Job Analysis Study Technical Report

For the positions of Career and Volunteer Firefighter

in the State of Florida

Developed for the Division of State Fire Marshal, Bureau of Fire Standards & Training

2015

INDUSTRIAL/ORGANIZATIONAL SOLUTIONS
PUBLIC SAFETY SELECTION EXPERTS

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Alachua County Dept of Public Safety
Alford Vol Fire Dept
Almarante Fire District
Alva Fire Control & Rescue District
Apalachicola Vol Fire Dept
Auburndale Fire Department
Avon Park Fire Dept
Baker County Vol Fire Dept
Baker Fire Dist
Bartow Fire Dept
Bay County Emergency Services
Bayshore Fire Protection & Rescue Service Dist - F10
Boca Grande Fire Control Dist
Boca Raton Fire Dept
Bonita Springs Fire Control & Rescue Dist
Boynton Beach Fire Rescue
Bradfordville Fire & Rescue Department
Brevard County Fire Rescue
Bristol Vol Fire Dept
Brooksville Fire Department
Brooksville Fire Dept
Broward Sheriff's Office Department of FR & EMS
Bunnell Fire Dept
Callaway Fire Dept
Campbellton Vol Fire Dept
Cape Canaveral Fire Rescue
Cape Coral Fire, Rescue & Emergency Mgmt Services
Carr-Clarksville Vol Fire Dept
Cedar Hammock Fire Rescue
Cedar Key Vol Fire Rescue
Chaires Capitola Vol Fire Dept
Charlotte County Fire & EMS Services
Chiefland Fire Rescue
Chipley Fire Dept
Citrus County Sheriff's Office Fire Rescue
City of Apopka Fire Dept
City of Bradenton Fire Rescue
City of Cocoa Fire Dept
City of Coral Springs Fire Dept
City of Davenport Fire Department
City of Deland Fire Dept
City of Dunedin Fire Dept
City of Dunnellon Fire Rescue
City of Ft Myers Fire Dept
City of Hollywood Fire Rescue
City of Kissimmee Fire Dept
City of Marco Island Fire Dept
City of Melbourne Fire Dept
City of Miami Fire Rescue
City of Milton Fire Dept
City of Minneola Fire Rescue
City of Naples Fire-Rescue Department
City of Oldsmar Fire Rescue
City of Palm Coast Fire Dept
City of Port Richey Fire Dept
City of Sebring Fire Dept
City of Seminole Fire Rescue
City of Stuart Fire Dept
City of Titusville Fire & Emer Services
City of Venice Fire Dept
Clay County Public Safety & Fire Rescue
Clearwater Fire Dept
Clermont Fire Dept
Coco Beach Fire Department
Columbia County Fire Dept
Concord Vol Fire Dept, Inc
Coral Gables Fire Dept
Cottondale Vol Fire Dept
Country Oaks Vol Fire Dept, Inc
Crawfordville Vol Fire Rescue
Crestview Fire Dept
Cross Creek Vol Fire Dept
Crossroads Vol Fire Dept
Crystal River Fire Dept
Daytona Beach Fire Dept
Daytona Beach Shores Public Safety
Defuniak Springs Fire Dept
Delray Beach Fire Rescue
Deltona Fire Rescue
Desoto City Vol Fire Dept

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Desoto County Fire Rescue
Destin Fire Control Dist
Dixie County Emer Services
Dundee Fire Rescue
East Lake Tarpon Spec Fire Control
East Manatee Fire Rescue Dist
East Milton Vol Fire Dept
East Naples Fire Control & Rescue Dist
Edgewater Fire Rescue Service
Englewood Area Fire Control Dist
Escambia County Fire Rescue
Estero Fire Rescue
Esto Vol Fire Dept
Eustis Fire Dept
Fernandina Beach Fire Dept
Five Points Vol Fire Dept
Flagler Beach Fire Dept
Florahome-Grandin Vol Fire Dept
Florida State Hospital Fire Dept
Florosa Fire Control Dist
Fort Lauderdale Fire/Rescue
Four Communities Fire Dept
Francis Vol Fire Dept
Fruitland Park Fire Rescue
Ft Myers Beach Fire Control Dist
Ft Myers Shores Fire & Rescue Control Dist
Gainesville Fire Rescue
Gilchrist County Fire Rescue
Glades County Vol Fire Dept
Graceville Vol Fire Dept
Grand Ridge Fire Dept
Greater Naples Fire Rescue
Greater Orlando Aviation Authority
Greenacres Dept of Public Safety
Groveland Fire Dept
Gulfport Fire Dept
Haines City Fire Rescue
Hallandale Beach Fire Rescue
Hardee County Fire Rescue
Hatch Bend Vol Fire Dept
Havana Fire Dept
Heilbron Springs Vol Fire Dept
Hernando Beach Fire Department
Hernando Beach Vol Fire Dept
Hernando County Fire Rescue
Hialeah Fire Dept
High Springs Vol Fire Dept
Highland Lakes Vol Fire Dept
Highlands County Fire Admin
Highlands Park Vol Fire Dept
Hillsborough County Fire Rescue
Holley Navarre Fire Protection Dist
Holt Fire Dist
Immokalee Fire Control Dist
Indialantic Fire Rescue
Indian Harbour Beach Vol Fire Dept
Indian River County Dept of Emer Serv
Indian River County Fire Rescue
Indian River Shores Public Safety
Interlachen Area Vol Fire Dept
Interlachen Lake Estates Fire Dept Unit 16 & 17
Iona McGregor Fire Dist
Islamorada Fire Rescue
Jackson County Fire Rescue
Jacksonville Beach Fire Dept
Jacksonville Fire Rescue
Jasper Fire Rescue
Jefferson County Fire Rescue
Jupiter Island Dept. Public Safety
Kennedy Space Center Fire Rescue
Key Largo Vol Fire Department, Inc.
Key West Fire Dept
Labelle Vol Fire Dept
Lake Alfred Fire Dept
Lake Butler Vol Fire Rescue
Lake County Fire Rescue
Lake Jackson Vol Fire Dept
Lake Mary Fire Dept
Lake Port Vol Fire Dept,
Lake Talquin Vol Fire Dept
Lake Wales Fire Dept
Lakeland Fire Dept
Largo Fire Rescue
Lauderdale by the Sea Vol Fire Dept
Lauderhill Fire Rescue
Lealman Fire Dept
Lee County Port Authority ARFF Dept
Leesburg Fire Dept
Lehigh Acres Fire Control & Rescue Dist
Levy County Fire Rescue
Liberty Fire District, Inc
Lighthouse Point Fire Rescue
Lloyd Vol Fire Dept
Longboat Key Fire Rescue
Longwood Fire Dept
Lorida Vol Fire Dept
Lynn Haven Fire & Emer Services
Madison Fire Dept
Maitland Fire Dept
Marathon Fire Rescue
Marco Island Fire Department
Margate Fire Rescue
Marianna Fire Rescue
Marion County Fire Rescue

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Mary Esther Fire Dept
Matlacha Pine Island Fire Control Dist
Mayo Vol Fire Dept
Medart Vol Fire Dept
Medulla Vol Fire Dept
Melbourne Fire Department
Merritt Island Vol Fire Dept
Miami Beach Fire Department
Miami-Dade Fire Rescue
Micco Vol Fire Dept
Midway Fire Department (Wetumpka Vol. Fire Dept)
Midway Fire District
Mims Vol Fire Dept
Miramar Fire Rescue
Monroe County Fire Rescue
Monticello Fire Department
Monticello Vol Fire Dept
Montverde Fire Dept
Mount Dora Fire Dept
Myakka City Fire Dist
Naples Fire Department
NAS Jacksonville Fire Dept
NAS Pensacola (Fire & Emerg Services Gulf Coast)
Nassau County Fire Rescue
Navarre Beach Fire Dept
New River Vol Fire Dept
New Smyrna Beach Fire Dept
Newberry Fire Rescue
North Collier Fire Control & Rescue District
North Ft. Myers Fire Control & Rescue Serv Dist
North Lauderdale Fire Rescue
North Naples Fire Control Dist
North Naples Fire Department
North Okaloosa Fire Dept
North Palm Beach Public Safety
North Port Fire Rescue
North River Fire Dist
Oakland Park Fire Rescue
Ocala Fire Dept
Ocean City-Wright Fire Control Dist
Ocean Reef Public Safety
Ochlockonee Bay Vol Fire Dept
Okaloosa Island Fire Dist
Okeechobee County Fire Rescue
Okeechobee Fire Dept
Old Town Sta #21 -Formerly Dixie County Fire Rescue
Orange City Fire Dept
Orange County Fire Rescue
Orange Park Fire Dept
Orlando Fire Dept
Ormond Beach Fire Dept
Ortona Vol Fire Dept
Osceola County Fire Rescue
Oviedo Fire Dept
Pace Fire Rescue District Inc.
Palatka Fire Dept
Palm Bay Fire Dept
Palm Beach County Fire Rescue
Palm Beach Gardens Fire Dept
Palm Beach Shores Vol Fire Dept
Palm Harbor Special Fire Control
Panama City Fire Dept
Parrish Fire District
Pasco County Fire Rescue
Pembroke Pines Fire Rescue
Pensacola Fire Dept
Pinellas Park Fire Dept
Pittman Vol Fire Dept
Placid Lakes Vol Fire Dept
Plant City Fire Rescue
Plantation Fire Dept
Polk City Fire Dept
Polk County Fire Rescue
Pompano Beach Fire Rescue
Ponce de Leon Vol Fire Dept
Port Orange Fire Rescue
Port St Joe Fire Dept
Punta Gorda Fire Dept
Putnam County Fire Emergency Services
Quincy Fire Dept
Rainbow Lakes Estates Vol Fire Dept
Ranchette Vol Fire Dept
Ratliff Community Vol Fire Dept
Reedy Creek Improvement District
Riviera Beach Fire Rescue
Rockledge Fire & Emer Services
Safety Harbor Fire Dept
Sampson City Vol Fire Dept
San Carlos Park Fire Protection & Rescue Service Dist
Sanford Fire Dept
Sanibel Fire & Rescue Dist
Sarasota County Fire Dept
Sarasota-Bradenton Intl Airport
Satellite Beach Fire Dept
Seminole County Fire Dept
Seminole Tribe's Fire Rescue
Skyline Fire Protection & Rescue Dist
Skyline Fire Rescue
South Gulf County Fire Dept
South Pasadena Fire Dept
South Trail Fire Protection & Rescue Service Dist
South Walton Fire Dept
Southern Manatee Fire Rescue
Southwest Ranches Vol Fire Rescue

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Spring Hill Fire Rescue
Springfield Fire Dept
St Augustine Fire Dept
St Cloud Fire Rescue
St Johns County Fire Rescue
St Lucie County Fire Dist
St Marks Vol Fire Dept
St Pete/Clearwater Airport Fire Dept
St Petersburg Beach Fire Dept
St Petersburg Fire Rescue
Starke Fire Dept
Sumter County Fire Rescue
Sun 'N Lakes of Lake Placid Vol Fire Dept
Sunrise Fire Rescue
Suwannee County Fire Rescue
Tallahassee Fire Department
Tamarac Fire Dept
Tampa Fire Rescue
Tarpon Springs Fire Dept
Taylor County Fire Rescue
Temple Terrace Fire Dept
Tequesta Fire Rescue
The Villages Public Safety Dept
Theressa Vol Fire Dept
Tice Fire Protection District
Town of Davie Fire Rescue
Town of Palm Beach Fire Rescue
Treasure Island Fire Dept
Venus Vol Fire Dept
Vernon Fire Rescue
Village of Key Biscayne Fire Rescue
Volusia County Fire Service
Wakulla County Fire Rescue
Wakulla County Fire/Rescue (Alligator Point Volunteer Fire)
Wakulla Vol Fire Dept
Walton County Fire Rescue
West Manatee Fire Rescue
West Palm Beach Fire Rescue
West Sebring Vol Fire Dept
Wetumpka Vol Fire Dept
Winter Garden Fire Dept
Winter Haven Fire Dept
Winter Park Fire/Rescue
Woodville Vol Fire Dept
Zephyrhills Fire Dept

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Executive Summary

This report summarizes the job analysis study conducted for the career and volunteer firefighter positions in the state of Florida by request of the Division of State Fire Marshal (Division). Florida is one of only a very select few states that has undertaken such great efforts to complete such a thorough and robust statewide job analysis study for the positions of firefighter and volunteer firefighter. Through this robust job analysis study, the Division aims to become an example on the best practices to consider in ensuring that the proper training and curriculum requirements are set for firefighters and volunteer firefighters.

This study commenced in the fall of 2014 and concluded in the winter of 2015 and was conducted by Industrial/Organizational Solutions, Inc. (IOS). The study was conducted under the direction of the Vice President of Testing Services at IOS, Dr. Mark Tawney and a primary consultant: Nahren Cama, and in collaboration with the Division.

The main purpose of the present job analysis study was to determine the essential job tasks, knowledge areas, skills, abilities and other characteristics (KSAOs) necessary for successful performance as a firefighter and volunteer firefighter in the state of Florida. The Division will use the results of the job analysis study to help in developing the minimum training and curriculum requirements of firefighters and volunteer firefighters. This report describes in detail the procedures and methods used to determine the required job tasks and KSAOs for firefighters and volunteer firefighters in the state of Florida.

Key findings from the present job analysis study included:

- A 91.5% overlap was found between the career and volunteer firefighter positions in terms of the essential tasks performed on the job and a 97.2% overlap in terms of the essential KSAOs.
- No statistically significant differences were found in the importance ratings of the KSAO statements between the career and volunteer firefighter position, nor were there any statistically significant geographical region differences found.
- An 83.5% overlap was found between the career and volunteer firefighter positions in terms the helpful qualifications required for entry into these positions.
- Of all 480 items included in the JAQ, approximately 75% were found to be required upon active duty, approximately 24% were found to be learned on-the-job, and approximately 1% was found to be learned through continuing education. This trend held for both career and volunteer firefighters. The Required upon Active Duty rating scale assessed the degree to which a new incumbent is either expected to perform a

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task (without any additional training) or KSAO upon entry into the job, or whether the person must gain additional information to perform the KSAO or job task.

- The results of the gap analysis revealed that the IOS JAQ went beyond the scope of the NFPA® 1001 requirements to find additional tasks to be essential that were not reflected within NFPA® 1001. To understand how the tasks and KSAOs found to be essential in the present study compared to National Fire Protection Association (NFPA®) Standard for Fire Fighter Professional Qualifications (2013 Edition), a complete gap analysis was conducted. Specifically, of the 468 total task and KSAO statements included in the IOS JAQ, the NFPA® 1001 requirements reflected 187 of these statements (about 40%). Thus, the IOS JAQ included an additional 281 task and KSAO items to assess their respective essentiality to the career and volunteer firefighter positions. Of these 281 task and KSAO statements that were unique to the IOS JAQ and not reflected in the NFPA® 1001 requirements, 233 (about 83%) were found to be essential to both the career and volunteer firefighter positions.

A more detailed review of the background and a general overview of the project are presented in Chapter 1 of this document. The initial stage of the job analysis, which included job analysis interviews and observations, will be presented in Chapter 2. The development of the job analysis questionnaire (JAQ) and the sampling methodology, are presented in Chapter 3 of this report. The results of the JAQ are presented in Chapter 4. The methodology and process utilized to gather linkage ratings to validate the KSAOs against the major job duty areas of the fire fighter position are presented in Chapter 5. A discussion of the key findings as well as recommended next steps is presented in Chapter 6. The following six chapters present the details of the study, the methods and procedures used and the findings produced from this job analysis study.

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Chapter 1. Introduction

The final narrative report is the culmination of the statewide Job Analysis Study conducted for the positions of firefighter and volunteer firefighter for the state of Florida. This report will take the reader chronologically through the entire project, simultaneously explaining and outlining all pertinent information obtained and analyses performed.

1.1 Background

The Division issued a statement of work to obtain a contractor who would be able to conduct a statewide job analysis study to determine the tasks, knowledge, skills, abilities, and other characteristics required to be a firefighter and volunteer firefighter in Florida. The findings from this job analysis study will be primarily used to develop the minimum training and curriculum requirements of firefighter and volunteer firefighters within the state of Florida.

1.2 Goals of the Job Analysis Study

The goals of the job analysis study as dictated by the Division were to conduct a job analysis study to determine the KSAOs required for the positions of firefighter and volunteer firefighter and to produce a report that provided all of the descriptive statistics for these findings.

Job-relevant KSAOs identified through the job analysis were linked to the various essential job duties for a firefighter. This subsequent analysis ensured that the KSAOs were job-related. This report will document the procedures and results that conform with industry guidelines and best practices including: The Equal Employment Opportunity Commission's (EEOC) Uniform Guidelines on Employee Selection (1978), the Society for Industrial and Organizational Psychology's (SIOP) Principles for the Validation and Use of Personnel Selection Procedures (2003) and the American Psychological Association's (APA) Standards for Educational and Psychological Testing (1999).

1.3 Purpose of a Job Analysis

The purpose of a job analysis is to determine important aspects of a particular job position, such as the work behaviors, knowledge, skills, abilities and physical abilities applicable to the position and the job-relevant tasks that employees in that position are expected to perform. Information regarding the frequency and importance of each aspect of the job position is collected and can be used as the foundation of various personnel and organizational tools and needs.

1.4 Major Phases of the Job Analysis Study

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The current job analysis study had several major phases. First, job observations and job interviews were conducted by representatives from IOS with fire personnel from departments all across the state of Florida. Second, a job analysis questionnaire (JAQ) was developed that focused on the job tasks and KSAOs of the firefighter position and was administered online. After the administration period concluded for the online JAQ, IOS began analyzing the data. The last major phase of the job analysis study was the development and administration of a linkage analysis questionnaire (LAQ) that asked participants to link knowledge and KSAOs utilized for each job duty area of the firefighter position. The LAQ was administered via paper questionnaires to selected departments across Florida. Each of these phases will be presented in detail in each of their respective chapters within this report. A summary table presenting the dates for these major phases is provided in Table 1.

Table 1. Summary of Dates by Major Job Analysis Stage

Job Analysis Stage	Date
Job Interviews/Job Observations	January – February 2015
Develop Job Analysis Questionnaire	March – April 2015
Job Analysis Questionnaire Administration	May – July 2015
Analyze Data from Job Analysis Questionnaire	July – October 2015
Develop Linkage Analysis Questionnaire	July – September 2015
Linkage Analysis Questionnaire Administration	September – October 2015
Analyze Data from Linkage Analysis Questionnaire	October 2015

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Chapter 2. Job Analysis Interviews and Observations

The first step required IOS personnel to conduct station visits to complete interviews, job observations, and review preliminary job task lists with fire personnel covering all major regions of Florida. The goal of the station visits was to collect specific task-level information and also to identify skills and abilities needed for successful performance in the positions of firefighter and volunteer firefighter. This is a necessary step in ensuring the questionnaires that are developed are in line with the positions as described by participants from these on-site visits.

2.1 Sampling Plan for Completing Station Visits

With a large number of departments across the State, it was proposed to the Division that IOS visit approximately 25 different fire departments spread throughout Florida. Thus, the State would be broken up into several geographic zones, and a number of departments would be visited within each. With the help from the Division, Florida was divided into five geographic regions: Northeast, Northwest, Central, Southeast, and Southwest. The departments that were chosen for the site visits were selected by the Division ensuring that IOS would be able to meet with departments of various sizes, type (volunteer and/or career), as well as geography (rural vs. metropolitan). Due to the size of the Central geographic region, more departments were visited within this area as compared to the other regions. Table 2 provides details on the departments that were visited by IOS representatives to conduct interviews and observations. IOS visited with 26 departments across the State. All station visits occurred between the dates of January 26, 2015 and February 6, 2015.

Table 2. Departments Visited by IOS for Interviews and Observations

Region	Department Name	Type
Northeast	Clay County Fire/Rescue	Paid & Volunteer
Northeast	Jacksonville Fire/Rescue	Paid
Northeast	St. Johns County Fire/Rescue	Paid & Volunteer
Northeast	Gainesville Fire Department	Paid
Northeast	High Springs Fire Department	Paid & Volunteer
Northwest	Monticello Fire Department	Volunteer
Northwest	Wakulla County Fire/Rescue (Alligator Point Volunteer Fire Dept.)	Volunteer
Northwest	Midway Fire Department (Wetumpka Vol. Fire Department)	Volunteer
Northwest	Tallahassee Fire Department	Paid
Central	Winter Park Fire/Rescue	Paid
Central	Coco Beach Fire Department	Paid

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Central	Melbourne Fire Department	Paid
Central	Orange County Fire Department	Paid
Central	Brooksville Fire Department	Paid & Volunteer
Central	Hernando Beach Fire Department	Volunteer
Central	Auburndale Fire Department	Paid & Volunteer
Central	Largo Fire Department	Paid
Southeast	Palm Beach County Fire/Rescue	Paid
Southeast	Broward County Fire/Rescue	Paid
Southeast	Fort Lauderdale Fire/Rescue	Paid
Southeast	Plantation Fire/Rescue	Paid & Volunteer
Southwest	North Naples Fire Department	Paid
Southwest	Greater Naples Fire Rescue	Paid
Southwest	Marco Island Fire Department	Paid
Southwest	Naples Fire Department	Paid

2.2 Purpose of Station Visits

There were three primary goals that IOS had for conducting the station visits: (1) job observations; (2) job interviews; (3) review of preliminary job task lists. The purpose of each of these will be presented next.

Job Observations. The goal of the job observations is to observe firefighters engaging in their daily activities. Representatives from IOS observed firefighters conducting their daily tasks and rode along with crews to various alarms/calls that occurred during the visit. Job analysts asked to be shown the station, equipment, and the apparatus that firefighters operate.

Job Interviews. IOS representatives met with the firefighters and supervisors to collect information about tasks and KSAOs that are performed while on the job. An interview protocol was developed containing several questions that IOS representatives used to guide the interviews. See Table 3 below for the questions that were used for the interviews. When IOS representatives interviewed supervisors, these questions were asked in regard to the firefighter position within their department. In addition, volunteer fire personnel were asked three additional questions to understand how their position varied from career fire personnel.

Table 3. Questions used during Florida Statewide Job Analysis Interviews

These were the main questions used during interviews/observations.
1 Describe a typical day on the job.

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2	What would you describe as the most critical tasks you perform in your job?
3	What knowledge, skills and abilities do you feel are important to successful performance in your job?
4	What knowledge, skills and abilities do you feel are required for job entry in the firefighter position?
5	What knowledge, skills, and abilities do you feel can be acquired through on-the-job training?
6	What knowledge, skills, and abilities do you feel can be obtained through continuing education?
7	What are the most difficult knowledge, skills, and abilities to master in your position? Describe why.
8	What do you want me to know about what it takes to do your job successfully that you have not yet shared?

Additional questions to use if interviewing VOLUNTEER fire personnel:

1. What do you believe are the major differences in the jobs of a volunteer firefighter versus a career firefighter?
2. What are the major similarities between the jobs of a volunteer firefighter and a career firefighter?
3. How do the training requirements for being a volunteer firefighter vary from career firefighters?

Review of Job Task Listing. A preliminary job task listing was developed by IOS prior to the station visits based on the company's previous experience conducting job analyses with fire departments across the country. The goal of reviewing this preliminary job task listing was to determine job tasks that were not relevant to firefighters in Florida and/or to add additional tasks that were not captured in our preliminary listing. This step (along with the interviews and observations) ensured that IOS would develop a comprehensive and representative JAQ for the career and volunteer firefighter positions in Florida.

IOS representatives worked with each department to coordinate each station visit. Each station visit lasted approximately 2 hours. During these 2 hours, the department coordinated 2 to 4 personnel to meet with IOS. If calls occurred during the station visit, the IOS representative rode along to observe the fire personnel on the job.

2.3 Participant Demographics

Across all station visits, IOS representatives met with 95 fire personnel. The demographics of the fire personnel who met with IOS are provided in Table 3. During these meetings, IOS representatives often combined goals and completed interviews while observing or had participants review task lists after an interview was completed. In total, IOS representatives

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conducted interviews with 81 personnel, completed job observations with 25 fire personnel, and reviewed the job task list with 25 fire personnel.

Table 4. Demographics of Participants Involved in Station Visits

Demographic	Total (% of Sample)
RANK	Firefighter = 51 (54%) Supervisory Level = 44 (46%)
TYPE	Career = 81 (85%) Volunteer = 14 (15%)
TENURE	Less than 2 years = 17 (18%) 2 to 4 years = 15 (16%) 5 years or more = 61 (64%)
GENDER	Male = 88 (93%) Female = 7 (7%)
RACE	African American = 1 (1%) Hispanic = 7 (7%) White = 84 (88%) Multi-Race = 3 (3%)

2.4 Main Findings from Interviews and Observations

The main findings from the station visits are presented below. First, the consensus across departments in terms of what a typical day looks like for firefighters are highlighted. Next, the required knowledge, skills, abilities, and other characteristics (KSAOs) for successful performance as reported from participants during the visits are provided. Finally, a summary of the themes identified from comparing the career and volunteer firefighter position are presented.

<u>Typical Day – Major Responsibilities (with sample tasks)</u>

1. Check and pack gear
   1.1. Check gear
   1.2. Put gear in truck
   1.3. Check rescue and fire trucks to ensure they're fully functioning
   1.4. Check and restock fire and medical supplies
2. Maintenance
   2.1. Maintain the rescue and fire trucks by washing or fixing any damaged parts
   2.2. Maintain the cleanliness of the station by performing duties
3. Training

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3.1. Review training requirements via a morning meeting or email
3.2. Participate in daily/monthly training either online or in-person including drills and scenarios
3.3. Conduct pre-plans by going into buildings and planning how a fire would be dealt with and mapping out routes of escape and potential hazards

4. Medical Calls
   4.1. Call and preparation
      4.1.1. Listen for emergency call information
      4.1.2. Go to truck
      4.1.3. Get an active route by checking a physical map, using the computer navigation, or using personal knowledge of the area for location
      4.1.4. Load equipment into the truck
      4.1.5. Drive to the scene
   4.2. On scene duties
      4.2.1. Enter the scene by using standard or forced entry methods
      4.2.2. Search the scene as instructed by the on-scene-officer
      4.2.3. Request police assistance if needed for forced entry
      4.2.4. Survey the scene for access and to determine if there is upset public to comfort
      4.2.5. Unload medical equipment on scene including stretchers, life packs, airway bags, and medical boxes
      4.2.6. Assess medical information from patients including checking for breathing, vital signs, major bleeding, blood pressure, a pulse, etc.
      4.2.7. Perform cardiopulmonary resuscitation
      4.2.8. Collect medical information verbally from the patient or family members
      4.2.9. Perform treatment including establishing an airway and an IV
      4.2.10. Load patient into rescue truck to begin performing treatment as necessary
   4.3. Post on scene duties
      4.3.1. Transport patient to the hospital
      4.3.2. Provide nurses at the hospital with a report on the patient
      4.3.3. Drive back to the station
5. Fire Calls
   5.1. Call and preparation
      5.1.1. Get an active route by checking a physical map, using the computer navigation, or using personal knowledge of the area for location
      5.1.2. Put on full or partial bunker gear possibly including an air pack
      5.1.3. Grab fire gear including irons, flashlights, thermal imaging camera, etc.
      5.1.4. Drive to the scene using a ladder or a rescue truck

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5.2. On scene duties

5.2.1. Setup and size-up

5.2.1.1. Park the truck a safe distance away from the scene

5.2.1.2. Take instructions on how to proceed with the fire or rescue operation from an officer

5.2.1.3. Secure safety in the location of all involved and the public by establishing a perimeter with highway cones, parking the truck so that it blocks any traffic from entering the scene, etc.

5.2.1.4. Locate hydrants and standpoints on scene using a map book or computer navigation system

5.2.1.5. Secure a water supply and attach a hose to the water supply

5.2.1.6. Secure utilities on scene

5.2.1.7. Look for exposures and hazards

5.2.1.8. Select a fire hose size to use

5.2.1.9. Pull the hose off of the truck to the fire

5.2.1.10. Assess the situation by performing an inner and outer circle

5.2.1.11. Lay a primary or secondary 5” line

5.2.1.12. Coordinate and charge the 5” line

5.2.2. Search and extinguish

5.2.2.1. Perform a ventilator inner search

5.2.2.2. Wet an outside perimeter to contain the fire

5.2.2.3. Hold a hose at a pinch point

5.2.2.4. Get engine flowing water and check water pressures

5.2.2.5. Check temperatures

5.2.2.6. Check for external conditions

5.2.2.7. Spray water at the source of a fire

5.2.2.8. Search the location for victims using various assigned search techniques

5.2.2.9. Setup a ladder truck

5.2.2.10. Remove victims from the scene of the fire or accident

5.2.2.11. Connect fire hoses to hydrants or other fire engines

5.2.3. Overhaul

5.2.3.1. Perform an overhaul by checking for hot spots

5.2.3.2. Spray water at hot spots

5.2.3.3. Establish ventilation using a fan

5.2.3.4. Place all equipment back in the truck

5.2.3.5. Assign victims needing hospitalization to rehab

5.2.3.6. Contact and talk with investigators as needed

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5.2.3.7. Contact towing companies

5.3. Extrication

5.3.1. Start a generator used for extraction

5.3.2. Create a strategy to extricate victims from the scene

5.3.3. Crib the car being extricated

5.3.4. Place salvage covers over victims while being extricated

6. Public service

6.1. Participate in public education

6.2. Follow up with victims of previous accidents

6.3. Clean a scene after an emergency

6.4. Talk with victims to comfort them

Required KSAOs For Successful Performance as Reported by Participants During Station Visits

1. Knowledge Areas

1.1. Knowledge of tools and equipment

1.1.1. Knowledge of basic tools

1.1.2. Knowledge of specialized firefighting tools and equipment

1.1.3. Knowledge of specialized rescue tools and equipment

1.1.4. Knowledge of fire engine layout

1.1.5. Knowledge of rescue truck layout

1.1.6. Knowledge of ladder truck layout

1.1.7. Knowledge of how to operate alarm panels

1.1.8. Knowledge of emergency truck driving

1.1.9. Knowledge of fire hose nozzles

1.1.10. Knowledge of fire hose nozzle use

1.1.11. Knowledge of fire hydrant operation

1.1.12. Knowledge of how to deploy a hose line

1.1.13. Knowledge of working with a fire engine, rescue, or ladder truck

1.1.14. Knowledge of how to operate extrication tools

1.1.15. Knowledge of how to connect a hose line to a hydrant

1.1.16. Knowledge of hydraulics and pressure

1.1.17. Knowledge of the SCBA components

1.1.18. Knowledge of how to use the SCBA

1.1.19. Knowledge of hydraulics and pressure

1.1.20. Knowledge of nozzle patterns including reach and hydraulic vent

1.1.21. Knowledge of operating hazard meters

1.1.22. Knowledge of operating a vehicle

1.1. Knowledge of medical techniques and protocol

1.1.1. Knowledge of medical problems

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1.1.2. Knowledge of complex medical diagnostics
1.1.3. Knowledge of anatomy
1.1.4. Knowledge of medical protocol
1.1.5. Knowledge of drug interactions
1.1.6. Knowledge of simple medical treatment
1.1.7. Knowledge of trauma alerts
1.1.8. Knowledge of life threatening injuries

1.2. Knowledge of fire scene techniques and protocol
1.2.1. Knowledge of building construction
1.2.2. Knowledge of how fire spreads in different building constructions
1.2.3. Knowledge of fire protocol
1.2.4. Knowledge of 2-way radio fire codes
1.2.5. Knowledge of reading smoke patterns including color, density, and velocity of the smoke
1.2.6. Knowledge of extrication techniques
1.2.7. Knowledge of fire science
1.2.8. Knowledge of fire suppression tactics
1.2.9. Knowledge of forcible entry techniques
1.2.10. Knowledge of forward and reverse hose line lays

1.3. Knowledge of location and scene setup
1.3.1. Knowledge of locations and zone layouts
1.3.2. Knowledge of securing a scene
1.3.3. Knowledge of command structure

1.4. Knowledge of department policy and guidelines
1.4.1. Knowledge of guidelines
1.4.2. Knowledge of standard operating procedure
1.4.3. Knowledge of assigned roles

1.5. Knowledge of outside resources including other agencies

2. Skill and Ability Areas
2.1. Interpersonal skills
2.2. Communication skills
2.3. Ability to take constructive criticism
2.4. Teamwork skills
2.5. Ability to handle emotional stress
2.6. Ability to operate in ambiguous situations
2.7. Ability to comprehend communications from a 2-way radio
2.8. Ability to anticipate challenges
2.9. Ability to maintain professionalism in stressful conditions
2.10. Problem solving skills
2.11. Ability to maintain personal safety
2.12. Ability to maintain the safety of others
2.13. Listening skills

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2.14. Physical Skills
    2.14.1. Ability to lift weights up to 300 pounds using both upper and lower body strength
    2.14.2. Ability to perform exercises involving heavy breathing
    2.14.3. Ability to control breathing
    2.14.4. Ability to endure high temperatures
    2.14.5. Ability to use tactile senses to navigate rooms
2.15. Mechanical skills and abilities
    2.15.1. Skill with operating small machines
    2.15.2. Ability to learn new tools and equipment
    2.15.3. Ability to manipulate a hose line
    2.15.4. Ability to throw a ladder
    2.15.5. Ability to perform extrication
    2.15.6. Ability to use extrication tools
    2.15.7. Ability to operate a vehicle
    2.15.8. Ability to manage ladders
    2.15.9. Ability to connect hose lines to a hydrant
    2.15.10. Ability to use small engines
    2.15.11. Ability to clearly communicate using a 2-way radio
    2.15.12. Ability to operate both physical and computer maps
    2.15.13. Ability to identify damaged and expired equipment
    2.15.14. Ability to drive an emergency truck
2.16. Medical skills and abilities
    2.16.1. Ability to identify medical problems
    2.16.2. Ability to operate an IV
    2.16.3. Ability to establish an airway in a patient
    2.16.4. Ability to perform CPR
    2.16.5. Ability to identify life threatening injuries
2.17. On-scene skills and abilities
    2.17.1. Ability to size-up a scene
    2.17.2. Ability to write reports
    2.17.3. Ability to provide a Personal Accountability Report (PAR)

3. Other Characteristics
    3.1. Willingness to help out with what is needed
    3.2. Agreeable
    3.3. Work ethic
    3.4. Initiative
    3.5. Knowing own limits
    3.6. Confidence
    3.7. Attend conventions
    3.8. Obtain a certain number of continuing education credit hours
    3.9. Participate in online classes

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3.10. Participate in hands-on training
3.11. Maintain physical fitness
3.12. Maintain current knowledge of fire science and training
3.13. Perform acts of public service

Major Themes Regarding the Comparison of the Volunteer and Career Firefighter Position

1. There is a difference in the extent of training between paid firefighters and volunteer firefighters.
   1.1. While the actual training is similar, paid firefighters get training more frequently than volunteer firefighters.
   1.2. Proficiency comes from training and experience, which is less available at slower volunteer fire stations.
   1.3. Paid firefighters practice during their shifts, while volunteers have other jobs outside of this position that takes their time.
   1.4. Extent of training of volunteer firefighters depends greatly on the department, while training for paid firefighters is mandated, constant and frequent.
   1.5. It is up to the volunteer firefighters to seek out opportunities and apply themselves to gain experience.
2. Certification requirements differ for the two positions.
   2.1. Paid firefighters require 398 hours of training, while volunteer firefighters require 206 hours of training.
   2.2. A volunteer firefighter is required to obtain a Volunteer Firefighter Certification; while a Firefighter Certificate of Compliance is required of paid firefighters.
   2.3. Training required to obtain a Volunteer Certificate of Completion includes firefighter training adopted from the NFPA 1001 Standard for Firefighter I.
   2.4. Training required to obtain a Firefighter Certificate of Compliance includes firefighter training adopted from the NFPA 1001 Standard for Firefighter II.
   2.5. Paid firefighters must possess a Firefighter Certificate of Compliance to be employed by a fire department, while volunteer firefighters can join a department in a supportive role as support personnel.
3. There are some differences in how the firefighter job is approached and performed.
   3.1. Paid firefighters often have better equipment to work with and train with.
   3.2. A paid firefighter is assigned and employed on a work shift, and is immediately required to respond whenever they are called out, while a volunteer firefighter is always on call. Volunteer firefighters may have a pager and stay at home until needed.
   3.3. Demand of the job hours is a major difference between the two positions.
   3.4. Driving the apparatus is often different between a paid firefighter and volunteer firefighter. Paid firefighters are often “promoted” to a driver position, where volunteer firefighters are often cross-trained to perform assigned driving duties.

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3.5. Volunteer firefighters can respond in their own car to a scene and report to command to determine where they are needed.
3.6. If a volunteer firefighter does not have the certification required, he/she cannot perform certain tasks, instead the volunteer firefighter performs important tasks he/she is trained to perform commensurate to duty.
3.7. Depending on the department, volunteer firefighters may serve as mutual aid.
3.8. Volunteer firefighters serve in this role out of personal satisfaction/motivation/love of the job. Oftentimes, retired career firefighters serve as volunteer.

4. There are similarities in how the firefighter job is approached and performed:
   4.1. Both paid and volunteer firefighters have to be trained, and prepared for any type of incident.
   4.2. When volunteer firefighters arrive on scene, they have the same job to do as paid firefighters. Citizens do not care who responds, whether they are paid or volunteer, they want the incident to be resolved, the fire to be put out, and victims to be rescued.
   4.3. Both have same connection and responsibility to the community.
   4.4. If there is a fire and a volunteer firefighter possesses a Volunteer Firefighter Certification, the volunteer firefighter will be tasked to perform the same duties as a paid firefighter.
   4.5. Volunteer firefighters have to go through the same vehicle training and testing as paid firefighters if they want to drive a fire apparatus.
   4.6. Both paid and volunteer firefighters have to know where everything is on the truck.
   4.7. Both paid and volunteer firefighters have to know how to don their gear.
   4.8. Both paid and volunteer firefighters have to know the general safety requirements for the job.

2.5 Main Findings from Review of Job Task Listing

During the station visits performed across the state, twenty five participants took the time to review the draft job task listing put together by IOS and provide feedback. Specifically, participants were asked to complete a worksheet during their review that asked them to:

1. Record any edits/modifications to the task statements in the section below. Be sure to include the task number from the booklet that you provide edits for.
2. Are there tasks performed in your position that are not included in the task group lists? Indicate the task group and respective task.
3. Record any edits/modifications to the KSAO statements in the section below. Be sure to include the KSAO number from the booklet that you provide edits for.
4. Are there KSAOs performed in your position that are not included in the lists? Record any missing KSAOs here.

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Participants provided several modifications to the draft job task and KSAO listing, including: altering words to make statements clearer or use jargon appropriate for Florida; adding missing language, adding missing task statements, adding missing KSAOs, as well as deleting statements that were not relevant to the positions in Florida. IOS reviewed all of the feedback obtained during these reviews and modified the proposed job task and KSAO listing accordingly.

2.6 Next Steps after Station Visits

After the station visits were completed, all of the information obtained was compiled to understand how the JAQ would need to be revised. A voluminous amount of information was accrued from these station visits, analyzed, and finally edited and/or inserted into the task and KSAO lists. The next chapter of this report delves into the development and finalization process of the JAQ tool as well as the methodology used to administer the JAQ.

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Chapter 3. Job Analysis Questionnaire Development and Methodology

This chapter presents information regarding the development of the final job analysis questionnaire tool utilized in this study. Additionally, the methodology used to administer the questionnaire will be provided.

3.1 Development of the Job Analysis Questionnaire (JAQ)

The job analysis questionnaire (JAQ) utilized for both career and volunteer firefighters throughout Florida for this study was developed based on information gathered during the job analysis interviews, job observations, and task list reviews, and previously developed questionnaires utilized for the firefighter position developed by IOS.

Gaining all the information concerning the job of a career and volunteer firefighter (as outlined previously in Chapter 2) in departments across the State, IOS edited the JAQ tool. Examples of changes made to the JAQ tool included: amendments in the verbiage and language utilized on the JAQ, general edits, deletions and additions to the draft task and KSAO lists.

Furthermore, the Division was greatly interested in understanding how the results of the present job analysis study compared against the job performance requirements of the National Fire Protection Association (NFPA®). Thus, a comprehensive gap analysis was performed to understand how the JAQ tool that IOS drafted compared against requirements included within the NFPA® 1001 Standard for Fire Fighter Professional Qualifications (2013 edition). The results of the gap analysis yielded additional tasks to be added upon the JAQ tool used in this study. A total of 16 knowledge statements paralleling NFPA® knowledge areas were added to the JAQ tool used in the present study. The gap analysis that was performed will be explained in greater detail in the following section.

IOS also added knowledge items to the JAQ tool to reflect information learned by firefighters during their educational tenure in the fire academy. The additional knowledge items encompassed material from the International Fire Service Training Association's Essentials of Fire Fighting utilized within the fire academy. A total of 54 knowledge statements from this source were added to the JAQ tool used in the present study.

Once all of the aforementioned changes were made to the JAQ tool, subject matter experts from the Division reviewed the JAQ and provided their feedback. Their feedback was further incorporated into the JAQ before it was finalized. In total, the JAQ included 480 items for participants to rate. Nonetheless, 12 of the 480 items were attention check questions to ensure that participants were paying attention while completing the questionnaire. Thus, there

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were 468 items spanning across job tasks, knowledge, skills, abilities, and other characteristics. Table 5 presents the breakdown of the major sections included within the JAQ. The JAQ utilized in this study is included in Appendix A.

Table 5. JAQ Sections and Number of Items

JAQ Section	# of Items
Job Tasks	264
Equipment and Tool Usage	21
Physical Tasks	38
Cognitive Abilities	16
Physical Abilities	18
Skills	19
Other Characteristics & Work Styles	16
Knowledge Areas	76

There were 15 job duty areas included within the job tasks section. Table 6 presents the job duty areas included as well as the number of task statements for each.

Table 6. Job Duty Areas included within the Job Tasks Section and Number of Items

Job Duty Area	# of Items
1. Incident Response	7
2. Incident Assessment/Size-up	16
3. Rescue Operations	27
4. Emergency Medical Service Operations	14
5. Pumping and Driving Operations	13
6. Ladder Operations	20
7. Hoseline and Attack Operations	59
8. Hazardous Materials Operations (HAZ-MAT)	14
9. Salvage and Overhaul Operations	25
10. External and Interagency Collaborations	7
11. Training and Education	15
12. Administrative Duties and Communications	10
13. Station and Equipment Maintenance	15
14. Prevention and Inspections	7
15. Public Relations and Customer Service	15
TOTAL	**264**

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3.2 Gap Analysis Between IOS JAQ and NFPA® Standard for Fire Fighter Professional Qualifications (2013 Edition)

The Division requested that IOS compare and contrast the KSAOs of a firefighter and volunteer firefighter that were established through the results of the present job analysis study against the job performance requirements of the NFPA® 1001 Standard for Fire Fighter Professional Qualifications (2013 edition) (NFPA® 1001, herein). Due to this request, IOS had to ensure that the job analysis questionnaire tool used in the statewide job analysis for the firefighter position in the state of Florida was robust and encompassed the tasks and KSAOs established by the NFPA® 1001 to ensure that these comparisons could be made once the data was obtained from the JAQ used in the present study.

Before IOS had finalized the JAQ, the total number of task and KSAO statements included was 392. The first step in the gap analysis performed was to organize the NFPA® 1001 by its task and KSAO statements. Initially, the NFPA® 1001 had a total of 131 items (including 3 "headers" because some material from these areas was comprised of unique information) across the Fire Fighter I and Fire Fighter II chapters. In order to capture all of the information encompassed within each item included by NFPA® 1001 it was necessary to partition the items such that matches could be determined. Thus, from the 131 items, a total of 271 items were derived. Of the partitioned 271 items from the NFPA® 1001, 84 were redundancies. Subsequently, these redundancies were not included in the overall count. This left 187 unique items in NFPA® 1001, of which 111 were directly matched to task items already included within the JAQ developed by IOS. To ensure that the JAQ finalized by IOS captured all of the required job tasks from NFPA® 1001, the tasks that were not yet included within the IOS job task section were added from NFPA® 1001. A total of 76 unique NFPA® 1001 job requirements were added within the IOS JAQ. Table 7 presents the gap analysis conducted between IOS job task items as compared to those included within NFPA® 1001 and presents the sections that items from NFPA® 1001 were added.

Table 7. Gap Analysis between IOS JAQ and NFPA® 1001

JAQ SECTION	# ORIGINAL IOS ITEMS	# MATCHES b/w IOS and NFPA	# IOS ITEMS Not included in NFPA	# UNIQUE NFPA ITEMS ADDED TO IOS JAQ
Incident Response	6	5	1	1
Incident Assessment/ Size-up	12	9	3	4

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JAQ SECTION	# ORIGINAL IOS ITEMS	# MATCHES b/w IOS and NFPA	# IOS ITEMS Not included in NFPA	# UNIQUE NFPA ITEMS ADDED TO IOS JAQ
Rescue Operations	21	13	8	6
Emergency Medical Service Operations	14	0	14	-
Pumping and Driving Operations	13	7	6	-
Ladder Operations	19	13	8	1
Hoseline & Attack Operations	34	20	14	25
Hazardous Materials Operations	7	2	5	7
Salvage & Overhaul Operations	17	13	3	8
External & Interagency Collaborations	7	1	6	-
Training & Education	12	1	11	3
Administrative Duties & Communications	9	4	5	1
Station & Equipment Maintenance	14	7	7	1
Prevention & Inspections	6	3	3	1
Public Relations & Customer Service	14	2	11	1
Equipment & Tool Usage	20	5	15	1
Physical Tasks	38	6	32	-
Knowledge	60	0	60	16
Skills	19	0	19	-
Abilities	34	0	34	-
Other Characteristics & Work Styles	16	0	16	-
TOTAL	**392**	**111**	**281**	**76**

3.3 JAQ Scales

Six scales were utilized to capture responses on the JAQ. These scales were a combination of recommendations put forth by the Division, in addition to scales which have been utilized by IOS in previous job analysis studies on a nationwide level. The following subsections will proceed into greater detail concerning each of the scales found on the JAQ, including the mathematical information necessary for tasks or KSAOs to be considered essential or critical to the job.

3.3.1 Applicability/Relevance Scale

A key factor in determining if a task, duty or KSAO is necessary for a job is to make sure that the majority of individuals who hold that job actually perform the task or need/use the KSAO. By

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demonstrating the relevance of such a task or KSAO, an initial measure of the job-relatedness of the given task or KSAO is established.

Participants completing the JAQ were asked to rate the relevance of all tasks and KSAOs prior to giving any other ratings. Participants indicated the relevance of a task or KSAO by completing the Applicability scale. If a participant marked "not applicable," the task or KSAO would not be rated on any other scale by that participant. Participants who marked "applicable" would give additional ratings on the remaining scales. To measure the relevance of a given task or KSAO, a relevance percentage was calculated. A "relevant" percentage was found by calculating the percentage of individuals (out of 100%) who rated the task or KSAO as "applicable." This calculation resulted in the final relevance percentage for all tasks and KSAOs.

Figure 1 breaks down the labels that were applied for the relevance percentage ranges. In order for a task to be considered relevant, a 2/3rd majority of SMEs needed to rate the task or KSAO as relevant. Thus, a relevance percentage of 66.67% or larger indicates that the task or KSAO is relevant to the job. A rating between a simple majority and a 2/3rd majority indicated that the task or KSAO was marginally relevant and may be included based upon factors such as importance and frequency ratings of those SMEs who rated it as relevant. Below a simple majority, the task or KSAO is either a specialized job function, or is tangential to the job.

Figure 1. Relevance Percentage Categories

Relevance Percentage	Label	Description
66.67% or Higher	*Relevant*	Most SMEs rated the task or KSAO as relevant, meaning it is performed, used or necessary for the successful completion of the job. This task or KSAO is required as part of the job and/or its measurement is likely job-related.
50% to 66.67%	*Marginal*	A majority of SMEs rated the task or KSAO as relevant; it is marginally related to the job. The task or KSAO may be required as part of the job based upon other factors such as the importance and frequency ratings of those who rated this task or KSAO as relevant.
33.33% to 50.00%	*Specialization*	Only a few SMEs rated this task or KSAO as relevant. Likely those SMEs are specialized or perform a different function than the majority of individuals.
0% to 33.33%	*Tangential*	Very few SMEs rated this task or KSAO as relevant. Those that did may have different jobs or hold specialized positions. The vast majority does not need or perform this task or KSAO. It is likely tangential to the job and thus not job-related.

3.3.2 Importance Scale

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Importance ratings assessed how important a task, skill area, etc. is to the entire job. For those tasks that were seen as relevant, SMEs were asked to provide a rating on the task's or KSAO's importance. A 5-point Likert-type rating scale was utilized, which can be observed in Figure 2. A rating of three or higher is suggestive of a task or KSAO that is important to the job, and therefore is likely job-related. Final importance ratings were calculated by taking the average importance ratings for a task, or KSAO across SMEs who had indicated the task, or KSAO was relevant to the job. A rating of 3 or higher is suggestive of a task, or KSAO that is important for the job and is therefore likely job-related.

Figure 2. Importance Rating Scale

Importance Scale				
"*Of Minimal Importance*" means the task is less important to complete as compared to the majority of other job tasks	***"Of Modest Importance"*** means the task is less important to complete as compared to many other job tasks	***"Of Moderate Importance"*** means the task is more important to complete as compared to many other job tasks	***"Of Major Importance"*** means the task is more important to complete as compared to the majority of other job tasks	***"Of Critical Importance"*** means the task is extremely important to complete compared to all other job tasks
1	***2***	***3***	***4***	***5***

3.3.3 Frequency Scale

A particularly useful way to measure the "job-relatedness" of a task is the frequency with which a task is performed. For those tasks that were seen as relevant, SMEs were asked to rate the task's frequency. A 5-point Likert-type scale was used, which can be seen in Figure 3.

Ratings of frequency were only obtained for tasks, equipment and tool use and physical tasks. Making ratings of frequency for KSAOs is an extremely nebulous task, and would not likely be performed accurately. Feedback from SMEs tends to confirm this. Many indicate that they felt unable to sufficiently make such judgments. As such, their ratings would likely be biased towards more conventional or desirable KSAOs. More accurate information is obtained by indirectly measuring the association of knowledge and skills through a linkage analysis, which is thoroughly covered in Chapter 5 of this report.

Final frequency ratings were calculated by taking the average frequency ratings for a task, equipment or tool, or physical task across SMEs who had indicated it was relevant to the job. A rating of 3 or higher is suggestive that a task or tool is likely to be job-related.

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Figure 3. Frequency Rating Scale

Frequency Scale				
Rarely Performed: Once a year	**Seldom Performed:** 1-2 times a month	**Occasionally Performed:** Once a week	**Often Performed:** Multiple times a week	**Constantly Performed:** Daily or many times a week
1	**2**	**3**	**4**	**5**

3.3.4 Required upon Active Duty (RUAD) Scale

The Required upon Active Duty rating scale assesses the degree to which a new incumbent is either expected to perform the task/physical activity (without any additional training), or whether the person must possess additional skill, knowledge, or abilities in order to fulfill the task on day one of active duty. Bear in mind, this scale reflects the first day of being hired after the incumbent has completed all mandatory training (typically in the form of academy training).

The purpose of the rating scale was to develop a better understanding of the degree of training that must commence after firefighters are brought on the job. There will always be certain tasks or work activities that newly trained personnel would not be entrusted to complete, due to either a lack of experience or a lack of the required skills, knowledge, abilities, or other characteristics. The purpose of the rating scale is to empirically capture these parameters. SMEs are able to respond to the question by either responding with a "Yes", where the task or KSAO is performed immediately upon active duty; "No", where the incumbent would not be required to perform the task or KSAO immediately upon hire, as the task or KSAO is learned on-the-job; or "No" where the incumbent would not be required to perform the task or KSAO immediately upon hire, as the task or KSAO is learned through continuing education. Figure 4 presents the scale that was utilized for RUAD ratings.

Figure 4: Required upon Active Duty Rating Scale

Required Upon Active Duty (RUAD)		
Yes	**No**	**No**
Performed immediately upon first day of active duty.	**NOT RUAD, can be learned on-the-job**	**NOT RUAD, can learned through continuing education**

3.3.5 Better Performance Scale

Better performance scale ratings were only gathered for the KSAOs within the JAQ. The essence of the scale captures additional information helpful in understanding whether the possession of

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more of the knowledge, skill, ability or other characteristic would result in better job performance. The intention of the better performance scale is to establish content validity evidence such that one may argue that an individual who possesses more of a given KSAO would be expected to be more successful on the job as a firefighter.

The scale is measured on a dichotomous scale, where marking a "Yes" for a KSAO would indicate that possessing more of the KSAO would lead to better job performance. Contrarily, marking a "No" would indicate the exact opposite; that more of the KSAO would not lead to better job performance. The dichotomous scale example is provided in Figure 5.

Figure 5. Better Performance Rating Scale

Better Performance Scale	
Yes (Y)	**No (N)**
Possessing more of this skill would result in better job performance.	**Possessing more of this skill would not result in better job performance.**

3.3.5 Reference versus Recall Scale

The last scale that was utilized on the JAQ was the Reference versus Recall scale, which was used for the knowledge items. On a five-point Likert scale, the reference versus recall scale captured information concerning the requirement of whether information could be cited while on duty or whether it must be produced from memory. The reference versus recall scale provides a general understanding of the level of cognitive memory that is involved with the job of a firefighter at any given point in time. Figure 6 provides the anchors used for the reference versus recall scale.

Figure 6. Reference versus Recall Rating Scale

Reference versus Recall Scale				
1	**2**	**3**	**4**	**5**
This job knowledge area is referenced and there is no need to know this information.	This knowledge area is often referenced and there is little need to know this information.	This knowledge area is sometimes referenced, may be a need to know this information.	This knowledge area is seldom referenced and there is a moderate need to know this information.	This knowledge area can't be referenced and there is a strong need to know this information.

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3.4 Survey Methodology

3.4.1 Survey Distribution

The JAQ was distributed to fire personnel all across the state via online survey software – SurveyMonkey®. Due to time constraints, the JAQ was been divided into 5 online survey modules. Each survey module was expected to take about 30 minutes to complete. Thus, each module contained a portion of the overall JAQ. Participants were only expected to complete one of the pre-assigned survey modules. Nonetheless, in the survey invitations that were sent, links were provided to the other survey modules so that participants could complete the other survey modules if they were willing. Also, the survey module links to participate in the job analysis study were placed on the Division's website.

A heads-up email was sent to participants on May 8, 2015, 1 week before the actual survey invitations went out. This email served to give participants an understanding of the job analysis study as well as information regarding when the actual JAQ surveys would be sent out and how long they would have to complete the survey. The heads-up email that was used is presented in Appendix B.

The initial survey invitation emails were sent to participants on May 15, 2015. This email informed the participants which survey module they were assigned to complete and provided the link to this survey as well as the others if they wished to provide further input. Participants were asked to complete the survey no later than by May 29, 2015. The invitation email that was used is presented in Appendix B.

A reminder email was sent to participants on May 22, 2015. This email reminded participants about the job analysis study and the deadline for participating. The reminder email that was used is presented in Appendix B.

A decision was made by IOS and the Division to keep the survey modules open longer than the original May 29th deadline. The Division and IOS worked with Fire Chiefs across the state to help us in improving the response rates for the survey modules. On June 11, 2015, one final attempt was made to obtain participants in the job analysis study. The email that was sent is presented in Appendix B.

Working with the Division, IOS closed the online survey modules on July 15, 2015 after further attempts were made to work with Chiefs and constituent groups to attempt to increase participation among volunteer fire personnel.

3.4.2 The Participants

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As the questionnaire was administered via an online survey, all fire personnel (career and volunteer) with an email address in the database of the Division's database were invited to participate in the online JAQ. The Division supplied IOS with 38,985 email addresses for the JAQ study. It is important to note, that the email distribution list was not cleaned to determine whether all the email address were still working and belonged to currently employed fire personnel. Even considering that there would be invalid emails, or email addresses of retired fire personnel, or those no longer in the fire service, there was expected to be sufficient potential participants remaining to divide this main group into 5 distinct email distribution lists. Therefore, the main sample of 38,985 was divided into 5 main distribution lists with each distributing list including about 6600 email addresses. Accordingly, each distribution list was assigned to participate in 1 of the 5 survey modules.

When completing the survey, participants were instructed to provide responses that were reflective of only that of the firefighter position. Thus, if the participant was of a higher rank, he/she was instructed to respond based on the firefighter position. Also, volunteer fire personnel were instructed to respond from the perspective of a volunteer firefighter.

3.5 Next Steps Following JAQ Survey Administration

Once the JAQ online survey modules were closed, IOS downloaded the responses and begin the data analysis stage. The results of the JAQ are presented in the next chapter of this report. Furthermore, IOS began working on the development of the linkage analysis questionnaires that would be used to validate the KSAOs required for the firefighter position. The results of the linkage analysis are presented in Chapter 5 of this report.

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Chapter 4. Job Analysis Questionnaire Results

4.1 JAQ Participants

4.1.1 Sample Information

A total of 2,051 individuals participated in the data collection process for the entry-level firefighter JAQ in the state of Florida. This number was reached after the removal of 917 responses that did not meet criteria for a "good-faith effort" in completing the online JAQ. Responses in which the participant failed to provide more than just demographic information or did not provide ratings for more than approximately 10% of the survey were deemed to have not provided a usable and trustworthy response. Duplicate incomplete responses were also removed.

4.1.2 Attention Check Questions

Various questions were sporadically asked throughout the JAQ to ascertain the degree to which a respondent was engaged in completing the JAQ. While these questions were meant to assess the degree to which an individual was paying attention while taking the survey, some respondents may have only received either two or three of these questions due to the use of five different JAQ modules to split the survey into manageable portions. The limited number of attention check questions did not provide a definitive manner in which to truly assess if a person was not paying attention or whether a simple transcription error might be the cause for an incorrect response to the attention check questions. Thus, further analyses on the attention check questions were omitted.

4.1.3 Demographic Breakdown

The JAQ was comprised of nine demographic variables, namely: Position type, Region, Department size, Race, Rank, Educational level, Gender, Tenure, and Age. Breakdown for each of these demographic variables will be presented in the following sections. All demographic information was collected across the five JAQ modules and aggregated into the overall summary breakdown that will follow.

4.1.4 Position Type Breakdown

In terms of the response rates received by position type (career vs. volunteer firefighter), please refer to Table 8. There were 55 cases where respondents failed to provide data on their position type.

Table 8. SMEs by Position

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Position	Frequency
Career	1,774
Volunteer	222
Missing	55
Total	2,051

4.1.5 Region Breakdown

In terms of the response rates received by region, please refer to Table 9*. SMEs by Region*. There was missing data for 64 cases for this demographic variable. Regions were determined by both IOS consultants and the Division to attempt to equally divide the state across the five regions.

Table 9. SMEs by Region

Region	Frequency
Central	738
Northeast	225
Northwest	275
Southeast	497
Southwest	252
Missing	64
Total	2,051

4.1.6 Department Size Breakdown

Response rates based on department size were obtained through similar means as region. The data is consistent with expected observations; smaller cities employ a smaller amount of firefighters, while larger cities typically tend to have a larger amount of firefighters. A total of 30 respondents failed to provide department size information for this variable. *Table 10* displays this information.

Table 10. SMEs by Department Size

Dept. Size	Frequency
Small (under 25)	269
Medium (26-100)	513

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Large (Over 100)	1,239
Missing	30
Total	2,051

4.1.7 Race Breakdown

The next demographic variable gathered within the JAQ was the Race of the SME. For the Race variable, SMEs were asked to select the racial category they most identified with. Respondents were also given the opportunity to not provide their racial information should they so choose. A total of 31 cases failed to provide Race data. The full racial breakdown can be seen in Table 11 below.

Table 11. SMEs by Race

Race	Frequency	Percent
African-American	64	3.1%
Asian	9	0.4%
Hispanic Non-White	140	6.8%
American Indian/Native Alaskan	21	1.0%
Pacific Islander/Native Hawaiian	5	0.2%
White – Non-Hispanic	1,587	77.4%
Two or More Races	39	1.9%
Do not Wish to Provide	155	7.7%
Missing	31	1.5%
Total	2,051	100%

4.1.8 Gender Breakdown

Gender was coded with three possible response options. The first two response options were male and female. SMEs were additionally allowed to select that they do not wish to provide gender information. The data matches expectations of gender distributions for firefighters within the state of Florida. With 2,051 cases, the breakdown for Gender was as follows:

Table 12. SMEs by Gender

Gender	Frequency	Percent

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Male	1,833	89.4%
Female	136	6.6%
Do not Wish to Provide	51	2.5%
Missing	31	1.5%
Total:	2,051	100%

4.1.9 Rank Breakdown

Rank was coded as a variable with five possible categories ranging from firefighter/firefighter paramedic/EMT up to Chief. This scale was expected to encapsulate the entire rank of command of fire departments across the state. Rank data was missing for a total of 36 respondents. The breakdown for the rank variable can be seen in the table below.

Table 13. SMEs by Rank

Rank	Frequency	Percent
Firefighter; Firefighter Paramedic; Firefighter EMT	614	30.0%
Driver/Engineer; Driver/Engineer Paramedic	282	13.7%
Lieutenant	417	20.3%
Captain	275	13.4%
Chief	427	20.8%
Missing	36	1.8%
Total:	2,051	100%

4.1.10 Education Breakdown

The next demographic variable gathered within the JAQ was the Educational level of the SME. For the education variable, SMEs were asked to select the highest educational category level they have completed. A total of 29 respondents failed to provide data for this variable. Results of the education variable can be seen in the table below.

Table 14. SMEs by Education

Educational Level	Frequency	Percent
Some High School	4	0.2%

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High School Graduate/GED	156	7.6%
Associates Degree	629	30.6%
Some College	617	30.1%
Bachelor's Degree	443	21.6%
Master's Degree (M.S., M.A.)	151	7.4%
Doctoral Degree (M.D., J.D., Ph.D)	22	1.1%
Missing	29	1.4%
Total:	2,051	100%

4.1.11 Tenure Analysis

Participants were instructed to self-report their tenure in their department, as well as their tenure in their current rank. Across a total of 2,011 individuals who provided data on their tenure within their department, the mean tenure was 15.1 years (SD= 9.5 years). Across a total 1,951 individuals who provided data on their rank tenure, the mean rank tenure for the sample was 7.4 years (SD = 6.5 years).

4.1.12 Age Analysis

Participants were instructed to self-report their age. The age variable was decidedly added to the online questionnaire after being initially open to the state for respondents, and thus was not able to be seen and answered by all participants. Across a total of 443 individuals who provided age data, the mean age was 44.7 years (SD= 10.7 years).

4.2 Calculation Methods

4.2.1 Relevance Calculations

To measure the relevance/applicability of a given task or KSAO, a relevance percentage was calculated. First, a "not relevant" percentage was found by calculating the percentage of individuals (out of 100%) who rated the task or KSAO as "not relevant/applicable." To make this scale positive, the "not relevant/applicable" percentage was subtracted from 100 (i.e., 100 – Not Relevant %). This calculation resulted in the final relevance percentage for all tasks and KSAOs.

4.2.2 Essentiality Calculations

In order to best determine the job-relatedness of a given task or tool, it was necessary to combine the acquired information regarding the task or tools' frequency and importance. A

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task, for example, may be performed extremely frequently, yet may not be as important as other tasks. Still, the sheer frequency with which the task is performed suggests that it is part of the job, and thus is job-related. Alternatively, a task may be seen as extremely important, but it is rarely performed. Such a task may be critical for job performance despite its infrequent performance. To deal with these scenarios, a rubric is needed to combine the importance and frequency information into a single measure – a measure of how essential the task, physical activity, or tool is to the job.

To calculate essentiality, a composite score of importance and frequency is computed. This composite is only calculated for individuals who rated the task or tool as relevant, and who had therefore provided ratings of importance and frequency for the given task or tool. This composite combines the importance and frequency into a single measure with a weight favoring importance 2/3rd to 1/3rd. The following calculation was used:

Composite = (.333 * Frequency Rating + .667 * Importance Rating).

The rationale for this weighting is explained by considering that a task may be critical to successful performance even if it is only done a few times in one's career. Failure on such a task could lead to profound consequences. An example for the current position is considering the importance and frequency of rescuing victims from a fire emergency. It is a task that is done rarely, but is vitally important to the position (as can be attested to by the amount of training and practice, and the focus of many pieces of equipment geared towards rescue). The same cannot be said of a task that is performed often but is not important. Still, the mere fact that a task is performed frequently is an important aspect when considering a task's job-relatedness and should therefore be considered in the overall weighting. The 2/3rd to 1/3rd weighting scheme more accurately reflects our rational judgments about which tasks should be more job-related.

The composite measure continues to utilize a Likert-type scale with a range from 1 to 5, with 1 being the least essential and 5 being the most essential. The calculations for a task or tool are made at the individual level first. That is, importance and frequency ratings from an individual are combined for each SME to give an essentiality score. A score of "3 or more" indicates that the task, tool or physical activity is "essential." The score of "3" was set as the threshold, as this score reflects the middle of the scale range for both importance and frequency. Scores can then be summed across raters to give an average essentiality rating.

A second calculation is also made to allow for a determination regarding whether or not a task, tool or physical activity is "essential." A percentage score is calculated to determine the number of raters who rated the task or tool as essential. This percentage represents a level of

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agreement between raters regarding the essentiality rating and is called the percent essential (PE) score.

Essentiality (PE) = 100 * (# respondents with Composite over 3 / Total # of respondents)

In order for a task, tool or physical activity to be considered essential, a 2/3rd majority of SMEs needed to rate the task or KSAO as essential (which is indicated by the PE score). Thus, a PE score of 66.67% or greater indicated that the task or tool is essential to the job. A rating between a simple majority and a 2/3rd majority indicated that the task, tool, or physical activity is marginally relevant and may be included based upon factors such as importance and frequency ratings of those SMEs who rated it as relevant. Below a simple majority, the task or KSAO is either a secondary job function, or is trivial to the job. Figure 7 shows the essentiality allocation categories, the labels associated with the rules, and a short description of the label.

Figure 7. Percent Essential Categories

Percent Essential	Label	Description
66.67% or Higher	*Essential*	Most SMEs rated the task, tool or physical activity as essential, meaning it is necessary for the successful completion of the job. This task, tool or physical activity is required as part of the job.
50.00% to 66.67%	*Marginal*	A majority of SMEs rated the task, tool or physical activity as essential; it is marginally related to the job. The task, tool or physical activity may be required as part of the job based upon other factors such as the relevance ratings.
33.33% to 50.00%	*Secondary*	Only a few SMEs rated this task, tool or physical activity as essential. Likely, this task, tool or physical activity is secondary to other tasks, tools or work activities. Inclusion of the task, tool or physical activity is likely not critical, but is still possible depending on other considerations.
0% to 33.33%	*Trivial*	Very few SMEs rated this task, tool or physical activity as essential. Those that did may have different jobs or hold specialized positions. The vast majority of individuals did not deem this task, tool or physical activity as necessary for their job. It is likely of trivial importance to the job and thus not job-related.

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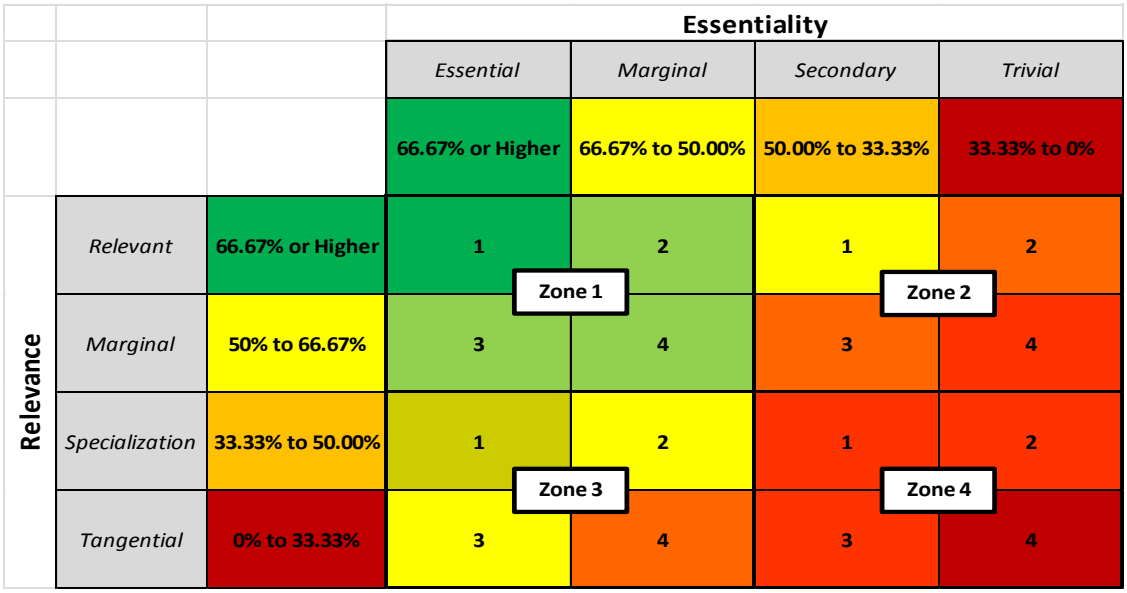
4.2.3 Decision Rules

In order to determine the final list of job-related tasks, tools and physical activities, a decision rubric was established. A rational system was developed based upon the relevance and PE scores; in that, these two values provide a thorough analysis of raters' views of a given task, tool or work activity. For example, 2/3^{rds} or more of raters could have agreed that a task was performed for a given job (i.e., relevant), while very few of those raters saw the task as essential. This suggests that the task is performed but is not essential for the job function; therefore, it is questionable if the task is job-related and should be included on a final list of tasks. A host of other interactions between relevance and essentiality are possible. These interactions are defined by the job-relatedness decision matrix which can be found in Figure 8.

Figure 8. Job Relatedness Decision Matrix



The job-relatedness matrix defines all possible interactions between the four essentiality categories and the relevance categories. In total there are sixteen (16) possible interactions. These interactions have been sub-divided into four zones. Each zone has a specific "job-relatedness" characteristic. In determining an interaction's impact on the job-relatedness, the essentiality is more heavily considered than the relevance because there are many cases when a smaller group of individuals may be required to conduct certain tasks that are essential to their job that others do not perform. The employer may be bound to hire individuals who can fill all possible roles, thus this "specialization" could be part of the job requirements; therefore, the "specialized" tasks are job-related and the measure of KSAOs that are necessary to perform

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those specialized tasks is a business need. Alternatively, there are few cases when a task should be seen as job-related when the majority agrees that the task is performed, but also agree that it is trivial. Each zone is composed of four interactions which are labeled as 1.1, 1.2, 1.3., 1.4 for Zone 1. The zones and their associated interactions are described below in relation to the decisions made about a task or tool's job-relatedness.

- ZONE 1 – Job-Related: This zone consists of multiple interactions between relevance and PE where the percentage magnitude of one or both is above a 2/3rd majority. Additionally, the interaction between the two marginal categories is also categorized as job-related as a majority will have seen the task or tool as relevant and essential. Thus, all interactions in this zone are considered job-related.
- ZONE 2 – Trivial Job Tasks: This zone consists of interactions between relevance scores where the majority of SMEs agree they perform/use the task or tool, and PE scores where the majority agree that they are not essential (or are trivial tasks or tools). Thus, the interactions in these zones are unlikely to be considered job-related. In these cases, the magnitude of PE scores and relevance percentages will be considered.
- ZONE 3 – Essential for Specialized Roles: This zone consists of interactions between PE scores where the majority of SMEs identify the task or tool as essential. However, the majority of SMEs did not indicate that they saw these tasks or tools as related to the job. This disconnect indicates that certain individuals may hold specialist positions within the job category. It is possible that the interactions could be deemed job-related if there was a departmental need to fill these roles, or if everyone was required to perform these duties at some point in their career. The most likely job-related interaction is that of Essential and Specialization; the least likely is that of Tangential and Marginal.
- ZONE 4 – Not Job-Related: The majority of SMEs view these tasks or tools as tangential and trivial to the job. These interactions show that the given task or tool is not job-related and will not make it onto the final lists.

4.2.4 Job-Relatedness Score

It is important to note that the magnitude within each category can fluctuate. To compensate for this, a final job-relatedness score is generated from a composite of the relevance percentage and PE score. This composite places a heavier weighting on the percent essential score (2/3rd) than the relevance score (1/3rd). Again, this is done in situations where an agency must hire individuals who can perform a specialized function, but where the majority of individuals in that position do not perform this function. This job-relatedness score is on a 100-point scale and will be used in conjunction with the job-relatedness decision matrix to determine the final lists of tasks, tools and physical activities that are job-related.

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4.3 Results—Task Analysis

4.3.1 Career Position Results

The list of all tasks and their respective rating scale scores for the career position are presented in *Appendix C*. From the ratings on applicability/relevance, importance, and frequency, as described above, the essentiality and job-relatedness scores were computed. To provide a snapshot of the categorization of the job tasks into the various job-relatedness zones for the career position, a summary table of the percentage breakdown is presented below in Table 15 and Figure 9.

Of the 323 tasks that were on the initial task list, 307 or 95.05% were categorized into Zone 1, designating these tasks as job-related. A total of 10 tasks (3.10%) were categorized into Zone 2 and designated as trivial job tasks. A total of two (0.62%) tasks were categorized into Zone 3 and are designated as specialized role job tasks. Finally, a total of four (1.24%) tasks were categorized into Zone 4 and are designated as non-job-related tasks.

Table 15. Job Task Percentages and Number of Tasks by Zone Categorization for *Career* Position

	% of Tasks	Number of Tasks
Zone 1	**95.05%**	307
1.1	85.45%	276
1.2	7.43%	24
1.3	1.24%	4
1.4	0.93%	3
Zone 2	**3.10%**	10
2.1	2.17%	7
2.2	0.31%	1
2.3	0.62%	2
2.4	0.00%	0
Zone 3	**0.62%**	2
3.1	0.00%	0
3.2	0.62%	2
3.3	0.00%	0
3.4	0.00%	0
Zone 4	**1.24%**	4
4.1	0.31%	1
4.2	0.00%	0
4.3	0.62%	2
4.4	0.31%	1

Figure 9. Job Relatedness Decision Matrix for *Career* Position

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		Essentiality			
		Essential	*Marginal*	*Secondary*	*Trivial*
		66.67% or Higher	**66.67% to 50.00%**	**50.00% to 33.33%**	**33.33% to 0%**
Relevancy					
Relevant	**66.67% or Higher**	**85.45%**	**7.43%**	**2.17%**	**0.31%**
Marginal	**50% to 66.67%**	**1.24%**	**0.93%**	**0.62%**	**0.00%**
Specialization	**33.33% to 50.00%**	**0.00%**	**0.62%**	**0.31%**	**0.00%**
Tangential	**0% to 33.33%**	**0.00%**	**0.00%**	**0.62%**	**0.31%**

4.3.2 Volunteer Position Results

The list of all tasks and their respective rating scale scores for the volunteer position are presented in *Appendix D.* From the ratings on applicability/relevance, importance, and frequency, as described above, the essentiality and job-relatedness scores were computed. To provide a snapshot of the categorization of the job tasks into the various job-relatedness zones for the volunteer position, a summary table of the percentage breakdown is presented below in Table 16 and Figure 10.

Of the 323 tasks that were on the initial task list, 295 or 91.33% were categorized into Zone 1, designating these tasks as job-related. A total of 11 tasks (3.41%) were categorized into Zone 2 and designated as trivial job tasks. A total of 15 (4.64%) tasks were categorized into Zone 3 and are designated as specialized role job tasks. Finally, a total of two (0.62%) tasks were categorized into Zone 4 and are designated as non-job-related tasks.

Table 16. Job Task Percentages and Number of Tasks by Zone Categorization for Volunteer Position

	% of Tasks	Number of Tasks
Zone 1	**91.33%**	295
1.1	76.47%	247

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1.2	10.22%	33
1.3	3.10%	10
1.4	1.55%	5
Zone 2	**3.41%**	11
2.1	2.17%	7
2.2	0.93%	3
2.3	0.31%	1
2.4	0.00%	0
Zone 3	**4.64%**	15
3.1	3.41%	11
3.2	0.00%	0
3.3	0.62%	2
3.4	0.62%	2
Zone 4	**0.62%**	2
4.1	0.00%	0
4.2	0.00%	0
4.3	0.00%	0
4.4	0.62%	2

Figure 10. Job Relatedness Decision Matrix Result Map for Volunteer Position

		Essentiality			
		Essential	*Marginal*	*Secondary*	*Trivial*
		66.67% or Higher	**66.67% to 50.00%**	**50.00% to 33.33%**	**33.33% to 0%**
Relevancy					
Relevant	**66.67% or Higher**	**76.47%**	**10.22%**	**2.17%**	**0.93%**
Marginal	**50% to 66.67%**	**3.10%**	**1.55%**	**0.31%**	**0.00%**
Specialization	**33.33% to 50.00%**	**3.41%**	**0.00%**	**0.00%**	**0.00%**
Tangential	**0% to 33.33%**	**0.62%**	**0.62%**	**0.00%**	**0.62%**

4.3.3 Essentiality/Criticality of Tasks

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In order to answer the question of whether a task can be considered essential as a whole, items that fell into Zone 1.1 were designated as 'essential job-related tasks.' Items that fell into Zone 1.1 were deemed essential by more than 2/3^{rds} of SME respondents as well as deemed highly relevant to the job, in that more than 2/3^{rds} of SME's rated the task as relevant. While tasks that also fell into Zone 1 (i.e. Zone 1.2, Zone 1.3, or Zone 1.4) may have also received high ratings on either the relevance or PE scale, they failed to meet the defined 2/3^{rds} threshold needed to be ultimately classified as an essential job-related task. It is important to note that this does not mean that these tasks are unimportant. For example, consider ratings provided to item 76 in reference to the career firefighter position. This task statement reads "*Conduct drafting operations.*" This task failed to exceed the 66.67% threshold to be deemed essential. While this was a considerably important task (with an average importance rating of 3.51), it was rated as being performed relatively infrequently (mean rating of 2.17). While as a whole, drafting is considered an important job task for the firefighter role, it is likely not performed in a high enough frequency across the state to be an essential job-relevant task.

4.4 Results—KSAO Analysis

4.4.1 Career Position Results

What follows will be a breakdown of the results of the KSAO analysis for the career position. The full results of the KSAO analysis for the career position can be seen in *Appendix E.*

4.4.1.1 Cognitive Abilities

The list of the 16 cognitive abilities was rated as highly relevant by SME respondents. Relevance percentages were all above 85.83% with the average relevance percentage being 96.48%. All importance ratings were above 3.22 with an average importance rating of 3.80. The most important cognitive ability was found to be "oral comprehension," with an importance score of 4.26. The least important cognitive ability was "visualization," with an importance rating of 3.22. This suggests that all SMEs viewed all cognitive abilities as relevant to the focal job, and SMEs viewed the cognitive abilities as important to performing the job of a career firefighter.

4.4.1.2 Physical Abilities

Results indicate that the list of 18 physical abilities was seen as highly relevant by the SMEs. Relevance percentage ratings were all above 89.21% with the average relevance percentage being 95.94%. All importance ratings were above 3.38 with an average importance rating of 3.71. The most important physical ability was found to be "stamina," with an importance score of 4.30. The least important physical ability was "response orientation," with an importance

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rating of 3.38. Taken together, this suggests that all SMEs viewed all physical abilities as relevant to the focal job, and SMEs viewed physical abilities as important to performing the job of a career firefighter.

4.4.1.3 Skills

The list of the 19 skills was rated as highly relevant by SME respondents. Relevance percentages were all above 69.23% with the average relevance percentage being 90.36%. All importance ratings were above 2.75 with an average importance rating of 3.63. The most important skill was found to be "composure," with an importance score of 4.39. The least important skill was "persuasion," with an importance rating of 2.75. Thus due to persuasion receiving the lowest relevance and importance ratings, it is likely not as essential to the entry-level role and duties as the remaining skills. Overall, this suggests that all SMEs viewed nearly all skills as highly relevant and important to the focal job of a career firefighter.

4.4.1.4 Other Attributes

Results indicate that the list of 16 other attributes was seen as highly relevant by the SMEs. Relevance percentage ratings were all above 90.25% with the average relevance percentage being 98.03%. Importance ratings were above 3.16, with an average rating of 3.96. The most important attribute was "integrity," with an importance score of 4.57. The least important attribute (which was still rated as extremely important) was "innovation," with an importance score of 3.16. Findings show that the other attributes are highly job-related and important to performing the duties of a career firefighter.

4.4.1.5 Knowledge Areas

For the knowledge items which composed the last 76 questions of the JAQ, relevance and importance ratings were collected. All relevance percentage ratings were above 81.5%, meaning that all 76 questions were related and applicable to the focal job. All importance ratings were at or above 2.61 with the average importance rating being 3.70. The most important knowledge area was "*Knowledge of cardiopulmonary resuscitation (CPR)*" with an importance rating of 4.73. The least important knowledge area was "*Knowledge of fire department procedures for answering nonemergency telephone calls*" with an importance rating of 2.61. For the "Reference versus Recall" scale, the highest rated area was *"Knowledge of cardiopulmonary resuscitation (CPR)",* with a score of 4.67. This indicates that this area cannot be referenced while on the job, and there is a strong need to know this information while on the job. Contrarily, the lowest rated area was *"Knowledge of the critical aspects of*

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NFPA 1500, Standard on Fire Department Occupational Safety and Health Program", with a score of 2.93.

4.4.2 Volunteer Position Results

What follows will be a breakdown of the results of the KSAO analysis for the volunteer position. The full results of the KSAO analysis for the volunteer position can be seen in *Appendix F*.

4.4.2.1 Cognitive Abilities

The list of the 16 cognitive abilities was rated as highly relevant by SME respondents. Relevance percentages were all above 76.47% with the average relevance percentage being 93.56%. All importance ratings were above 3.00 with an average importance rating of 3.70. The most important cognitive ability was found to be "oral comprehension," with an importance score of 4.36. The least important cognitive ability was "visualization," with an importance rating of 3.00. This suggests that all SMEs viewed all cognitive abilities as relevant to the focal job, and SMEs viewed the cognitive abilities as important to performing the job of a volunteer firefighter.

4.4.2.2 Physical Abilities

Results indicate that the list of 18 physical abilities was seen as highly relevant by the SMEs. Relevance percentage ratings were all above 78.79% with the average relevance percentage being 92.01%. All importance ratings were above 3.48 with an average importance rating of 3.74. The most important physical ability was found to be "stamina," with an importance score of 4.06. The least important physical ability was "far vision," with an importance rating of 3.48. Taken together, this suggests that all SMEs viewed all physical abilities as relevant to the focal job, and SMEs viewed physical abilities as important to performing the job of a volunteer firefighter.

4.4.2.3 Skills

The list of the 19 skills was rated as highly relevant by SME respondents. Relevance percentages were all above 64.52% with the average relevance percentage being 87.05%. All importance ratings were above 2.95 with an average importance rating of 3.77. The most important skill was found to be "composure," with an importance score of 4.33. The least important skill was "persuasion," with an importance rating of 2.95. Thus, due to persuasion receiving the lowest relevance and importance ratings, it is likely not as essential to the entry-level role and duties as the remaining skills. Overall, this suggests that all SMEs viewed nearly all skills as highly relevant and important to the focal job of a volunteer firefighter.

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4.4.2.4 Other Attributes

Results indicate that the list of 16 other attributes was seen as highly relevant by the SMEs. Relevance percentage ratings were all above 78.38% with the average relevance percentage being 97.64%. Importance ratings were above 3.19, with an average rating of 4.05. The most important attribute was "integrity," with an importance score of 4.76. The least important attribute (which was still rated as extremely important) was "innovation," with an importance score of 3.19. Findings show that the other attributes are highly job-related and important to performing the duties of a volunteer firefighter.

4.4.2.5 Knowledge Areas

For the knowledge items that appeared as the last 76 questions on the JAQ, relevance and importance ratings were collected. All relevance percentage ratings were above 77.78%, meaning that all 76 questions were related and applicable to the focal job. All importance ratings were at or above 2.91 with the average importance rating being 3.82. The most important knowledge area was "*Knowledge of the components of personal protective equipment*" with an importance rating of 4.77. The least important knowledge area was "*Knowledge of the steps in presenting fire and life safety information to the public*" with an importance rating of 2.91. For the "Reference versus Recall" scale, the highest rated area was *"Knowledge of cardiopulmonary resuscitation (CPR)",* with a score of 4.76. This indicates that this area cannot be referenced while on the job, and there is a strong need to know this information while on the job. Contrarily, the lowest rated area was *"Knowledge of preincident surveys and inspections",* with a score of 3.12.

4.4.3 Essentiality/Criticality of KSAOs

In order to answer the question of whether a KSAO can be considered essential as a whole, a criteria threshold must be put in place to determine its essentiality. Seeing as KSAO items lacked the use of the Percent Essential (PE) scale or the ability to create a composite scale, the importance scale was used as an indication of how important or essential a KSAO was to the job. KSAO items were deemed 'essential' if they receive an average rating on the importance scale greater than 3. This threshold was chosen as it represents the middle of the scale and corresponds to a considerable degree of importance being placed on the KSAO in relation to the job.

4.5 Comparisons

A key step in the analysis is to assess the extent of any significant disparity in the response patterns for the JAQ statements as a result of any key demographic variables. This analysis

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seeks to answer whether there were significant differences in the manner in which individuals responded to the statements based on region or position type. This analysis is needed in order to show that the degree of criticality for each item on the JAQ is more or less consistent across demographic variables. One would initially expect there to be no significant differences in the criticality of statements on the JAQ as this would suggest that there are underlying differences in the firefighter position based upon region of the state or position type. Findings of significant differences in the response patterns for JAQ statements based on the demographic variables may serve as rationale for the removal of these items from the final essential task or KSAO lists.

Due to the fact that the scales utilized on the JAQ use inherently different measurement methods in asking participants about the criticality of statements, different statistical methods for comparing the responses of participants must be used. For example, some statements are simply evaluated on a "yes"/"no" basis while other statements ask respondents to answer on a scale from 1 through 5. Because of these differences in scales, multiple different statistical tests were employed to detect the presence of statistically significant differences between demographic groups.

4.5.1 Analysis of Variance

The Analysis of Variance (or ANOVA) test answers the question about the existence of statistically significant differences between groups. The ANOVA test, however, is applied to data with a continuous or interval level outcome variable (such as test scores or responses on a 1-5 point scale). The ANOVA test seeks to determine if statistically significant differences exist between the mean (i.e. average) scores of multiple groups on a certain outcome variable. The ANOVA test functions by analyzing the amount of variance within groups as well as between groups and produces an *F-value* which, if it exceeds a critical value, indicates whether a statistically significant difference exists. If a significant *F-value* is obtained, indicating a significant overall ANOVA model, *post-hoc* comparisons are employed to identify the specific group comparison that triggered the significant difference.

4.5.2 Chi-Square

The Chi-Square test is a statistical procedure created to detect the degree of significant difference between two independent groups. The Chi-Square test is principally used when two groups are being compared on a dichotomous outcome variable (i.e. an outcome variable that has only two options). For example, one may compute a Chi-Square test on two groups of firefighters with an outcome variable of test performance coded as either "Pass" or "Fail." Since the test involves two variables (a group variable and an outcome variable) each with two levels, a 2 x 2 contingency table must be constructed as part of the analysis. The Chi-Square test

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functions by evaluating the degree of discrepancy between the *expected* and *observed* frequencies in each cell of the 2 x 2 table. To illustrate, consider the table presented below which presents *hypothetical* data response outcomes Career and Volunteer firefighters. Please note, this table is NOT based on data obtained from this study.

Table 17. Hypothetical Outcomes for detecting Career and Volunteer Position Differences

Position Type	Yes	No	Total
Career	112	38	150
Volunteer	28	22	50
Total	140	60	200

As can be seen, a total of 112 career firefighters responded "Yes" to the statement (out of a total of 150, a rate of approximately 74%) while 28 volunteer firefighters responded "Yes" to the statement (out of a total 50, a rate of 56%). Assuming there was no bias in the statement, we would expect both career and volunteer firefighters to have almost the same response rates; 70%, since this was the overall response rate for "Yes" (140/200). The reader can observe that the rates for career and volunteer firefighters are not equal, but are significantly different from one another. The Chi-Square test yields a Chi-Square statistic (x^2) that is deemed to be statistically significant if it exceeds a certain threshold value. Conducting a chi-square test on this data shows that the two response rates are indeed significantly different from one another with a difference of approximately 2.5 standard deviations. Furthermore, we can state that the resulting disparity is significant at less than a .02 probability value ($p < .02$). These results would indicate that the difference in response rates between career and volunteer firefighters are most likely due to an external circumstance not attributed to chance.

4.5.3 Student's T-Test

The appropriate analysis to conduct a comparison of means across two unique groups is known as the family of Student's t-test. IOS utilized this test statistic in conjunction with Levene's Test of Homogeneity of Variance (also referred to as the property of homoscedasticity) to properly interpret the test statistic. For example, for task statements where the Levene's test was significant at the $p < .05$, these were interpreted with the assumption that the equality of variance has been violated. Unlike the Levene's Test Statistic, which is interpreted at the $p < .05$ level, the t-test statistic continues to rely on the $p < .001$ level of significance for reasons outlined below.

4.5.4 Significance Thresholds and Effect Sizes

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An important question to consider when testing for statistically significant group differences is the determination of an appropriate significance level. In traditional statistical testing the commonly accepted probability value for which one may confidently say that the observed difference between two variables is unlikely due to chance is .05. More specifically, this states that there is a 95% probability that the observed difference is not solely due to chance. Another way to state this is that one is willing to accept the incorrect finding of a meaningful difference (when in reality no true difference exists) less than 5 times out of 100, also known as a *Type I* error rate. However, a caveat of statistical significance testing is that the outcome is heavily influenced by the sample size within the analysis. More specifically, as the sample size becomes relatively large, it becomes far easier to find statistical differences that may not have been observed in smaller samples. In fact, as the sample size becomes considerably large, the statistical test has so much power that even trivial differences between groups will often be flagged as statistically significant.

One way to combat these tendencies produced by large sample sizes is through a reduction in the alpha level within the analysis. Another way to say this is that one is reducing the probability of a false-positive, or falsely claiming a meaningful disparity exists when in reality one does not. With an alpha level below the conventional .05 level, one is ensuring that any statistical difference that may be found is in fact meaningful and not an artifact due to random chance. Accordingly, for the subsequent analyses, the alpha level was set at .001 for a variety of reasons. One reason for this choice is that the alpha level of .001 is typically utilized for detection of statistical outliers (extreme values). In terms of standard deviation units, the .001 significance level corresponds to a *Z*-score greater or less than 3.29 standard deviations from the mean. A main priority of the analysis was to detect JAQ items that are truly differentiated from other items and show clear lack of fit with the rest of the JAQ content. Establishing statistical criteria for outlier detection seemed suitable to accomplish this goal as doing so helps alleviate any concern over mistakenly eliminating items, as any flagged statements are likely poorly functioning items causing meaningful differences between groups.

Another reason for adoption of the .001 alpha level ($p < .001$) is that it reduces the amount of falsely identified significant differences (reduces the Type I error rate). Because of the fact that many statistical tests were run, assuming an alpha level of .05 would still allow for a falsely identified statistical difference 5 times out of every 100 comparison tests. Since hundreds of comparison tests were run, adoption of a .05 alpha level would have resulted in a surplus of falsely identified “significant” differences that in reality would have been due to random error as a result of the multitude of comparisons. Effectively, reducing the alpha level to .001 establishes willingness to accept the incorrect finding of a meaningful difference (when in

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reality no true difference exists) less than once out of 1000, a more appropriate standard considering the number of statistical tests that are being conducted as part of the analysis.

A final reason for adopting a more stringent significance threshold ($p < .001$) has to do with the issue of practical significance. Just because a statistically significant difference is found does not automatically imply that the difference is truly "significant" or non-trivial. For example, the difference between a 98 and 100 for males and females on an IQ test would be found to be significantly different with a sample of 10,000 cases. However, in reality, a two point difference on an IQ scale is more appropriately labeled as a trivial disparity instead of meaningful or "significant." Measures of practical significance assess the implications of the disparity and help answer the question of whether or not a difference really is meaningful. A commonly used measure of practical significance is the effect size, which serves as a statistical indication of the magnitude and direction of a disparity. Effect size is often conceptualized as the standardized mean difference (SMD) between two groups and reflected in Cohen's (1988) *d* statistic. The *d* statistic represents the difference in mean outcome between any two groups on a standardized scale that allows for cross comparison. Computationally, the standardized mean difference is defined as follows:

$$\text{SMD } (Cohen's\ d) = \frac{M_1 - M_2}{SD_{Pooled}}$$

M_1 represents the mean score for the majority group while M_2 represents the mean score for the minority group. The pooled standard deviation (SD_{Pooled}) is taken into account when the two comparison groups have unequal sample sizes as is most frequently the case. Values for the standardized mean difference can be negative, zero, or positive values with the vast majority of values falling between -2 and 2. Cohen (1988)[1] offered conventional interpretations of effect sizes as: 0.2 = "small"; 0.5 = "medium"; and 0.8 = "large".

To illustrate, consider KSAO item # 402, which reads "Stress Tolerance: Accepting criticism and dealing calmly and effectively with high stress situations". This KSAO was found to show significant differences between position types at the less than .05 significance level (specifically, $p = .039$). However the SMD between the mean importance rating for career and volunteer position types as assessed by Cohen's *d* is only .36; a conventionally modest effect size that would have been flagged as statistically significant had a .05 alpha level been retained. Importantly, the mean importance ratings for this statement were above 4.25 for both positions, suggesting that the KSAO is seen as extremely important regardless of position type.

[1] Cohen, J. (1988). Statistical power analysis for the behavioral sciences (2nd ed.). Hillsdale, NJ: Erlbaum.

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4.6 Region Comparison

4.6.1 KSAOs

An important consideration was to answer the question of whether there existed any meaningful differences in the KSAOs needed to perform the firefighting job in different regions across the state. To detect any possible statistically significant differences in the KSAO items, which utilized the 5-point importance scale, a multitude of ANOVA tests were run to test for significant mean differences between geographical regions (i.e., Central, Southeast, Southwest, Northeast, and Northwest). Using a significance criterion (alpha level) of .001, no significant differences were found between regions on the mean importance ratings of KSAO statements. Results of these analyses can be seen in *Appendix R.*

4.7 Position Comparisons: Volunteer vs. Licensed Firefighters

A critical aspect of the job analysis project was to analyze the firefighter job from the perspective of both the career and volunteer positons. This analysis would seek to identify discrepancies in the manner that tasks or KSAOs apply to each positon. In order to assess the similarities and differences between the career and volunteer position in terms of the tasks and KSAOs presented, multiple quantitative methods were utilized. These included the use of similarity index analyses, rank-ordering based on essentiality, and statistical significance testing.

4.7.1 Similarity Between Positions

An important comparison to conduct was the degree of overlap in the tasks that were deemed as essential job-related tasks between the two firefighter positions. For criteria on what constituted an 'essential job-related' task, please refer to section *4.3.3 Essentiality/Criticality of Tasks.* To compare the two positions, the degree of overlap was assessed empirically via a similarity index methodology. A total of 276 task statements were defined as essential job-related tasks for the career firefighter position. A total of 247 task statements were defined as essential job-related tasks for the volunteer firefighter positon. 239 tasks were found to be essential job-related tasks for both the career and volunteer firefighter positions while 45 task statements were mismatched (i.e. an essential job-related task for one position but not the other). An example of a mismatched task statement was task 133, which read "*Operate a thermal imaging camera (TIC)".* This task was deemed as an essential job-related task for career firefighters, however was not for volunteer firefighters, largely due to lower reported frequency ratings for volunteers.

To empirically evaluate the degree of overlap in the essential job-related tasks, a similarity index was computed per the equation below with the number of essential job-related tasks in

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each position (N_c – career position, N_v – volunteer position) and the number of essential job-related tasks in common to both positons (N_{Common}).

$$SI = \frac{N_{Common}}{\sqrt{N_C * N_V}}$$

The result found that the two positions had a similarity index of .915, indicating an approximate 91.5% overlap between the two positions in terms of their essential job-related tasks. This value is above the suggested threshold similarity value[2] of .75 and indicates a reasonably high degree of similarity between the two positions. This can be seen graphically in the figure below. A comprehensive list of the essential job-related tasks for each position can be seen in *Appendix J.*

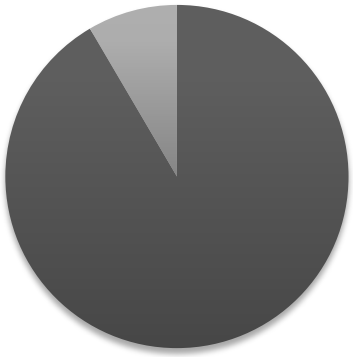

Figure 11. Graphical representation of 91.5% overlap in essential job-related tasks between career and volunteer position

Another important comparison to conduct was the degree of overlap in the KSAOs that were deemed as essential job-related KSAO between the two firefighter positions. For criteria that constituted an 'essential' KSAO, please refer to section *4.4.3 Essentiality/Criticality of KSAOs.* To compare the two positions, the degree of overlap was assessed empirically via similarity index methodology. A total of 135 KSAO statements were defined as essential for the career firefighter position while a total of 143 KSAO statements were defined as essential for the volunteer firefighter positon. 135 KSAOs were found to be essential for both the career and volunteer firefighter positions while 8 KSAO statements were found to be only essential for the volunteer position. An example KSAO that was found to be essential for only the volunteer

[2] McPhail, S.M. (2007). *Alternative validation strategies: Developing new and leveraging existing validity evidence*. John Wiley & Sons, Inc.: San Francisco, CA

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position was item 479, which read, "*Knowledge of the methods to assess the origin and cause of fires"*.

The result found that the two positions had a similarity index of .972, indicating an approximate 97.2% overlap between the two positions in terms of their essential KSAOs. This value is above the suggested threshold similarity value of .75 and indicates a reasonably high degree of similarity between the two positions. This can be seen graphically in the figure below. A comprehensive list of the essential KSAOs for each position can be seen in *Appendix K.*

Figure 12. Graphical representation of 97.2% overlap in essential KSAOs between career and volunteer position

4.7.2 Analysis of Tasks and KSAOs Required for Entry

In order to provide an assessment of the tasks and KSAOs required for firefighters upon entry into the position, the Required upon Active Duty (RUAD) scale was utilized. This scale presented respondents with three possible options to categorize tasks and KSAOs into: required upon active duty, not required upon active duty but rather learned on-the-job, and not required upon active duty but rather learned through continuing education. A task or KSAO was categorized into one of the three options when a majority of SMEs identified it as such. This analysis was performed at the overall JAQ, the task, and the KSAO level as well as for both career and volunteer firefighters. Excluding the 12 attention check questions, the overall JAQ contained 468 items. Of these, 323 were task statements and 145 were KSAO statements. The overall summary of the RUAD categorization analysis can be seen in Table 18 below. The full breakdown of the RUAD categorization for career and volunteer positions can be seen in *Appendices G* and H*.*

Table 18. Summary of RUAD Categorization by Position

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		Overall JAQ			Tasks			KSAOs		
Position		***RUAD***	***Not RUAD; learned OTJ***	***Not RUAD; learned through continuing education***	***RUAD***	***Not RUAD; learned OTJ***	***Not RUAD; learned through continuing education***	***RUAD***	***Not RUAD; learned OTJ***	***Not RUAD; learned through continuing education***
Career	*# items*	350	114	4	239	81	3	111	33	1
	% of total JAQ	74.8%	24.4%	0.9%	74.0%	25.1%	0.9%	76.6%	22.8%	0.7%
Volunteer	*# items*	350	113	5	231	88	4	119	25	1
	% of total JAQ	74.8%	24.1%	1.1%	71.5%	27.2%	1.2%	82.1%	17.2%	0.7%

As can be seen in the above table, approximately 75% of all JAQ statements were rated as RUAD by the majority of SME respondents, while nearly 25% were rated as learned on-the-job and not required upon active duty. This trend was the case for both career and volunteer positions. To supplement this analysis, pie chart analyses were also performed on all JAQ items using the total number of responses from all participants regardless of position type. This provides a high-level perspective of whether a task/KSAO is required for entry in the firefighter position on a statewide level as rated by all SMEs that responded to the questionnaire. These pie charts can be viewed in *Appendix I.*

The next step in the analysis was to provide a list of the tasks and KSAOs that are required upon entry into the firefighter position ranked in order of their essentiality. The analysis provides a concise perspective of what the most important tasks/KSAOs a firefighter should be able to perform or possess upon active duty. This analysis was conducted across both the career and volunteer positions as each position would likely have different requirements for entry and different essentiality ratings. For this analysis, items that were rated as RUAD by the majority of SME respondents were selected and then rank-ordered in terms of their essentiality. For tasks, essentiality was defined as the percentage of SMEs that rated an item as having a composite greater than three. Then for all tasks that were rated by a majority of SMEs to be required upon entry, the items were then ranked in terms of their essentiality percentage. For KSAOs, an item was deemed essential if it received an average importance rating greater than three. Then for all KSAOs that were rated by a majority of SMEs to be required upon entry, the

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items were then rank-ordered in terms of their importance values. An abbreviated list of the top 20 task and top 10 KSAO statements is provided below for the career and volunteer firefighter positions. The complete rank-ordered lists can be seen in *Appendices M* and *N.*

Table 19. Abbreviated Rank-ordered RUAD Tasks/KSAOs for Career Firefighter

Rank	Item#	Task	Origin	% Essential	RUAD
1	272	**PPE:** SCBA, turnout gear (pants, jacket, helmet, gloves, hood), PASS (Personal Alert Safety System) Device	Match	100.00%	91.36%
2	229	Report for duty on time.	IOS	100.00%	88.07%
3	236	Ensure proper function of SCBA by inspecting and performing daily tests at the start of each shift; service SCBA if malfunctioning.	IOS	100.00%	73.44%
4	5	Put on and wear self-contained breathing apparatus (SCBA).	Match	99.82%	95.73%
5	314	Hold and operate a hoseline	Match	99.65%	95.42%
6	4	Put on situation-appropriate personal protective equipment (PPE) (example: full turnout gear, HAZ-MAT Equipment, Universal Protections [Body Substance Isolation Gear]).	Match	99.63%	88.95%
7	242	Maintain all personal protective equipment (PPEs).	Match	99.58%	74.48%
8	285	**First Responder:** Collars, backboard, dressings, AED, stethoscope, Stokes basket, airway adjuncts	IOS	99.54%	93.12%
9	56	Perform cardiopulmonary resuscitation.	IOS	99.53%	93.63%
10	3	Respond to a vast range of emergencies including fire alarms, automobile accidents, medical emergencies, hazardous materials, or other incidents.	Match	99.45%	72.56%
11	293	Perform all fireground tasks wearing full turnout gear (coat, bunker pants, boots, helmet, gloves and hood) and SCBA	Match	99.38%	96.36%
12	42	Systematically search for trapped persons.	Match	99.32%	85.35%
13	55	Control bleeding and bandage wounds.	IOS	99.29%	92.43%
14	230	Maintain professional appearance and personal hygiene in accordance with regulations.	IOS	99.17%	86.42%
15	275	**Fire hoses:** Charged fire hoses, uncharged fire hoses	IOS	99.07%	91.71%
16	53	Assess a patient's condition (e.g. alertness level, orientation, breathing, circulation).	IOS	99.06%	91.96%
17	52	Administer first aid to injured persons.	IOS	99.06%	91.53%
18	124	Enter smoky buildings and rooms with a hose in hand while wearing SCBA.	Match	98.94%	95.05%
19	50	Ensure respiratory protection is not compromised.	NFPA	98.86%	86.67%
20	101	Establish an appropriate water supply, lay hose lines and connect them to water supplies.	Match	98.75%	87.69%
Rank	**Item#**	**KSAO**	**Origin**	**Import.**	**RUAD**
1	450	Knowledge of cardiopulmonary resuscitation (CPR)	TEXT	4.73	94.22%
2	448	Knowledge of the components of personal protective equipment	TEXT	4.71	90.75%
3	454	Knowledge of Body Substance Isolation (BSI) or infection control precautions	TEXT	4.60	86.63%
4	397	**Integrity:** Being honest and ethical, especially in situations where others could be taken advantage of.	IOS	4.57	90.04%
5	393	**Ethics.** Acting in an honest and fair manner. Willingness to accept responsibility for actions when things go wrong. Displaying a high degree of integrity and professionalism in action and word**.**	IOS	4.56	90.11%
6	392	**Dependability:** Being reliable, responsible and dependable and fulfilling obligations.	IOS	4.55	88.24%
7	474	Knowledge of personnel accountability systems, emergency communication procedures, and emergency evacuation methods.	NFPA	4.43	52.73%

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8	**421**	Knowledge of search operations	**TEXT**	4.41	70.59%
9	**422**	Knowledge of rescue operations	**TEXT**	4.39	65.16%
10	**374**	**Composure**: Working under stress and performing in unpleasant or traumatic circumstances.	**IOS**	4.39	61.64%

Table 20. Abbreviated Rank-ordered RUAD Tasks/KSAOs for Volunteer Firefighter

Rank	Item#	Task	Origin	% Essential	RUAD
1	**272**	**PPE:** SCBA, turnout gear (pants, jacket, helmet, gloves, hood), PASS (Personal Alert Safety System) Device	**Match**	100.00%	91.67%
2	**310**	Individually drag charged 1 ¾ inch hoseline	**IOS**	100.00%	79.49%
3	**236**	Ensure proper function of SCBA by inspecting and performing daily tests at the start of each shift; service SCBA if malfunctioning.	**IOS**	100.00%	66.67%
4	**277**	**Fire or rescue trucks:** Aerial trucks, ladder trucks, engine trucks, rescue vehicles, other apparatus, brush apparatus	**IOS**	100.00%	58.33%
5	**267**	Provide assistance to victims.	**IOS**	100.00%	55.00%
6	**242**	Maintain all personal protective equipment (PPEs).	**Match**	100.00%	54.17%
7	**5**	Put on and wear self-contained breathing apparatus (SCBA).	**Match**	98.70%	83.12%
8	**4**	Put on situation-appropriate personal protective equipment (PPE) (example: full turnout gear, HAZ-MAT Equipment, Universal Protections [Body Substance Isolation Gear]).	**Match**	98.70%	75.32%
9	**3**	Respond to a vast range of emergencies including fire alarms, automobile accidents, medical emergencies, hazardous materials, or other incidents.	**Match**	98.70%	72.73%
10	**46**	Maintain team integrity and firefighter safety.	**NFPA**	98.36%	68.85%
11	**48**	Rescue a firefighter whose respiratory protection is not functioning.	**NFPA**	98.31%	76.27%
12	**314**	Hold and operate a hoseline	**Match**	97.37%	79.49%
13	**2**	Be in a response-ready status to respond to alarms at all hours of the day and night.	**IOS**	97.33%	74.67%
14	**125**	Seek the source of a fire and extinguish.	**Match**	97.06%	76.47%
15	**325**	Crawl, duck-under, crawl-over and maneuver around obstacles in confined and restricted spaces while wearing SCBA and appropriate PPE	**IOS**	96.97%	68.57%
16	**24**	Rescue victims from burning buildings and accident sites.	**Match**	96.77%	74.19%
17	**39**	Systematically search burning buildings to locate fire victims.	**Match**	96.55%	82.76%
18	**56**	Perform cardiopulmonary resuscitation.	**IOS**	96.23%	83.02%
19	**84**	Be aware of electrical lines when setting up ladders.	**Match**	96.23%	72.22%
20	**73**	Maintain constant water supply through proper management of pumping apparatus.	**Match**	96.23%	43.40%
Rank	**Item#**	**KSAO**	**Origin**	**Import.**	**RUAD**
1	**448**	Knowledge of the components of personal protective equipment	**TEXT**	4.77	96.00%
2	**397**	**Integrity:** Being honest and ethical, especially in situations where others could be taken advantage of.	**IOS**	4.76	94.44%
3	**450**	Knowledge of cardiopulmonary resuscitation (CPR)	**TEXT**	4.62	88.00%
4	**393**	**Ethics.** Acting in an honest and fair manner. Willingness to accept responsibility for actions when things go wrong. Displaying a high degree of integrity and professionalism in action and word**.**	**IOS**	4.62	86.11%
5	**392**	**Dependability:** Being reliable, responsible and dependable and fulfilling obligations.	**IOS**	4.57	94.44%
6	**399**	**Self-Control:** Maintaining composure, keeping emotions in check, controlling anger and avoiding aggressive behavior, even in very difficult situations.	**IOS**	4.57	83.33%

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7	**454**	Knowledge of Body Substance Isolation (BSI) or infection control precautions	**TEXT**	4.54	88.00%
8	**402**	**Stress Tolerance:** Accepting criticism and dealing calmly and effectively with high stress situations.	**IOS**	4.54	75.00%
9	**455**	Knowledge of methods to prevent and/or reduce the effects of heat exposure while wearing protective clothing	**TEXT**	4.50	80.00%
10	**340**	**Oral Comprehension:** The ability to listen to and understand information and ideas presented through spoken words and sentences.	**IOS**	4.36	63.64%

4.7.3 Significance Testing

4.7.3.1 Task Essentiality Differences

Chi-square analyses were conducted on the essentiality variable for the comparison between career and volunteer firefighters. A total of 23 tasks out of the total 323 tasks were found to show statistically significant differences in essentiality based on position type. For all 23 tasks that showed significant differences, they were found to show significantly greater essentiality ratings for career firefighters than volunteer firefighters. A list of the 23 tasks that showed significant differences can be seen below in Table 21. A complete list of the essentiality significance test results for the position type comparison can been seen in *Appendix P.*

Table 21. Tasks Showing Significant Differences in Essentiality based on Position Type

Item #	Statement	Chi-square	Standard Deviations
58	Use airway adjuncts.	32.06	5.662
52	Administer first aid to injured persons.	31.03	5.570
55	Control bleeding and bandage wounds.	29.37	5.419
42	Systematically search for trapped persons.	26.58	5.155
230	Maintain professional appearance and personal hygiene in accordance with regulations.	20.99	4.582
229	Report for duty on time.	20.25	4.500
50	Ensure respiratory protection is not compromised.	19.17	4.378
293	Perform all fireground tasks wearing full turnout gear (coat, bunker pants, boots, helmet, gloves and hood) and SCBA	18.86	4.343
93	Use equipment (e.g., swing axe or sledge hammer) to make forcible entries.	18.46	4.297
213	Participate in physical training activities to maintain a high level of physical fitness.	17.54	4.188
61	Administer appropriate oxygen flow to patients.	16.50	4.061
219	Maintain ongoing certification requirement through continuing education or training.	16.12	4.015
124	Enter smoky buildings and rooms with a hose in hand while wearing SCBA.	16.04	4.005
107	Advance and fully extend a pre-connected, charged or uncharged hose of a diameter between 1¾ to 2½ inches.	15.35	3.917

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106	Carry a high-rise pack up multiple flights of stairs while wearing PPE so that attack line can be set up.	14.05	3.748
133	Operate a thermal imaging camera (TIC).	13.83	3.718
206	Clearly and accurately communicate patient information and care to medical staff.	13.65	3.695
92	Remove equipment from truck and start power tools.	12.92	3.595
285	**First Responder:** Collars, backboard, dressings, AED, stethoscope, Stokes basket, airway adjuncts	12.70	3.564
86	Raise a 24-foot extension ladder and extend the fly section of that ladder.	12.51	3.537
304	Lift and push a stretcher/gurney into an ambulance with assistance	12.40	3.521
54	Gather information from patient or family member regarding medical history.	11.96	3.458
227	Complete reports required of the job (daily maintenance, inspections and truck checks).	11.46	3.385

4.7.3.2 KSAO Importance Differences

To answer the question of whether significant differences existed in the KSAOs, which utilized the 5-point importance scale, based on position type, *t*-test analyses were conducted. No significant differences were found across the 145 KSAO statements using a .001 significance threshold. This suggests that the KSAOs were not found to be meaningfully different in terms of importance between career and volunteer firefighters across the state. Results of these analyses can be seen in *Appendix Q.*

4.7.3.3 RUAD Scale Differences

Another analysis deemed pertinent to this report was the degree of any statistically significant differences in the requirement of task/KSAO for active duty based on position type (career vs. volunteer). To do so, statistical significance tests were conducted. To test whether there were significant differences in the degree to which respondents found a task/KSAO to be required for active duty (RUAD), a Chi-square significance analysis was conducted. Applying the Chi-square test to the RUAD ratings showed significant differences (with a SD difference greater than 3.29) to exist for a total of 30 items based on position type. Of the 30 items showing significant differences, one item showed a difference for volunteers finding a task more required for active duty than career firefighters. This task was number 471 and read, "*Knowledge of procedures for reporting an emergency; departmental SOPs for taking and receiving alarms, radio codes, or procedures; and information needs of dispatch center*". All other significant differences were for tasks/KSAOs being rated as more RUAD for the career than volunteer position and a breakdown of these differences can be seen in the table below. A full breakdown of the RUAD Chi-square test results for all items can been seen in *Appendix O*.

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Table 22. Items Rated to be Significantly more RUAD for Career Position

Item #	Statement	Chi-square	Standard Deviations
111	Carry a 50-foot section of rolled hose unassisted while in appropriate PPE.	53.16	7.291
471	Knowledge of procedures for reporting an emergency; departmental SOPs for taking and receiving alarms, radio codes, or procedures; and information needs of dispatch center.	26.86	5.182
108	Remove kinks in charged supply line by lifting and/or turning hose so that water flow is not obstructed.	24.04	4.903
130	Carry equipment up stairs while wearing PPE gear and SCBA.	21.91	4.680
106	Carry a high-rise pack up multiple flights of stairs while wearing PPE so that attack line can be set up.	19.86	4.457
107	Advance and fully extend a pre-connected, charged or uncharged hose of a diameter between 1¾ to 2½ inches.	19.65	4.433
5	Put on and wear self-contained breathing apparatus (SCBA).	19.49	4.415
86	Raise a 24-foot extension ladder and extend the fly section of that ladder.	17.42	4.174
357	**Stamina:** The ability to exert yourself physically over long periods of time without getting winded or out of breath.	16.87	4.108
131	Climb obstacles while wearing PPE and SCBA.	16.76	4.094
103	Pull the supply line from an engine to a hydrant.	16.44	4.054
55	Control bleeding and bandage wounds.	16.41	4.051
118	While assisted, hold a charged 2½ inch hose and open the nozzle.	16.12	4.015
315	Open a hydrant valve or hydrant cap using a hydrant wrench	14.74	3.839
278	**Fire hand tools:** Fire axes, McLeod tools, pick head axes, Pulaski tools, pike pole, claw hammers, rubber mallet, non-sparking hammers, sledgehammers, Halligan bars, Hux bars, pinch bars	14.54	3.813
314	Hold and operate a hoseline	14.32	3.785
149	Replace burst hose sections.	14.32	3.784
328	Climb to the top and back down ground ladders while wearing SCBA and appropriate PPE	13.96	3.736
230	Maintain professional appearance and personal hygiene in accordance with regulations.	13.59	3.687
58	Use airway adjuncts.	13.56	3.683
293	Perform all fireground tasks wearing full turnout gear (coat, bunker pants, boots, helmet, gloves and hood) and SCBA	13.55	3.681
342	**Oral Expression:** The ability to communicate information and ideas in speaking so others will understand.	13.37	3.656
52	Administer first aid to injured persons.	12.70	3.564
88	With assistance, carry extension ladders (24-foot, 35-foot) from truck to incident scene.	12.69	3.562
93	Use equipment (e.g., swing axe or sledge hammer) to make forcible entries.	12.21	3.494
282	**Ladders:** Aluminum ladders, extension ladders, roof ladders, A-Frame ladders	11.89	3.448
109	Carry, assemble and operate deluge set (ground monitor).	11.73	3.425
53	Assess a patient's condition (e.g. alertness level, orientation, breathing,	11.51	3.392

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	circulation).		
4	Put on situation-appropriate personal protective equipment (PPE) (example: full turnout gear, HAZ-MAT Equipment, Universal Protections [Body Substance Isolation Gear]).	11.26	3.356
331	Climb stairs while wearing PPE and carrying equipment while wearing SCBA and appropriate PPE	11.13	3.336

4.7.4 Analysis of Helpful Qualifications

In order to propose the helpful qualifications needed for each position, a detailed analysis of the KSAOs was conducted to determine these qualifications. The first question dealt with how to define a helpful qualification. It was determined in order to be considered as a KSAO that would be helpful as a qualification criteria, the KSAO must be applicable to the job, lead to better performance on the job, and be required for entry into the position. As such, quantitative thresholds were set for each of these criteria that signal whether or not a KSAO can reasonably be defined as a helpful qualification. Specifically, a KSAO was determined to be a helpful qualification if it received greater than a 66.66% rating on the applicability scale, greater than a 66.66% rating on the better performance scale, and greater than a 50% rating on the RUAD scale.

A total of 97 KSAO statements were identified as helpful qualifications for the career firefighter position. A total of 90 KSAO statements were identified as helpful qualifications for the volunteer firefighter positon. 78 KSAOs were found to be helpful qualifications for both the career and volunteer firefighter positions while 31 KSAOs statements were mismatched (i.e. a helpful qualification for one position but not the other). An example of a mismatched helpful qualification was item 464, "*Knowledge of the organization of the fire department*". This item was found to be a helpful qualification for the volunteer position, though was not found to be a helpful qualification for the career position. This was due to the fact that a majority of career SMEs found this to be knowledge that was learned on-the-job and not required upon active duty.

To empirically evaluate the degree of overlap in the helpful KSAO qualifications, a similarity index was computed per the equation below with the number of helpful qualification KSAOs of each position (N_c – career position, N_v – volunteer position) and the number of qualification KSAOs in common to both positons (N_{Common}).

$$SI = \frac{N_{Common}}{\sqrt{N_C * N_V}}$$

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The result found that the two positions had a similarity index of .835, indicating an approximate 83.5% overlap between the two positions in terms of their helpful qualifications. This value is above the suggested threshold similarity value of .75 and indicates a reasonably high degree of similarity between the two positions. This can be seen graphically in the figure below. A comprehensive list of the helpful qualification categorization for KSAOs can be seen in *Appendix L.*

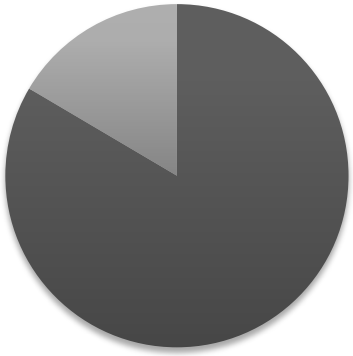

Figure 13. Graphical representation of 83.5% overlap of helpful KSAO qualifications between career and volunteer position

4.8 Comparison between IOS and NFPA

4.8.1 Gap Analysis

To ensure that the job analysis questionnaire tool used in the statewide job analysis for the career and volunteer firefighter positions in the state of Florida was robust and encompassed the tasks and KSAOs established by the NFPA® 1001, a thorough gap analysis study was completed. The tasks and KSAOs included in the NFPA® 1001 were analyzed and compared by internal IOS consultants against the standard tasks and KSAOs established by IOS for the firefighter position. Overall, the percentage of match (including tasks, skills, abilities, and knowledge items) between IOS and the NFPA® 1001 was 28.32% (111 / 392). Specifically, 111 items from the NFPA® 1001 requirements were directly matched to the IOS JAQ items which comprised of 392 items.

4.8.2 Task Section

The initial IOS task list contained 263 task items. Initially, the NFPA® 1001 had a total of 131 items (including 3 “headers” because some material from these areas was comprised of unique

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information). In order to capture all of the information encompassed within each item it was necessary to partition the items such that matches could be determined. From 131 items, a total of 271 items were derived. Of the partitioned 271 items, 111 were directly matched to IOS task items. A total of 60 of the partitioned items were found to be unique to the NFPA® 1001 and were added on the final JAQ task list. The remaining items were redundant in that they included information that was already detailed in other statements on the NFPA® 1001. Subsequently, these redundancies were not included in the overall count or the final JAQ. The percentage of pure match between IOS task items and NFPA® 1001 task items was 42.21% (111/263). The final task section contained a total of 323 task statements drawn from both the NFPA® 1001 and IOS JAQ.

4.8.3 KSA Section

Section 16(K) of the *Uniform Guidelines* defines Job Analysis as "a detailed statement of work behaviors and other information relevant to the job." Section 16(Y) defines work behaviors as "an activity performed to achieve the objective of the job. Work behaviors involve observable (physical) components and unobservable (mental) components. A work behavior consists of the performance of one or more tasks." To further clarify the role of KSAs to work behaviors, Section 16(Y) also denotes that KSAs are not behaviors, although they may be applied in work behaviors. Knowledge is operationalized in Section 16(M) as "a body of information applied directly to the performance of a function." Skill is operationalized in Section 16(T) as "a present, observable competence to perform a learned psychomotor skill." Section 16(A) defines ability as "a present competence to perform an observable behavior or a behavior which results in an observable product."

4.8.3.1 Knowledge

An abbreviated explanation of knowledge is provided according to Section 14C(4) of the *Uniform Guidelines on Employee Selection Procedures*. Knowledge is operationalized as "that body of learned information which is used in and is a necessary prerequisite for observable aspects of work behavior of the job." The definition that IOS has previously used for knowledge in job analysis questionnaires for entry-level positions is "information stored in memory." The initial IOS list included a total of six (6) knowledge items. However, since the data that will be gathered from the current job analysis is for training purposes, it must include all the knowledge that would be obtained while in the position, and not just the knowledge that would be expected of a candidate being selected for this position. Thus, the knowledge areas included in the current job analysis tool will encompass the information that is learned while in academy and while on the job. The NFPA has defined knowledge in relation to the performance of tasks.

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Thus, a total of 16 unique knowledge areas from the NFPA® 1001 were added onto the job analysis questionnaire survey. Furthermore, a total of 54 additional knowledge items were added onto the final job analysis questionnaire tool to reflect information learned during the incumbent's educational tenure in the academy. The additional knowledge items encompassed material from the International Fire Service Training Association's (IFSTA) *Essentials of Firefighting and Fire Department Operations* (5th Edition) handbook. Thus, it is reasonable to expect that such information would be retained and memorized by the incumbent. Overall, the knowledge section contained a total of 76 knowledge statements.

4.8.3.2 Skills & Abilities

Differences in the operationalization of skills and abilities existed between IOS and the NFPA® 1001. While the NFPA® 1001 does not include abilities as part of their standard, the skills that they do include are stated in terms of "the ability to (perform some task)." IOS has defined skills as "the capacity to do something, behavioral proficiency, **task-specific, changeable/learnable** (tied to task)."

IOS has defined abilities as "the capacity to do something, behavioral proficiency, generalizable, stable/resistant to change (less tied to task)." For example, some of the abilities that IOS has included in entry-level job analysis questionnaires are "Deductive Reasoning" but an initial decision was made that for the purpose of this gap analysis, we would just consider abilities as equal to skills. Even with that concession, the NFPA skill items are defined as "the ability to (perform some task)." As such, it seemed best to utilize the existing IOS task duty areas (e.g. "Personal Equipment and Environment", "Incident Response", etc.), and fit all disparate NFPA items under each duty area. This allowed for reconciliation of the erroneous NFPA® 1001 KSAO definitions by treating the skills and knowledge items as tasks.

UNEQUAL OPERATIONALIZATION EXAMPLE		
	NFPA DEFINITION	IOS DEFINITION
SKILL	"the ability to (perform some task)"	"the capacity to do something, behavioral proficiency, **task-specific, changeable/learnable** (tied to task)"
ABILITY	N/A – Abilities not included in NFPA	"the capacity to do something, behavioral proficiency, **generalizable, stable/resistant to change** (less tied to task)"
KNOWLEDGE	"information learned to perform	"information stored in memory"

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	specific tasks”	

4.9 Comparison of Essentiality between IOS and NFPA Items

After completion of the gap analysis, which sought to identify the similarities and differences between the tasks/KSAOs listed on the initial IOS JAQ and the NFPA® 1001, a comparison was sought to identify the degree of overlap and discrepancy between IOS and NFPA® 1001 items in terms of their essentiality.

4.9.1 Tasks

4.9.1.1 Tasks included on both IOS and NFPA lists

A total of 111 tasks were matched (common to both the IOS JAQ as well as the NFPA® 1001). Of these matched tasks, 88 (79.3%) were found to be essential to both the career and volunteer positions. However, of these 111 commonly shared tasks, 16 tasks were not found to be essential tasks for the career position, 19 shared task statements were not found to be essential to the volunteer position, and 12 shared tasks were not found to be essential to either the career or volunteer positions. A list of the shared task statements that were not essential for one or both positions is summarized below. A comprehensive list of the essential job-related tasks for each position can be seen in *Appendix J Comparison of Essential Tasks.*

Table 23. Nonessential Tasks Shared between IOS and NFPA lists

Item#	Task	Origin	NFPA Code	Essential Career?	Essential Volunteer?
99	Properly knot and tie rope to hoist equipment weighing up to 50 pounds to upper levels.	**Match**	5.3.20(A)	Y	N
134	Operate a fire extinguisher by carrying it to objective, aiming and discharging at seat of fire or spill.	**Match**	5.3.16*	Y	N
175	Protect property from water and smoke using waterproof salvage covers and/or smoke ejectors (i.e., powered fans).	**Match**	5.3.14(A)1	Y	N
225	Summarize incidents that occurred at an emergency scene, detailing tactics, equipment and procedures used through written narratives.	**Match**	6.2.1	Y	N
228	Answer routine phone calls in the station.	**Match**	5.2.2	Y	N
249	Engage in pre-planning operations such as documenting building layouts, building construction, fire suppression and other tactical information such as location of exits to assist in future operations.	**Match**	6.5.3*	Y	N
291	Computer software: E-mail software, internet browsing software, drafting software, spreadsheet software, word processing	**Match**	6.2.1(B)2	Y	N

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	software, project management software				
76	Conduct drafting operations.	**Match**	5.3.15*(B)2	N	Y
121	Operate a charged hose line from confined spaces and direct spray at fire.	**Match**	5.3.10*(B)4b	N	Y
244	Maintain maintenance records of all equipment and apparatus.	**Match**	6.5.4*2	N	Y
323	Hoist equipment using a rope	**Match**	5.3.12(B)2	N	Y
75	Calculate foam amounts.	**Match**	6.3.1*2	N	N
119	Operate a charged hose line from elevated positions and direct spray at fire.	**Match**	5.3.10*(B)7	N	N
120	While on a ladder, operate and direct spray at fire.	**Match**	5.3.10*(B)4a	N	N
165	Provide onsite crowd control in a HAZ-MAT situation.	**Match**	6.4.2*(B)	N	N
177	Gather furniture into an appropriate location and protect it with salvage covers.	**Match**	5.3.14(B)1	N	N
178	Place salvage covers over lower floors to prevent unnecessary damage.	**Match**	5.3.13(B)4	N	N
179	Salvage property by removing broken glass, removing water and ventilating buildings to remove smoke.	**Match**	5.3.14	N	N
180	After a fire is extinguished, drain or pump out water and clean up remaining water on the floors.	**Match**	5.3.14(B)3	N	N
181	Remove burned and charred waste and other debris, if hazardous.	**Match**	5.3.14(B)5	N	N
251	Inspect businesses and non-owner occupied private dwellings.	**Match**	6.5.1*1	N	N
252	Identify code enforcement issues and alert superiors.	**Match**	6.5.1*2	N	N
260	Conduct fire station tours for groups of individuals and children.	**Match**	6.5.2*(A)	N	N

4.9.1.2 Tasks unique to NFPA® 1001

A total of 60 tasks were included in the final JAQ that were unique to the NFPA® 1001. 40 (66.6%) of these tasks were found to be essential to both the career and volunteer positions. 11 NFPA® 1001 tasks were not found to be essential to the career position, and 18 NFPA® 1001 tasks were not found to be essential to the volunteer position. 9 NFPA® 1001 tasks were not found to be essential to either position. A list of the NFPA® 1001 task statements that were not essential for one or both positions is summarized below. A comprehensive list of the essential job-related tasks for each position can be seen in *Appendix J Comparison of Essential Tasks.*

Table 24. Nonessential NFPA Tasks

Item#	Task	Origin	NFPA Code	Essential Career?	Essential Volunteer?
145	Extinguish fires in exterior Class A materials, given fires in stacked or piled and small unattached structures or storage containers.	**NFPA**	5.3.8*	Y	N
155	Identify automobile fuel types and assess and control fuel leaks.	**NFPA**	5.3.10*(A)6	Y	N
156	Choose attack and control techniques for grade level and above	**NFPA**	6.3.2*2	Y	N

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	and below grade level fires.				
158	Apply appropriate attack lines and water streams for stacked, piled materials and outdoor fires.	**NFPA**	5.3.8*(A)1	Y	N
172	Use the appropriate concentrates on hydrocarbon and polar solvent fuels.	**NFPA**	6.3.1*(A)2	Y	N
174	Use fog nozzles or foam nozzles depending on situation.	**NFPA**	6.3.1*(A)4	Y	N
195	Remove flooring, ceiling, and wall components to expose void spaces without compromising structural integrity.	**NFPA**	5.3.13.3	Y	N
197	Perform horizontal ventilation on a structure, so that the ventilation openings are free of obstructions.	**NFPA**	5.3.11.1	Y	N
198	Recognize points of strength and weakness in auto body construction.	**NFPA**	6.4.1*(A)2	Y	N
200	Designate work zones for safe operation at emergency scenes.	**NFPA**	5.3.3*(A)4	N	Y
222	Read, comprehend and retain information of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program	**NFPA**	5.1.1.6	N	Y
146	Deploy portable water tanks as well as the equipment necessary to transfer water between and draft from them.	**NFPA**	5.3.15*(B)3	N	N
149	Replace burst hose sections.	**NFPA**	5.3.10*(B)6	N	N
173	Reduce or avoid hazards associated with firefighting foams.	**NFPA**	6.3.1*(A)3	N	N
193	Overhaul all vehicle compartments.	**NFPA**	5.3.7*3	N	N
194	Stop the flow of water from building sprinkler with sprinkler wedges or stoppers.	**NFPA**	5.3.14(B)6	N	N
196	Roll and fold salvage covers for reuse.	**NFPA**	5.3.14(B)2	N	N
220	Read and comprehend aspects of the fire department's member assistance program	**NFPA**	5.1.1.4	N	N
233	Document presentations and use prepared materials.	**NFPA**	6.5.2*(B)	N	N
255	Use commonly recognized symbols when diagramming construction features, utilities, hazards, and fire protection systems.	**NFPA**	6.5.3*(A)3	N	N

4.9.2 KSAOs

4.9.2.1 KSAOs unique to NFPA Qualifications

A total of 16 knowledge statements were included in the final JAQ that were unique to NFPA® 1001. 13 (81.3%) of these knowledge statements were found to be essential to both the career and volunteer positions. Three NFPA® 1001 knowledge statements were not found to be essential to the career position. All NFPA® 1001 knowledge statements were found to be essential to the volunteer position. A list of the NFPA® 1001 knowledge statements that were not essential for the career position is summarized below. A comprehensive list of the essential KSAOs for each position can be seen in *Appendix K, Comparison of Essential KSAOs.*

Table 25. Nonessential NFPA KSAOs

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Item #	KSAO	Origin	NFPA Code	Essential Career?	Essential Volunteer?
468	Knowledge of the role of other agencies as they relate to the fire department.	**NFPA**	**5.1.1*5**	N	Y
472	Knowledge of fire department procedures for answering nonemergency telephone calls.	**NFPA**	**5.2.2(A)**	N	Y
479	Knowledge of the methods to assess the origin and cause of fires.	**NFPA**	**6.3.4(A)**	N	Y

4.9.2.2 KSAOs from Text-based Source

A total of 54 knowledge statements were included in the final JAQ that were adopted from the IFSTA *Essentials of Firefighting and Fire Department Operations* (5th Edition) handbook. These items were determined to add unique knowledge domains to the final JAQ and be highly pertinent to the academic learning repertoire of the entry-level firefighter role. 50 (92.6%) of these text-based knowledge statements were found to be essential to both career and volunteer positions. Four knowledge statements were not found to be essential for the career position. One knowledge statement was found to be not essential for either position. A list of the text-based knowledge statements that were not essential for one or both positions is summarized below. A comprehensive list of the essential knowledge statements for each position can be seen in *Appendix K*, *Comparison of Essential KSAOs.* KSAOs that were included from the text-based sourced are designated as "text" under the "origin" variable.

Table 26. Nonessential Text-based KSAOs

Item #	KSAO	Origin	Essential Career?	Essential Volunteer?
430	Knowledge of static pressure, flow pressure, and residual pressure.	**TEXT**	N	Y
431	Knowledge of common hose rolls.	**TEXT**	N	Y
445	Knowledge of preincident surveys and inspections.	**TEXT**	N	Y
447	Knowledge of the steps in presenting fire and life safety information to the public.	**TEXT**	N	N

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Chapter 5. Linkage Analysis Questionnaire Development, Methodology and Results

5.1 Goals of the Linkage Analysis

The linkage analysis served as a survey to collect expert opinions that were then utilized to tie the knowledge, skills, abilities and other characteristics necessary to successfully perform a target job – in this case, the job of a firefighter – to the essential tasks of that job. Through a linkage analysis, a detailed "mapping" of the KSAOs as they related to the job were uncovered. This mapping provides a more accurate description of the circumstances in which KSAOs are required, as the KSAOs are "linked" to all essential job tasks. The goals of this linkage analysis process were to uncover the relative importance ratings of KSAOs across the domains of the job of a firefighter in the state of Florida.

5.2 Linkage Analysis Questionnaires

Due to the number of KSAOs included in the present job analysis study, two linkage analysis questionnaires were developed. One questionnaire focused solely on knowledge, while the other focused solely on skill, ability, and other characteristics. Both questionnaires included 15 job duty areas which participants linked either knowledge or abilities to deepening on which questionnaire they received to complete. The 15 job duty areas included in both linkage questionnaires were:

1. Incident Response
2. Incident Assessment/Size-up
3. Rescue Operations
4. Emergency Medical Service Operations
5. Pumping and Driving Operations
6. Ladder Operations
7. Hoseline and Attack Operations
8. Hazardous Materials Operations (HAZ-MAT)
9. Salvage and Overhaul Operations
10. External and Interagency Collaborations
11. Training and Education
12. Administrative Duties and Communications
13. Station and Equipment Maintenance
14. Prevention and Inspections

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15. Public Relations and Customer Service

Each questionnaire will be further described next.

5.2.1 Ability Linkage Questionnaire

The ability linkage questionnaire contained three sections, including:

- Section One listed all of the definitions for the skills, abilities, and other characteristic areas that participants familiarized themselves with prior to beginning the rating process.
- Section Two asked participants to rate the importance of the list of skills, abilities, and other characteristics in performing each job duty area. Participants rated one job duty area at a time. There were 15 job duty areas in total.
- Section Three asked participants to complete relative importance and frequency rates regarding the defined job duty areas.

Participants rated a total of 69 skills, abilities, and other characteristics (SAOs) in their importance for performing tasks associated with each of the 15 job duty areas. Of the 69 SAOs, 19 were skills, 16 were cognitive abilities, 18 were physical abilities, and 16 were other characteristics. Figure 14 provides the composition of the SAOs included within the ability linkage questionnaire. Appendix S includes the ability linkage questionnaire utilized in the job analysis study.

Figure 14. SAO listing included in the Ability Linkage Questionnaire

Skills	**Physical Abilities**
• Problem Analysis • Problem-Solving • Decision-Making • Planning and Organization • Interpersonal Skill • Oral Communication • Self-Motivation • Composure • Conflict Resolution • Critical Thinking • Leadership. • Monitoring • Operation and Control • Instructing • Judgment and Decision Making	• Reaction Time • Arm-Hand Steadiness • Manual Dexterity • Multi-limb Coordination • Response Orientation • Rate Control • Static Strength • Control Precision • Stamina • Near Vision • Dynamic Strength • Trunk Strength • Extent Flexibility • Depth Perception • Auditory Attention

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• Social Perceptiveness • Negotiation • Public Relations Skill • Persuasion	• Gross Body Coordination • Gross Body Equilibrium • Far Vision
Cognitive Abilities • Basic Arithmetic • Deductive Reasoning • Flexibility of Closure • Inductive Reasoning • Information Ordering • Mathematical Reasoning • Memorization • Number Facility • Oral Comprehension • Oral Expression • Problem Sensitivity • Selective Attention • Spatial Orientation • Visualization • Written Comprehension • Written Expression	**Other Characteristics** • Achievement/Effort • Adaptability/Flexibility • Attention to Detail • Concern for Others • Cooperation • Dependability • Ethics • Independence • Initiative • Innovation • Integrity • Persistence • Self-Control • Service Orientation • Social/Teamwork Orientation • Stress Tolerance

Individuals completing the second section of the ability LAQ used the following four-point Likert scale to link each SAO to each of the job duty areas. Table 27 below presents the rating scale utilized in this ability LAQ.

Table 27. Scale Used for Linking SAOs on the LAQ

Rating Scale for SKILL/ABILITY AREA/OTHER CHARACTERISTIC Linkage			
N/A	***1***	***2***	***3***
Skill/Ability area is not relevant to task group	***Skill/Ability area is somewhat important and there is some value in performing task group***	***Skill/Ability area is moderately important and there is a tangible value in performing task group***	***Skill/Ability area is essential and must be possessed to perform task group***

5.2.2 Knowledge Linkage Questionnaire

The knowledge linkage questionnaire contained two sections, including:

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- Section One asked participants to rate the importance of the list of knowledge areas in performing each job duty area. Participants rated one job duty area at a time. There were 15 job duty areas in total.
- Section Two asked participants to complete relative importance and frequency ratings regarding the defined job duty areas.

Participants rated a total of 76 knowledge items for each job duty area. The knowledge items were meant to cover all aspects of the firefighter position. Figure 15 presents the 76 knowledge items included in the linkage questionnaire. Appendix T includes the knowledge linkage questionnaire utilized in the job analysis study.

Figure 15. Knowledge listing included in the Knowledge Linkage Questionnaire

Knowledge Items included in Linkage Questionnaire
1. Knowledge of motor vehicle rules and regulations.
2. Knowledge of common hand tools, such as wrenches, pliers, screw drivers, hammers and mauls, axes, prying tools, etc., e.g., their use, operation, limits and safety precautions/procedures.
3. Knowledge of basic science terms and concepts, e.g., force, gravity, pressure, vacuum, etc.
4. Knowledge of ratios and terms, expressing ratios and the practical use of ratios, e.g., pounds per square inch, gallons per minute, etc.
5. Knowledge of basic mechanical principles, e.g., leverage, gears, pulleys, screws, etc.
6. Knowledge of typical occupancy activity at a given time of day.
7. Knowledge of the science behind fire propagation.
8. Knowledge of common heat energy sources: chemical, electrical, and mechanical energy.
9. Knowledge of heat transmission and the mechanisms by which heat transfer occurs: conduction, convection, and radiation.
10. Knowledge of common products of combustion and their toxic effects.
11. Knowledge of classification of fires: class A, B, C, D, and K fires.
12. Knowledge of Fire Control Theory: temperature reduction, fuel removal, oxygen exclusion, and chemical flame inhibition.
13. Knowledge of common materials found in building construction.
14. Knowledge of the strengths and weaknesses associated with different types of building construction types.
15. Knowledge of types of extinguishers and their common uses.
16. Knowledge of types of knots, ropes, and webbing materials.
17. Knowledge of types of ladders.
18. Knowledge of search operations.
19. Knowledge of rescue operations.
20. Knowledge of extrication operations.
21. Knowledge of types of carries.
22. Knowledge of victim removal methods.
23. Knowledge of forcible entry methods.
24. Knowledge of ventilation methods.
25. Knowledge of types of hydrants and alternative water supplies.

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Knowledge Items included in Linkage Questionnaire
26. Knowledge of methods of moving water in a system. 27. Knowledge of static pressure, flow pressure, and residual pressure. 28. Knowledge of common hose rolls. 29. Knowledge of friction loss, elevation loss/gain, and water hammers. 30. Knowledge of size classifications of fire streams. 31. Knowledge of foam techniques. 32. Knowledge of direct attacks. 33. Knowledge of indirect attacks. 34. Knowledge of combination attacks. 35. Knowledge of salvage operations. 36. Knowledge of overhaul operations. 37. Knowledge of hidden fire indicators. 38. Knowledge of evidence protection methods. 39. Knowledge of procedures the public should use to report a fire or other emergency. 40. Knowledge of necessary skills for fire department communications. 41. Knowledge of the types of information required for arrival and progress reports. 42. Knowledge of pre-incident surveys and inspections. 43. Knowledge of common fire hazards. 44. Knowledge of the steps in presenting fire and life safety information to the public. 45. Knowledge of the components of personal protective equipment. 46. Knowledge of the physiological aspects of stress. 47. Knowledge of cardiopulmonary resuscitation (CPR). 48. Knowledge of scene safety considerations such as hazardous materials incidents and rescue operations. 49. Knowledge of the types and states of shock of victims and/or other fire personnel 50. Knowledge of methods to managing shock of victims and/or other fire personnel. 51. Knowledge of Body Substance Isolation (BSI) or infection control precautions. 52. Knowledge of methods to prevent and/or reduce the effects of heat exposure while wearing protective clothing. 53. Knowledge of the main routes through which hazardous materials can enter the body. 54. Knowledge of the clues which indicate the presence of hazardous materials. 55. Knowledge of chemical attack indicators. 56. Knowledge of incident priorities at all HAZMAT and terrorist incidents. 57. Knowledge of types of decontamination. 58. Knowledge of hazard-control zones. 59. Knowledge of defensive confinement and spill control actions. 60. Knowledge of factors to address during large-scale evacuations. 61. Knowledge of the organization of the fire department . 62. Knowledge of the role of the Fire Fighter I in the organization. 63. Knowledge of the mission of fire service. 64. Knowledge of the fire department's standard operating procedures (SOPs) and rules and regulations. 65. Knowledge of the role of other agencies as they relate to the fire department. 66. Knowledge of the critical aspects of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program.

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Knowledge Items included in Linkage Questionnaire
67. Knowledge of procedures for reporting an emergency; departmental SOPs for taking and receiving alarms, radio codes, or procedures; and information needs of dispatch center. 68. Knowledge of fire department procedures for answering nonemergency telephone calls. 69. Knowledge of departmental radio procedures and etiquette for routine traffic, emergency traffic, and emergency evacuation signals. 70. Knowledge of personnel accountability systems, emergency communication procedures, and emergency evacuation methods. 71. Knowledge of basic construction of typical doors, windows, and walls within the department's community or service area. 72. Knowledge of personnel accountability systems and communication procedures. 73. Principles of fire streams as they relate to fighting automobile fires. 74. Knowledge of SOPs for alarm assignments and fire department radio communication procedures. 75. Knowledge of the methods to assess the origin and cause of fires. 76. Knowledge of the characteristics of pressurized flammable gases.

Individuals completing the knowledge LAQ used the following four-point Likert scale to link each knowledge to each of the job duty areas. Table 28 below presents the rating scale utilized in this knowledge LAQ.

Table 28. Scale Used for Linking Knowledge on the LAQ

Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

5.3 Participants and Distribution of Linkage Analysis Questionnaires

To distribute the linkage questionnaires, IOS recommended leveraging the 25 departments utilized in the first stage of the job analysis study for the site visits. These 25 departments were presented earlier in Table 2. The departments that were chosen for the site visits were selected by the Division ensuring that IOS would be able to meet with departments of various sizes, type (volunteer and/or career), as well as geography (rural vs. metropolitan). Thus, these 25 departments served as the main sample for the linkage study.

Furthermore, the Division requested two additional fire departments to be included in the linkage study as these departments had expressed interest in participating. These two departments were North Collier Fire Control & Rescue District in the southwest region of the

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state and Skyline Fire Rescue in the northwest region of the state. Additionally, the Division distributed linkage questionnaires to fire personnel across that state who happened to be participating in training seminars during the linkage study phase.

The linkage questionnaires were distributed to departments on September 10, 2015. Upon receipt of the package, department were told they had 2 weeks to complete the linkage questionnaires. Each department received a shipment of 10 linkage questionnaires of which 6 were knowledge linkage questionnaires, and 4 were ability linkage questionnaires. The rationale for including more knowledge linkage questionnaires was due to the underlying use of the data obtained from this job analysis study. The Division was interested in understanding how fire training and curriculum requirements may need to be adjusted for firefighters and volunteer firefighters. The date obtained from the knowledge portion of the linkage study would, thus, be most critical to the Division. Therefore, linkage questionnaires were distributed such that more weight was given to the knowledge linkage questionnaire to ensure sufficient responses that would yield quality data.

To distribute the questionnaires amongst fire personnel, departments were instructed to select personnel in the rank of firefighter as much as possible to participate. Further, for the departments that had combined career and volunteer positions, departments were instructed to have at least 2 volunteer personnel complete each of the questionnaires. Once the two week timeline elapsed, departments began shipping completed questionnaires back to IOS for analysis. In total, 15 departments across the state returned completed linkage questionnaires to IOS in time for the analysis. All 5 regions across the state were represented by these 15 departments. Six additional departments returned completed questionnaires back to IOS, however, they were after the cutoff point and were not included in the analysis. Table 29 provides a breakdown of the number of fire personnel who completed each linkage questionnaire that were included in the linkage analysis.

Table 29. Participant Demographics for Linkage Study

Demographic	Knowledge Linkage	Ability Linkage
Total # Participants	77	48
Average Age	36.15 years	37.92 years
Average Tenure in Fire Service	9.56 years	10.07 years
Race	• African American/Black (2.6%) • Hispanic (5.2%) • AI/NA (2.6%) • White (75.3%) • Two or more Races (5.2%)	• African American/Black (4.2%) • Hispanic (12.5%) • AI/NA (0%) • White (77.1%) • Two or more Races (4.2%)

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Demographic	Knowledge Linkage	Ability Linkage
	• Missing (9.1%)	• Missing (2.1%)
Education	• HS Grad/GED (11.7%) • Associates Degree (27.3%) • Some College (44.2%) • Bachelor's Degree (11.7%) • Master's Degree (1.3%) • Missing (3.9%)	• HS Grad/GED (14.6%) • Associates Degree (18.8%) • Some College (52.1%) • Bachelor's Degree (8.3%) • Master's Degree (6.3%)
Position Type	• Career (64 total / 83.1%) • Volunteer (13 total / 16.9%)	• Career (44 total / 91.7%) • Volunteer (4 total / 8.3%)
Position	• Firefighter (64.9%) • Driver/Engineer (16.9%) • Lieutenant (7.8%) • Captain (2.6%) • Chief (6.5%) • Missing (1.3%)	• Firefighter (75.0%) • Driver/Engineer (12.5%) • Lieutenant (4.2%) • Captain (4.2%) • Chief (4.2%)
Department Size	• 25 or fewer (18.2%) • 26-100 (29.9%) • Over 100 (49.4%) • Missing (2.6%)	• 25 or fewer (20.8%) • 26-100 (33.3%) • Over 100 (45.8%)

In total, 125 completed linkage questionnaires (77 for the knowledge linkage and 48 for the ability linkage) were returned to IOS in time for the analysis stage. Of the 125 completed questionnaires, 17 were completed by volunteer firefighters (13 for the knowledge linkage and 4 for the ability linkage). Due to the small amount of volunteer personnel who were able to complete the linkage questionnaires, IOS did not separate out the positions during the linkage analysis. Thus, the data presented herein for the linkage results represents both the career and volunteer positions. As much of the findings presented in Chapter 4 show the great overlap between the career and volunteer positions, the data obtained from the linkage portion of the study would be therefore expected to support both positions.

5.4 Relative Duty Area Ratings

Within both linkage questionnaires, participants rated the relative importance and frequency of the job duty areas and the higher order areas of Tactical and Non-Tactical Duties. Certain job duty areas in the firefighter position are expected to be performed more frequently than other duty areas, and certain duty areas are more important to the job than other areas. The ratings obtained from the participants help to support the relative importance and frequency of the duty areas for the firefighter position. When making these ratings, participants were asked to

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consider, how important a given job duty area is relative to all other job duties, and for frequency, to consider how much time is spent by firefighters engaging in the job tasks defined by the job duty area. Participants were asked to allocate 100 points across the 15 duty areas (such that their sum would equate to 100), and separately across the two higher order areas to indicate their relative importance and frequency.

During the analysis, these ratings were first corrected for rater calculation errors. Often computational errors are made such that the sums do not equal 100. In some cases, these errors can be large. Such errors would lead to errors in the results and interpretation of the data. Corrections were made in such cases (on an individual level) to ensure that each participant's ratings summed to 100. This was done by summing each participant's relative duty area ratings and dividing their original ratings by the sum and then taking that quotient times 100, ((Original Rating / Sum) *100).

Table 30 presents the average ratings across all participants who completed this section in their linkage questionnaire booklets. In total, 106 of the 125 participants completed this section. The tactical duties had an average relative importance of 65.2% as compared to 34.8% for the non-tactical duties. However, participants reported that non-tactical duties are performed more frequently compared to tactical duties, 53.7% versus 46.3%, respectively. Across the job duty areas, Emergency Medical Service Operations was given the highest importance rating of 10.7%, followed closely by Training and Education at 9.8%. These job duty areas were also rated as being the most frequently performed within the firefighter position.

Table 30. Relative Importance and Frequency of Job Duty Areas

Job Duty Areas		Importance	Frequency
Tactical Duties		**65.2%**	**46.3%**
1	Incident Response	6.0%	6.7%
2	Incident Assessment/ Size-Up	6.3%	5.6%
3	Rescue Operations	8.3%	5.6%
4	Emergency Medical Service Operations	10.7%	13.8%
5	Pumping and Driving Operations	5.9%	5.2%
6	Ladder Operations	4.8%	4.0%
7	Hoseline and Attack Operations	6.5%	4.8%
8	Hazardous Materials Operations (HAZ-MAT)	5.0%	4.0%
9	Salvage and Overhaul Operations	5.2%	4.4%
Non-Tactical Duties		**34.8%**	**53.7%**
10	External and Interagency Collaborations	4.8%	5.2%
11	Training and Education	9.8%	12.3%
12	Administrative Duties and Communications	5.2%	7.0%

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13	Station and Equipment Maintenance	8.0%	9.1%
14	Prevention and Inspections	5.5%	5.3%
15	Public Relations and Customer Service	7.8%	8.2%
	Total:	**100.0%**	**100.0%**

5.5 Linkage Matrix Results

The linkage matrices were calculated using the standard methodology practices of IOS. First the knowledge linkage results will be presented and then followed by the ability linkage results.

5.5.1 Knowledge Linkage Results

The knowledge linkage ratings produced a 76 x 15 knowledge to job duty area matrix which represents the 76 knowledge items that were each rated in their importance in performing tasks associated with the 15 job duty areas included in the study. Table 31 presents the average importance ratings across participants for each of the knowledge areas in performing tasks associated with the respective job duty areas. The higher the rating, the more so that a knowledge area is essential to performing tasks associated with the respective job duty area.

Next, the knowledge matrix presented in Table 31 was multiplied by the average relative importance of duty areas as indicated in Table 30. Therefore, the 76 knowledge areas for each job duty area were weighted according to how important that particular duty area was rated. Each knowledge area was then summed across the 15 duty areas to get the final "weighted" knowledge linkage vertex, which represents the relative importance of a knowledge area weighted across all job duty areas. Essentially then, these values represent the weighted importance of each knowledge area to the job globally. These values are reported in the "total" column in Table 32. These total values were then standardized with a mean of 2 and a standard deviation of 1. The standardization process helps define "weighted importance total" differences. When a score is extremely high, the particular knowledge area has been described by respondents as more important to the job globally as compared to the other knowledge areas. Extremely small values represent the opposite situation – less important to the job globally as other knowledge areas. Standardized scores can be seen in the last column in Table 32. For ease in interpreting this table, the knowledge areas are presented in descending order based on the standardized score.

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Table 31. Average Importance Ratings of Knowledge to Job Duties

Knowledge Area	DUTY AREAS														
	Incident Response	Incident Assessment/ Size-up	Rescue Operations	Emergency Medical Service Operations	Pumping and Driving Operations	Ladder Operations	Hoseline and Attack Operations	Hazardous Materials Operations (HAZ-MAT)	Salvage and Overhaul Operations	External and Interagency Collaborations	Training and Education	Administrative Duties and Communications	Station and Equipment Maintenance	Prevention and Inspections	Public Relations and Customer Service
1. Knowledge of motor vehicle rules and regulations.	2.62	2.48	2.46	2.51	2.80	2.50	2.43	2.21	2.29	2.27	2.56	2.32	2.37	2.34	2.24
2. Knowledge of common hand tools, such as wrenches, pliers, screw drivers, hammers and mauls, axes, prying tools, etc., e.g., their use, operation, limits and safety precautions/procedures.	2.68	2.54	2.78	2.22	2.63	2.65	2.60	2.35	2.51	2.25	2.65	2.10	2.52	2.24	2.18
3. Knowledge of basic science terms and concepts, e.g., force, gravity, pressure, vacuum, etc.	2.14	2.33	2.45	2.36	2.78	2.38	2.51	2.41	2.34	2.20	2.71	2.14	2.31	2.30	2.21
4. Knowledge of ratios and terms, expressing ratios and the practical use of ratios, e.g., pounds per square inch, gallons per minute, etc.	2.19	2.49	2.48	2.40	2.82	2.40	2.55	2.56	2.32	2.18	2.74	2.25	2.34	2.30	2.27
5. Knowledge of basic mechanical principles, e.g., leverage, gears, pulleys, screws, etc.	2.35	2.43	2.68	2.14	2.67	2.50	2.54	2.41	2.30	2.29	2.73	2.07	2.45	2.25	2.11
6. Knowledge of typical occupancy activity at a given time	2.51	2.66	2.64	2.18	2.52	2.49	2.59	2.56	2.24	2.33	2.63	2.19	2.13	2.54	2.19

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Knowledge Area	DUTY AREAS														
	Incident Response	Incident Assessment/ Size-up	Rescue Operations	Emergency Medical Service Operations	Pumping and Driving Operations	Ladder Operations	Hoseline and Attack Operations	Hazardous Materials Operations (HAZ-MAT)	Salvage and Overhaul Operations	External and Interagency Collaborations	Training and Education	Administrative Duties and Communications	Station and Equipment Maintenance	Prevention and Inspections	Public Relations and Customer Service
of day.															
7. Knowledge of the science behind fire propagation.	2.51	2.58	2.47	2.15	2.48	2.41	2.66	2.39	2.34	2.21	2.74	2.18	2.16	2.44	2.13
8. Knowledge of common heat energy sources: chemical, electrical, and mechanical energy.	2.74	2.63	2.44	2.12	2.44	2.45	2.75	2.43	2.41	2.25	2.78	2.07	2.13	2.40	2.18
9. Knowledge of heat transmission and the mechanisms by which heat transfer occurs: conduction, convection, and radiation.	2.75	2.66	2.51	2.29	2.42	2.37	2.68	2.46	2.36	2.21	2.80	2.05	2.13	2.37	2.13
10. Knowledge of common products of combustion and their toxic effects.	2.77	2.70	2.56	2.25	2.47	2.38	2.76	2.55	2.54	2.18	2.76	2.09	2.24	2.34	2.20
11. Knowledge of classification of fires: class A, B, C, D, and K fires.	2.85	2.67	2.48	2.12	2.58	2.38	2.74	2.57	2.28	2.16	2.76	2.05	2.23	2.57	2.24
12. Knowledge of Fire Control Theory: temperature reduction, fuel removal, oxygen exclusion, and chemical flame inhibition.	2.78	2.66	2.50	2.20	2.55	2.33	2.80	2.56	2.42	2.25	2.73	2.15	2.14	2.42	2.17
13. Knowledge of common materials found in building construction.	2.79	2.74	2.60	2.12	2.41	2.58	2.75	2.31	2.51	2.20	2.73	2.04	2.20	2.63	2.11

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Knowledge Area	DUTY AREAS														
	Incident Response	Incident Assessment/ Size-up	Rescue Operations	Emergency Medical Service Operations	Pumping and Driving Operations	Ladder Operations	Hoseline and Attack Operations	Hazardous Materials Operations (HAZ-MAT)	Salvage and Overhaul Operations	External and Interagency Collaborations	Training and Education	Administrative Duties and Communications	Station and Equipment Maintenance	Prevention and Inspections	Public Relations and Customer Service
14. Knowledge of the strengths and weaknesses associated with different types of building construction types.	2.82	2.80	2.71	2.14	2.52	2.66	2.76	2.33	2.65	2.18	2.75	2.07	2.27	2.56	2.09
15. Knowledge of types of extinguishers and their common uses.	2.61	2.50	2.46	2.14	2.52	2.42	2.76	2.35	2.40	2.13	2.72	2.04	2.34	2.47	2.27
16. Knowledge of types of knots, ropes, and webbing materials.	2.59	2.52	2.84	2.25	2.32	2.78	2.56	2.25	2.34	2.23	2.73	2.06	2.26	2.05	2.20
17. Knowledge of types of ladders.	2.64	2.59	2.73	2.18	2.52	2.82	2.54	2.21	2.31	2.24	2.77	2.06	2.48	2.20	2.14
18. Knowledge of search operations.	2.78	2.66	2.87	2.21	2.35	2.60	2.54	2.26	2.38	2.29	2.73	2.07	2.24	2.17	2.20
19. Knowledge of rescue operations.	2.79	2.68	2.91	2.24	2.33	2.65	2.51	2.25	2.27	2.29	2.72	2.07	2.21	2.11	2.23
20. Knowledge of extrication operations.	2.78	2.55	2.83	2.24	2.38	2.45	2.44	2.17	2.30	2.36	2.74	2.09	2.24	2.00	2.27
21. Knowledge of types of carries.	2.49	2.47	2.79	2.48	2.33	2.68	2.53	2.37	2.28	2.25	2.74	2.09	2.27	2.04	2.18
22. Knowledge of victim removal methods.	2.73	2.53	2.86	2.50	2.35	2.58	2.49	2.36	2.31	2.29	2.73	2.11	2.18	2.05	2.18
23. Knowledge of forcible entry methods.	2.71	2.58	2.78	2.15	2.39	2.72	2.60	2.34	2.30	2.12	2.69	2.09	2.22	2.14	2.11
24. Knowledge of ventilation methods.	2.77	2.57	2.61	2.18	2.43	2.67	2.56	2.29	2.60	2.21	2.73	2.11	2.11	2.22	2.23
25. Knowledge of types of hydrants and alternative water supplies.	2.58	2.65	2.35	2.19	2.87	2.32	2.63	2.31	2.28	2.15	2.66	2.09	2.10	2.39	2.05
26. Knowledge of methods of moving water in a system.	2.41	2.54	2.26	2.09	2.85	2.37	2.60	2.39	2.25	2.10	2.66	2.11	2.13	2.22	2.13

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Knowledge Area	DUTY AREAS														
	Incident Response	Incident Assessment/ Size-up	Rescue Operations	Emergency Medical Service Operations	Pumping and Driving Operations	Ladder Operations	Hoseline and Attack Operations	Hazardous Materials Operations (HAZ-MAT)	Salvage and Overhaul Operations	External and Interagency Collaborations	Training and Education	Administrative Duties and Communications	Station and Equipment Maintenance	Prevention and Inspections	Public Relations and Customer Service
27. Knowledge of static pressure, flow pressure, and residual pressure.	2.45	2.31	2.35	2.14	2.79	2.32	2.55	2.23	2.25	2.14	2.77	2.11	2.16	2.19	2.15
28. Knowledge of common hose rolls.	2.29	2.43	2.25	2.18	2.67	2.31	2.62	2.11	2.31	2.04	2.73	2.04	2.50	2.06	2.19
29. Knowledge of friction loss, elevation loss/gain, and water hammers.	2.47	2.31	2.23	2.21	2.84	2.29	2.57	2.26	2.24	2.05	2.73	2.13	2.09	2.22	2.11
30. Knowledge of size classifications of fire streams.	2.45	2.35	2.17	2.14	2.84	2.28	2.80	2.23	2.14	2.07	2.70	2.09	2.16	2.17	2.17
31. Knowledge of foam techniques.	2.47	2.44	2.19	2.26	2.84	2.34	2.78	2.57	2.27	2.07	2.70	2.15	2.27	2.10	2.13
32. Knowledge of direct attacks.	2.82	2.68	2.42	2.26	2.70	2.35	2.83	2.51	2.25	2.20	2.77	2.19	2.13	2.17	2.17
33. Knowledge of indirect attacks.	2.73	2.70	2.42	2.26	2.70	2.32	2.84	2.50	2.27	2.20	2.78	2.13	2.15	2.13	2.05
34. Knowledge of combination attacks.	2.77	2.64	2.37	2.25	2.66	2.39	2.83	2.47	2.24	2.20	2.73	2.15	2.19	2.20	2.15
35. Knowledge of salvage operations.	2.50	2.36	2.19	2.18	2.44	2.36	2.51	2.29	2.73	2.21	2.69	2.13	2.18	2.19	2.14
36. Knowledge of overhaul operations.	2.62	2.36	2.22	2.16	2.35	2.38	2.51	2.17	2.81	2.16	2.74	2.15	2.14	2.24	2.11
37. Knowledge of hidden fire indicators.	2.70	2.63	2.49	2.23	2.41	2.37	2.76	2.19	2.71	2.19	2.74	2.13	2.06	2.31	2.09
38. Knowledge of evidence protection methods.	2.44	2.44	2.34	2.19	2.42	2.25	2.70	2.26	2.58	2.18	2.73	2.29	2.06	2.38	2.18
39. Knowledge of procedures the public should use to report a fire or other emergency.	2.44	2.43	2.34	2.27	2.27	2.30	2.29	2.28	2.23	2.40	2.68	2.51	2.13	2.42	2.47
40. Knowledge of necessary skills for fire	2.57	2.75	2.64	2.34	2.58	2.47	2.59	2.46	2.30	2.46	2.68	2.44	2.07	2.41	2.41

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Knowledge Area	DUTY AREAS														
	Incident Response	Incident Assessment/ Size-up	Rescue Operations	Emergency Medical Service Operations	Pumping and Driving Operations	Ladder Operations	Hoseline and Attack Operations	Hazardous Materials Operations (HAZ-MAT)	Salvage and Overhaul Operations	External and Interagency Collaborations	Training and Education	Administrative Duties and Communications	Station and Equipment Maintenance	Prevention and Inspections	Public Relations and Customer Service
department communications.															
41. Knowledge of the types of information required for arrival and progress reports.	2.64	2.70	2.52	2.35	2.44	2.39	2.46	2.42	2.33	2.39	2.72	2.48	2.24	2.27	2.15
42. Knowledge of pre-incident surveys and inspections.	2.36	2.54	2.40	2.15	2.42	2.34	2.54	2.41	2.25	2.33	2.66	2.42	2.19	2.63	2.13
43. Knowledge of common fire hazards.	2.77	2.66	2.57	2.19	2.38	2.46	2.69	2.43	2.50	2.26	2.71	2.33	2.21	2.58	2.28
44. Knowledge of the steps in presenting fire and life safety information to the public.	2.36	2.43	2.35	2.26	2.31	2.31	2.51	2.29	2.20	2.40	2.69	2.43	2.27	2.64	2.57
45. Knowledge of the components of personal protective equipment.	2.89	2.65	2.65	2.57	2.40	2.54	2.78	2.59	2.45	2.21	2.69	2.29	2.28	2.25	2.27
46. Knowledge of the physiological aspects of stress.	2.51	2.44	2.50	2.56	2.25	2.49	2.51	2.38	2.29	2.23	2.63	2.31	2.21	2.15	2.23
47. Knowledge of cardiopulmonary resuscitation (CPR).	2.86	2.63	2.73	2.90	2.36	2.51	2.45	2.28	2.32	2.42	2.69	2.32	2.15	2.18	2.35
48. Knowledge of scene safety considerations such as hazardous materials incidents and rescue operations.	2.78	2.70	2.66	2.57	2.31	2.60	2.54	2.72	2.39	2.27	2.71	2.30	2.10	2.26	2.23
49. Knowledge of the types and states of shock of victims and/or other fire personnel	2.61	2.43	2.57	2.80	2.20	2.29	2.32	2.29	2.29	2.35	2.65	2.37	2.25	2.14	2.18

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Knowledge Area	DUTY AREAS														
	Incident Response	Incident Assessment/ Size-up	Rescue Operations	Emergency Medical Service Operations	Pumping and Driving Operations	Ladder Operations	Hoseline and Attack Operations	Hazardous Materials Operations (HAZ-MAT)	Salvage and Overhaul Operations	External and Interagency Collaborations	Training and Education	Administrative Duties and Communications	Station and Equipment Maintenance	Prevention and Inspections	Public Relations and Customer Service
50. Knowledge of methods to managing shock of victims and/or other fire personnel.	2.68	2.47	2.54	2.74	2.21	2.21	2.39	2.40	2.31	2.30	2.62	2.35	2.20	2.08	2.13
51. Knowledge of Body Substance Isolation (BSI) or infection control precautions.	2.85	2.58	2.58	2.83	2.34	2.31	2.37	2.60	2.38	2.43	2.72	2.33	2.17	2.25	2.22
52. Knowledge of methods to prevent and/or reduce the effects of heat exposure while wearing protective clothing.	2.70	2.53	2.64	2.52	2.33	2.52	2.55	2.70	2.44	2.25	2.68	2.29	2.13	2.15	2.18
53. Knowledge of the main routes through which hazardous materials can enter the body.	2.70	2.65	2.52	2.65	2.31	2.33	2.35	2.75	2.38	2.34	2.74	2.28	2.23	2.15	2.17
54. Knowledge of the clues which indicate the presence of hazardous materials.	2.75	2.74	2.62	2.52	2.37	2.31	2.42	2.85	2.33	2.24	2.72	2.29	2.22	2.23	2.15
55. Knowledge of chemical attack indicators.	2.59	2.75	2.47	2.46	2.43	2.37	2.43	2.86	2.38	2.31	2.72	2.21	2.16	2.23	2.05
56. Knowledge of incident priorities at all HAZMAT and terrorist incidents.	2.61	2.68	2.48	2.38	2.40	2.32	2.33	2.86	2.24	2.28	2.71	2.36	2.16	2.09	2.16
57. Knowledge of types of decontamination.	2.53	2.37	2.38	2.51	2.33	2.34	2.25	2.80	2.29	2.20	2.72	2.29	2.13	2.07	2.09
58. Knowledge of hazard-control zones.	2.60	2.58	2.49	2.39	2.45	2.40	2.38	2.86	2.24	2.29	2.74	2.25	2.08	2.18	2.16

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Knowledge Area	DUTY AREAS														
	Incident Response	Incident Assessment/ Size-up	Rescue Operations	Emergency Medical Service Operations	Pumping and Driving Operations	Ladder Operations	Hoseline and Attack Operations	Hazardous Materials Operations (HAZ-MAT)	Salvage and Overhaul Operations	External and Interagency Collaborations	Training and Education	Administrative Duties and Communications	Station and Equipment Maintenance	Prevention and Inspections	Public Relations and Customer Service
59. Knowledge of defensive confinement and spill control actions.	2.45	2.61	2.31	2.06	2.29	2.27	2.19	2.84	2.27	2.27	2.71	2.25	2.20	2.15	2.16
60. Knowledge of factors to address during large-scale evacuations.	2.48	2.66	2.44	2.22	2.30	2.27	2.19	2.78	2.16	2.38	2.62	2.36	2.08	2.15	2.26
61. Knowledge of the organization of the fire department .	2.61	2.41	2.29	2.25	2.28	2.36	2.31	2.49	2.20	2.49	2.70	2.63	2.19	2.27	2.39
62. Knowledge of the role of the Fire Fighter I in the organization.	2.59	2.50	2.37	2.17	2.21	2.31	2.34	2.36	2.09	2.30	2.72	2.52	2.19	2.25	2.29
63. Knowledge of the mission of fire service.	2.56	2.40	2.34	2.15	2.35	2.34	2.34	2.28	2.28	2.37	2.70	2.58	2.22	2.37	2.60
64. Knowledge of the fire department's standard operating procedures (SOPs) and rules and regulations.	2.75	2.64	2.68	2.51	2.72	2.77	2.67	2.63	2.53	2.73	2.75	2.76	2.50	2.61	2.62
65. Knowledge of the role of other agencies as they relate to the fire department.	2.45	2.49	2.47	2.26	2.37	2.39	2.27	2.50	2.25	2.68	2.57	2.69	2.27	2.52	2.46
66. Knowledge of the critical aspects of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program.	2.40	2.37	2.28	2.30	2.24	2.37	2.36	2.38	2.28	2.47	2.73	2.74	2.16	2.50	2.36
67. Knowledge of procedures for reporting an emergency;	2.54	2.46	2.64	2.34	2.46	2.36	2.31	2.48	2.32	2.57	2.65	2.69	2.14	2.26	2.42

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Knowledge Area	DUTY AREAS														
	Incident Response	Incident Assessment/ Size-up	Rescue Operations	Emergency Medical Service Operations	Pumping and Driving Operations	Ladder Operations	Hoseline and Attack Operations	Hazardous Materials Operations (HAZ-MAT)	Salvage and Overhaul Operations	External and Interagency Collaborations	Training and Education	Administrative Duties and Communications	Station and Equipment Maintenance	Prevention and Inspections	Public Relations and Customer Service
departmental SOPs for taking and receiving alarms, radio codes, or procedures; and information needs of dispatch center.															
68. Knowledge of fire department procedures for answering nonemergency telephone calls.	2.32	2.46	2.29	2.14	2.23	2.23	2.26	2.26	2.27	2.45	2.56	2.67	2.16	2.29	2.52
69. Knowledge of departmental radio procedures and etiquette for routine traffic, emergency traffic, and emergency evacuation signals.	2.56	2.58	2.62	2.46	2.60	2.58	2.58	2.53	2.38	2.56	2.69	2.62	2.07	2.25	2.42
70. Knowledge of personnel accountability systems, emergency communication procedures, and emergency evacuation methods.	2.80	2.66	2.74	2.37	2.57	2.62	2.75	2.71	2.45	2.51	2.75	2.66	2.05	2.21	2.30
71. Knowledge of basic construction of typical doors, windows, and walls within the department's community or service area.	2.68	2.71	2.62	2.21	2.36	2.69	2.62	2.27	2.44	2.36	2.65	2.36	2.07	2.50	2.17
72. Knowledge of personnel accountability systems	2.71	2.63	2.70	2.31	2.59	2.56	2.65	2.64	2.49	2.47	2.73	2.63	1.94	2.12	2.24

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Knowledge Area	DUTY AREAS														
	Incident Response	Incident Assessment/ Size-up	Rescue Operations	Emergency Medical Service Operations	Pumping and Driving Operations	Ladder Operations	Hoseline and Attack Operations	Hazardous Materials Operations (HAZ-MAT)	Salvage and Overhaul Operations	External and Interagency Collaborations	Training and Education	Administrative Duties and Communications	Station and Equipment Maintenance	Prevention and Inspections	Public Relations and Customer Service
and communication procedures.															
73. Principles of fire streams as they relate to fighting automobile fires.	2.63	2.53	2.43	2.25	2.77	2.43	2.76	2.44	2.25	2.22	2.70	2.34	2.08	2.10	2.07
74. Knowledge of SOPs for alarm assignments and fire department radio communication procedures.	2.54	2.76	2.51	2.18	2.64	2.51	2.49	2.53	2.23	2.51	2.72	2.68	2.14	2.34	2.34
75. Knowledge of the methods to assess the origin and cause of fires.	2.35	2.39	2.26	2.17	2.28	2.38	2.37	2.34	2.42	2.19	2.66	2.24	2.15	2.25	2.23
76. Knowledge of the characteristics of pressurized flammable gases.	2.61	2.59	2.29	2.09	2.42	2.46	2.69	2.72	2.32	2.26	2.68	2.25	2.22	2.28	2.19

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Table 32. Weighted Knowledge Linkage Matrix

Knowledge	Incident Response	Incident Assessment/Size-up	Rescue Operations	Emergency Medical Service Operations	Pumping and Driving Operations	Ladder Operations	Hoseline and Attack Operations	Hazardous Materials Operations (HAZ-MAT)	Salvage and Overhaul Operations	External and Interagency Collaborations	Training and Education	Administrative Duties and Communications	Station and Equipment Maintenance	Prevention and Inspections	Public Relations and Customer Service	Total	Z-Score	Standardized Score
64. Knowledge of the fire department's standard operating procedures (SOPs) and rules and regulations.	0.17	0.17	0.22	0.27	0.16	0.13	0.17	0.13	0.13	0.13	0.27	0.14	0.20	0.14	0.20	2.65	4.17	6.17
70. Knowledge of personnel accountability systems, emergency communication procedures, and emergency evacuation methods.	0.17	0.17	0.23	0.25	0.15	0.13	0.18	0.14	0.13	0.12	0.27	0.14	0.16	0.12	0.18	2.54	2.09	4.09
45. Knowledge of the components of personal protective equipment.	0.17	0.17	0.22	0.28	0.14	0.12	0.18	0.13	0.13	0.11	0.26	0.12	0.18	0.12	0.18	2.52	1.73	3.73
47. Knowledge of cardiopulmonary resuscitation (CPR).	0.17	0.17	0.23	0.31	0.14	0.12	0.16	0.11	0.12	0.12	0.26	0.12	0.17	0.12	0.18	2.51	1.64	3.64
69. Knowledge of departmental radio procedures and etiquette for routine traffic, emergency traffic, and emergency evacuation signals.	0.15	0.16	0.22	0.26	0.15	0.13	0.17	0.13	0.12	0.12	0.26	0.14	0.17	0.12	0.19	2.50	1.45	3.45
51. Knowledge of Body Substance Isolation (BSI) or infection control precautions.	0.17	0.16	0.21	0.30	0.14	0.11	0.15	0.13	0.12	0.12	0.27	0.12	0.17	0.12	0.17	2.49	1.26	3.26
48. Knowledge of scene safety considerations such as hazardous materials incidents and rescue operations.	0.17	0.17	0.22	0.28	0.14	0.13	0.17	0.14	0.13	0.11	0.27	0.12	0.17	0.12	0.17	2.49	1.21	3.21
72. Knowledge of personnel accountability systems and communication	0.16	0.17	0.22	0.25	0.15	0.12	0.17	0.13	0.13	0.12	0.27	0.14	0.16	0.12	0.17	2.49	1.19	3.19

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Knowledge	Incident Response	Incident Assessment/Size-up	Rescue Operations	Emergency Medical Service Operations	Pumping and Driving Operations	Ladder Operations	Hoseline and Attack Operations	Hazardous Materials Operations (HAZ-MAT)	Salvage and Overhaul Operations	External and Interagency Collaborations	Training and Education	Administrative Duties and Communications	Station and Equipment Maintenance	Prevention and Inspections	Public Relations and Customer Service	Total	Z-Score	Standardized Score
procedures.																		
14. Knowledge of the strengths and weaknesses associated with different types of building construction types.	0.17	0.18	0.23	0.23	0.15	0.13	0.18	0.12	0.14	0.10	0.27	0.11	0.18	0.14	0.16	2.49	1.16	3.16
40. Knowledge of necessary skills for fire department communications.	0.16	0.17	0.22	0.25	0.15	0.12	0.17	0.12	0.12	0.12	0.26	0.13	0.17	0.13	0.19	2.48	1.08	3.08
2. Knowledge of common hand tools, such as wrenches, pliers, screw drivers, hammers and mauls, axes, prying tools, etc., e.g., their use, operation, limits and safety precautions/procedures.	0.16	0.16	0.23	0.24	0.16	0.13	0.17	0.12	0.13	0.11	0.26	0.11	0.20	0.12	0.17	2.47	0.87	2.87
43. Knowledge of common fire hazards.	0.17	0.17	0.21	0.24	0.14	0.12	0.18	0.12	0.13	0.11	0.27	0.12	0.18	0.14	0.18	2.47	0.82	2.82
54. Knowledge of the clues which indicate the presence of hazardous materials.	0.17	0.17	0.22	0.27	0.14	0.11	0.16	0.14	0.12	0.11	0.27	0.12	0.18	0.12	0.17	2.47	0.81	2.81
74. Knowledge of SOPs for alarm assignments and fire department radio communication procedures.	0.15	0.17	0.21	0.23	0.16	0.12	0.16	0.13	0.12	0.12	0.27	0.14	0.17	0.13	0.18	2.46	0.80	2.80
10. Knowledge of common products of combustion and their toxic effects.	0.17	0.17	0.21	0.24	0.15	0.12	0.18	0.13	0.13	0.10	0.27	0.11	0.18	0.13	0.17	2.46	0.71	2.71
53. Knowledge of the main routes through which hazardous materials can enter the body.	0.16	0.17	0.21	0.28	0.14	0.11	0.15	0.14	0.12	0.11	0.27	0.12	0.18	0.12	0.17	2.46	0.66	2.66
52. Knowledge of methods to prevent and/or reduce the	0.16	0.16	0.22	0.27	0.14	0.12	0.17	0.14	0.13	0.11	0.26	0.12	0.17	0.12	0.17	2.45	0.58	2.58

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Knowledge	Incident Response	Incident Assessment/Size-up	Rescue Operations	Emergency Medical Service Operations	Pumping and Driving Operations	Ladder Operations	Hoseline and Attack Operations	Hazardous Materials Operations (HAZ-MAT)	Salvage and Overhaul Operations	External and Interagency Collaborations	Training and Education	Administrative Duties and Communications	Station and Equipment Maintenance	Prevention and Inspections	Public Relations and Customer Service	Total	Z-Score	Standardized Score
effects of heat exposure while wearing protective clothing.																		
11. Knowledge of classification of fires: class A, B, C, D, and K fires.	0.17	0.17	0.21	0.23	0.15	0.12	0.18	0.13	0.12	0.10	0.27	0.11	0.18	0.14	0.17	2.45	0.48	2.48
13. Knowledge of common materials found in building construction.	0.17	0.17	0.22	0.23	0.14	0.13	0.18	0.12	0.13	0.11	0.27	0.11	0.18	0.14	0.16	2.45	0.47	2.47
67. Knowledge of procedures for reporting an emergency; departmental SOPs for taking and receiving alarms, radio codes, or procedures; and information needs of dispatch center.	0.15	0.15	0.22	0.25	0.15	0.11	0.15	0.12	0.12	0.12	0.26	0.14	0.17	0.12	0.19	2.44	0.45	2.45
12. Knowledge of Fire Control Theory: temperature reduction, fuel removal, oxygen exclusion, and chemical flame inhibition.	0.17	0.17	0.21	0.24	0.15	0.11	0.18	0.13	0.13	0.11	0.27	0.11	0.17	0.13	0.17	2.44	0.43	2.43
22. Knowledge of victim removal methods.	0.16	0.16	0.24	0.27	0.14	0.13	0.16	0.12	0.12	0.11	0.27	0.11	0.18	0.11	0.17	2.44	0.41	2.41
17. Knowledge of types of ladders.	0.16	0.16	0.23	0.23	0.15	0.14	0.17	0.11	0.12	0.11	0.27	0.11	0.20	0.12	0.17	2.44	0.39	2.39
71. Knowledge of basic construction of typical doors, windows, and walls within the department's community or service area.	0.16	0.17	0.22	0.24	0.14	0.13	0.17	0.11	0.13	0.11	0.26	0.12	0.17	0.14	0.17	2.44	0.37	2.37
1. Knowledge of motor vehicle rules and regulations.	0.16	0.16	0.20	0.27	0.17	0.12	0.16	0.11	0.12	0.11	0.25	0.12	0.19	0.13	0.17	2.44	0.36	2.36
41. Knowledge of the types of information required for	0.16	0.17	0.21	0.25	0.14	0.12	0.16	0.12	0.12	0.11	0.27	0.13	0.18	0.13	0.17	2.44	0.35	2.35

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Knowledge	Incident Response	Incident Assessment/Size-up	Rescue Operations	Emergency Medical Service Operations	Pumping and Driving Operations	Ladder Operations	Hoseline and Attack Operations	Hazardous Materials Operations (HAZ-MAT)	Salvage and Overhaul Operations	External and Interagency Collaborations	Training and Education	Administrative Duties and Communications	Station and Equipment Maintenance	Prevention and Inspections	Public Relations and Customer Service	Total	Z-Score	Standardized Score
arrival and progress reports.																		
18. Knowledge of search operations.	0.17	0.17	0.24	0.24	0.14	0.13	0.17	0.11	0.12	0.11	0.27	0.11	0.18	0.12	0.17	2.44	0.32	2.32
32. Knowledge of direct attacks.	0.17	0.17	0.20	0.24	0.16	0.11	0.18	0.13	0.12	0.11	0.27	0.11	0.17	0.12	0.17	2.44	0.31	2.31
4. Knowledge of ratios and terms, expressing ratios and the practical use of ratios, e.g., pounds per square inch, gallons per minute, etc.	0.13	0.16	0.21	0.26	0.17	0.12	0.17	0.13	0.12	0.10	0.27	0.12	0.19	0.13	0.18	2.44	0.28	2.28
19. Knowledge of rescue operations.	0.17	0.17	0.24	0.24	0.14	0.13	0.16	0.11	0.12	0.11	0.27	0.11	0.18	0.12	0.17	2.43	0.26	2.26
65. Knowledge of the role of other agencies as they relate to the fire department.	0.15	0.16	0.21	0.24	0.14	0.12	0.15	0.13	0.12	0.13	0.25	0.14	0.18	0.14	0.19	2.43	0.26	2.26
55. Knowledge of chemical attack indicators.	0.16	0.17	0.21	0.26	0.14	0.11	0.16	0.14	0.12	0.11	0.27	0.11	0.17	0.12	0.16	2.43	0.26	2.26
21. Knowledge of types of carries.	0.15	0.16	0.23	0.27	0.14	0.13	0.17	0.12	0.12	0.11	0.27	0.11	0.18	0.11	0.17	2.43	0.12	2.12
9. Knowledge of heat transmission and the mechanisms by which heat transfer occurs: conduction, convection, and radiation.	0.17	0.17	0.21	0.25	0.14	0.11	0.17	0.12	0.12	0.11	0.28	0.11	0.17	0.13	0.17	2.42	0.08	2.08
6. Knowledge of typical occupancy activity at a given time of day.	0.15	0.17	0.22	0.23	0.15	0.12	0.17	0.13	0.12	0.11	0.26	0.11	0.17	0.14	0.17	2.42	0.07	2.07
34. Knowledge of combination attacks.	0.17	0.17	0.20	0.24	0.16	0.12	0.18	0.12	0.12	0.11	0.27	0.11	0.18	0.12	0.17	2.42	0.04	2.04
24. Knowledge of ventilation methods.	0.17	0.16	0.22	0.23	0.14	0.13	0.17	0.11	0.14	0.11	0.27	0.11	0.17	0.12	0.17	2.42	0.03	2.03
33. Knowledge of indirect attacks.	0.16	0.17	0.20	0.24	0.16	0.11	0.19	0.13	0.12	0.11	0.27	0.11	0.17	0.12	0.16	2.42	0.01	2.01

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Knowledge	Incident Response	Incident Assessment/Size-up	Rescue Operations	Emergency Medical Service Operations	Pumping and Driving Operations	Ladder Operations	Hoseline and Attack Operations	Hazardous Materials Operations (HAZ-MAT)	Salvage and Overhaul Operations	External and Interagency Collaborations	Training and Education	Administrative Duties and Communications	Station and Equipment Maintenance	Prevention and Inspections	Public Relations and Customer Service	Total	Z-Score	Standardized Score
49. Knowledge of the types and states of shock of victims and/or other fire personnel	0.16	0.15	0.21	0.30	0.13	0.11	0.15	0.11	0.12	0.11	0.26	0.12	0.18	0.12	0.17	2.42	-0.04	1.96
15. Knowledge of types of extinguishers and their common uses.	0.16	0.16	0.20	0.23	0.15	0.12	0.18	0.12	0.13	0.10	0.27	0.11	0.19	0.14	0.18	2.42	-0.06	1.94
16. Knowledge of types of knots, ropes, and webbing materials.	0.16	0.16	0.24	0.24	0.14	0.13	0.17	0.11	0.12	0.11	0.27	0.11	0.18	0.11	0.17	2.42	-0.06	1.94
8. Knowledge of common heat energy sources: chemical, electrical, and mechanical energy.	0.17	0.17	0.20	0.23	0.14	0.12	0.18	0.12	0.13	0.11	0.27	0.11	0.17	0.13	0.17	2.42	-0.09	1.91
58. Knowledge of hazard-control zones.	0.16	0.16	0.21	0.26	0.14	0.12	0.16	0.14	0.12	0.11	0.27	0.12	0.17	0.12	0.17	2.41	-0.13	1.87
56. Knowledge of incident priorities at all HAZMAT and terrorist incidents.	0.16	0.17	0.21	0.26	0.14	0.11	0.15	0.14	0.12	0.11	0.27	0.12	0.17	0.12	0.17	2.41	-0.15	1.85
20. Knowledge of extrication operations.	0.17	0.16	0.24	0.24	0.14	0.12	0.16	0.11	0.12	0.11	0.27	0.11	0.18	0.11	0.18	2.41	-0.15	1.85
44. Knowledge of the steps in presenting fire and life safety information to the public.	0.14	0.15	0.20	0.24	0.14	0.11	0.16	0.11	0.12	0.12	0.26	0.13	0.18	0.15	0.20	2.41	-0.17	1.83
50. Knowledge of methods to managing shock of victims and/or other fire personnel.	0.16	0.16	0.21	0.29	0.13	0.11	0.16	0.12	0.12	0.11	0.26	0.12	0.18	0.11	0.17	2.41	-0.25	1.75
37. Knowledge of hidden fire indicators.	0.16	0.17	0.21	0.24	0.14	0.11	0.18	0.11	0.14	0.11	0.27	0.11	0.17	0.13	0.16	2.41	-0.25	1.75
5. Knowledge of basic mechanical principles, e.g., leverage, gears, pulleys, screws, etc.	0.14	0.15	0.22	0.23	0.16	0.12	0.17	0.12	0.12	0.11	0.27	0.11	0.20	0.12	0.16	2.41	-0.26	1.74
23. Knowledge of forcible	0.16	0.16	0.23	0.23	0.14	0.13	0.17	0.12	0.12	0.10	0.26	0.11	0.18	0.12	0.16	2.41	-	1.73

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Knowledge	Incident Response	Incident Assessment/Size-up	Rescue Operations	Emergency Medical Service Operations	Pumping and Driving Operations	Ladder Operations	Hoseline and Attack Operations	Hazardous Materials Operations (HAZ-MAT)	Salvage and Overhaul Operations	External and Interagency Collaborations	Training and Education	Administrative Duties and Communications	Station and Equipment Maintenance	Prevention and Inspections	Public Relations and Customer Service	Total	Z-Score	Standardized Score
entry methods.																	0.27	
73. Principles of fire streams as they relate to fighting automobile fires.	0.16	0.16	0.20	0.24	0.16	0.12	0.18	0.12	0.12	0.11	0.27	0.12	0.17	0.12	0.16	2.40	-0.32	1.68
46. Knowledge of the physiological aspects of stress.	0.15	0.15	0.21	0.27	0.13	0.12	0.16	0.12	0.12	0.11	0.26	0.12	0.18	0.12	0.17	2.40	-0.34	1.66
66. Knowledge of the critical aspects of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program.	0.14	0.15	0.19	0.25	0.13	0.11	0.15	0.12	0.12	0.12	0.27	0.14	0.17	0.14	0.18	2.40	-0.43	1.57
76. Knowledge of the characteristics of pressurized flammable gases.	0.16	0.16	0.19	0.22	0.14	0.12	0.18	0.14	0.12	0.11	0.26	0.12	0.18	0.13	0.17	2.40	-0.44	1.56
63. Knowledge of the mission of fire service.	0.15	0.15	0.19	0.23	0.14	0.11	0.15	0.11	0.12	0.11	0.27	0.13	0.18	0.13	0.20	2.40	-0.44	1.56
7. Knowledge of the science behind fire propagation.	0.15	0.16	0.21	0.23	0.15	0.12	0.17	0.12	0.12	0.11	0.27	0.11	0.17	0.13	0.17	2.39	-0.48	1.52
61. Knowledge of the organization of the fire department .	0.16	0.15	0.19	0.24	0.13	0.11	0.15	0.12	0.12	0.12	0.27	0.14	0.18	0.13	0.19	2.39	-0.52	1.48
3. Knowledge of basic science terms and concepts, e.g., force, gravity, pressure, vacuum, etc.	0.13	0.15	0.20	0.25	0.16	0.12	0.16	0.12	0.12	0.11	0.27	0.11	0.19	0.13	0.17	2.39	-0.56	1.44
42. Knowledge of pre-incident surveys and inspections.	0.14	0.16	0.20	0.23	0.14	0.11	0.17	0.12	0.12	0.11	0.26	0.13	0.18	0.14	0.17	2.38	-0.71	1.29
31. Knowledge of foam techniques.	0.15	0.15	0.18	0.24	0.17	0.11	0.18	0.13	0.12	0.10	0.27	0.11	0.18	0.12	0.17	2.38	-0.73	1.27
25. Knowledge of types of hydrants and alternative water	0.16	0.17	0.20	0.24	0.17	0.11	0.17	0.12	0.12	0.10	0.26	0.11	0.17	0.13	0.16	2.38	-0.78	1.22

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Knowledge	Incident Response	Incident Assessment/Size-up	Rescue Operations	Emergency Medical Service Operations	Pumping and Driving Operations	Ladder Operations	Hoseline and Attack Operations	Hazardous Materials Operations (HAZ-MAT)	Salvage and Overhaul Operations	External and Interagency Collaborations	Training and Education	Administrative Duties and Communications	Station and Equipment Maintenance	Prevention and Inspections	Public Relations and Customer Service	Total	Z-Score	Standardized Score
supplies.																		
39. Knowledge of procedures the public should use to report a fire or other emergency.	0.15	0.15	0.19	0.24	0.13	0.11	0.15	0.11	0.12	0.12	0.26	0.13	0.17	0.13	0.19	2.37	-0.87	1.13
57. Knowledge of types of decontamination.	0.15	0.15	0.20	0.27	0.14	0.11	0.15	0.14	0.12	0.11	0.27	0.12	0.17	0.11	0.16	2.37	-0.92	1.08
38. Knowledge of evidence protection methods.	0.15	0.15	0.19	0.24	0.14	0.11	0.18	0.11	0.14	0.10	0.27	0.12	0.17	0.13	0.17	2.37	-0.95	1.05
60. Knowledge of factors to address during large-scale evacuations.	0.15	0.17	0.20	0.24	0.14	0.11	0.14	0.14	0.11	0.11	0.26	0.12	0.17	0.12	0.18	2.36	-1.13	0.87
62. Knowledge of the role of the Fire Fighter I in the organization.	0.16	0.16	0.20	0.23	0.13	0.11	0.15	0.12	0.11	0.11	0.27	0.13	0.18	0.12	0.18	2.35	-1.17	0.83
36. Knowledge of overhaul operations.	0.16	0.15	0.18	0.23	0.14	0.12	0.16	0.11	0.15	0.10	0.27	0.11	0.17	0.12	0.16	2.34	-1.38	0.62
26. Knowledge of methods of moving water in a system.	0.15	0.16	0.19	0.22	0.17	0.11	0.17	0.12	0.12	0.10	0.26	0.11	0.17	0.12	0.17	2.34	-1.42	0.58
35. Knowledge of salvage operations.	0.15	0.15	0.18	0.23	0.14	0.11	0.16	0.11	0.14	0.11	0.26	0.11	0.18	0.12	0.17	2.34	-1.42	0.58
68. Knowledge of fire department procedures for answering nonemergency telephone calls.	0.14	0.15	0.19	0.23	0.13	0.11	0.15	0.11	0.12	0.12	0.25	0.14	0.17	0.13	0.20	2.34	-1.44	0.56
27. Knowledge of static pressure, flow pressure, and residual pressure.	0.15	0.15	0.20	0.23	0.17	0.11	0.17	0.11	0.12	0.10	0.27	0.11	0.17	0.12	0.17	2.34	-1.44	0.56
28. Knowledge of common hose rolls.	0.14	0.15	0.19	0.23	0.16	0.11	0.17	0.11	0.12	0.10	0.27	0.11	0.20	0.11	0.17	2.34	-1.46	0.54
59. Knowledge of defensive confinement and spill control actions.	0.15	0.16	0.19	0.22	0.14	0.11	0.14	0.14	0.12	0.11	0.27	0.12	0.18	0.12	0.17	2.33	-1.58	0.42

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Knowledge	Incident Response	Incident Assessment/Size-up	Rescue Operations	Emergency Medical Service Operations	Pumping and Driving Operations	Ladder Operations	Hoseline and Attack Operations	Hazardous Materials Operations (HAZ-MAT)	Salvage and Overhaul Operations	External and Interagency Collaborations	Training and Education	Administrative Duties and Communications	Station and Equipment Maintenance	Prevention and Inspections	Public Relations and Customer Service	Total	Z-Score	Standardized Score
30. Knowledge of size classifications of fire streams.	0.15	0.15	0.18	0.23	0.17	0.11	0.18	0.11	0.11	0.10	0.27	0.11	0.17	0.12	0.17	2.33	-1.66	0.34
29. Knowledge of friction loss, elevation loss/gain, and water hammers.	0.15	0.15	0.19	0.24	0.17	0.11	0.17	0.11	0.12	0.10	0.27	0.11	0.17	0.12	0.16	2.33	-1.66	0.34
75. Knowledge of the methods to assess the origin and cause of fires.	0.14	0.15	0.19	0.23	0.13	0.12	0.15	0.12	0.13	0.11	0.26	0.12	0.17	0.12	0.17	2.32	-1.85	0.15
TOTALS	**11.95**	**12.22**	**15.88**	**18.78**	**11.14**	**8.98**	**12.63**	**9.33**	**9.37**	**8.34**	**20.23**	**8.94**	**13.42**	**9.53**	**13.18**	**183.92**	**0.00**	**152.00**

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5.5.2 Ability Linkage Results

The ability linkage ratings produced a 69 x 15 knowledge to job duty area matrix which represents the 69 abilities that were each rated in their importance in performing tasks associated with the 15 job duty areas included in the study. Table 33 presents the average importance ratings across participants for each of the abilities in performing tasks associated with the respective job duty areas. The higher the rating, the more so that the ability is essential to performing tasks associated with the respective job duty area.

Next, the ability matrix presented in Table 33 was multiplied by the average relative importance of duty areas as indicated in Table 30. Therefore, the 69 abilities for each job duty area were weighted according to how important that particular duty area was rated. Each ability was then summed across the 15 duty areas to get the final "weighted" knowledge linkage vertex, which represents the relative importance of the ability area weighted across all job duty areas. Essentially then, these values represent the weighted importance of each ability to the job globally. These values are reported in the "total" column in Table 34. These total values were then standardized with a mean of 2 and a standard deviation of 1. The standardization process helps define "weighted importance total" differences. When a score is extremely high, the particular ability has been described by respondents as more important to the job globally as compared to the other abilities. Extremely small values represent the opposite situation – less important to the job globally as other abilities. Standardized scores can be seen in the last column in Table 34. For ease in interpreting this table, the abilities are presented in descending order based on the standardized score.

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Table 33. Average Importance Ratings of Ability to Job Duties

SAO Area	DUTY AREAS														
	Incident Response	Incident Assessment/Size-up	Rescue Operations	Emergency Medical Service Operations	Pumping and Driving Operations	Ladder Operations	Hoseline and Attack Operations	Hazardous Materials Operations (HAZ-MAT)	Salvage and Overhaul Operations	External and Interagency Collaborations	Training and Education	Administrative Duties and Communications	Station and Equipment Maintenance	Prevention and Inspections	Public Relations and Customer Service
Problem Analysis	2.53	2.81	2.87	2.79	2.80	2.67	2.70	2.83	2.62	2.57	2.67	2.67	2.38	2.62	2.56
Problem-Solving	2.44	2.68	2.85	2.81	2.83	2.72	2.66	2.83	2.59	2.61	2.65	2.60	2.35	2.69	2.58
Decision-Making	2.60	2.83	2.83	2.87	2.83	2.82	2.85	2.85	2.48	2.70	2.73	2.66	2.34	2.57	2.53
Planning and Organization	2.27	2.42	2.63	2.50	2.76	2.69	2.66	2.66	2.42	2.66	2.70	2.70	2.44	2.83	2.72
Interpersonal Skill	2.43	2.33	2.67	2.78	2.59	2.58	2.62	2.64	2.44	2.78	2.78	2.74	2.36	2.61	2.67
Oral Communication	2.48	2.66	2.83	2.85	2.73	2.69	2.74	2.77	2.47	2.80	2.78	2.76	2.50	2.74	2.83
Self-Motivation	2.50	2.54	2.71	2.65	2.80	2.69	2.67	2.61	2.40	2.50	2.80	2.67	2.59	2.59	2.72
Composure	2.50	2.75	2.83	2.85	2.71	2.82	2.80	2.77	2.54	2.76	2.67	2.63	2.30	2.61	2.76
Conflict Resolution	2.25	2.52	2.64	2.66	2.67	2.56	2.53	2.63	2.31	2.59	2.61	2.64	2.40	2.70	2.64
Critical Thinking	2.50	2.77	2.77	2.68	2.82	2.86	2.83	2.83	2.43	2.72	2.73	2.77	2.38	2.60	2.61
Leadership.	2.45	2.49	2.67	2.51	2.39	2.58	2.57	2.56	2.29	2.67	2.62	2.65	2.24	2.43	2.61
Monitoring	2.21	2.43	2.61	2.58	2.82	2.52	2.65	2.65	2.46	2.57	2.57	2.65	2.30	2.54	2.59
Operation and Control	2.46	2.59	2.63	2.77	2.87	2.71	2.83	2.78	2.52	2.70	2.51	2.70	2.65	2.56	2.69
Instructing	2.28	2.36	2.46	2.52	2.43	2.60	2.50	2.68	2.33	2.59	2.82	2.66	2.28	2.58	2.65
Judgment and Decision Making	2.43	2.68	2.74	2.76	2.73	2.79	2.78	2.75	2.62	2.67	2.70	2.64	2.52	2.69	2.69
Social Perceptiveness	2.16	2.31	2.28	2.61	2.24	2.24	2.24	2.40	2.18	2.57	2.52	2.66	2.26	2.78	2.85
Negotiation	1.95	2.08	2.35	2.63	2.13	2.21	2.28	2.33	2.05	2.67	2.44	2.48	2.24	2.59	2.64
Public Relations Skill	2.38	2.42	2.33	2.59	2.19	2.07	2.05	2.39	2.35	2.69	2.51	2.59	2.23	2.76	2.87
Persuasion	1.98	2.02	2.34	2.51	1.95	1.98	2.10	2.21	2.20	2.51	2.42	2.56	2.19	2.50	2.62

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SAO Area	DUTY AREAS														
	Incident Response	Incident Assessment/Size-up	Rescue Operations	Emergency Medical Service Operations	Pumping and Driving Operations	Ladder Operations	Hoseline and Attack Operations	Hazardous Materials Operations (HAZ-MAT)	Salvage and Overhaul Operations	External and Interagency Collaborations	Training and Education	Administrative Duties and Communications	Station and Equipment Maintenance	Prevention and Inspections	Public Relations and Customer Service
Basic Arithmetic	2.18	2.26	2.31	2.59	2.78	2.29	2.30	2.59	2.00	2.30	2.58	2.56	2.16	2.35	2.10
Deductive Reasoning	2.27	2.43	2.48	2.55	2.65	2.50	2.52	2.57	2.17	2.46	2.64	2.55	2.20	2.56	2.42
Flexibility of Closure	2.00	2.13	2.40	2.52	2.55	2.30	2.42	2.47	2.13	2.44	2.41	2.37	2.33	2.41	2.35
Inductive Reasoning	2.19	2.45	2.48	2.58	2.65	2.45	2.45	2.53	2.28	2.53	2.53	2.52	2.28	2.43	2.33
Information Ordering	2.28	2.49	2.47	2.56	2.64	2.49	2.55	2.62	2.23	2.52	2.54	2.55	2.39	2.67	2.44
Mathematical Reasoning	2.02	2.00	2.17	2.55	2.76	2.39	2.20	2.45	2.02	2.25	2.54	2.52	2.23	2.42	2.24
Memorization	2.30	2.43	2.65	2.67	2.80	2.53	2.58	2.62	2.13	2.38	2.70	2.63	2.39	2.63	2.50
Number Facility	2.10	2.11	2.30	2.48	2.72	2.35	2.34	2.51	2.14	2.30	2.52	2.52	2.26	2.56	2.42
Oral Comprehension	2.47	2.64	2.57	2.71	2.59	2.58	2.57	2.68	2.37	2.63	2.83	2.70	2.56	2.78	2.83
Oral Expression	2.43	2.70	2.56	2.75	2.68	2.57	2.63	2.68	2.32	2.65	2.80	2.70	2.58	2.74	2.85
Problem Sensitivity	2.26	2.61	2.69	2.74	2.57	2.58	2.48	2.68	2.20	2.47	2.67	2.58	2.40	2.63	2.62
Selective Attention	2.26	2.45	2.47	2.53	2.64	2.49	2.55	2.57	2.21	2.48	2.61	2.56	2.39	2.43	2.52
Spatial Orientation	2.33	2.55	2.55	2.43	2.55	2.59	2.57	2.68	2.22	2.51	2.57	2.50	2.33	2.52	2.28
Visualization	2.33	2.64	2.62	2.51	2.57	2.56	2.65	2.66	2.43	2.51	2.60	2.56	2.43	2.64	2.45
Written Comprehension	2.26	2.07	2.18	2.61	2.18	1.97	2.05	2.47	1.98	2.57	2.81	2.80	2.43	2.78	2.70
Written Expression	2.23	2.00	2.09	2.57	2.22	1.98	2.05	2.39	1.98	2.59	2.68	2.84	2.34	2.80	2.62
Reaction Time	2.60	2.66	2.85	2.57	2.72	2.79	2.74	2.53	2.47	2.10	2.44	2.05	2.21	1.98	2.06
Arm-Hand Steadiness	2.34	2.45	2.77	2.62	2.57	2.83	2.74	2.53	2.40	1.95	2.49	1.95	2.14	2.00	1.94
Manual Dexterity	2.46	2.44	2.88	2.60	2.53	2.77	2.87	2.59	2.50	2.02	2.45	2.03	2.20	2.05	1.92
Multi-limb Coordination	2.49	2.51	2.79	2.53	2.72	2.85	2.89	2.57	2.54	1.95	2.41	1.81	2.23	2.02	1.92
Response Orientation	2.49	2.53	2.74	2.61	2.53	2.77	2.81	2.59	2.48	2.15	2.58	1.87	2.09	1.90	1.94

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SAO Area	DUTY AREAS														
	Incident Response	Incident Assessment/Size-up	Rescue Operations	Emergency Medical Service Operations	Pumping and Driving Operations	Ladder Operations	Hoseline and Attack Operations	Hazardous Materials Operations (HAZ-MAT)	Salvage and Overhaul Operations	External and Interagency Collaborations	Training and Education	Administrative Duties and Communications	Station and Equipment Maintenance	Prevention and Inspections	Public Relations and Customer Service
Rate Control	2.43	2.47	2.72	2.41	2.53	2.78	2.89	2.60	2.49	2.23	2.55	1.86	2.02	2.00	1.97
Static Strength	2.50	2.50	2.80	2.48	2.34	2.83	2.91	2.55	2.50	2.15	2.52	1.84	2.07	2.00	1.92
Control Precision	2.41	2.41	2.78	2.40	2.60	2.87	2.83	2.70	2.46	2.23	2.57	1.82	2.19	2.10	1.97
Stamina	2.56	2.50	2.89	2.38	2.33	2.79	2.89	2.70	2.60	2.26	2.61	1.92	2.13	2.02	1.97
Near Vision	2.47	2.52	2.65	2.54	2.59	2.80	2.76	2.71	2.50	2.28	2.62	2.24	2.38	2.12	2.16
Dynamic Strength	2.59	2.51	2.83	2.33	2.37	2.83	2.94	2.68	2.57	2.10	2.59	1.89	2.17	1.95	1.92
Trunk Strength	2.57	2.50	2.80	2.40	2.39	2.89	2.89	2.64	2.60	2.15	2.52	1.92	2.22	1.95	1.92
Extent Flexibility	2.43	2.36	2.83	2.48	2.43	2.93	2.87	2.70	2.54	2.24	2.54	1.92	2.15	2.00	1.92
Depth Perception	2.40	2.50	2.72	2.37	2.67	2.81	2.87	2.70	2.50	2.10	2.43	2.05	2.17	2.14	2.05
Auditory Attention	2.49	2.51	2.83	2.54	2.70	2.76	2.83	2.73	2.52	2.20	2.54	2.18	2.20	2.19	2.08
Gross Body Coordination	2.51	2.46	2.68	2.40	2.48	2.83	2.89	2.69	2.57	1.93	2.47	1.87	2.20	1.98	1.92
Gross Body Equilibrium	2.48	2.48	2.74	2.32	2.51	2.81	2.81	2.68	2.58	2.03	2.53	1.97	2.16	2.00	1.95
Far Vision	2.32	2.55	2.60	2.24	2.68	2.65	2.63	2.65	2.52	2.28	2.52	2.07	2.23	2.24	2.16
Achievement/Effort	2.48	2.45	2.70	2.59	2.55	2.58	2.70	2.68	2.44	2.56	2.78	2.43	2.51	2.60	2.67
Adaptability/Flexibility	2.40	2.47	2.67	2.65	2.49	2.57	2.64	2.78	2.43	2.67	2.68	2.59	2.47	2.58	2.63
Attention to Detail	2.52	2.72	2.76	2.78	2.68	2.76	2.68	2.85	2.66	2.66	2.74	2.70	2.76	2.72	2.78
Concern for Others	2.54	2.73	2.80	2.89	2.63	2.74	2.66	2.77	2.62	2.70	2.68	2.74	2.49	2.67	2.82
Cooperation	2.45	2.62	2.82	2.76	2.65	2.70	2.72	2.72	2.61	2.70	2.77	2.74	2.60	2.76	2.80
Dependability	2.67	2.70	2.81	2.78	2.79	2.78	2.81	2.85	2.59	2.74	2.64	2.79	2.67	2.78	2.82
Ethics	2.64	2.63	2.66	2.76	2.63	2.50	2.52	2.63	2.57	2.70	2.62	2.72	2.53	2.80	2.84
Independence	2.19	2.31	2.52	2.67	2.54	2.41	2.49	2.46	2.46	2.47	2.57	2.67	2.51	2.54	2.67

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SAO Area	DUTY AREAS														
	Incident Response	Incident Assessment/Size-up	Rescue Operations	Emergency Medical Service Operations	Pumping and Driving Operations	Ladder Operations	Hoseline and Attack Operations	Hazardous Materials Operations (HAZ-MAT)	Salvage and Overhaul Operations	External and Interagency Collaborations	Training and Education	Administrative Duties and Communications	Station and Equipment Maintenance	Prevention and Inspections	Public Relations and Customer Service
Initiative	2.56	2.58	2.64	2.67	2.70	2.57	2.64	2.76	2.52	2.60	2.70	2.74	2.64	2.70	2.69
Innovation	2.23	2.49	2.57	2.64	2.57	2.60	2.49	2.74	2.43	2.55	2.68	2.76	2.53	2.60	2.76
Integrity	2.72	2.64	2.63	2.67	2.57	2.56	2.57	2.65	2.43	2.70	2.67	2.78	2.52	2.78	2.82
Persistence	2.42	2.65	2.77	2.72	2.59	2.52	2.68	2.72	2.45	2.70	2.78	2.68	2.58	2.61	2.73
Self-Control	2.60	2.67	2.81	2.77	2.63	2.70	2.76	2.70	2.55	2.70	2.74	2.70	2.40	2.74	2.73
Service Orientation	2.52	2.56	2.66	2.64	2.59	2.59	2.61	2.65	2.46	2.67	2.56	2.66	2.55	2.83	2.80
Social/Teamwork Orientation	2.56	2.75	2.87	2.68	2.63	2.72	2.79	2.83	2.70	2.74	2.76	2.65	2.58	2.67	2.76
Stress Tolerance	2.68	2.65	2.79	2.72	2.72	2.77	2.77	2.79	2.57	2.65	2.72	2.54	2.43	2.52	2.69

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Table 34. Weighted Ability Linkage Matrix

Ability Area	Incident Response	Incident Assessment/Size-up	Rescue Operations	Emergency Medical Service Operations	Pumping and Driving Operations	Ladder Operations	Hoseline and Attack Operations	Hazardous Materials Operations (HAZ-MAT)	Salvage and Overhaul Operations	External and Interagency Collaborations	Training and Education	Administrative Duties and Communications	Station and Equipment Maintenance	Prevention and Inspections	Public Relations and Customer Service	Total	z-Score	Standardized Score
Dependability	0.16	0.17	0.23	0.30	0.17	0.13	0.18	0.14	0.14	0.13	0.26	0.14	0.21	0.15	0.22	2.75	1.74	3.74
Attention to Detail	0.15	0.17	0.23	0.30	0.16	0.13	0.17	0.14	0.14	0.13	0.27	0.14	0.22	0.15	0.22	2.73	1.56	3.56
Oral Communication	0.15	0.17	0.24	0.31	0.16	0.13	0.18	0.14	0.13	0.13	0.27	0.14	0.20	0.15	0.22	2.72	1.52	3.52
Social/Teamwork Orientation	0.15	0.17	0.24	0.29	0.16	0.13	0.18	0.14	0.14	0.13	0.27	0.14	0.21	0.15	0.22	2.72	1.48	3.48
Concern for Others	0.15	0.17	0.23	0.31	0.16	0.13	0.17	0.14	0.14	0.13	0.26	0.14	0.20	0.15	0.22	2.71	1.42	3.42
Cooperation	0.15	0.16	0.23	0.30	0.16	0.13	0.18	0.14	0.14	0.13	0.27	0.14	0.21	0.15	0.22	2.71	1.39	3.39
Decision-Making	0.16	0.18	0.24	0.31	0.17	0.14	0.19	0.14	0.13	0.13	0.27	0.14	0.19	0.14	0.20	2.71	1.38	3.38
Composure	0.15	0.17	0.24	0.31	0.16	0.14	0.18	0.14	0.13	0.13	0.26	0.14	0.18	0.14	0.22	2.69	1.28	3.28
Self-Control	0.16	0.17	0.23	0.30	0.16	0.13	0.18	0.14	0.13	0.13	0.27	0.14	0.19	0.15	0.21	2.69	1.24	3.24
Judgment and Decision Making	0.15	0.17	0.23	0.30	0.16	0.14	0.18	0.14	0.14	0.13	0.27	0.14	0.20	0.15	0.21	2.68	1.22	3.22
Critical Thinking	0.15	0.17	0.23	0.29	0.17	0.14	0.18	0.14	0.13	0.13	0.27	0.14	0.19	0.14	0.20	2.68	1.21	3.21
Problem Analysis	0.15	0.18	0.24	0.30	0.17	0.13	0.18	0.14	0.14	0.12	0.26	0.14	0.19	0.14	0.20	2.68	1.17	3.17
Stress Tolerance	0.16	0.17	0.23	0.29	0.16	0.13	0.18	0.14	0.13	0.13	0.27	0.13	0.20	0.14	0.21	2.67	1.13	3.13
Operation and Control	0.15	0.16	0.22	0.30	0.17	0.13	0.18	0.14	0.13	0.13	0.25	0.14	0.21	0.14	0.21	2.67	1.06	3.06
Problem-Solving	0.15	0.17	0.24	0.30	0.17	0.13	0.17	0.14	0.14	0.13	0.26	0.13	0.19	0.15	0.20	2.66	1.06	3.06
Oral Expression	0.15	0.17	0.21	0.30	0.16	0.12	0.17	0.13	0.12	0.13	0.28	0.14	0.21	0.15	0.22	2.66	1.01	3.01
Ethics	0.16	0.17	0.22	0.30	0.16	0.12	0.16	0.13	0.13	0.13	0.26	0.14	0.20	0.15	0.22	2.66	1.00	3.00
Persistence	0.15	0.17	0.23	0.29	0.15	0.12	0.17	0.14	0.13	0.13	0.27	0.14	0.21	0.14	0.21	2.66	0.99	2.99
Initiative	0.15	0.16	0.22	0.29	0.16	0.12	0.17	0.14	0.13	0.12	0.27	0.14	0.21	0.15	0.21	2.65	0.97	2.97

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Ability Area	Incident Response	Incident Assessment/Size-up	Rescue Operations	Emergency Medical Service Operations	Pumping and Driving Operations	Ladder Operations	Hoseline and Attack Operations	Hazardous Materials Operations (HAZ-MAT)	Salvage and Overhaul Operations	External and Interagency Collaborations	Training and Education	Administrative Duties and Communications	Station and Equipment Maintenance	Prevention and Inspections	Public Relations and Customer Service	Total	Z-Score	Standardized Score
Integrity	0.16	0.17	0.22	0.29	0.15	0.12	0.17	0.13	0.13	0.13	0.26	0.14	0.20	0.15	0.22	2.65	0.95	2.95
Oral Comprehension	0.15	0.17	0.21	0.29	0.15	0.13	0.17	0.13	0.12	0.13	0.28	0.14	0.21	0.15	0.22	2.65	0.93	2.93
Self-Motivation	0.15	0.16	0.23	0.28	0.17	0.13	0.17	0.13	0.13	0.12	0.28	0.14	0.21	0.14	0.21	2.65	0.89	2.89
Service Orientation	0.15	0.16	0.22	0.28	0.15	0.13	0.17	0.13	0.13	0.13	0.25	0.14	0.21	0.16	0.22	2.63	0.74	2.74
Interpersonal Skill	0.15	0.15	0.22	0.30	0.15	0.13	0.17	0.13	0.13	0.13	0.27	0.14	0.19	0.14	0.21	2.61	0.65	2.65
Planning and Organization	0.14	0.15	0.22	0.27	0.16	0.13	0.17	0.13	0.13	0.13	0.27	0.14	0.20	0.16	0.21	2.60	0.55	2.55
Achievement/Effort	0.15	0.15	0.22	0.28	0.15	0.13	0.18	0.13	0.13	0.12	0.27	0.13	0.20	0.14	0.21	2.60	0.51	2.51
Adaptability/Flexibility	0.14	0.16	0.22	0.28	0.15	0.12	0.17	0.14	0.13	0.13	0.26	0.13	0.20	0.14	0.21	2.59	0.45	2.45
Innovation	0.13	0.16	0.21	0.28	0.15	0.13	0.16	0.14	0.13	0.12	0.26	0.14	0.20	0.14	0.22	2.59	0.41	2.41
Conflict Resolution	0.14	0.16	0.22	0.29	0.16	0.12	0.17	0.13	0.12	0.12	0.26	0.14	0.19	0.15	0.21	2.57	0.25	2.25
Problem Sensitivity	0.14	0.16	0.22	0.29	0.15	0.13	0.16	0.13	0.12	0.12	0.26	0.13	0.19	0.14	0.20	2.56	0.24	2.24
Memorization	0.14	0.15	0.22	0.29	0.17	0.12	0.17	0.13	0.11	0.11	0.27	0.14	0.19	0.14	0.20	2.55	0.10	2.10
Visualization	0.14	0.17	0.22	0.27	0.15	0.12	0.17	0.13	0.13	0.12	0.26	0.13	0.20	0.15	0.19	2.55	0.09	2.09
Monitoring	0.13	0.15	0.22	0.28	0.17	0.12	0.17	0.13	0.13	0.12	0.25	0.14	0.18	0.14	0.20	2.55	0.08	2.08
Instructing	0.14	0.15	0.20	0.27	0.14	0.13	0.16	0.13	0.12	0.12	0.28	0.14	0.18	0.14	0.21	2.52	-0.10	1.90
Leadership.	0.15	0.16	0.22	0.27	0.14	0.13	0.17	0.13	0.12	0.13	0.26	0.14	0.18	0.13	0.20	2.52	-0.12	1.88
Independence	0.13	0.15	0.21	0.29	0.15	0.12	0.16	0.12	0.13	0.12	0.25	0.14	0.20	0.14	0.21	2.52	-0.15	1.85
Information Ordering	0.14	0.16	0.21	0.27	0.16	0.12	0.17	0.13	0.12	0.12	0.25	0.13	0.19	0.15	0.19	2.50	-0.29	1.71
Near Vision	0.15	0.16	0.22	0.27	0.15	0.14	0.18	0.14	0.13	0.11	0.26	0.12	0.19	0.12	0.17	2.50	-0.30	1.70
Auditory Attention	0.15	0.16	0.24	0.27	0.16	0.13	0.18	0.14	0.13	0.11	0.25	0.11	0.18	0.12	0.16	2.49	-0.34	1.66
Selective Attention	0.14	0.15	0.21	0.27	0.16	0.12	0.17	0.13	0.12	0.12	0.26	0.13	0.19	0.13	0.20	2.49	-0.39	1.61

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Ability Area	Incident Response	Incident Assessment/Size-up	Rescue Operations	Emergency Medical Service Operations	Pumping and Driving Operations	Ladder Operations	Hoseline and Attack Operations	Hazardous Materials Operations (HAZ-MAT)	Salvage and Overhaul Operations	External and Interagency Collaborations	Training and Education	Administrative Duties and Communications	Station and Equipment Maintenance	Prevention and Inspections	Public Relations and Customer Service	Total	Z-Score	Standardized Score
Spatial Orientation	0.14	0.16	0.21	0.26	0.15	0.13	0.17	0.13	0.12	0.12	0.25	0.13	0.19	0.14	0.18	2.48	-0.47	1.53
Deductive Reasoning	0.14	0.15	0.21	0.27	0.16	0.12	0.16	0.13	0.11	0.12	0.26	0.13	0.18	0.14	0.19	2.47	-0.51	1.49
Reaction Time	0.16	0.17	0.24	0.28	0.16	0.14	0.18	0.13	0.13	0.10	0.24	0.11	0.18	0.11	0.16	2.46	-0.58	1.42
Inductive Reasoning	0.13	0.15	0.21	0.28	0.16	0.12	0.16	0.13	0.12	0.12	0.25	0.13	0.18	0.13	0.18	2.45	-0.67	1.33
Stamina	0.15	0.16	0.24	0.26	0.14	0.14	0.19	0.14	0.14	0.11	0.26	0.10	0.17	0.11	0.15	2.44	-0.75	1.25
Public Relations Skill	0.14	0.15	0.19	0.28	0.13	0.10	0.13	0.12	0.12	0.13	0.25	0.13	0.18	0.15	0.22	2.44	-0.76	1.24
Manual Dexterity	0.15	0.15	0.24	0.28	0.15	0.13	0.19	0.13	0.13	0.10	0.24	0.10	0.18	0.11	0.15	2.44	-0.80	1.20
Social Perceptiveness	0.13	0.15	0.19	0.28	0.13	0.11	0.15	0.12	0.11	0.12	0.25	0.14	0.18	0.15	0.22	2.43	-0.81	1.19
Depth Perception	0.14	0.16	0.23	0.25	0.16	0.14	0.19	0.14	0.13	0.10	0.24	0.11	0.17	0.12	0.16	2.43	-0.85	1.15
Extent Flexibility	0.15	0.15	0.24	0.27	0.14	0.14	0.19	0.14	0.13	0.11	0.25	0.10	0.17	0.11	0.15	2.43	-0.86	1.14
Trunk Strength	0.16	0.16	0.23	0.26	0.14	0.14	0.19	0.13	0.14	0.10	0.25	0.10	0.18	0.11	0.15	2.43	-0.86	1.14
Control Precision	0.15	0.15	0.23	0.26	0.15	0.14	0.18	0.14	0.13	0.11	0.25	0.09	0.18	0.12	0.15	2.43	-0.86	1.14
Multi-limb Coordination	0.15	0.16	0.23	0.27	0.16	0.14	0.19	0.13	0.13	0.09	0.24	0.09	0.18	0.11	0.15	2.43	-0.87	1.13
Dynamic Strength	0.16	0.16	0.24	0.25	0.14	0.14	0.19	0.13	0.13	0.10	0.25	0.10	0.17	0.11	0.15	2.42	-0.90	1.10
Response Orientation	0.15	0.16	0.23	0.28	0.15	0.13	0.18	0.13	0.13	0.10	0.25	0.10	0.17	0.10	0.15	2.42	-0.90	1.10
Written Comprehension	0.14	0.13	0.18	0.28	0.13	0.10	0.13	0.12	0.10	0.12	0.28	0.14	0.20	0.15	0.21	2.42	-0.94	1.06
Far Vision	0.14	0.16	0.22	0.24	0.16	0.13	0.17	0.13	0.13	0.11	0.25	0.11	0.18	0.12	0.17	2.42	-0.95	1.05
Gross Body Equilibrium	0.15	0.16	0.23	0.25	0.15	0.14	0.18	0.13	0.14	0.10	0.25	0.10	0.17	0.11	0.15	2.41	-1.05	0.95
Static Strength	0.15	0.16	0.23	0.27	0.14	0.14	0.19	0.13	0.13	0.10	0.25	0.10	0.17	0.11	0.15	2.41	-1.05	0.95
Rate Control	0.15	0.16	0.23	0.26	0.15	0.13	0.19	0.13	0.13	0.11	0.25	0.10	0.16	0.11	0.15	2.40	-1.07	0.93

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Ability Area	Incident Response	Incident Assessment/Size-up	Rescue Operations	Emergency Medical Service Operations	Pumping and Driving Operations	Ladder Operations	Hoseline and Attack Operations	Hazardous Materials Operations (HAZ-MAT)	Salvage and Overhaul Operations	External and Interagency Collaborations	Training and Education	Administrative Duties and Communications	Station and Equipment Maintenance	Prevention and Inspections	Public Relations and Customer Service	Total	Z-Score	Standardized Score
Arm-Hand Steadiness	0.14	0.15	0.23	0.28	0.15	0.14	0.18	0.13	0.13	0.09	0.24	0.10	0.17	0.11	0.15	2.40	-1.08	0.92
Gross Body Coordination	0.15	0.15	0.22	0.26	0.15	0.14	0.19	0.13	0.13	0.09	0.24	0.10	0.18	0.11	0.15	2.40	-1.11	0.89
Number Facility	0.13	0.13	0.19	0.27	0.16	0.11	0.15	0.13	0.11	0.11	0.25	0.13	0.18	0.14	0.19	2.38	-1.23	0.77
Written Expression	0.13	0.13	0.17	0.28	0.13	0.10	0.13	0.12	0.10	0.12	0.26	0.15	0.19	0.15	0.20	2.38	-1.28	0.72
Basic Arithmetic	0.13	0.14	0.19	0.28	0.16	0.11	0.15	0.13	0.10	0.11	0.25	0.13	0.17	0.13	0.16	2.37	-1.35	0.65
Flexibility of Closure	0.12	0.13	0.20	0.27	0.15	0.11	0.16	0.12	0.11	0.12	0.24	0.12	0.19	0.13	0.18	2.36	-1.40	0.60
Negotiation	0.12	0.13	0.20	0.28	0.13	0.11	0.15	0.12	0.11	0.13	0.24	0.13	0.18	0.14	0.21	2.36	-1.43	0.57
Mathematical Reasoning	0.12	0.13	0.18	0.27	0.16	0.12	0.14	0.12	0.11	0.11	0.25	0.13	0.18	0.13	0.17	2.33	-1.66	0.34
Persuasion	0.12	0.13	0.19	0.27	0.12	0.10	0.14	0.11	0.12	0.12	0.24	0.13	0.18	0.14	0.20	2.30	-1.94	0.06
TOTALS	**9.99**	**10.82**	**15.20**	**19.31**	**10.56**	**8.73**	**11.85**	**9.16**	**8.73**	**8.20**	**17.78**	**8.79**	**13.07**	**9.41**	**13.29**	**174.90**	**0.00**	**138.00**

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Chapter 6. Conclusion

6.1 Key Findings

One of the key takeaways from the results of this study revolves around the high degree of similarity between the career and volunteer firefighter position. Specifically, similarity indices were used to compare the career and volunteer firefighter positions. A 91.5% overlap was found between the two positions in terms of the essential job-related tasks. Further, a 97.2% overlap was found in terms of the essential KSAOs for the career and volunteer positions. Thus, this suggests a high degree of similarity between the career and volunteer firefighter position within Florida. Additionally, no significant differences were found across the geographical regions (i.e., Central, Southeast, Southwest, Northeast, Northwest) as to the importance of the KSAOs to the firefighter position.

Another key finding was related to the Required Upon Active Duty (RUAD) rating scale which helped to understand which tasks and KSAOs are required for job entry versus acquired through on-the-job training versus obtained through continuing education. Thus, the RUAD rating scale assessed the degree to which a new incumbent is either expected to perform a KSAO or task/physical activity (without any additional training) upon entry into the position, or whether the person must obtain additional information in order to perform the KSAO or task. Of all the 480 items presented on the JAQ, approximately 75% were found to be required upon active duty, approximately 24% were found to be learned on-the-job, and approximately 1% was found to be learned through continuing education. This trend held for both the career and volunteer firefighters.

To further demonstrate the overlap of these positions, an analysis of the helpful qualifications needed for the career and volunteer firefighter jobs was completed. A total of 97 KSAOs were identified as helpful qualifications for the career firefighter position and 90 KSAOs were identified as helpful qualifications for the volunteer firefighter position. Of these, 78 KSAOs were found to be essential as helpful qualifications to both positions, resulting in an 83.5% overlap between the career and volunteer firefighter positions.

Ratings from career and volunteer firefighters revealed that tactical duties had an average relative importance of 65.2% as compared to 34.8% for non-tactical duties. However, participants reported that non-tactical duties are performed more frequently compared to tactical duties, 53.7% versus 46.3%, respectively. Across all job duty areas, Emergency Medical

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Service Operations was given the highest importance rating, followed closely by Training and Education.

One of the goals of the present job analysis study was to compare and contrast the tasks and KSAOs found essential by IOS against those included in the NFPA® 1001. Upon analysis by IOS of the requirements included in both Fire Fighter I and Fire Fighter II chapters of the NFPA® 1001, 187 unique items were identified. Of the 263 original job task items included in the IOS JAQ, 111 (or 42.2%) were directly matched to NFPA® 1001 items. The results revealed that 88 out of these 111 shared job task items (or 79.3%) were found to be essential to both the career and volunteer firefighter positions in the present study. Further, the 60 job task items that were unique to NFPA® 1001 were additionally included within the IOS JAQ task sections to determine their importance to the focal positions. Of these 60 job task statements that were unique to the NFPA 1001, 40 of these tasks (or 66.7%) were found to be essential to both the career and volunteer firefighter positions in the present study. This left a difference of 152 job tasks on the IOS JAQ that were unique to IOS and not included in the NFPA® 1001. Of these 152 job tasks unique to the IOS JAQ and not included in the NFPA® 1001, 111 (or 73.0%) were found to be essential to both the career and volunteer firefighter positions in the present study. Thus, the present study moves beyond the NFPA® 1001 requirements to understand additional essential job tasks to the career and volunteer firefighter positions.

Also, a total of 16 knowledge statements were included in the final JAQ that were unique to the NFPA® 1001. Of these, 13 (or 81.3%) of these knowledge statements were found to be essential to both the career and volunteer positions. IOS went beyond the knowledge statements included in the NFPA® 1001 requirements to include an additional 60 knowledge items that were rated by participants in the present study. Of these 60 knowledge items unique to the IOS JAQ, 55 (or 91.7%) were essential to both the career and volunteer firefighter positions.

Overall, the IOS JAQ included an additional 281 task and KSAO items to assess their respective essentiality to the career and volunteer firefighter positions. Of these 281 task and KSAO statements that were unique to the IOS JAQ and not reflected in the NFPA® 1001 requirements, 233 (about 83%) were found to be essential to both the career and volunteer firefighter positions. The results of the gap analysis revealed that the IOS JAQ went beyond the scope of the NFPA® 1001 requirements to find additional tasks to be essential that were not reflected within NFPA® 1001.

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Through the linkage analysis preformed as part of the job analysis study, the top KSAOs were identified in terms of their importance to the firefighter position. The most important skills, abilities, and other characteristics identified from the linkage analysis were:

- Dependability
- Attention to Detail
- Oral Communication
- Social/Teamwork Orientation
- Concern for Others
- Cooperation
- Decision-Making
- Composure
- Self-Control
- Judgment and Decision Making
- Critical Thinking
- Problem Analysis
- Stress Tolerance
- Operation and Control
- Problem-Solving
- Oral Expression
- Ethics

The most important knowledge areas identified from the linkage analysis in terms of their relationship to the firefighter position include:

- Knowledge of the fire department's standard operating procedures (SOPs) and rules and regulations.
- Knowledge of personnel accountability systems, emergency communication procedures, and emergency evacuation methods.
- Knowledge of the components of personal protective equipment.
- Knowledge of cardiopulmonary resuscitation (CPR).
- Knowledge of departmental radio procedures and etiquette for routine traffic, emergency traffic, and emergency evacuation signals.
- Knowledge of Body Substance Isolation (BSI) or infection control precautions.

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- Knowledge of scene safety considerations such as hazardous materials incidents and rescue operations.
- Knowledge of personnel accountability systems and communication procedures.
- Knowledge of the strengths and weaknesses associated with different types of building construction types.
- Knowledge of necessary skills for fire department communications.

6.2 Next Steps

This job analysis study conducted for the career and volunteer firefighters in the state of Florida has produced a thorough identification of the essential tasks and KSAOs for these positions. The study conformed to industry guidelines and best practices for conducting job analysis including: The Equal Employment Opportunity Commission's (EEOC) Uniform Guidelines on Employee Selection (1978), the Society for Industrial and Organizational Psychology's (SIOP) Principles for the Validation and Use of Personnel Selection Procedures (2003) and the American Psychological Association's (APA) Standards for Educational and Psychological Testing (1999). Thus, this job analysis study has produced a thorough description of the tasks performed by career and volunteer firefighters as well as the KSAOs required to complete these essential job tasks. Further, the job-relevant KSAOs identified through the job analysis were linked to the various essential job duties for a firefighter. This subsequent linkage analysis ensured that the KSAOs were job-related. The findings from this job analysis study will be directly utilized by the Division to develop the minimum training and curriculum requirements of firefighters and volunteer firefighters.

There are various frameworks that exist in instructional design literature to develop a training curriculum. For example, the ADDIE model, Rapid Prototyping, Dick and Carey Systems Approach Model, Guaranteed Learning, and countless others. In the majority of these models, though, the first step would be to conduct a thorough needs assessment. As part of this needs assessment, a job analysis is performed to understand the tasks and KSAOs that are essential to the positions for which the training curriculum will be developed. Specifically, through the job analysis it is understood what the tasks and KSAOs are that will be expected to be performed and acquired for successful performance in the focal positions so that the training can be built around this. Thus, the data obtained from this job analysis study must be directly used as the basis from which to develop and design training curriculum requirements. Accordingly, all of the tasks and KSAOs found to be essential in the present job analysis study need to be mapped

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out to the current training curriculum to identify where any gaps may exist and where the current training curriculum may need revision.

For any areas where gaps are identified, Figure 16 presents the Dick and Carey Systems Approach Model[3], which is an iterative framework for instructional design and includes the following 9 components:

- Conduct a needs assessment to identify the instructional goals. This component involves understanding what is expected of the target position and what those in this position are expected to be able to do upon completion of the training curriculum.
    - Note: This component has already been completed as all of the tasks, and KSAOs required for successful in the career and volunteer firefighter positions have been identified.
- Conduct instructional analysis to identify what those in the target position are doing and how they perform their position.
    - Note: This component has already been completed as through this job analysis, the tasks that are expected to be performed as part of the target position and the KSAOs needed for performing these tasks have been identified.
- Analyze the users of the training curriculum and the training context to identify the general characteristics of those in the target position as well as the instructional setting. Training developers should consider: skills of the target users, their prior experience, basic demographics, behaviors required upon entry into the position, characteristics directly related to the skill to be taught; attitudes towards training content and potential delivery systems, motivation, etc.
- Write performance objectives for the training curriculum. Objectives consist of a description of the behavior, the conditions, and criteria.
- Develop assessment instruments that are consistent with developed performance objectives.
- Develop instructional strategy that reflect any pre-instructional activities, the actual content/training presentation, how those undergoing training will be able to practice what they have learned, any assessment that will be included as part of the training, and any follow-through activities to ensure transfer of training.
- Develop and select instructional materials for the training content to be delivered.
- Design and conduct training evaluations to identify areas of the instructional materials that need improvement.

[3] Dick, Walter, Lou Carey, and James O. Carey (2004). The Systematic Design of Instruction (6th ed.). Allyn & Bacon. pp. 1–12.

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- Revise training instruction as needed based on the data obtained from users.

In summary, the understanding by IOS that the data obtained from this job analysis would be directly used for development of training curriculum and to validate minimum training requirements has directly influenced the scope of this job analysis study. The IOS JAQ included 468 task and KSAO statements to ensure the comprehensiveness of the data obtained. The IOS JAQ included all of the original items it has used with departments nationally when conducting a job analysis for the firefighter position as well as ensuring that all NFPA 1001® requirements were covered within it as well as the ensuring the inclusion of additional knowledge areas obtained from the IFSTA Essentials of Firefighting and Fire Department Operations (5th Edition) textbook to reflect the knowledge domains acquired through academy.

Thus, IOS wanted to be sure to identify all of the essential tasks and KSAOs performed in the career and volunteer firefighter positions to ensure that those involved in the next phase of work have all of the data needed to review the current training and curriculum requirements for the target positions. The development and administration of a robust JAQ was the only way to ensure that all aspects of the target positions were accounted for and that the end users of this data could be confident that all essential aspects of these positions have been identified. For the next phase of work, those working with the Division must utilize the data obtained from this job analysis study as the foundation from which to evaluate the current training curriculum requirements.

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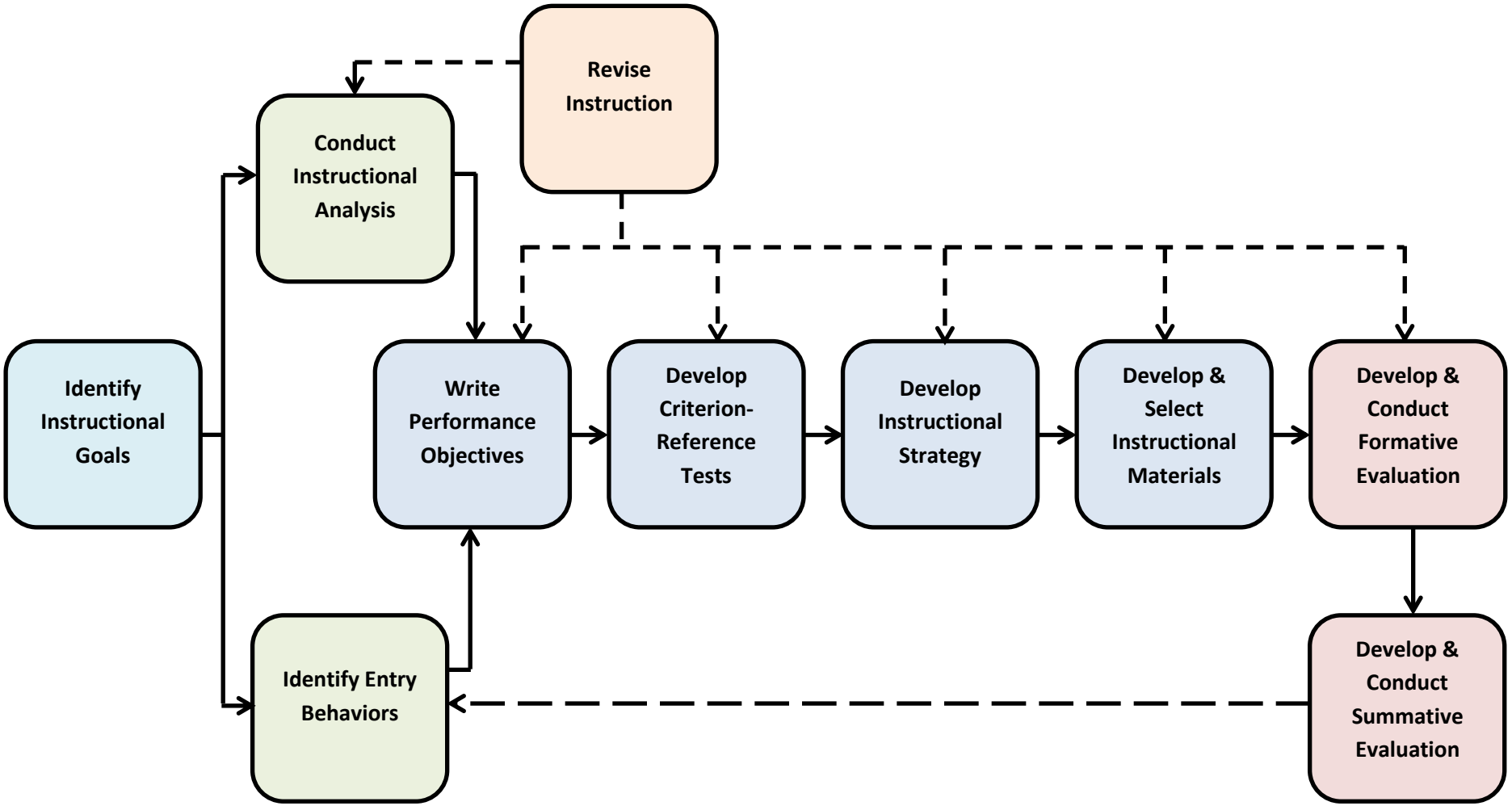
Figure 16. Dick and Carey Design Model



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Appendix A: Job Analysis Questionnaire

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THE BUREAU OF FIRE STANDARDS AND TRAINING
AT
The Florida State Fire College

JOB ANALYSIS QUESTIONNAIRE

Welcome!

You are about to begin the Job Analysis Questionnaire for the Bureau of Fire Standards & Training at The Florida State Fire College. Please continue to the next page for instructions on completing the questionnaire.

THE BUREAU OF FIRE STANDARDS AND TRAINING
AT
The Florida State Fire College

JOB ANALYSIS QUESTIONNAIRE

Please watch this video to view the instructions on how to complete the survey.

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THE BUREAU OF FIRE STANDARDS AND TRAINING
AT
The Florida State Fire College
JOB ANALYSIS QUESTIONNAIRE

Introduction

The Bureau of Fire Standards and Training, Division of State Fire Marshal is conducting a statewide job analysis for the positions of firefighter and volunteer firefighter. As part of the job analysis study, a job-analysis questionnaire (JAQ) has been developed that contains a number of statements relevant to the rank of Firefighter. A job analysis questionnaire is a survey that collects expert opinions that are used to define the job tasks, skills, abilities and other characteristics necessary to successfully perform a target job: in this case, **the job of a firefighter (career/ volunteer)**. The results from a job analysis questionnaire are used to identify important job functions and requirements needed for successful performance and forms the foundation for subsequent training or other processes. You will be asked to provide your expert opinions regarding **the firefighter position** within your department. The results of this survey will be used in the evaluation of the training requirements for our **firefighters and volunteer firefighters** within the State of Florida.

In the following sections of this JAQ you will be asked to provide ratings concerning the importance and frequency of job-specific tasks, skills, abilities and knowledge areas that are related to the **firefighter position**. Please make sure that your responses are reflective of only that of the firefighter position . **If you are of a higher rank, your responses should reflect the firefighter position. If you are volunteer, please only respond from the perspective of a volunteer firefighter.**

Due to time constraints, the job analysis survey has been divided into 5 modules. Each survey module is expected to take about 30 minutes to complete. Thus, each module contains a portion of the overall job analysis survey. You are only expected to complete your randomly selected survey module. Nonetheless, if you are able to we would greatly appreciate your input in as many of the other survey modules that you are able to complete. Across the 5 modules, the survey is intended to cover as many job tasks as possible; this means that some job tasks will be relevant (or "applicable") to the job while other job tasks may not be applicable.

General Instructions:

1. First, please review the item, and determine whether or not it is applicable to the **job of a firefighter**. If you determine that it is not applicable to the position, you will indicate this by selecting the "Not Applicable" option. **If you mark "N/A" for a particular task statement, skill area, etc., DO NOT rate the statement on any of the remaining scales.**

2. If the item is applicable to the **firefighter position**, please rate the item using the scales provided on the screen.

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3. Regarding Technology: Due to the nature of the survey allowing multiple responses from a single computer, responses cannot be saved. Therefore, *any* interruption to the survey session (browser closes, computer shut down, log off, etc.) will cause you to lose your responses and have to start over. **Please attempt to finish the survey in one sitting if possible!**

****If you must step away, take measures to ensure the computer/session will remain untouched until your return****

THE BUREAU OF FIRE STANDARDS AND TRAINING AT The Florida State Fire College

JOB ANALYSIS QUESTIONNAIRE

Scales

The following scales will be used across the 5 survey modules:

Applicability: Rating whether an item is applicable to the position.
"Not Applicable" The item is not applicable to the position. If you choose this, then you will not rate the item on the remaining scales.
"Applicable" The item is applicable to the position. If you choose this, then complete the other scales for this item.

Frequency: Ratings of how frequently a task, skill area, etc. is performed.
"Rarely Performed" means the task is performed once a year
"Seldomly Performed" means the task is performed 1 – 2 times a month
"Occasionally Performed" means the task is performed once a week
"Often Performed" means the task is performed multiple times a week
"Constantly Performed" means the task is performed daily or many times a week

Importance: Ratings of how important a task, skill area, etc. is to the entire job.
"Of Minimal Importance" means the task is less important to complete as compared to the majority of other job tasks
"Of Modest Importance" means the task is less important to complete as compared to many other job tasks
"Of Moderate Importance" means the task is more important to complete as compared to many other job tasks
"Of Major Importance" means the task is more important to complete as compared to the majority of other job tasks
"Of Critical Importance" means the task is extremely important to complete compared to all other job tasks

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Required Upon Active Duty (RUAD): Ask yourself, "On Day 1 of active duty, is the new employee expected to perform the task/skill, knowledge or ability?" Consider that the employee has already completed academy training and is on their first day of active duty in the department. Respond by selecting either:

"*Yes*"; Required upon active duty
"*No*"; NOT RUAD, can be learned on-the-job
"*No*"; NOT RUAD, can learned through continuing education

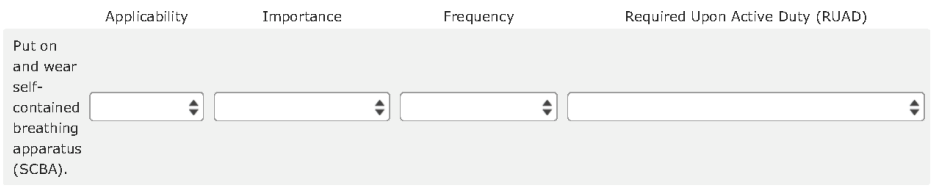
Better Performance: Ratings of whether the possession of a knowledge, skill or ability (KSA) would increase job performance. Ask yourself, "Does having more of the knowledge, skill or ability result in better job performance?" Respond by selecting either:
"*Yes*"; Possessing more leads to better performance
"*No*"; Possessing more does NOT lead to better performance

Reference vs. Recall: Can the knowledge be referenced through a source or other means while engaging in job tasks, or does one need to recall, "memorize," this information as it cannot be referenced while engaging in job tasks? Respond by utilizing the scale below:
"Knowledge area is referenced--no need to "know" this information"
"Knowledge area is often referenced--little need to "know' this information"
"Knowledge area is sometimes referenced--may be a need to know and understand this information"
"Knowledge area is seldom referenced--moderate need to know this information"
"Knowledge area can't be referenced--strong need to "know" this information"

Please consider the following examples (use scales below):
You are presented with two statements below and are asked to determine the importance and frequency of a task and a KSAO to the job. After considering the Task statement, you determine that the task is applicable, of critical importance, often performed, and required upon the first day of active duty. You will select, "Applicable", "Of Critical Importance" in the importance column, "Often Performed" in the frequency column, and "Yes" in the RUAD column.

After considering the KSA item, you determine it is applicable, of critical importance, required upon active duty, leads to better performance in greater amounts, and is seldom referenced. You will select "Applicable", "Critically Important" in the importance column, "Yes" in the RUAD column, "Yes" in the Better Performance column, and "Seldom Referenced" in the Ref vs. Recall column.

Example Question #1 (TASK)



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Example Question #2 (KSAO)

	Applicability	Importance	Required Upon Active Duty (RUAD)	Better Performance	Ref vs. Rec
Knowledge of motor vehicle rules and regulations.					

Demographic Information

For this section, please fill in your demographic information. No personal identifying information will be shared; your responses will remain completely confidential.

a. On the screen, please fill the information out by typing your information in the boxes provided, and also filling in the corresponding circles underneath.

b. It is **crucial that you make sure to fill out the last 4 of your SSN** in the provided box

c. Please identify your Race/Ethnicity and Gender in the spaces provided. **This information is optional** and collected for governmental reporting purposes along with ensuring that our sample is representative.

First Name

Last Name

Last 4 Digits of SSN

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Current Rank

- ◯ Firefighter; Firefighter Paramedic; Firefighter EMT
- ◯ Driver/Engineer; Driver/Engineer Paramedic; Driver Engineer EMT
- ◯ Lieutenant
- ◯ Captain
- ◯ Chief

Position Type

- ◯ Paid/Career
- ◯ Volunteer

Total Tenure with Department (in years)

Rank Tenure (# years in current rank position)

Department Size

- ◯ 25 or fewer
- ◯ 26 to 100 individuals
- ◯ Over 100 individuals

Race

- ◯ African American/Black--*Non-Hispanic*
- ◯ Asian
- ◯ Hispanic--*Non-White*
- ◯ American Indian/Native Alaskan
- ◯ Pacific Islander/Native Hawaiian
- ◯ White--*Non-Hispanic*
- ◯ Two or More Races
- ◯ Do not wish to provide

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Gender

- ◯ Male
- ◯ Female
- ◯ Do not wish to provide

Highest Level of Education Completed

- ◯ Some High School
- ◯ High School Graduate/GED
- ◯ Associates Degree
- ◯ Some College
- ◯ Bachelors Degree
- ◯ Masters Degree (M.S., M.A.)
- ◯ Doctoral Degree (M.D., J.D., Ph.D)

Please select your department from the alphabetical drop-down menus below.
Please select only one department

Department (A-J)

Department (K-Z)

If your department is NOT listed, please type the name below

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***REMINDER*: Remember, your responses are <u>not</u> saved. If your session is interrupted for any reason (computer log off, shut down, browser closed, etc) you will lose your responses and have to start over. Please attempt to complete the survey module in a single sitting if possible.**

Chapter I: Task Statements

This chapter provides a number of task statements, each grouped under their respective duty area. Please provide ratings for the following task statements. **Remember, if a task statement does not apply to the job and you select "Not Applicable", DO NOT complete the remaining scales for that item and instead move down to the next item*

Incident Response

	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
1. Accurately take incoming calls or information from the dispatcher regarding alarms (e.g., fire alarms, requests for emergency medical services).				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
2. Be in a response-ready status to respond to alarms at all hours of the day and night.				
3. Respond to a vast range of emergencies including fire alarms, automobile accidents, medical emergencies, hazardous materials, or other incidents.				
4. Put on situation-appropriate personal protective equipment (PPE) (example: full turnout gear, HAZ-MAT Equipment, Universal Protections [Body Substance Isolation Gear]).				
5. Put on and wear self-contained breathing apparatus (SCBA).				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
6. Carry equipment when needed (RIT Pack, High-Rise Pack, Medical Bag).				
7. Perform tasks only in established, protected work areas.				

Incident Assessment/Size-up

	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
8. Assess fires and situations and report conditions to superiors to receive instructions, using two-way radios.				
9. Conduct a mental size-up of the emergency scene.				
10. Check the wind direction in relation to the fire or HAZ-MAT scene.				
11. Assess the potential effects of weather on emergency response.				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
12. Assess the color, location and movement of smoke.				
13. Assess fire conditions to ensure proper fire suppression agent is used.				
14. Determine the safest evacuation route and primary and secondary means of egress.				
15. Safely shut off utility services to buildings in emergency situations (e.g., electrical and gas valves).				
16. Communicate with the dispatcher, other fire vehicles and commanding officers by radio and request any necessary assistance.				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
17. Advise the commanding officer of fire conditions, hazards and exposures at the scene.				
18. Communicate with the superior during a live fire.				
19. Collaborate with other firefighters, supervisors and other firefighter companies to conduct firefighting and rescue operations.				
20. Illuminate the emergency scene.				
21. Recognize potential hazards on emergency scenes regarding vehicle traffic.				
22. Discriminate between routine and emergency traffic.				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
23. Use personnel accountability systems to locate team members and communicate loss of air supply.				

Chapter I: Task Statements

Rescue Operations

	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
24. Rescue victims from burning buildings and accident sites.				
25. Assist at a water rescue (e.g., swollen rivers, frozen lakes)				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
26. Are you paying attention? Please fill in a 'YES' for Applicability, 'Moderate' for Importance, 'Constantly' for Frequency, and 'NO-*Learned on-the-job*' for RUAD.				
27. Interact with victims or casualties who have sustained severe or life-ending injuries.				
28. Interact with victims who have witnessed the loss or injury of companions.				
29. Safely remove persons from entrapments.				
30. Safely lift, hoist or drag victim(s), taking care to minimize further injuries.				
31. Drag or carry a victim(s) out of a building wearing appropriate PPE.				
32. Carry victim(s) via ladders wearing appropriate PPE.				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
33. Drag or carry victim(s) up or down stairs wearing appropriate PPE.				
34. Evacuate persons from a fire area.				
35. Extricate persons from automobiles.				
36. Cut vehicle power during extrication.				
37. Strategically position apparatus to protect incident scene from oncoming traffic.				
38. Bring and use the necessary tools to extricate or free trapped persons.				
39. Systematically search burning buildings to locate fire victims.				
40. Gather information (e.g., bystanders, neighbors, family members) about probable victim locations and/or building floor plans.				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
41. Enter unfamiliar, smoke-filled buildings and rooms while wearing PPE and SCBA equipment.				
42. Systematically search for trapped persons.				
43. Operate and/or man firefighting watercraft/boats for civilian rescue.				
44. Assess risk/benefit of rescue and relay to company officer.				
45. Tie knots to a hose line, ladder, or other object as necessary during a large area search.				
46. Maintain team integrity and firefighter safety.				
47. Rescue a firefighter with functioning respiratory protection.				
48. Rescue a firefighter whose respiratory protection is not functioning.				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
49. Recognize and manage psychological effects resulting from operating in obscured conditions.				
50. Ensure respiratory protection is not compromised.				
51. Choose and apply appropriate techniques for opening or removing trunks, engine compartments, vehicle roofs, doors, windshields, windows, steering wheels or columns, and dashboards.				

Chapter I: Task Statements

Emergency Medical Service Operations

	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
52. Administer first aid to injured persons.				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
53. Assess a patient's condition (e.g. alertness level, orientation, breathing, circulation).				
54. Gather information from patient or family member regarding medical history.				
55. Control bleeding and bandage wounds.				
56. Perform cardiopulmonary resuscitation.				
57. Operate Defibrillator (AED).				
58. Use airway adjuncts				
59. Immobilize painful, swollen, or deformed extremities.				
60. Appropriately control patients who are hysterical, mentally disturbed, or in an altered state of consciousness that require medical attention.				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
61. Administer appropriate oxygen flow to patients.				
62. Are you paying attention? Please fill in a 'YES' for Applicability, 'Modest' for Importance, 'Rarely' for Frequency, and 'YES' for RUAD.				
63. Prepare and transfer a patient to an ambulance.				
64. Lift a patient into a bed/onto a stretcher; carry patient through tight quarters and down flights of stairs using a stair chair or Reeve stretcher; carry patient to ambulance.				
65. Monitor and provide needed care when transporting a patient to a medical facility.				
66. Properly utilize emergency equipment and supplies.				

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Chapter I: Task Statements

Pumping and Driving Operations

	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
67. Know street layouts, addresses, intersections and alternative routes in response area.				
68. Know the location of hydrants and mains in a response area.				
69. Efficiently and safely drive firefighting emergency equipment to and from a scene.				
70. Operate pumps connected to hoses.				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
71. Check gauges for pressures and proper water flow.				
72. Calculate and/or estimate friction loss rates or other pertinent values.				
73. Maintain constant water supply through proper management of pumping apparatus.				
74. Monitor apparatus during operations.				
75. Calculate foam amounts.				
76. Conduct drafting operations.				
77. Charge lines at officer's command by opening discharge valves to support fire operations.				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
78. Control pumper output by regulating engine RPMs, pressure relief valve and output gate valves so that pressure or flow is correct for the given operation.				
79. Utilize watercraft to supply water for fighting fires.				

Chapter I: Task Statements

Ladder Operations

	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
80. Operate the ladder pipe as per apparatus specifications.				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
81. Position and climb ladders to gain access to upper levels of buildings or to rescue individuals from burning structures.				
82. Determine the size and type of ladders required.				
83. Identify proper ladder locations to allow access to upper levels of buildings or to ensure proper evacuation of fire personnel.				
84. Be aware of electrical lines when setting up ladders.				
85. For aerial ladders: position truck, place chocks and set-up truck jacks.				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
86. Raise a 24-foot extension ladder and extend the fly section of that ladder.				
87. With assistance, raise a 35-foot extension ladder and extend the fly section of that ladder.				
88. With assistance, carry extension ladders (24-foot, 35-foot) from truck to incident scene.				
89. Climb an aerial ladder to a height up to 100 feet while wearing PPE equipment.				
90. Lower ground ladders and stow them onto the truck.				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
91. Create openings in buildings for ventilation or entrance using axes, chisels, crowbars, power saws or core cutters.				
92. Remove equipment from truck and start power tools.				
93. Use equipment (e.g., swing axe or sledge hammer) to make forcible entries.				
94. Determine the stability of supporting surfaces such as roofs and fire escapes.				
95. Cut openings in roof with a fire axe or power saw (e.g., K-12 saw) for ventilation or examination.				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
96. Remove ceiling materials, such as plaster and lath, sheet rock, ceiling tiles and insulation by poking from above with pike pole or axe so that smoke and hot gases can escape.				
97. Are you paying attention? Please fill in a 'YES' for Applicability, 'Minimal' for Importance, 'Rarely' for Frequency, and 'NO-*Learned through Continuing Education*' for RUAD.				
98. Remove and transport equipment (e.g., electrical extension cords, ventilation fans) from the truck as needed.				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
99. Properly knot and tie rope to hoist equipment weighing up to 50 pounds to upper levels.				
100. Retreat from the area as a team when ventilation is accomplished.				

Chapter I: Task Statements

Hoseline and Attack Operations (pt. 1)

	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
101. Establish an appropriate water supply, lay hose lines and connect them to water supplies.				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
102. Coordinate firefighting and rescue operations with other firefighters, supervisors and other firefighter companies.				
103. Pull the supply line from an engine to a hydrant.				
104. Wrap a hose around functioning hydrant, unscrew the hydrant cap, screw the hose connection to the hydrant and turn on the hydrant (i.e., catch the plug).				
105. Make and unmake coupling connection				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
106. Carry a high-rise pack up multiple flights of stairs while wearing PPE so that attack line can be set up.				
107. Advance and fully extend a pre-connected, charged or uncharged hose of a diameter between 1¾ to 2½ inches.				
108. Remove kinks in charged supply line by lifting and/or turning hose so that water flow is not obstructed.				
109. Carry, assemble and operate deluge set (ground monitor).				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
110. Connect multiple small lines (example: 50-foot) and extend them to reach fire when required.				
111. Carry a 50-foot section of rolled hose unassisted while in appropriate PPE.				
112. Feed charged hose line of a diameter between 1¾ to 2½ inches to attacking firefighter units.				
113. Re-bed hose line back onto the proper apparatus (e.g., engine or truck).				
114. Select the proper hose size based upon fire scene and method of attack.				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
115. Calculate the height of a building in feet from its floors.				
116. Determine the correct spray pattern based upon fire scene (e.g., solid stream, hollow cone, full cone, fog stream, etc.).				
117. Hold a charged 1¾ inch hose and open the nozzle.				
118. While assisted, hold a charged 2½ inch hose and open the nozzle.				
119. Operate a charged hose line from elevated positions and direct spray at fire.				

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Chapter I: Task Statements

Hoseline and Attack Operations (pt. 2)

	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
120. While on a ladder, operate and direct spray at fire.				
121. Operate a charged hose line from confined spaces and direct spray at fire.				
122. Continue to monitor fire suppression and adjust suppression tactics to extinguish fire and prevent the extension of the fire.				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
123. Move toward the source of a fire using knowledge of types of fires, construction design, building materials and physical layout of properties.				
124. Enter smoky buildings and rooms with a hose in hand while wearing SCBA.				
125. Seek the source of a fire and extinguish.				
126. Select the correct tool or equipment for various firefighting maneuvers.				
127. Fight fires in smoky buildings when visibility is poor or nonexistent.				
128. Fight fires for prolonged periods of time in extreme temperatures.				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
129. Use other senses to find the source of a fire when you cannot see.				
130. Carry equipment up stairs while wearing PPE gear and SCBA.				
131. Climb obstacles while wearing PPE and SCBA.				
132. Identify and respond to hazards at the scene.				
133. Operate a thermal imaging camera (TIC).				
134. Operate a fire extinguisher by carrying it to objective, aiming and discharging at seat of fire or spill.				
135. Attack a passenger vehicle fire.				
136. Communicate attack techniques to the attack teams				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
137. Communicate and manage search, rescue, and ventilation requirements.				

Chapter I: Task Statements

Hoseline and Attack Operations (pt. 3)

	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
138. Control a flammable gas cylinder fire.				
139. Identify the contents of cylinder.				
140. Close cylinder valves.				
141. Eliminate leaking gas and then extinguish fire.				
142. Evaluate the cylinder integrity and ensure cylinder has cooled.				
143. Face the cylinder during approach and retreat.				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
144. Maintain correct body posture during attack operations.				
145. Extinguish fires in exterior Class A materials, given fires in stacked or piled and small unattached structures or storage containers.				
146. Deploy portable water tanks as well as the equipment necessary to transfer water between and draft from them.				
147. Are you paying attention? Please fill in a 'YES' for Applicability, 'Major' for Importance, 'Often' for Frequency, and 'Yes' for RUAD.				
148. Prevent water hammers when shutting down nozzles.				
149. Replace burst hose sections.				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
150. Anticipate the injuries which could result from common types of accidents.				
151. Prevent exposure to products of combustion.				
152. Follow precautions when advancing hose lines to a fire.				
153. Assess proper application of fire stream.				
154. Use appropriate water application methods for exposure protection and fire extinguishment.				
155. Identify automobile fuel types and assess and control fuel leaks.				
156. Choose attack and control techniques for grade level and above and below grade level fires.				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
157. Recognize hazards associated with an automobile fire.				
158. Apply appropriate attack lines and water streams for stacked, piled materials and outdoor fires.				
159. Ensure complete extinguishment of stacked and piled materials.				
160. Recognize dangers of exposure to toxins or hazardous materials associated with storage building and container fires.				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
161. Conduct a size-up of HAZ-MAT scene.				
162. Respond to the release or potential release of hazardous material according to outlined protocols.				
163. Identify HAZ-MAT by use of signage and HAZ-MAT reference materials.				
164. Apply a foam blanket or other suppressants.				
165. Provide onsite crowd control in a HAZ-MAT situation.				
166. Conduct a decontamination setup.				
167. Utilize watercraft to trace source of oil slicks.				
168. Exit a hazardous area as a team.				
169. Extinguish an ignitable liquid fire.				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
170. Identify and control leaking flammable liquids, such that protection from flash fire is maintained				
171. Take corrective measures to rectify poor foam generation.				
172. Use the appropriate concentrates on hydrocarbon and polar solvent fuels.				
173. Reduce or avoid hazards associated with firefighting foams.				
174. Use fog nozzles or foam nozzles depending on situation.				

Chapter I: Task Statements

Salvage and Overhaul Operations

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
175. Protect property from water and smoke using waterproof salvage covers and/or smoke ejectors (i.e., powered fans).				
176. Place a smoke ejector in strategic locations throughout the fire scene to aid in proper ventilation and smoke removal.				
177. Gather furniture into an appropriate location and protect it with salvage covers.				
178. Place salvage covers over lower floors to prevent unnecessary damage.				
179. Salvage property by removing broken glass, removing water and ventilating buildings to remove smoke.				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
180. After a fire is extinguished, drain or pump out water and clean up remaining water on the floors.				
181. Remove burned and charred waste and other debris, if hazardous.				
182. Perform overhaul and salvage operations.				
183. Check for fire extension or hotspots using thermal imaging camera.				
184. Inspect fire sites after flames have been extinguished to ensure that there is no further danger.				
185. Coordinate inspections with other firefighters, supervisors and other firefighter companies.				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
186. Check for smoldering fire inside walls and ceiling by means of fire tools and equipment (e.g., fire axe, ceiling hook).				
187. Are you paying attention? Please fill in a 'YES' for Applicability, 'Critical' for Importance, 'Rarely' for Frequency, and 'NO-*Learned on-the-job*' for RUAD.				
188. Search for missing persons not accounted for.				
189. Preserve evidence at fire scene.				
190. Secure the fire scene.				
191. Monitor the air for harmful toxins.				
192. Remove water via water chutes and other devices.				
193. Overhaul all vehicle compartments.				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
194. Stop the flow of water from building sprinkler with sprinkler wedges or stoppers.				
195. Remove flooring, ceiling, and wall components to expose void spaces without compromising structural integrity.				
196. Roll and fold salvage covers for reuse.				
197. Perform horizontal ventilation on a structure, so that the ventilation openings are free of obstructions.				
198. Recognize points of strength and weakness in auto body construction.				
199. Recognize and communicate dangers associated with overhaul.				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
200. Designate work zones for safe operation at emergency scenes.				

Chapter I: Task Statements

External and Interagency Collaborations

	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
201. Collaborate with other agencies and individuals to respond to accidents and/or disasters.				
202. Exchange information with law enforcement officials.				
203. Coordinate tasks and responsibilities with law enforcement officials (e.g., traffic control, crowd control).				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
204. Monitor emergency scene and request assistance from other agencies as needed.				
205. Clearly and accurately communicate patient information, assessment and treatment via radio on route to a medical facility.				
206. Clearly and accurately communicate patient information and care to medical staff.				
207. Assist medical staff as needed until released by medical staff.				

Training and Education

	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
208. Participate in fire drills and demonstrations of firefighting techniques.				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
209. Participate in ongoing training drills to develop and maintain proficiency (e.g., HAZ-MAT, search and rescue operations, SCBA and air management, automobile extrication, rapid intervention team (RIT) training, etc.).				
210. Participate in training drills with new firefighters, assisting in their training through coaching and mentoring.				
211. Train in equipment operations such as apparatus driving, hydraulics and pump operation and aerial ladder operation.				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
212. Participate in demonstrations, Officer classes, company level training or educational reviews (e.g., signs and symptoms of heat stroke, winter fireground operations, review of response zone building construction and floor plans, review of response zone street maps).				
213. Participate in physical training activities to maintain a high level of physical fitness.				
214. Participate in courses, seminars and conferences, and study fire science literature to learn firefighting techniques.				
215. Complete required training courses such as hazardous materials and automobile extrication.				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
216. Read, comprehend and retain information from training materials (e.g., text books and manuals).				
217. Successfully complete and pass written exams that test coursework learning and training objectives.				
218. Take and complete course work required to obtain medical certifications.				
219. Maintain ongoing certification requirement through continuing education or training.				
220. Read and comprehend aspects of the fire department's member assistance program				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
221. Are you paying attention? Please fill in a 'YES' for Applicability, 'Major' for Importance, 'Seldom' for Frequency, and 'YES' for RUAD.				
222. Read, comprehend and retain information of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program				
223. Participate in life safety initiatives in support of the fire department mission and to reduce firefighter line-of-duty injuries and fatalities.				

Chapter I: Task Statements

Administrative Duties and Communications

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
224. Document required information such as personal information of patients or citizens involved in emergency scene.				
225. Summarize incidents that occurred at an emergency scene, detailing tactics, equipment and procedures used through written narratives.				
226. Write descriptions of situations in medical reports, including details of symptoms, actions taken, etc.				
227. Complete reports required of the job (daily maintenance, inspections and truck checks).				
228. Answer routine phone calls in the station.				
229. Report for duty on time.				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
230. Maintain professional appearance and personal hygiene in accordance with regulations.				
231. Remain on-duty for extended periods of time per department-specific SOGs.				
232. Read all internal communications (emails, handouts, etc.) from department (e.g., SOGs, policies and procedures, rules and regulations, etc.).				
233. Document presentations and use prepared materials.				

Station and Equipment Maintenance

	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
234. Clean and maintain fire stations and firefighting equipment and apparatus.				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
235. Ensure apparatus is in response-ready state, including decontaminating and disinfecting the unit and equipment, restocking of supplies and inspection of equipment.				
236. Ensure proper function of SCBA by inspecting and performing daily tests at the start of each shift; service SCBA if malfunctioning.				
237. Coordinate with firefighters from off-going shift as to the actions needed to ensure the apparatus is in a response ready state.				
238. Checks bells and other signaling devices in the fire station by operating them to ensure that they work properly.				
239. Report damaged and out of service equipment to company officer.				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
240. Perform maintenance and upkeep for equipment and apparatus as necessary to ensure a response-ready state.				
241. Wash used hoses and re-bed them on the truck.				
242. Maintain all personal protective equipment (PPE).				
243. Maintain an inventory of tools and equipment.				
244. Maintain maintenance records of all equipment and apparatus.				
245. Perform daily chores to ensure a neat and clean working and living environment at the fire station.				
246. Perform and coordinate kitchen chores such as planning meals, cooking meals and cleaning up after meals.				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
247. Maintain the exterior of fire station: lawns, walkways and driveways.				
248. Perform an annual service test on fire hose, using a pump, a marking device, pressure gauges, and a timer.				

Chapter I: Task Statements

Prevention and Inspections

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
249. Engage in pre-planning operations such as documenting building layouts, building construction, fire suppression and other tactical information such as location of exits to assist in future operations.				
250. Inspect fire hydrant functioning in response zones and conduct hydrant flow tests.				
251. Inspect businesses and non-owner occupied private dwellings.				
252. Identify code enforcement issues and alert superiors.				
253. Complete smoke detector certifications.				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
254. Identify illegal occupant dwellings or other occupancies.				
255. Use commonly recognized symbols when diagramming construction features, utilities, hazards, and fire protection systems.				

Public Relations and Customer Service

	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
256. Maintain a log of visitors to the fire station by recording their names, date, time and other relevant information so a written record is available.				
257. At superior's command, accompany owners/occupants into burned structure to allow them to retrieve possessions safely and to reduce liability risk to the fire department.				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
258. Inform and educate the public on fire prevention.				
259. Perform community service and outreach programs such as fire alarm installations, child safety seat installations, etc.				
260. Conduct fire station tours for groups of individuals and children.				
261. Maintain a service orientation or public servant mentality when dealing with the public.				
262. Use tact and diplomacy in dealing with the public under times of high stress or with disgruntled, agitated or hysterical persons.				
263. Interact and work with citizens.				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
264. Are you paying attention? Please fill in a 'YES' for Applicability, 'Major' for Importance, 'Occasionally' for Frequency, and 'YES' for RUAD.				
265. Attend community meetings, ceremonies and parades as representatives of the department.				
266. Establish perimeter lines to prevent unauthorized persons from entering areas near emergencies.				
267. Provide assistance to victims.				
268. Control the emergency scene to protect yourself, coworkers and the patient or victim.				
269. Communicate with the public to prevent them from crossing perimeter lines.				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
270. Assist rescue operation teams so that rescue items are recognized and retrieved in the time as prescribed by the Authorities Having Jurisdiction (AHJ).				
271. Support and conduct community risk reduction programs.				

Chapter I: Equipment and Tool Usage Statements

Equipment & Tools

	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
272. PPE: SCBA, turnout gear (pants, jacket, helmet, gloves, hood), PASS (Personal Alert Safety System) Device				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
273. Blocks or pulleys: Block and tackle equipment, pulleys, riggings, carabiners, anchors, straps, ropes				
274. Fire extinguishers: Carbon dioxide CO2 fire extinguishers, dry chemical fire extinguishers, multipurpose fire extinguishers, water extinguisher, K-Type				
275. Fire hoses: Charged fire hoses, uncharged fire hoses				
276. Nozzles & Appliances: Fire hose nozzles, hose couplings, wyes, siamese, adapters, reducers				
277. Fire or rescue trucks: Aerial trucks, ladder trucks, engine trucks, rescue vehicles, other apparatus, brush apparatus				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
278. Fire hand tools: Fire axes, McLeod tools, pick head axes, Pulaski tools, pike pole, claw hammers, rubber mallet, non-sparking hammers, sledgehammers, Halligan bars, Hux bars, pinch bars				
279. Stabilizing Tools: Struts, lift jackets, cribbing				
280. Ropes & Webbing				
281. Hydraulic Rescue Tools: Spreaders, cutters, Jaws of Life, rams, air bags				
282. Ladders: Aluminum ladders, extension ladders, roof ladders, A-Frame ladders				
283. Power Equipment: Chain saws, circular saws, K-12 saws, reciprocating saws, electric/hydraulic generators				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
284. Ventilation: Positive pressure fans, negative pressure fans, hydraulic ventilation, electric fans				
285. First Responder: Collars, backboard, dressings, AED, stethoscope, Stokes basket, airway adjuncts				
286. Meters: Thermal imaging camera (TIC), CO2 monitors, gas detectors, radiation meters				
287. Saws: Hacksaws, handsaws, tree saws				
288. Maps & Manuals: City maps, county maps, building layout maps, equipment manuals, apparatus manuals, repair manuals, Dangerous Goods Manual (HAZMAT)				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
289. Specialty wrenches: Hydrant shutoff wrenches, lug wrenches, non-sparking bung wrenches, gas-utility wrenches, spanner wrenches, adjustable wrenches				
290. Database user interface and query software: Affiliated Computer Services (ACS), FIREHOUSE, Fire incident reporting systems, Microsoft Access, Scientific Software				
291. Computer software: E-mail software, internet browsing software, drafting software, spreadsheet software, word processing software, project management software				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
292. Lighting Equipment: Power supply and lighting equipment, cords and connectors, and ground-fault interpreter (GFI) devices.				

Chapter I: Physical Task Statements

Personal Equipment & Environment

	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
293. Perform all fireground tasks wearing full turnout gear (coat, bunker pants, boots, helmet, gloves and hood) and SCBA.				
294. Perform physically demanding tasks for extended periods of time.				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
295. Perform in extreme heat and cold conditions.				
296. Perform operations in inclement weather.				
297. Walk long distances in full turnout gear.				
298. Operate in dark environments.				
299. Are you paying attention? Please fill in a 'YES' for Applicability, 'Moderate' for Importance, 'Constantly' for Frequency, and 'NO-*Learned through Continuing Education*' for RUAD.				
300. Operate at high elevations.				
301. Operate in confined areas.				

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THE BUREAU OF FIRE STANDARDS AND TRAINING
AT
The Florida State Fire College

JOB ANALYSIS QUESTIONNAIRE

Chapter I: Physical Task Statements

Lifting/Dragging/Carrying

	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
302. Lift and carry heavy equipment and tools (e.g., high-rise pack containing hoseline and tools, gas-powered circular saw, chain saw, hydraulic cutters/spreaders, hydraulic tool power supply, gas-powered fans, portable hydrants, EMS bag containing oxygen bottle)				
303. Lift and carry a stretcher/gurney with assistance				
304. Lift and push a stretcher/gurney into an ambulance with assistance				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
305. Lift and transfer victims from ground to stretcher with assistance				
306. Carry heavy equipment and tools for extended distances				
307. Drag unconscious human victims and/or firefighters out of dangerous environments				
308. Carry unconscious or injured victims and/or firefighters out of dangerous conditions				
309. Remove heavy equipment from apparatus compartments				
310. Individually drag charged 1 ¾ inch hoseline				
311. Individually drag charged 2 ½ inch hoseline				
312. Individually feed charged 1¾ inch hoseline to firefighter(s) at nozzle to assist in moving hoseline around obstacles, up stairs, etc.				
313. Drag uncharged or charged hoseline				

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	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
314. Hold and operate a hoseline				
315. Open a hydrant valve or hydrant cap using a hydrant wrench				
316. Connect hoseline sections using a spanner tool				
317. Penetrate and tear down ceiling using a pike pole				
318. Hold and operate gas-powered saws and hydraulic tools				
319. Lift, swing and strike targets using sledge hammers and axes				
320. Lift and carry ground ladders				
321. Position, heel and raise ground ladders				
322. Extend ground ladders using halyard				
323. Hoist equipment using a rope				

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JOB ANALYSIS QUESTIONNAIRE

Chapter I: Physical Task Statements

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Crawling/Climbing/Maneuvering

	Applicability	Importance	Frequency	Required Upon Active Duty (RUAD)
324. Climb, crawl and/or maneuver in confined or restricted spaces while wearing SCBA and appropriate PPE				
325. Crawl, duck-under, crawl-over and maneuver around obstacles in confined and restricted spaces while wearing SCBA and appropriate PPE				
326. Climb through windows and openings while wearing SCBA and appropriate PPE				
327. Crawl along ceiling joists and rafters while wearing SCBA and appropriate PPE				
328. Climb to the top and back down ground ladders while wearing SCBA and appropriate PPE				
329. Climb to the top and back down aerial ladders/buckets/baskets/platforms while wearing SCBA and appropriate PPE				
330. Rappel down from the top of structures while wearing SCBA and appropriate PPE				
331. Climb stairs while wearing PPE and carrying equipment while wearing SCBA and appropriate PPE				

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Cognitive Abilities

	Applicability	Importance	Required Upon Active Duty (RUAD)	Better Performance
332. **Basic Arithmetic**: Ability to perform mathematical operations, such as counting, addition, subtraction, multiplication and division.				
333. **Deductive Reasoning**: The ability to apply general rules to specific problems to produce answers that make sense. (Example: Interpretation of SOPs and SOGs).				
334. **Flexibility of Closure**: The ability to identify or detect a known pattern (a figure, object, word or sound) that is hidden in other distracting material. (Example: Listening to Engine RPM's in order to identify issues).				

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	Applicability	Importance	Required Upon Active Duty (RUAD)	Better Performance
335. **Inductive Reasoning**: The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events). (Example: Reading the various clues of smoke/heat to reach a decision regarding the extent of fire).				
336. **Information Ordering**: The ability to arrange things or actions in a certain order or pattern according to a specific rule or set of rules (e.g., patterns of numbers, letters, words, pictures, mathematical operations). (Example: Using SOPs to follow procedures for hoseline operation).				

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	Applicability	Importance	Required Upon Active Duty (RUAD)	Better Performance
337. **Mathematical Reasoning**: The ability to choose the right mathematical methods or formulas to solve a problem. (Example: Friction loss, ladder or hose length calculation).				
338. **Memorization**: The ability to remember information such as words, numbers, pictures, and procedures. (Example: Hydrant locations, previous building layouts).				
339. **Number Facility**: The ability to add, subtract, multiply or divide quickly and correctly.				
340. **Oral Comprehension**: The ability to listen to and understand information and ideas presented through spoken words and sentences.				

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	Applicability	Importance	Required Upon Active Duty (RUAD)	Better Performance
341. **Are you paying attention?** Please fill in a 'YES' for Applicability, 'Critical' for Importance, 'YES' for RUAD, and a 'NO' for Better Performance.				
342. **Oral Expression**: The ability to communicate information and ideas in speaking so others will understand.				
343. **Problem Sensitivity**: The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.				
344. **Selective Attention**: The ability to concentrate on a task over a period of time without being distracted. (Example: Being the only pump operator on-duty).				

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	Applicability	Importance	Required Upon Active Duty (RUAD)	Better Performance
345. **Spatial Orientation**: The ability to know your location in relation to the environment or to know where other objects are in relation to you.				
346. **Visualization**: The ability to imagine how something will look after it is moved around or when its parts are moved or rearranged.				
347. **Written Comprehension**: The ability to read and understand information and ideas presented in writing.				
348. **Written Expression**: The ability to communicate information and ideas in writing so others will understand. (Example: Filling out maintenance records or logbooks).				

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Chapter II: KSAO Statements

Physical Abilities

	Applicability	Importance	Required Upon Active Duty (RUAD)	Better Performance
349. **Reaction Time:** The ability to quickly respond (with the hand, finger or foot) to a signal (sound, light, picture) when it appears.				
350. **Arm-Hand Steadiness:** The ability to keep your hand and arm steady while moving your arm or while holding your arm and hand in one position. (Example: Operating power tools for extrication).				

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	Applicability	Importance	Required Upon Active Duty (RUAD)	Better Performance
351. **Manual Dexterity**: The ability to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate or assemble objects.				
352. **Multi-limb Coordination**: The ability to coordinate two or more limbs (for example, two arms, two legs, or one leg and one arm) while sitting, standing or lying down. It does not involve performing the activities while the whole body is in motion.				

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	Applicability	Importance	Required Upon Active Duty (RUAD)	Better Performance
353. **Response Orientation**: The ability to choose quickly between two or more movements in response to two or more different signals (lights, sounds, pictures). It includes the speed with which the correct response is started with the hand, foot or other body part.				
354. **Rate Control**: The ability to time your movements or the movement of a piece of equipment in anticipation of changes in the speed and/or direction of a moving object or scene. (Example: Controlling for water hammer).				

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	Applicability	Importance	Required Upon Active Duty (RUAD)	Better Performance
355. **Static Strength**: The ability to exert maximum muscle force to lift, push, pull or carry objects.				
356. **Control Precision**: The ability to quickly and repeatedly adjust the controls of a machine or a vehicle to exact positions. (Example: Operating the aerial ladder).				
357. **Stamina**: The ability to exert yourself physically over long periods of time without getting winded or out of breath.				
358. **Near Vision**: The ability to see details at close range (within a few feet of the observer).				

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	Applicability	Importance	Required Upon Active Duty (RUAD)	Better Performance
359. **Dynamic Strength**: The ability to exert muscle force repeatedly or continuously over time. This involves muscular endurance and resistance to muscle fatigue.				
360. **Trunk Strength**: The ability to use your abdominal and lower back muscles to support part of the body repeatedly or continuously over time without 'giving out' or fatiguing.				
361. **Extent Flexibility**: The ability to bend, stretch, twist or reach with your body, arms and/or legs.				

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	Applicability	Importance	Required Upon Active Duty (RUAD)	Better Performance
362. **Depth Perception**: The ability to judge which of several objects is closer or farther away from you, or to judge the distance between you and an object. (Example: Placement of aerial).				
363. **Auditory Attention**: The ability to focus on a single source of sound in the presence of other distracting sounds. (Example: Focusing on your PASS device in a chaotic environment).				
364. **Gross Body Coordination**: The ability to coordinate the movement of your arms, legs and torso together when the whole body is in motion.				

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	Applicability	Importance	Required Upon Active Duty (RUAD)	Better Performance
365. **Gross Body Equilibrium:** The ability to keep or regain your body balance or stay upright when in an unstable position. (Example: Gusting winds while firefighting from the aerial ladder).				
366. **Far Vision:** The ability to see details at a distance.				

Chapter II: KSAO Statements

Skills

	Applicability	Importance	Required Upon Active Duty (RUAD)	Better Performance
367. **Problem Analysis:** Quickly perceiving problem areas, identifying options and the potential impact of various solutions.				

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	Applicability	Importance	Required Upon Active Duty (RUAD)	Better Performance
368. **Problem-Solving**: Determining courses of action/solutions to problems. Implementing targeted solutions.				
369. **Decision-Making**: Understanding when a decision must be made and to have the willingness to make a decision. Quickly and efficiently determining an appropriate course of action to target a particular situation.				
370. **Planning and Organization**: Skill in establishing a course of action for oneself and others to accomplish goals. Skill in properly planning assignments, work duties and tasks; appropriate allocation of resources to ensure efficient, timely and smooth department operations.				
371. **Interpersonal Skill**: Listening to others and being considerate of the concerns of others.				
372. **Oral Communication**: Speaking in a clear, concise, understandable and appropriate manner.				

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	Applicability	Importance	Required Upon Active Duty (RUAD)	Better Performance
373. **Self-Motivation**: Working without supervision and accomplishing tasks without prodding.				
374. **Composure**: Working under stress and performing in unpleasant or traumatic circumstances.				
375. **Conflict Resolution**: Skill in de-escalating tense situations and quieting potential disturbances.				
376. **Critical Thinking**: Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.				
377. **Leadership**: Willingness to lead, take charge and offer opinions and direction, and having people respond positively to those directions such that there are behavioral changes.				

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	Applicability	Importance	Required Upon Active Duty (RUAD)	Better Performance
378. **Monitoring**: Monitoring/Assessing your performance or the performance of other individuals or organizations to make improvements or take corrective action.				
379. **Operation and Control**: Watching gauges, dials or other indicators to make sure a machine is working properly.				
380. **Instructing**: Teaching others how to do something.				
381. **Judgment and Decision Making**: Considering the relative costs and benefits of potential actions to choose the most appropriate one.				
382. **Are you paying attention?** Please fill in a 'YES' for Applicability, 'Moderate' for Importance, 'YES' for RUAD, and a 'YES' for Better Performance.				
383. **Social Perceptiveness**: Being aware of others' reactions and understanding why they react as they do.				

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	Applicability	Importance	Required Upon Active Duty (RUAD)	Better Performance
384. **Negotiation**: Bringing others together and trying to reconcile differences.				
385. **Public Relations Skill**: Dealing with the public in such a way as to protect the image and reputation of the department while providing the public or individuals with necessary or requested information.				
386. **Persuasion**: Persuading others to change their minds or behavior.				

Chapter II: KSAO Statements

Other Characteristics & Work Styles

	Applicability	Importance	Required Upon Active Duty (RUAD)	Better Performance
387. **Achievement/Effort**: Establishing and maintaining personally challenging achievement goals and exerting effort toward mastering tasks.				

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	Applicability	Importance	Required Upon Active Duty (RUAD)	Better Performance
388. **Adaptability/Flexibility**: Being open to change (positive or negative) and to considerable variety in the workplace.				
389. **Attention to Detail**: Being careful about detail and thorough in completing work tasks.				
390. **Concern for Others**: Being sensitive to others' needs and feelings and being understanding and helpful on the job. Showing compassion for others.				
391. **Cooperation**: Being pleasant with others on the job and displaying a good-natured, cooperative attitude.				
392. **Dependability**: Being reliable, responsible and dependable and fulfilling obligations.				
393. **Ethics**: Acting in an honest and fair manner. Willingness to accept responsibility for actions when things go wrong. Displaying a high degree of integrity and professionalism in action and word.				
394. **Independence**: Developing one's own ways of doing things, guiding oneself with little or no supervision and depending on oneself to get things done.				

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	Applicability	Importance	Required Upon Active Duty (RUAD)	Better Performance
395. **Initiative**: Willingness to take on responsibilities and challenges.				
396. **Innovation**: Tendency towards creativity and alternative thinking to develop new ideas for and answers to work-related problems.				
397. **Integrity**: Being honest and ethical, especially in situations where others could be taken advantage of.				
398. **Persistence**: In the face of obstacles, one continues to engage to overcome the obstacle.				
399. **Self-Control**: Maintaining composure, keeping emotions in check, controlling anger and avoiding aggressive behavior, even in very difficult situations.				
400. **Service Orientation**: Actively looking for ways to help people; a desire to place others' interests ahead of your own; showing compassion for others.				
401. **Social/Teamwork Orientation**: Preferring to work with others rather than alone, and being personally connected with others on the job. The ability to work with others (teamwork) to achieve a mutual end.				

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	Applicability	Importance	Required Upon Active Duty (RUAD)	Better Performance
402. **Stress Tolerance**: Accepting criticism and dealing calmly and effectively with high stress situations.				

Chapter II: KSAO Statements

Knowledge Areas (pt. 1)

	Applicability	Importance	Required Upon Active Duty (RUAD)	Better Performance	
403. Knowledge of motor vehicle rules and regulations.					
404. Knowledge of common hand tools, such as wrenches, pliers, screw drivers, hammers and mauls, axes, prying tools, etc., e.g., their use, operation, limits and safety precautions/procedures.					
405. Knowledge of basic science terms and concepts, e.g., force, gravity, pressure, vacuum, etc.					

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	Applicability	Importance	Required Upon Active Duty (RUAD)	Better Performance	
406. Knowledge of ratios and terms, expressing ratios and the practical use of ratios, e.g., pounds per square inch, gallons per minute, etc.					
407. Knowledge of basic mechanical principles, e.g., leverage, gears, pulleys, screws, etc.					
408. Knowledge of typical occupancy activity at a given time of day					
409. Knowledge of the science behind fire propagation					
410. Are you paying attention? Please fill in a 'YES' for Applicability, 'Major' for importance, 'YES' for RUAD, a 'NO' for Better Performance, and 'Seldom Referenced' for Ref vs. Recall.					
411. Knowledge of common heat energy sources: chemical, electrical, and mechanical energy					
412. Knowledge of heat transmission and the mechanisms by which heat transfer occurs: conduction, convection, and radiation					
413. Knowledge of common products of combustion and their toxic effects					

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	Applicability	Importance	Required Upon Active Duty (RUAD)	Better Performance	
414. Knowledge of classification of fires: class A, B, C, D, and K fires					
415. Knowledge of Fire Control Theory: temperature reduction, fuel removal, oxygen exclusion, and chemical flame inhibition					
416. Knowledge of common materials found in building construction					
417. Knowledge of the strengths and weaknesses associated with different types of building construction types					
418. Knowledge of types of extinguishers and their common uses					
419. Knowledge of types of knots, ropes, and webbing materials					
420. Knowledge of types of ladders					
421. Knowledge of search operations					
422. Knowledge of rescue operations					
423. Knowledge of extrication operations					
424. Knowledge of types of carries					

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Chapter II: KSAO Statements

Knowledge Areas (pt. 2)

	Applicability	Importance	Required Upon Active Duty (RUAD)	Better Performance	Ref vs.
425. Knowledge of victim removal methods					
426. Knowledge of forcible entry methods					
427. Knowledge of ventilation methods					
428. Knowledge of types of hydrants and alternative water supplies					
429. Knowledge of methods of moving water in a system					
430. Knowledge of static pressure, flow pressure, and residual pressure					
431. Knowledge of common hose rolls					

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	Applicability	Importance	Required Upon Active Duty (RUAD)	Better Performance	Ref vs.
432. Knowledge of friction loss, elevation loss/gain, and water hammers					
433. Knowledge of size classifications of fire streams					
434. Knowledge of foam techniques					
435. Knowledge of direct attacks					
436. Knowledge of indirect attacks					
437. Knowledge of combination attacks					
438. Knowledge of salvage operations					
439. Knowledge of overhaul operations					
440. Knowledge of hidden fire indicators					
441. Knowledge of evidence protection methods					
442. Knowledge of procedures the public should use to report a fire or other emergency					

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	Applicability	Importance	Required Upon Active Duty (RUAD)	Better Performance	Ref vs.
443. Knowledge of necessary skills for fire department communications					
444. Knowledge of the types of information required for arrival and progress reports					
445. Knowledge of preincident surveys and inspections					
446. Knowledge of common fire hazards					

Knowledge Areas (pt. 3)

	Applicability	Importance	Required Upon Active Duty (RUAD)	Better Performance	Ref vs
447. Knowledge of the steps in presenting fire and life safety information to the public					

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	Applicability	Importance	Required Upon Active Duty (RUAD)	Better Performance	Ref vs
448. Knowledge of the components of personal protective equipment					
449. Knowledge of the physiological aspects of stress					
450. Knowledge of cardiopulmonary resuscitation (CPR)					
451. Knowledge of scene safety considerations as hazardous materials incidents and rescue operations					
452. Knowledge of the types and states of shock of victims and/or other fire personnel					
453. Knowledge of methods to managing shock of victims and/or other fire personnel					
454. Knowledge of Body Substance Isolation (BSI) or infection control precautions					

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	Applicability	Importance	Required Upon Active Duty (RUAD)	Better Performance	Ref vs
455. Knowledge of methods to prevent and/or reduce the effects of heat exposure while wearing protective clothing					
456. Knowledge of the main routes through which hazardous materials can enter the body					
457. Knowledge of the clues which indicate the presence of hazardous materials					
458. Knowledge of chemical attack indicators					
459. Knowledge of incident priorities at all HAZMAT and terrorist incidents					
460. Knowledge of types of decontamination					
461. Knowledge of hazard-control zones					
462. Knowledge of defensive confinement and spill control actions					

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	Applicability	Importance	Required Upon Active Duty (RUAD)	Better Performance	Ref vs
463. Knowledge of factors to address during large-scale evacuations					

Chapter II: KSAO Statements

Knowledge Areas (pt. 4)

	Applicability	Importance	Required Upon Active Duty (RUAD)	Better Performance	Ref vs.
464. Knowledge of the organization of the fire department.					
465. Knowledge of the role of the Fire Fighter I in the organization.					
466. Knowledge of the mission of fire service.					

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	Applicability	Importance	Required Upon Active Duty (RUAD)	Better Performance	Ref vs.
467. Knowledge of the fire department's standard operating procedures (SOPs) and rules and regulations.					
468. Knowledge of the role of other agencies as they relate to the fire department.					
469. Are you paying attention? Please fill in a 'YES' for Applicability, 'Modest' for importance, 'YES' for RUAD, a 'YES' for Better Performance, and 'Referenced' for Ref vs. Recall.					
470. Knowledge of the critical aspects of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program.					

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	Applicability	Importance	Required Upon Active Duty (RUAD)	Better Performance	Ref vs.
471. Knowledge of procedures for reporting an emergency; departmental SOPs for taking and receiving alarms, radio codes, or procedures; and information needs of dispatch center.					
472. Knowledge of fire department procedures for answering nonemergency telephone calls.					
473. Knowledge of departmental radio procedures and etiquette for routine traffic, emergency traffic, and emergency evacuation signals.					

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	Applicability	Importance	Required Upon Active Duty (RUAD)	Better Performance	Ref vs.
474. Knowledge of personnel accountability systems, emergency communication procedures, and emergency evacuation methods.					
475. Knowledge of basic construction of typical doors, windows, and walls within the department's community or service area.					
476. Knowledge of personnel accountability systems and communication procedures.					
477. Principles of fire streams as they relate to fighting automobile fires.					
478. Knowledge of SOPs for alarm assignments and fire department radio communication procedures.					

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	Applicability	Importance	Required Upon Active Duty (RUAD)	Better Performance	Ref vs.
479. Knowledge of the methods to assess the origin and cause of fires.					
480. Knowledge of the characteristics of pressurized flammable gases					

This completes the Job Analysis Questionnaire!

We would like to thank you for your time and effort in completing this questionnaire.
Your input is essential to what we do, so we offer our sincerest thanks.

Please hit "Done" below to finish

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Appendix B: JAQ Distribution Communications to Participants

Subject: Statewide Firefighter Job Analysis Survey Coming Next Week

Date: 5/8/2015

THE BUREAU OF FIRE STANDARDS AND TRAINING
AT
The Florida State Fire College

JOB ANALYSIS QUESTIONNAIRE

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TOGETHER.
WE CAN SHAPE THE FUTURE OF THE FLORIDA FIRE SERVICE.

Next week, you will receive an email inviting you to participate in an important ONLINE SURVEY. This online survey is a critical component of Florida's Firefighter Job Task Analysis Study that is currently underway.

The State Fire Marshal is required to establish the minimum training standards for Florida's Firefighters. A job task analysis survey is the best tool to help determine the essential job tasks and minimum knowledge, skills and abilities required for a person to become certified as a firefighter or volunteer firefighter.

Your input on this survey is vital to help the State Fire Marshal determine the training standards required to become a firefighter. Information gathered from this survey will directly influence the design of future firefighter and volunteer firefighter training programs.

Participation in this survey is voluntary. We hope to obtain a great response rate to ensure that the data obtained is representative of all firefighters and fire departments throughout Florida.

Please direct any questions to: FLjobanalysis@iosolutions.org

Your participation will shape the future of Florida's fire service!

Bill Wentlandt
Bureau Chief
Bureau of Fire Standards and Training

"By knowing their needs and exceeding their expectations; we enable the success of Florida's Fire

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and Emergency Services Community!"

Subject: Participate in the Bureau of Fire Standards and Training's Job Analysis Survey

Date: 5/15/2015

THE BUREAU OF FIRE STANDARDS AND TRAINING
AT
The Florida State Fire College

JOB ANALYSIS QUESTIONNAIRE

We greatly appreciate your help!

All fire personnel across the state of Florida are invited to participate in an important online job analysis survey for the firefighter position. Your input on this survey is vital

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in helping the Bureau of Fire Standards and Training determine the training standards required to become a firefighter. Information gathered from this survey will directly influence the design of future firefighter and volunteer firefighter training programs.

Due to time constraints, the job analysis survey has been divided into 5 survey modules. Each survey module is expected to take about 30 minutes to complete. Thus, each module contains a portion of the overall job analysis survey. You are only expected to complete **your** randomly selected survey module. You have been randomly assigned to complete **Survey Module #1**. Simply click on the link below, or copy and paste the entire URL into your browser to access the survey.

https://www.surveymonkey.com/r/FLFFSurveyModule1

We strongly encourage you to complete your randomly assigned survey module as soon as possible, but no later than by May 29, 2015. Your input is very important to us and will remain strictly confidential.

If you have further interest in completing other survey modules, we would greatly appreciate your input. Please go through the survey modules in the order as they are listed below:

https://www.surveymonkey.com/r/FLFFSurveyModule2
https://www.surveymonkey.com/r/FLFFSurveyModule3
https://www.surveymonkey.com/r/FLFFSurveyModule4
https://www.surveymonkey.com/r/FLFFSurveyModule5

Feel free to forward this email to other Florida fire service personnel if they have not received a survey invitation. All fire personnel across the state are invited to participate.

Please direct any questions to: FLjobanalysis@iosolutions.org.

Thank You in advance for your time and input!

Your participation will shape the future of Florida's fire service.

Bill Wentlandt
Bureau Chief
Bureau of Fire Standards and Training

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"By knowing their needs and exceeding their expectations; we enable the success of Florida's Fire and Emergency Services Community!"

Subject: Reminder to Participate in the Bureau of Fire Standards and Training's Job Analysis Survey

Date: 5/22/15

THE BUREAU OF FIRE STANDARDS AND TRAINING
AT
The Florida State Fire College
JOB ANALYSIS QUESTIONNAIRE

Friendly reminder to please complete the survey!

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Last week you received an e-mail message asking you to assist us by completing an online job analysis survey. If you have filled out the survey, thank you! If you have not had a chance to take the survey yet, please read the message below to complete the survey by May 29th.

All fire personnel across the state of Florida are invited to participate in an important online job analysis survey for the firefighter position. Your input on this survey is vital in helping the Bureau of Fire Standards and Training determine the training standards required to become a firefighter. Information gathered from this survey will directly influence the design of future firefighter and volunteer firefighter training programs.

Due to time constraints, the job analysis survey has been divided into 5 survey modules. Each survey module is expected to take about 30 minutes to complete. Thus, each module contains a portion of the overall job analysis survey. You are only expected to complete **your** randomly selected survey module. You have been randomly assigned to complete **Survey Module #2**. Simply click on the link below, or copy and paste the entire URL into your browser to access the survey.

https://www.surveymonkey.com/r/FLFFSurveyModule2

We strongly encourage you to complete your randomly assigned survey module as soon as possible, but no later than by May 29, 2015. Your input is very important to us and will remain strictly confidential.

If you have further interest in completing other survey modules, we would greatly appreciate your input. Please go through the survey modules in the order as they are listed below:

https://www.surveymonkey.com/r/FLFFSurveyModule3
https://www.surveymonkey.com/r/FLFFSurveyModule4
https://www.surveymonkey.com/r/FLFFSurveyModule5
https://www.surveymonkey.com/r/FLFFSurveyModule1

Feel free to forward this email to other Florida fire service personnel if they have not received a survey invitation. All fire personnel across the state are invited to participate.

Please direct any questions to: FLjobanalysis@iosolutions.org.

Thank You in advance for your time and input!

Your participation will shape the future of Florida's fire service.

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Bill Wentlandt
Bureau Chief
Bureau of Fire Standards and Training
"By knowing their needs and exceeding their expectations; we enable the success of Florida's Fire and Emergency Services Community!"

Subject: We need your input! Participate in the Bureau of Fire Standards and Training's Job Analysis Survey

Date: 6/11/15

THE BUREAU OF FIRE STANDARDS AND TRAINING
AT
The Florida State Fire College

JOB ANALYSIS QUESTIONNAIRE

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We need your input!

If you have not already done so, please take the time to complete your randomly assigned survey module as soon as possible. Thank you to those who have already participated!

All fire personnel across the state of Florida are invited to participate in an important online job analysis survey for the firefighter position. Your input on this survey is vital in helping the Bureau of Fire Standards and Training determine the training standards required to become a firefighter. Information gathered from this survey will directly influence the design of future firefighter and volunteer firefighter training programs.

Due to time constraints, the job analysis survey has been divided into 5 survey modules. Each survey module is expected to take about 30 minutes to complete. Thus, each module contains a portion of the overall job analysis survey. You are only expected to complete **your** randomly selected survey module. You have been randomly assigned to complete **Survey Module #4**. Simply click on the link below, or copy and paste the entire URL into your browser to access the survey.

https://www.surveymonkey.com/r/FLFFSurveyModule4

We strongly encourage you to complete your randomly assigned survey module as soon as possible. Your input is very important to us and will remain strictly confidential.

If you have further interest in completing other survey modules, we would greatly appreciate your input. Please go through the survey modules in the order as they are listed below:

https://www.surveymonkey.com/r/FLFFSurveyModule5
https://www.surveymonkey.com/r/FLFFSurveyModule1
https://www.surveymonkey.com/r/FLFFSurveyModule2
https://www.surveymonkey.com/r/FLFFSurveyModule3

Feel free to forward this email to other Florida fire service personnel if they have not received a survey invitation. All fire personnel across the state are invited to participate.

Please direct any questions to: FLjobanalysis@iosolutions.org.

Thank You in advance for your time and input!

Your participation will shape the future of Florida's fire service.

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Bill Wentlandt
Bureau Chief
Bureau of Fire Standards and Training

"By knowing their needs and exceeding their expectations; we enable the success of Florida's Fire and Emergency Services Community!"

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Appendix C: Task Analysis Results for Career Position

Item#	Task	Origin	NFPA Code	%Rel	I.	F.	C.	%E	JR%	RUAD	Zone
1	Accurately take incoming calls or information from the dispatcher regarding alarms (e.g., fire alarms, requests for emergency medical services).	Match	5.2.1*	83.42%	4.18	4.29	4.22	89.10%	87.21%	46.64%	1.1
2	Be in a response-ready status to respond to alarms at all hours of the day and night.	IOS		99.64%	4.71	4.81	4.75	98.72%	99.02%	76.65%	1.1
3	Respond to a vast range of emergencies including fire alarms, automobile accidents, medical emergencies, hazardous materials, or other incidents.	Match	5.3.3*1	99.45%	4.71	4.77	4.73	99.45%	99.45%	72.56%	1.1
4	Put on situation-appropriate personal protective equipment (PPE) (example: full turnout gear, HAZ-MAT Equipment, Universal Protections [Body Substance Isolation Gear]).	Match	5.3.3*2	100.00%	4.84	4.62	4.77	99.63%	99.76%	88.95%	1.1
5	Put on and wear self-contained breathing apparatus (SCBA).	Match	5.3.1*	99.63%	4.92	4.29	4.71	99.82%	99.76%	95.73%	1.1
6	Carry equipment when needed (RIT Pack, High-Rise Pack, Medical Bag).	Match	5.3.13.2	99.09%	4.31	4.35	4.33	97.60%	98.10%	69.39%	1.1
7	Perform tasks only in established, protected work areas.	NFPA	5.3.3*4	75.70%	3.76	3.76	3.76	86.93%	83.19%	50.80%	1.1
8	Assess fires and situations and report conditions to superiors to receive instructions, using two-way radios.	Match	5.2.3	94.89%	4.34	3.81	4.17	93.83%	94.19%	41.70%	1.1
9	Conduct a mental size-up of the emergency scene.	IOS		97.99%	4.35	4.23	4.31	96.44%	96.95%	50.56%	1.1
10	Check the wind direction in relation to the fire or HAZ-MAT scene.	IOS		91.62%	4.05	3.06	3.73	85.49%	87.53%	48.82%	1.1
11	Assess the potential effects of weather on emergency response.	Match	5.3.3*(A)2	90.68%	3.67	3.25	3.54	80.91%	84.17%	37.52%	1.1
12	Assess the color, location and movement of smoke.	IOS		97.06%	4.31	3.50	4.04	94.32%	95.23%	47.24%	1.1
13	Assess fire conditions to ensure proper fire suppression agent is used.	Match	6.3.2*(A)	92.86%	4.21	3.47	3.97	92.29%	92.48%	56.75%	1.1
14	Determine the safest evacuation route and primary and secondary means of egress.	Match	6.3.3*3	96.52%	4.59	3.63	4.26	96.56%	96.55%	60.46%	1.1
15	Safely shut off utility services to buildings in emergency situations (e.g., electrical and gas valves).	Match	5.3.18	95.42%	4.14	3.30	3.86	90.82%	92.35%	47.78%	1.1
16	Communicate with the dispatcher, other fire vehicles and commanding officers by radio and request any necessary assistance.	Match	6.2.2*1	91.76%	4.10	3.86	4.02	91.32%	91.47%	38.89%	1.1
17	Advise the commanding officer of fire conditions, hazards and exposures at the scene.	Match	6.3.2*7	92.84%	4.25	3.46	3.98	90.64%	91.38%	46.37%	1.1
18	Communicate with the superior during a live fire.	Match	6.2.2*2	97.24%	4.49	3.77	4.25	96.01%	96.42%	56.08%	1.1
19	Collaborate with other firefighters, supervisors and other firefighter companies to conduct firefighting and rescue operations.	Match	6.3.2*4	96.69%	4.30	3.77	4.12	95.05%	95.59%	52.11%	1.1
20	Illuminate the emergency scene.	NFPA	5.3.17	92.29%	3.61	3.38	3.54	82.32%	85.64%	33.14%	1.1
21	Recognize potential hazards on emergency scenes regarding vehicle traffic.	NFPA	5.3.3*(A)1	98.35%	4.54	4.23	4.44	98.32%	98.33%	63.91%	1.1
22	Discriminate between routine and emergency traffic.	NFPA	5.2.3(B)	86.06%	3.87	3.60	3.78	86.40%	86.29%	39.45%	1.1

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Item#	Task	Origin	NFPA Code	%Rel	I.	F.	C.	%E	JR%	RUAD	Zone
23	Use personnel accountability systems to locate team members and communicate loss of air supply.	NFPA	5.3.5*(A)	95.40%	4.68	3.31	4.22	95.42%	95.41%	63.78%	1.1
24	Rescue victims from burning buildings and accident sites.	Match	5.3.9*1a	99.55%	4.74	2.90	4.13	97.52%	98.20%	81.18%	1.1
25	Assist at a water rescue (e.g., swollen rivers, frozen lakes).	IOS		86.49%	3.82	2.01	3.22	67.84%	74.05%	31.47%	1.1
26	Are you paying attention? Please fill in a 'YES' for Applicability, 3 for importance, 5 for frequency, and 'NO-*Learned on-the-job*' for RUAD.			99.09%	3.04	4.96	3.68	99.77%	99.54%	3.48%	1.1
27	Interact with victims or causalities who have sustained severe or life-ending injuries.	IOS		95.96%	4.09	3.46	3.88	86.90%	89.91%	47.21%	1.1
28	Interact with victims who have witnessed the loss or injury of companions.	IOS		93.72%	3.72	3.06	3.50	78.59%	83.63%	34.05%	1.1
29	Safely remove persons from entrapments.	Match	5.3.9*5	99.55%	4.50	3.22	4.07	96.62%	97.60%	63.41%	1.1
30	Safely lift, hoist or drag victim(s), taking care to minimize further injuries.	Match	6.4.1*3	99.33%	4.35	3.33	4.01	95.25%	96.61%	76.71%	1.1
31	Drag or carry a victim(s) out of a building wearing appropriate PPE.	IOS		99.55%	4.45	2.53	3.81	94.12%	95.93%	84.93%	1.1
32	Carry victim(s) via ladders wearing appropriate PPE.	Match	5.3.9*(A)1b	98.42%	4.18	2.09	3.48	82.23%	87.62%	80.46%	1.1
33	Drag or carry victim(s) up or down stairs wearing appropriate PPE.	IOS		99.55%	4.17	2.24	3.56	91.67%	94.29%	80.88%	1.1
34	Evacuate persons from a fire area.	Match	5.2.4*(A)	98.87%	4.26	2.56	3.69	89.52%	92.64%	69.43%	1.1
35	Extricate persons from automobiles.	Match	6.4.1*1	99.55%	4.46	3.39	4.10	97.27%	98.03%	68.65%	1.1
36	Cut vehicle power during extrication.	IOS		98.65%	4.17	3.47	3.94	93.61%	95.29%	65.21%	1.1
37	Strategically position apparatus to protect incident scene from oncoming traffic.	Match	5.3.3*3	87.84%	4.48	4.15	4.37	94.26%	92.12%	48.11%	1.1
38	Bring and use the necessary tools to extricate or free trapped persons.	Match	6.4.1*2	99.09%	4.36	3.56	4.09	96.80%	97.57%	61.98%	1.1
39	Systematically search burning buildings to locate fire victims.	Match	5.3.9*4	99.55%	4.67	3.19	4.18	97.96%	98.49%	84.25%	1.1
40	Gather information (e.g., bystanders, neighbors, family members) about probable victim locations and/or building floor plans.	IOS		87.19%	4.05	2.90	3.67	82.65%	84.16%	49.74%	1.1
41	Enter unfamiliar, smoke-filled buildings and rooms while wearing PPE and SCBA equipment.	Match	5.3.9*2	99.55%	4.73	3.39	4.28	98.64%	98.94%	87.90%	1.1
42	Systematically search for trapped persons.	Match	5.3.9*1b	99.77%	4.67	3.16	4.17	99.32%	99.47%	85.35%	1.1
43	Operate and/or man firefighting watercraft/boats for civilian rescue.	IOS		61.12%	3.18	1.97	2.78	50.00%	53.70%	19.28%	1.4
44	Assess risk/benefit of rescue and relay to company officer.	Match	6.4.2*(A)2	85.36%	4.03	2.90	3.65	82.03%	83.14%	43.31%	1.1
45	Tie knots to a hose line, ladder, or other object as necessary during a large area search.	Match	5.3.20	97.52%	3.84	2.64	3.44	77.78%	84.35%	74.53%	1.1
46	Maintain team integrity and firefighter safety.	NFPA	5.3.9*6	97.97%	4.74	4.36	4.62	97.93%	97.94%	79.81%	1.1
47	Rescue a firefighter with functioning respiratory protection.	NFPA	5.3.9*(B)*3	99.32%	4.75	2.11	3.87	96.82%	97.65%	82.61%	1.1
48	Rescue a firefighter whose respiratory protection is not functioning.	NFPA	5.3.9*(B)*4	98.87%	4.83	1.96	3.88	97.72%	98.10%	79.77%	1.1
49	Recognize and manage psychological effects resulting from operating in obscured conditions.	NFPA	5.3.9*(A)2	90.77%	4.26	2.68	3.74	86.95%	88.22%	59.20%	1.1
50	Ensure respiratory protection is not compromised.	NFPA	5.3.9*(A)6	98.87%	4.83	3.90	4.52	98.86%	98.86%	86.67%	1.1

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51	Choose and apply appropriate techniques for opening or removing trunks, engine compartments, vehicle roofs, doors, windshields, windows, steering wheels or columns, and dashboards.	NFPA	6.4.1*(B)3	96.62%	4.04	3.25	3.78	90.19%	92.33%	54.74%	1.1
52	Administer first aid to injured persons.	IOS		99.77%	4.43	4.54	4.46	99.06%	99.30%	91.53%	1.1
53	Assess a patient's condition (e.g. alertness level, orientation, breathing, circulation).	IOS		99.30%	4.57	4.59	4.58	99.06%	99.14%	91.96%	1.1
54	Gather information from patient or family member regarding medical history.	IOS		98.59%	4.16	4.42	4.25	94.80%	96.06%	80.52%	1.1
55	Control bleeding and bandage wounds.	IOS		99.30%	4.51	4.17	4.40	99.29%	99.30%	92.43%	1.1
56	Perform cardiopulmonary resuscitation.	IOS		99.30%	4.78	3.79	4.45	99.53%	99.45%	93.63%	1.1
57	Operate Defibrillator (AED).	IOS		96.96%	4.65	3.44	4.25	97.60%	97.39%	88.92%	1.1
58	Use airway adjuncts.	IOS		96.96%	4.51	3.53	4.18	96.39%	96.58%	88.86%	1.1
59	Immobilize painful, swollen, or deformed extremities.	IOS		98.59%	4.09	3.61	3.93	93.13%	94.95%	89.52%	1.1
60	Appropriately control patients who are hysterical, mentally disturbed, or in an altered state of consciousness that require medical attention.	IOS		94.63%	3.99	3.35	3.78	85.47%	88.52%	64.60%	1.1
61	Administer appropriate oxygen flow to patients.	IOS		98.13%	4.32	4.21	4.28	96.91%	97.32%	86.63%	1.1
62	Are you paying attention? Please fill in a 'YES' for Applicability, 2 for importance, 1 for frequency, and 'YES' for RUAD.			98.81%	2.11	1.08	1.77	2.17%	34.35%	99.04%	2.2
63	Prepare and transfer a patient to an ambulance.	IOS		97.89%	3.90	4.40	4.07	93.81%	95.17%	70.57%	1.1
64	Lift a patient into a bed/onto a stretcher; carry patient through tight quarters and down flights of stairs using a stair chair or Reeve stretcher; carry patient to ambulance.	IOS		98.59%	4.00	4.23	4.08	95.27%	96.38%	71.02%	1.1
65	Monitor and provide needed care when transporting a patient to a medical facility.	IOS		82.94%	4.15	3.99	4.10	91.88%	88.90%	74.86%	1.1
66	Properly utilize emergency equipment and supplies.	IOS		98.83%	4.28	4.43	4.33	97.39%	97.87%	74.76%	1.1
67	Know street layouts, addresses, intersections and alternative routes in response area.	IOS		90.78%	4.08	4.35	4.17	91.49%	91.26%	14.25%	1.1
68	Know the location of hydrants and mains in a response area.	Match	6.5.3*(A)1	85.92%	3.86	3.72	3.81	86.38%	86.22%	13.97%	1.1
69	Efficiently and safely drive firefighting emergency equipment to and from a scene.	Match	5.3.2*	86.47%	4.47	4.29	4.41	94.55%	91.86%	38.74%	1.1
70	Operate pumps connected to hoses.	Match	5.3.15*1	78.02%	4.18	3.40	3.92	89.15%	85.44%	30.77%	1.1
71	Check gauges for pressures and proper water flow.	IOS		77.48%	4.10	3.36	3.85	87.43%	84.11%	26.81%	1.1
72	Calculate and/or estimate friction loss rates or other pertinent values.	IOS		72.95%	3.77	3.08	3.54	79.31%	77.19%	22.08%	1.1
73	Maintain constant water supply through proper management of pumping apparatus.	Match	5.3.15*2	74.88%	4.13	3.27	3.84	88.00%	83.63%	24.15%	1.1
74	Monitor apparatus during operations.	IOS		73.67%	3.94	3.40	3.76	86.25%	82.06%	26.10%	1.1
75	Calculate foam amounts.	Match	6.3.1*2	72.22%	3.43	2.34	3.07	64.35%	66.97%	23.17%	1.2

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76	Conduct drafting operations.	Match	5.3.15*(B)2	75.24%	3.51	2.17	3.07	64.53%	68.09%	28.00%	1.2
77	Charge lines at officer's command by opening discharge valves to support fire operations.	IOS		75.36%	4.11	3.16	3.79	87.16%	83.23%	34.36%	1.1
78	Control pumper output by regulating engine RPMs, pressure relief valve and output gate valves so that pressure or flow is correct for the given operation.	Match	5.3.10*(A)1	72.22%	3.98	3.10	3.69	85.53%	81.10%	25.55%	1.1
79	Utilize watercraft to supply water for fighting fires.	IOS		36.23%	2.77	1.76	2.41	38.86%	37.98%	18.56%	4.1
80	Operate the ladder pipe as per apparatus specifications.	IOS		67.49%	3.72	2.37	3.27	71.92%	70.44%	24.14%	1.1
81	Position and climb ladders to gain access to upper levels of buildings or to rescue individuals from burning structures.	Match	5.3.6*3	95.78%	4.30	2.72	3.77	92.75%	93.76%	76.30%	1.1
82	Determine the size and type of ladders required.	Match	5.3.6*1	96.03%	4.07	2.86	3.67	86.56%	89.72%	80.31%	1.1
83	Identify proper ladder locations to allow access to upper levels of buildings or to ensure proper evacuation of fire personnel.	Match	5.3.9*3	95.53%	4.19	2.81	3.73	88.54%	90.87%	72.58%	1.1
84	Be aware of electrical lines when setting up ladders.	Match	5.3.6*2	99.25%	4.80	3.49	4.36	97.73%	98.24%	86.40%	1.1
85	For aerial ladders: position truck, place chocks and set-up truck jacks.	IOS		66.17%	3.91	2.80	3.54	81.82%	76.61%	25.70%	1.3
86	Raise a 24-foot extension ladder and extend the fly section of that ladder.	IOS		99.25%	4.14	3.15	3.81	90.48%	93.40%	91.41%	1.1
87	With assistance, raise a 35-foot extension ladder and extend the fly section of that ladder.	IOS		92.04%	3.76	2.49	3.35	76.19%	81.47%	84.05%	1.1
88	With assistance, carry extension ladders (24-foot, 35-foot) from truck to incident scene.	IOS		98.51%	3.81	2.88	3.50	79.04%	85.52%	89.09%	1.1
89	Climb an aerial ladder to a height up to 100 feet while wearing PPE equipment.	IOS		89.28%	3.69	2.27	3.21	65.84%	73.64%	66.48%	1.2
90	Lower ground ladders and stow them onto the truck.	IOS		98.75%	3.55	2.99	3.36	74.12%	82.32%	82.99%	1.1
91	Create openings in buildings for ventilation or entrance using axes, chisels, crowbars, power saws or core cutters.	Match	5.3.12*1	98.01%	4.08	2.80	3.65	86.87%	90.58%	75.13%	1.1
92	Remove equipment from truck and start power tools.	Match	5.3.12(B)1a	99.25%	4.00	3.91	3.97	92.73%	94.90%	61.21%	1.1
93	Use equipment (e.g., swing axe or sledge hammer) to make forcible entries.	Match	5.3.4*	99.25%	4.07	3.19	3.77	88.97%	92.40%	82.62%	1.1
94	Determine the stability of supporting surfaces such as roofs and fire escapes.	Match	5.3.12*2	94.28%	4.39	2.91	3.90	92.39%	93.02%	72.63%	1.1
95	Cut openings in roof with a fire axe or power saw (e.g., K-12 saw) for ventilation or examination.	Match	5.3.12(B)3	97.76%	4.01	2.49	3.50	81.47%	86.90%	76.28%	1.1
96	Remove ceiling materials, such as plaster and lath, sheet rock, ceiling tiles and insulation by poking from above with pike pole or axe so that smoke and hot gases can escape.	Match	5.3.12*3	98.01%	4.00	3.03	3.68	88.19%	91.46%	77.78%	1.1

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97	Are you paying attention? Please fill in a 'YES' for Applicability, 1 for importance, 1 for frequency, and 'NO-*Learned through Continuing Education*' for RUAD.			98.99%	1.10	1.09	1.10	2.79%	34.83%	3.05%	2.2
98	Remove and transport equipment (e.g., electrical extension cords, ventilation fans) from the truck as needed.	Match	5.3.12(B)1b	98.50%	3.39	3.37	3.39	77.22%	84.30%	52.67%	1.1
99	Properly knot and tie rope to hoist equipment weighing up to 50 pounds to upper levels.	Match	5.3.20(A)	97.51%	3.62	2.55	3.26	70.81%	79.70%	82.91%	1.1
100	Retreat from the area as a team when ventilation is accomplished.	NFPA	5.3.12*4	96.75%	4.08	2.73	3.63	84.10%	88.31%	69.25%	1.1
101	Establish an appropriate water supply, lay hose lines and connect them to water supplies.	Match	5.3.15*(A)	98.50%	4.53	3.52	4.20	98.75%	98.67%	87.69%	1.1
102	Coordinate firefighting and rescue operations with other firefighters, supervisors and other firefighter companies.	Match	5.3.19*	87.09%	4.15	3.49	3.93	89.00%	88.37%	59.39%	1.1
103	Pull the supply line from an engine to a hydrant.	Match	5.3.15*(B)1	99.40%	4.29	3.45	4.02	95.06%	96.51%	89.67%	1.1
104	Wrap a hose around functioning hydrant, unscrew the hydrant cap, screw the hose connection to the hydrant and turn on the hydrant (i.e., catch the plug).	Match	5.3.15*(B)5	100.00%	4.33	3.42	4.03	94.15%	96.10%	90.58%	1.1
105	Make and unmake coupling connections.	Match	5.3.10*(B)8	100.00%	4.09	3.67	3.96	91.98%	94.65%	93.29%	1.1
106	Carry a high-rise pack up multiple flights of stairs while wearing PPE so that attack line can be set up.	IOS		97.60%	4.04	2.70	3.61	81.37%	86.77%	82.82%	1.1
107	Advance and fully extend a pre-connected, charged or uncharged hose of a diameter between 1¾ to 2½ inches.	Match	5.3.7*(B)5	99.40%	4.45	3.65	4.19	96.92%	97.75%	94.51%	1.1
108	Remove kinks in charged supply line by lifting and/or turning hose so that water flow is not obstructed.	IOS		100.00%	4.00	3.33	3.79	87.04%	91.35%	87.20%	1.1
109	Carry, assemble and operate deluge set (ground monitor).	IOS		97.89%	3.47	2.39	3.11	59.32%	72.16%	65.12%	1.2
110	Connect multiple small lines (example: 50-foot) and extend them to reach fire when required.	IOS		98.80%	3.82	2.87	3.51	75.62%	83.34%	82.01%	1.1
111	Carry a 50-foot section of rolled hose unassisted while in appropriate PPE.	IOS		98.19%	3.49	3.07	3.36	70.31%	79.60%	87.65%	1.1
112	Feed charged hose line of a diameter between 1¾ to 2½ inches to attacking firefighter units.	IOS		97.29%	4.09	3.37	3.86	88.89%	91.69%	88.40%	1.1
113	Re-bed hose line back onto the proper apparatus (e.g., engine or truck).	IOS		99.70%	3.63	3.64	3.63	83.59%	88.95%	74.69%	1.1
114	Select the proper hose size based upon fire scene and method of attack.	Match	5.3.10*(A)8	88.22%	4.03	3.36	3.81	88.28%	88.26%	55.78%	1.1
115	Calculate the height of a building in feet from its floors.	IOS		83.99%	3.23	2.71	3.06	60.56%	68.36%	57.09%	1.2
116	Determine the correct spray pattern based upon fire scene (e.g., solid stream, hollow cone, full cone, fog stream, etc.).	Match	5.3.10*(B)3	96.69%	4.07	3.47	3.87	89.87%	92.14%	78.93%	1.1
117	Hold a charged 1¾ inch hose and open the nozzle.	Match	5.3.10*(B)2	99.10%	4.50	3.80	4.27	96.89%	97.63%	95.38%	1.1
118	While assisted, hold a charged 2½ inch hose and open the nozzle.	IOS		99.09%	4.13	3.01	3.76	85.05%	89.72%	91.05%	1.1

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119	Operate a charged hose line from elevated positions and direct spray at fire.	Match	5.3.10*(B)7	97.29%	3.58	2.52	3.22	64.24%	75.25%	72.64%	1.2
120	While on a ladder, operate and direct spray at fire.	Match	5.3.10*(B)4a	96.92%	3.51	2.28	3.10	59.79%	72.15%	78.37%	1.2
121	Operate a charged hose line from confined spaces and direct spray at fire.	Match	5.3.10*(B)4b	94.85%	3.66	2.47	3.25	65.81%	75.48%	70.33%	1.2
122	Continue to monitor fire suppression and adjust suppression tactics to extinguish fire and prevent the extension of the fire.	Match	6.3.2*5	84.14%	4.05	3.23	3.78	87.45%	86.35%	52.28%	1.1
123	Move toward the source of a fire using knowledge of types of fires, construction design, building materials and physical layout of properties.	Match	5.3.12(A)	93.81%	4.19	3.41	3.93	92.59%	93.00%	64.94%	1.1
124	Enter smoky buildings and rooms with a hose in hand while wearing SCBA.	Match	5.3.10*1	99.31%	4.71	3.69	4.37	98.94%	99.06%	95.05%	1.1
125	Seek the source of a fire and extinguish.	Match	5.3.13.6	99.31%	4.63	3.63	4.30	97.15%	97.87%	90.14%	1.1
126	Select the correct tool or equipment for various firefighting maneuvers.	Match	5.3.8*(A)2	97.59%	4.17	3.71	4.01	93.55%	94.89%	77.30%	1.1
127	Fight fires in smoky buildings when visibility is poor or nonexistent.	Match	5.3.5*(B)	98.97%	4.56	3.49	4.20	97.16%	97.76%	89.79%	1.1
128	Fight fires for prolonged periods of time in extreme temperatures.	IOS		97.92%	4.32	3.11	3.92	90.32%	92.85%	74.02%	1.1
129	Use other senses to find the source of a fire when you cannot see.	IOS		97.93%	4.25	3.15	3.89	89.29%	92.16%	67.97%	1.1
130	Carry equipment up stairs while wearing PPE gear and SCBA.	IOS		99.31%	4.07	3.27	3.81	86.93%	91.05%	89.79%	1.1
131	Climb obstacles while wearing PPE and SCBA.	IOS		97.59%	3.74	2.99	3.49	76.79%	83.71%	81.49%	1.1
132	Identify and respond to hazards at the scene.	Match	5.3.10*6	96.53%	4.30	3.58	4.06	92.39%	93.77%	67.03%	1.1
133	Operate a thermal imaging camera (TIC).	IOS		96.54%	3.89	3.51	3.76	86.91%	90.12%	48.19%	1.1
134	Operate a fire extinguisher by carrying it to objective, aiming and discharging at seat of fire or spill.	Match	5.3.16*	98.97%	3.87	2.98	3.58	77.30%	84.52%	90.81%	1.1
135	Attack a passenger vehicle fire.	NFPA	5.3.7*1	98.28%	4.20	3.59	4.00	95.74%	96.59%	87.28%	1.1
136	Communicate attack techniques to the attack teams	NFPA	6.3.2*3	72.07%	3.84	3.17	3.62	82.46%	79.00%	48.11%	1.1
137	Communicate and manage search, rescue, and ventilation requirements.	NFPA	6.3.2*6	72.41%	4.07	3.21	3.79	85.65%	81.24%	54.29%	1.1
138	Control a flammable gas cylinder fire.	NFPA	6.3.3*1	98.09%	4.07	2.16	3.43	75.39%	82.95%	79.61%	1.1
139	Identify the contents of cylinder.	NFPA	6.3.3*2	93.13%	4.01	2.30	3.44	77.05%	82.40%	67.21%	1.1
140	Close cylinder valves.	NFPA	6.3.3*4	92.75%	3.79	2.23	3.27	68.18%	76.36%	74.07%	1.1
141	Eliminate leaking gas and then extinguish fire.	NFPA	6.3.3*5	91.19%	3.90	2.18	3.32	75.11%	80.46%	73.00%	1.1
142	Evaluate the cylinder integrity and ensure cylinder has cooled.	NFPA	6.3.3*6	79.69%	3.91	2.11	3.31	73.08%	75.28%	64.59%	1.1
143	Face the cylinder during approach and retreat.	NFPA	6.3.3*7	93.87%	4.12	2.13	3.45	78.19%	83.41%	82.64%	1.1
144	Maintain correct body posture during attack operations.	NFPA	5.3.10*5	96.55%	4.01	3.48	3.83	86.80%	90.05%	89.24%	1.1
145	Extinguish fires in exterior Class A materials, given fires in stacked or piled and small unattached structures or storage containers.	NFPA	5.3.8*	97.69%	3.89	3.20	3.66	81.75%	87.06%	89.29%	1.1
146	Deploy portable water tanks as well as the equipment necessary to transfer water between and draft from them.	NFPA	5.3.15*(B)3	84.29%	3.28	2.14	2.89	52.23%	62.91%	43.75%	1.2
147	Are you paying attention? Please fill in a 'YES' for Applicability, 4 for importance, 4 for frequency, and 'Yes' for RUAD.			96.85%	3.97	3.96	3.96	98.39%	97.88%	98.39%	1.1
148	Prevent water hammers when shutting down nozzles.	NFPA	5.3.10*(B)1	96.55%	3.65	3.55	3.61	76.10%	82.91%	90.87%	1.1

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Item#	Task	Origin	NFPA Code	%Rel	I.	F.	C.	%E	JR%	RUAD	Zone
149	Replace burst hose sections.	NFPA	5.3.10*(B)6	98.08%	3.48	1.98	2.97	56.52%	70.36%	86.22%	1.2
150	Anticipate the injuries which could result from common types of accidents.	NFPA	5.3.10*(A)7	92.34%	3.77	3.65	3.73	80.59%	84.50%	71.55%	1.1
151	Prevent exposure to products of combustion.	NFPA	5.3.10*(A)5	98.46%	4.44	3.70	4.19	94.07%	95.53%	86.96%	1.1
152	Follow precautions when advancing hose lines to a fire.	NFPA	5.3.10*(A)2	98.08%	4.32	3.66	4.09	94.49%	95.68%	90.16%	1.1
153	Assess proper application of fire stream.	NFPA	5.3.10*(A)3	94.23%	4.13	3.59	3.94	91.74%	92.57%	83.13%	1.1
154	Use appropriate water application methods for exposure protection and fire extinguishment.	NFPA	5.3.8*(A)4	95.38%	4.07	3.44	3.85	89.47%	91.44%	82.19%	1.1
155	Identify automobile fuel types and assess and control fuel leaks.	NFPA	5.3.10*(A)6	87.69%	3.63	2.81	3.35	72.05%	77.26%	53.28%	1.1
156	Choose attack and control techniques for grade level and above and below grade level fires.	NFPA	6.3.2*2	80.38%	3.75	2.74	3.41	77.03%	78.15%	64.11%	1.1
157	Recognize hazards associated with an automobile fire.	NFPA	5.3.7*(A)5	98.46%	4.23	3.56	4.01	92.13%	94.24%	83.46%	1.1
158	Apply appropriate attack lines and water streams for stacked, piled materials and outdoor fires.	NFPA	5.3.8*(A)1	93.05%	3.68	3.10	3.48	78.66%	83.45%	71.01%	1.1
159	Ensure complete extinguishment of stacked and piled materials.	NFPA	5.3.8*(A)3	93.82%	3.80	3.12	3.58	79.17%	84.05%	69.01%	1.1
160	Recognize dangers of exposure to toxins or hazardous materials associated with storage building and container fires.	NFPA	5.3.8*(A)5	97.31%	4.40	3.10	3.97	91.60%	93.50%	77.20%	1.1
161	Conduct a size-up of HAZ-MAT scene.	IOS		75.79%	4.06	2.24	3.45	78.06%	77.31%	54.08%	1.1
162	Respond to the release or potential release of hazardous material according to outlined protocols.	IOS		91.24%	4.06	2.26	3.46	78.60%	82.81%	50.87%	1.1
163	Identify HAZ-MAT by use of signage and HAZ-MAT reference materials.	IOS		96.02%	4.17	2.37	3.57	81.67%	86.44%	75.73%	1.1
164	Apply a foam blanket or other suppressants.	Match	6.3.1*3	98.41%	3.89	2.28	3.36	74.29%	82.32%	76.95%	1.1
165	Provide onsite crowd control in a HAZ-MAT situation.	Match	6.4.2*(B)	68.00%	3.65	2.15	3.15	62.36%	64.24%	46.33%	1.2
166	Conduct a decontamination setup.	IOS		83.67%	3.65	1.99	3.09	64.62%	70.96%	40.00%	1.2
167	Utilize watercraft to trace source of oil slicks.	IOS		26.29%	2.38	1.51	2.08	27.18%	26.89%	20.59%	4.4
168	Exit a hazardous area as a team.	NFPA	5.3.5*	92.03%	4.29	2.67	3.76	87.50%	89.01%	70.56%	1.1
169	Extinguish an ignitable liquid fire.	NFPA	6.3.1*1	97.57%	4.10	2.29	3.50	78.84%	85.08%	84.94%	1.1
170	Identify and control leaking flammable liquids, such that protection from flash fire is maintained	NFPA	5.3.7*2	89.24%	3.94	2.21	3.36	75.34%	79.97%	69.23%	1.1
171	Take corrective measures to rectify poor foam generation.	NFPA	6.3.1*(A)1	83.27%	3.69	2.14	3.17	66.98%	72.40%	49.05%	1.1
172	Use the appropriate concentrates on hydrocarbon and polar solvent fuels.	NFPA	6.3.1*(A)2	80.08%	3.81	2.18	3.27	72.41%	74.97%	55.00%	1.1
173	Reduce or avoid hazards associated with firefighting foams.	NFPA	6.3.1*(A)3	88.84%	3.48	2.09	3.02	59.38%	69.19%	54.50%	1.2
174	Use fog nozzles or foam nozzles depending on situation.	NFPA	6.3.1*(A)4	94.02%	3.65	2.50	3.27	66.81%	75.87%	65.09%	1.1
175	Protect property from water and smoke using waterproof salvage covers and/or smoke ejectors (i.e., powered fans).	Match	5.3.14(A)1	98.35%	3.46	2.89	3.27	71.43%	80.39%	80.59%	1.1
176	Place a smoke ejector in strategic locations throughout the fire scene to aid in proper ventilation and smoke removal.	Match	5.3.11.2	93.42%	3.74	3.21	3.45	82.93%	86.42%	77.63%	1.1

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177	Gather furniture into an appropriate location and protect it with salvage covers.	Match	5.3.14(B)1	93.42%	2.98	2.48	2.81	52.19%	65.92%	66.96%	1.2
178	Place salvage covers over lower floors to prevent unnecessary damage.	Match	5.3.13(B)4	92.98%	2.94	2.29	2.73	47.14%	62.40%	64.60%	2.1
179	Salvage property by removing broken glass, removing water and ventilating buildings to remove smoke.	Match	5.3.14	94.24%	3.13	2.74	3.00	60.70%	71.87%	64.76%	1.2
180	After a fire is extinguished, drain or pump out water and clean up remaining water on the floors.	Match	5.3.14(B)3	66.67%	2.57	2.17	2.44	34.10%	44.95%	43.93%	2.1
181	Remove burned and charred waste and other debris, if hazardous.	Match	5.3.14(B)5	78.84%	2.80	2.37	2.67	45.96%	56.91%	50.25%	2.1
182	Perform overhaul and salvage operations.	Match	5.3.13.1	98.77%	3.71	3.23	3.55	82.92%	88.19%	77.73%	1.1
183	Check for fire extension or hotspots using thermal imaging camera.	IOS		93.80%	4.10	3.55	3.92	90.31%	91.47%	55.07%	1.1
184	Inspect fire sites after flames have been extinguished to ensure that there is no further danger.	Match	5.3.8*(B)	85.95%	3.98	3.43	3.80	86.67%	86.43%	58.02%	1.1
185	Coordinate inspections with other firefighters, supervisors and other firefighter companies.	IOS		52.26%	3.06	2.86	2.98	57.93%	56.04%	35.86%	1.4
186	Check for smoldering fire inside walls and ceiling by means of fire tools and equipment (e.g., fire axe, ceiling hook).	Match	5.3.10*4	98.76%	4.13	3.49	3.91	92.05%	94.28%	77.73%	1.1
187	Are you paying attention? Please fill in a 'YES' for Applicability, 5 for importance, 1 for frequency, and 'NO-*Learned on-the-job*' for RUAD.			97.46%	4.94	1.08	3.65	98.70%	98.29%	3.90%	1.1
188	Search for missing persons not accounted for.	Match	5.3.9*(A)4	97.13%	4.72	3.18	4.21	97.02%	97.06%	86.38%	1.1
189	Preserve evidence at fire scene.	Match	6.3.4*	96.30%	3.91	3.08	3.63	82.20%	86.90%	69.79%	1.1
190	Secure the fire scene.	Match	5.3.13(A)5	81.97%	3.70	3.11	3.51	77.23%	78.81%	57.43%	1.1
191	Monitor the air for harmful toxins.	IOS		78.93%	4.21	3.19	3.87	89.69%	86.11%	46.39%	1.1
192	Remove water via water chutes or other devices.	IOS		83.54%	2.67	1.95	2.43	32.68%	49.62%	62.75%	2.2
193	Overhaul all vehicle compartments.	NFPA	5.3.7*3	90.91%	3.22	2.99	3.14	62.67%	72.07%	60.71%	1.2
194	Stop the flow of water from building sprinkler with sprinkler wedges or stoppers.	NFPA	5.3.14(B)6	96.31%	3.49	2.47	3.15	62.71%	73.90%	71.06%	1.2
195	Remove flooring, ceiling, and wall components to expose void spaces without compromising structural integrity.	NFPA	5.3.13.3	97.12%	3.87	3.03	3.59	82.20%	87.17%	73.19%	1.1
196	Roll and fold salvage covers for reuse.	NFPA	5.3.14(B)2	95.88%	2.49	2.41	2.47	40.25%	58.78%	69.36%	2.1
197	Perform horizontal ventilation on a structure, so that the ventilation openings are free of obstructions.	NFPA	5.3.11.1	97.95%	3.96	3.13	3.69	84.81%	89.19%	85.71%	1.1
198	Recognize points of strength and weakness in auto body construction.	NFPA	6.4.1*(A)2	91.39%	3.55	3.08	3.39	75.78%	80.98%	57.21%	1.1
199	Recognize and communicate dangers associated with overhaul.	NFPA	5.3.13(A)4	95.90%	4.04	3.27	3.79	87.12%	90.05%	76.82%	1.1
200	Designate work zones for safe operation at emergency scenes.	NFPA	5.3.3*(A)4	64.34%	3.81	3.15	3.59	81.99%	76.11%	61.11%	1.3
201	Collaborate with other agencies and individuals to respond to accidents and/or disasters.	Match	5.1.1.3	87.41%	3.57	3.31	3.50	80.65%	82.90%	27.60%	1.1
202	Exchange information with law enforcement officials.	IOS		92.47%	3.48	3.48	3.47	80.54%	84.52%	24.71%	1.1

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203	Coordinate tasks and responsibilities with law enforcement officials (e.g., traffic control, crowd control).	IOS		80.29%	3.27	3.18	3.23	72.73%	75.24%	22.65%	1.1
204	Monitor emergency scene and request assistance from other agencies as needed.	IOS		79.93%	3.66	3.17	3.49	79.39%	79.57%	26.75%	1.1
205	Clearly and accurately communicate patient information, assessment and treatment via radio on route to a medical facility.	IOS		88.89%	4.19	4.27	4.23	93.15%	91.73%	52.19%	1.1
206	Clearly and accurately communicate patient information and care to medical staff.	IOS		92.11%	4.32	4.31	4.32	96.08%	94.76%	55.43%	1.1
207	Assist medical staff as needed until released by medical staff.	IOS		85.30%	3.45	3.46	3.45	79.01%	81.11%	40.00%	1.1
208	Participate in fire drills and demonstrations of firefighting techniques.	IOS		97.85%	3.95	3.42	3.77	83.90%	88.54%	51.66%	1.1
209	Participate in ongoing training drills to develop and maintain proficiency (e.g., HAZ-MAT, search and rescue operations, SCBA and air management, automobile extrication, rapid intervention team (RIT) training, etc.).	IOS		99.64%	4.39	3.85	4.21	97.79%	98.41%	52.73%	1.1
210	Participate in training drills with new firefighters, assisting in their training through coaching and mentoring.	IOS		97.13%	4.10	3.71	3.97	92.48%	94.03%	26.39%	1.1
211	Train in equipment operations such as apparatus driving, hydraulics and pump operation and aerial ladder operation.	IOS		96.75%	3.96	3.62	3.84	88.26%	91.09%	20.30%	1.1
212	Participate in demonstrations, Officer classes, company level training or educational reviews (e.g., signs and symptoms of heat stroke, winter fireground operations, review of response zone building construction and floor plans, review of response zone street maps).	IOS		93.84%	3.61	3.32	3.51	83.66%	87.05%	20.38%	1.1
213	Participate in physical training activities to maintain a high level of physical fitness.	Match	5.1.1.5	98.19%	4.26	4.14	4.23	97.03%	97.42%	71.22%	1.1
214	Participate in courses, seminars and conferences, and study fire science literature to learn firefighting techniques.	IOS		95.32%	3.43	3.14	3.33	77.48%	83.42%	18.49%	1.1
215	Complete required training courses such as hazardous materials and automobile extrication.	IOS		97.83%	3.74	3.29	3.58	85.98%	89.93%	30.97%	1.1
216	Read, comprehend and retain information from training materials (e.g., text books and manuals).	IOS		98.92%	3.61	3.55	3.59	82.16%	87.74%	41.54%	1.1
217	Successfully complete and pass written exams that test coursework learning and training objectives.	IOS		93.14%	3.44	3.29	3.39	78.52%	83.39%	42.08%	1.1
218	Take and complete course work required to obtain medical certifications.	IOS		97.84%	4.18	3.91	4.09	95.06%	95.98%	51.87%	1.1
219	Maintain ongoing certification requirement through continuing education or training.	IOS		98.92%	4.20	3.98	4.12	95.54%	96.66%	27.94%	1.1
220	Read and comprehend aspects of the fire department's member assistance program	NFPA	5.1.1.4	84.89%	2.70	2.02	2.45	34.84%	51.50%	12.96%	2.1
221	Are you paying attention? Please fill in a 'YES' for Applicability, 4 for importance, 2 for frequency, and 'YES' for RUAD.			97.82%	3.98	2.01	3.32	99.25%	98.78%	98.52%	1.1

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222	Read, comprehend and retain information of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program	NFPA	5.1.1.6	89.57%	3.20	2.51	2.96	57.20%	67.98%	38.43%	1.2
223	Participate in life safety initiatives in support of the fire department mission and to reduce firefighter line-of-duty injuries and fatalities.	NFPA	5.1.1.2	95.68%	4.15	3.25	3.85	87.50%	90.23%	35.96%	1.1
224	Document required information such as personal information of patients or citizens involved in emergency scene.	IOS		96.72%	4.10	4.28	4.16	92.74%	94.06%	45.53%	1.1
225	Summarize incidents that occurred at an emergency scene, detailing tactics, equipment and procedures used through written narratives.	Match	6.2.1	82.72%	3.88	3.87	3.88	84.58%	83.96%	31.19%	1.1
226	Write descriptions of situations in medical reports, including details of symptoms, actions taken, etc.	IOS		93.83%	4.23	4.27	4.24	93.45%	93.58%	54.35%	1.1
227	Complete reports required of the job (daily maintenance, inspections and truck checks).	Match	6.2.1(B)1	96.72%	3.88	4.53	4.10	94.44%	95.20%	25.53%	1.1
228	Answer routine phone calls in the station.	Match	5.2.2	95.90%	2.92	4.21	3.35	71.06%	79.33%	27.97%	1.1
229	Report for duty on time.	IOS		100.00%	4.81	4.99	4.87	100.00%	100.00%	88.07%	1.1
230	Maintain professional appearance and personal hygiene in accordance with regulations.	IOS		100.00%	4.34	4.88	4.52	99.17%	99.45%	86.42%	1.1
231	Remain on-duty for extended periods of time per department-specific SOGs.	IOS		95.49%	4.09	3.59	3.93	87.07%	89.87%	55.36%	1.1
232	Read all internal communications (emails, handouts, etc.) from department (e.g., SOGs, policies and procedures, rules and regulations, etc.).	Match	5.1.1.1	97.95%	4.08	4.33	4.17	96.20%	96.78%	34.18%	1.1
233	Document presentations and use prepared materials.	NFPA	6.5.2*(B)	61.57%	2.69	2.64	2.68	49.08%	53.24%	20.25%	2.3
234	Clean and maintain fire stations and firefighting equipment and apparatus.	Match	5.5.1(A)	99.18%	4.21	4.75	4.39	97.93%	98.34%	45.04%	1.1
235	Ensure apparatus is in response-ready state, including decontaminating and disinfecting the unit and equipment, restocking of supplies and inspection of equipment.	Match	6.5.4*3a	98.78%	4.66	4.81	4.71	99.59%	99.32%	45.00%	1.1
236	Ensure proper function of SCBA by inspecting and performing daily tests at the start of each shift; service SCBA if malfunctioning.	IOS		99.18%	4.93	4.86	4.91	100.00%	99.73%	73.44%	1.1
237	Coordinate with firefighters from off-going shift as to the actions needed to ensure the apparatus is in a response ready state.	IOS		97.55%	4.45	4.71	4.54	98.74%	98.34%	40.08%	1.1
238	Checks bells and other signaling devices in the fire station by operating them to ensure that they work properly.	IOS		67.35%	3.81	3.61	3.74	78.29%	74.64%	21.26%	1.1
239	Report damaged and out of service equipment to company officer.	Match	6.5.4*3b	97.96%	4.44	4.07	4.31	95.00%	95.99%	36.67%	1.1
240	Perform maintenance and upkeep for equipment and apparatus as necessary to ensure a response-ready state.	Match	6.5.4*1	90.20%	4.42	4.31	4.38	96.33%	94.29%	34.25%	1.1
241	Wash used hoses and re-bed them on the truck.	Match	5.5.2	97.55%	3.71	3.45	3.63	80.33%	86.07%	59.41%	1.1

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242	Maintain all personal protective equipment (PPEs).	Match	5.5.1	99.18%	4.80	4.53	4.71	99.58%	99.45%	74.48%	1.1
243	Maintain an inventory of tools and equipment.	IOS		88.93%	4.04	4.19	4.09	91.74%	90.81%	36.24%	1.1
244	Maintain maintenance records of all equipment and apparatus.	Match	6.5.4*2	65.71%	3.86	3.92	3.88	87.20%	80.04%	25.77%	1.3
245	Perform daily chores to ensure a neat and clean working and living environment at the fire station.	IOS		98.37%	3.62	4.63	3.95	91.98%	94.11%	38.40%	1.1
246	Perform and coordinate kitchen chores such as planning meals, cooking meals and cleaning up after meals.	IOS		91.84%	3.20	4.36	3.58	81.25%	84.78%	25.56%	1.1
247	Maintain the exterior of fire station: lawns, walkways and driveways.	IOS		69.39%	2.97	3.57	3.16	67.22%	67.94%	25.27%	1.1
248	Perform an annual service test on fire hose, using a pump, a marking device, pressure gauges, and a timer.	NFPA	6.5.5	80.82%	3.92	3.06	3.63	78.57%	79.32%	25.13%	1.1
249	Engage in pre-planning operations such as documenting building layouts, building construction, fire suppression and other tactical information such as location of exits to assist in future operations.	Match	6.5.3*	89.04%	3.73	3.29	3.58	84.31%	85.89%	15.61%	1.1
250	Inspect fire hydrant functioning in response zones and conduct hydrant flow tests.	IOS		75.11%	3.69	3.05	3.47	82.18%	79.83%	25.71%	1.1
251	Inspect businesses and non-owner occupied private dwellings.	Match	6.5.1*1	50.66%	3.31	2.75	3.11	69.75%	63.39%	15.00%	1.3
252	Identify code enforcement issues and alert superiors.	Match	6.5.1*2	49.34%	3.28	2.52	3.01	59.66%	56.23%	11.67%	3.2
253	Complete smoke detector certifications.	IOS		27.51%	2.88	2.12	2.61	41.89%	37.10%	17.33%	4.3
254	Identify illegal occupant dwellings or other occupancies.	IOS		32.75%	2.95	2.01	2.63	38.82%	36.80%	11.63%	4.3
255	Use commonly recognized symbols when diagramming construction features, utilities, hazards, and fire protection systems.	NFPA	6.5.3*(A)3	61.67%	3.11	2.60	2.94	55.24%	57.39%	26.39%	1.4
256	Maintain a log of visitors to the fire station by recording their names, date, time and other relevant information so a written record is available.	IOS		51.75%	2.55	2.77	2.63	44.53%	46.94%	9.45%	2.3
257	At superior's command, accompany owners/occupants into burned structure to allow them to retrieve possessions safely and to reduce liability risk to the fire department.	IOS		77.19%	3.04	2.30	2.79	52.20%	60.52%	13.19%	1.2
258	Inform and educate the public on fire prevention.	Match	6.5.2*	88.55%	3.53	3.03	3.36	76.85%	80.74%	24.63%	1.1
259	Perform community service and outreach programs such as fire alarm installations, child safety seat installations, etc.	IOS		66.96%	3.01	2.68	2.88	57.96%	60.96%	10.76%	1.2
260	Conduct fire station tours for groups of individuals and children.	Match	6.5.2*(A)	96.92%	2.81	2.98	2.86	59.55%	71.99%	12.22%	1.2
261	Maintain a service orientation or public servant mentality when dealing with the public.	IOS		93.83%	4.03	4.29	4.11	93.40%	93.54%	61.03%	1.1
262	Use tact and diplomacy in dealing with the public under times of high stress or with disgruntled, agitated or hysterical persons.	IOS		96.92%	4.19	4.08	4.15	94.09%	95.03%	57.01%	1.1
263	Interact and work with citizens.	IOS		97.79%	4.06	4.24	4.12	93.21%	94.74%	56.31%	1.1
264	Are you paying attention? Please fill in a 'YES' for Applicability, 4 for importance, 3 for frequency, and 'YES' for RUAD.			99.10%	4.00	3.01	3.67	100.00%	99.70%	100.00%	1.1

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Item#	Task	Origin	NFPA Code	%Rel	I.	F.	C.	%E	JR%	RUAD	Zone
265	Attend community meetings, ceremonies and parades as representatives of the department.	IOS		76.65%	2.78	2.46	2.66	48.31%	57.75%	20.11%	2.1
266	Establish perimeter lines to prevent unauthorized persons from entering areas near emergencies.	IOS		77.09%	3.70	3.03	3.47	75.72%	76.18%	40.57%	1.1
267	Provide assistance to victims.	IOS		89.43%	4.35	3.97	4.22	94.06%	92.52%	62.07%	1.1
268	Control the emergency scene to protect yourself, coworkers and the patient or victim.	IOS		92.00%	4.65	4.24	4.52	98.55%	96.37%	70.19%	1.1
269	Communicate with the public to prevent them from crossing perimeter lines.	IOS		82.82%	3.85	3.13	3.61	79.57%	80.65%	44.92%	1.1
270	Assist rescue operation teams so that rescue items are recognized and retrieved in the time as prescribed by the Authorities Having Jurisdiction (AHJ).	NFPA	6.4.2*	70.93%	3.70	2.78	3.39	75.46%	73.95%	34.76%	1.1
271	Support and conduct community risk reduction programs.	IOS		46.67%	3.14	2.45	2.90	51.79%	50.08%	15.18%	3.2
272	**PPE:** SCBA, turnout gear (pants, jacket, helmet, gloves, hood), PASS (Personal Alert Safety System) Device	Match	5.3.2*(B)	99.55%	4.91	4.79	4.87	100.00%	99.85%	91.36%	1.1
273	**Blocks or pulleys:** Block and tackle equipment, pulleys, riggings, carabiners, anchors, straps, ropes	IOS		80.09%	3.66	2.71	3.34	75.56%	77.07%	39.11%	1.1
274	**Fire extinguishers:** Carbon dioxide CO_2 fire extinguishers, dry chemical fire extinguishers, multipurpose fire extinguishers, water extinguisher, K-Type	IOS		99.10%	4.17	3.45	3.93	92.66%	94.80%	89.50%	1.1
275	**Fire hoses:** Charged fire hoses, uncharged fire hoses	IOS		98.65%	4.60	4.01	4.40	99.07%	98.93%	91.71%	1.1
276	**Nozzles & Appliances:** Fire hose nozzles, hose couplings, wyes, siamese, adapters, reducers	IOS		99.10%	4.52	3.99	4.34	97.66%	98.14%	92.20%	1.1
277	**Fire or rescue trucks:** Aerial trucks, ladder trucks, engine trucks, rescue vehicles, other apparatus, brush apparatus	IOS		96.38%	4.39	4.25	4.34	96.68%	96.58%	58.29%	1.1
278	**Fire hand tools:** Fire axes, McLeod tools, pick head axes, Pulaski tools, pike pole, claw hammers, rubber mallet, non-sparking hammers, sledgehammers, Halligan bars, Hux bars, pinch bars	Match	6.4.1*(A)3a	98.65%	4.49	4.24	4.41	98.17%	98.33%	89.91%	1.1
279	**Stabilizing Tools:** Struts, lift jackets, cribbing	Match	6.4.1*(B)2	93.67%	4.09	3.32	3.83	89.42%	90.84%	57.42%	1.1
280	**Ropes & Webbing**	IOS		94.57%	3.96	3.15	3.69	86.67%	89.30%	71.90%	1.1
281	**Hydraulic Rescue Tools:** Spreaders, cutters, Jaws of Life, rams, air bags	IOS		98.19%	4.29	3.52	4.03	93.06%	94.77%	70.51%	1.1
282	**Ladders:** Aluminum ladders, extension ladders, roof ladders, A-Frame ladders	IOS		98.64%	4.39	3.65	4.14	97.22%	97.69%	92.63%	1.1
283	**Power Equipment:** Chain saws, circular saws, K-12 saws, reciprocating saws, electric/hydraulic generators	Match	6.4.1*(A)3b	98.64%	4.27	3.73	4.09	93.98%	95.53%	80.18%	1.1
284	**Ventilation:** Positive pressure fans, negative pressure fans, hydraulic ventilation, electric fans	IOS		98.19%	4.27	3.61	4.05	93.98%	95.38%	81.11%	1.1

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Item#	Task	Origin	NFPA Code	%Rel	I.	F.	C.	%E	JR%	RUAD	Zone
285	**First Responder:** Collars, backboard, dressings, AED, stethoscope, Stokes basket, airway adjuncts	IOS		100.00%	4.50	4.47	4.49	99.54%	99.69%	93.12%	1.1
286	**Meters:** Thermal imaging camera (TIC), CO_2 monitors, gas detectors, radiation meters	IOS		95.93%	3.93	3.44	3.76	87.79%	90.50%	44.39%	1.1
287	**Saws:** Hacksaws, handsaws, tree saws	IOS		90.05%	3.51	3.10	3.37	69.35%	76.24%	64.50%	1.1
288	**Maps & Manuals:** City maps, county maps, building layout maps, equipment manuals, apparatus manuals, repair manuals, Dangerous Goods Manual (HAZMAT)	IOS		96.85%	3.99	3.93	3.96	90.14%	92.37%	39.72%	1.1
289	**Specialty wrenches:** Hydrant shutoff wrenches, lug wrenches, non-sparking bung wrenches, gas-utility wrenches, spanner wrenches, adjustable wrenches	IOS		97.75%	3.86	3.49	3.73	83.26%	88.08%	70.83%	1.1
290	**Database user interface and query software:** Affiliated Computer Services (ACS), FIREHOUSE, Fire incident reporting systems, Microsoft Access, Scientific Software	IOS		82.43%	3.45	3.94	3.62	82.32%	82.36%	18.38%	1.1
291	**Computer software:** E-mail software, internet browsing software, drafting software, spreadsheet software, word processing software, project management software	Match	6.2.1(B)2	87.39%	3.22	3.96	3.46	77.32%	80.67%	28.93%	1.1
292	**Lighting Equipment:** Power supply and lighting equipment, cords and connectors, and ground-fault interpreter (GFI) devices.	NFPA	5.3.17(B)	91.89%	3.69	3.35	3.57	84.24%	86.79%	54.41%	1.1
293	Perform all fireground tasks wearing full turnout gear (coat, bunker pants, boots, helmet, gloves and hood) and SCBA	Match	5.1.2	99.10%	4.64	3.95	4.41	99.38%	99.29%	96.36%	1.1
294	Perform physically demanding tasks for extended periods of time	IOS		99.10%	4.31	3.61	4.08	96.34%	97.26%	91.44%	1.1
295	Perform in extreme heat and cold conditions	IOS		99.70%	4.20	3.80	4.07	96.34%	97.46%	84.40%	1.1
296	Perform operations in inclement weather	IOS		99.40%	3.94	3.39	3.76	89.91%	93.07%	67.79%	1.1
297	Walk long distances in full turnout gear	IOS		83.23%	3.18	2.58	2.98	59.40%	67.33%	71.53%	1.2
298	Operate in dark environments	IOS		98.80%	4.23	3.48	3.98	92.92%	94.88%	80.00%	1.1
299	Are you paying attention? Please fill in a 'YES' for Applicability, 3 for importance, 5 for frequency, and 'NO-*Learned through Continuing Education*' for RUAD.			98.77%	3.02	4.90	3.64	98.75%	98.76%	4.62%	1.1
300	Operate at high elevations	IOS		84.23%	3.31	2.39	3.01	60.86%	68.64%	56.95%	1.2
301	Operate in confined areas	IOS		97.01%	3.77	2.60	3.38	75.31%	82.54%	62.26%	1.1
302	Lift and carry heavy equipment and tools (e.g., high-rise pack containing hoseline and tools, gas-powered circular saw, chain saw, hydraulic cutters/spreaders, hydraulic tool power supply, gas-powered fans, portable hydrants, EMS bag containing oxygen bottle)	Match	5.3.4*(B)1a	99.31%	4.37	4.11	4.28	97.20%	97.91%	85.96%	1.1
303	Lift and carry a stretcher/gurney with assistance	IOS		97.60%	4.07	4.30	4.15	91.90%	93.80%	60.42%	1.1
304	Lift and push a stretcher/gurney into an ambulance with assistance	IOS		95.21%	4.07	4.28	4.14	92.42%	93.35%	54.35%	1.1

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Item#	Task	Origin	NFPA Code	%Rel	I.	F.	C.	%E	JR%	RUAD	Zone
305	Lift and transfer victims from ground to stretcher with assistance	IOS		97.94%	4.14	4.29	4.19	95.05%	96.01%	67.38%	1.1
306	Carry heavy equipment and tools for extended distances	IOS		96.92%	3.65	3.14	3.48	77.86%	84.20%	70.86%	1.1
307	Drag unconscious human victims and/or firefighters out of dangerous environments	IOS		99.66%	4.74	2.12	3.87	96.50%	97.55%	85.61%	1.1
308	Carry unconscious or injured victims and/or firefighters out of dangerous conditions	IOS		98.97%	4.66	2.01	3.78	94.72%	96.13%	84.45%	1.1
309	Remove heavy equipment from apparatus compartments	IOS		98.97%	3.98	3.99	3.98	93.68%	95.45%	71.02%	1.1
310	Individually drag charged 1 ¾ inch hoseline	IOS		99.31%	4.43	3.66	4.17	96.85%	97.67%	93.33%	1.1
311	Individually drag charged 2 ½ inch hoseline	IOS		93.13%	3.84	2.58	3.43	76.00%	81.70%	79.78%	1.1
312	Individually feed charged 1¾ inch hoseline to firefighter(s) at nozzle to assist in moving hoseline around obstacles, up stairs, etc.	IOS		99.66%	4.35	3.38	4.03	95.10%	96.62%	88.77%	1.1
313	Drag uncharged or charged hoseline	IOS		99.66%	4.22	3.60	4.02	96.85%	97.79%	92.28%	1.1
314	Hold and operate a hoseline	Match	5.3.13(B)1	99.66%	4.55	3.61	4.24	99.65%	99.65%	95.42%	1.1
315	Open a hydrant valve or hydrant cap using a hydrant wrench	IOS		99.31%	4.35	3.57	4.09	94.04%	95.79%	92.96%	1.1
316	Connect hoseline sections using a spanner tool	IOS		99.66%	4.07	3.44	3.86	89.82%	93.10%	90.49%	1.1
317	Penetrate and tear down ceiling using a pike pole	IOS		99.66%	3.91	3.11	3.64	83.86%	89.12%	75.70%	1.1
318	Hold and operate gas-powered saws and hydraulic tools	Match	5.3.4*(B)1b	99.66%	4.03	3.30	3.79	89.47%	92.86%	71.13%	1.1
319	Lift, swing and strike targets using sledge hammers and axes	Match	5.3.4*(B)2	99.66%	3.74	3.05	3.51	80.70%	87.01%	80.63%	1.1
320	Lift and carry ground ladders	IOS		99.66%	4.02	3.10	3.71	88.07%	91.93%	92.61%	1.1
321	Position, heel and raise ground ladders	IOS		99.66%	4.09	3.04	3.74	89.12%	92.63%	92.25%	1.1
322	Extend ground ladders using halyard	IOS		99.66%	4.04	3.02	3.70	87.37%	91.46%	92.96%	1.1
323	Hoist equipment using a rope	Match	5.3.12(B)2	97.93%	3.35	2.29	2.99	56.74%	70.46%	73.93%	1.2
324	Climb, crawl and/or maneuver in confined or restricted spaces while wearing SCBA and appropriate PPE	Match	5.3.9*(B)*1	98.15%	4.40	2.70	3.83	89.27%	92.23%	85.38%	1.1
325	Crawl, duck-under, crawl-over and maneuver around obstacles in confined and restricted spaces while wearing SCBA and appropriate PPE	IOS		97.78%	4.35	2.74	3.81	90.46%	92.90%	85.38%	1.1
326	Climb through windows and openings while wearing SCBA and appropriate PPE	IOS		99.26%	4.23	2.68	3.72	88.30%	91.95%	86.31%	1.1
327	Crawl along ceiling joists and rafters while wearing SCBA and appropriate PPE	IOS		85.87%	3.67	2.13	3.16	68.42%	74.23%	61.63%	1.1
328	Climb to the top and back down ground ladders while wearing SCBA and appropriate PPE	IOS		98.52%	4.05	2.84	3.65	85.50%	89.83%	91.98%	1.1
329	Climb to the top and back down aerial ladders/buckets/baskets/platforms while wearing SCBA and appropriate PPE	IOS		95.56%	3.73	2.42	3.30	70.04%	78.54%	69.02%	1.1
330	Rappel down from the top of structures while wearing SCBA and appropriate PPE	IOS		75.93%	3.25	1.60	2.70	47.58%	57.02%	50.67%	2.1

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Item#	Task	Origin	NFPA Code	%Rel	I.	F.	C.	%E	JR%	RUAD	Zone
331	Climb stairs while wearing PPE and carrying equipment while wearing SCBA and appropriate PPE	IOS		98.89%	4.11	3.25	3.83	89.02%	92.30%	87.31%	1.1

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Appendix D: Task Analysis Results for Volunteer Position

Item#	Task	Origin	NFPA Code	%Rel	I	F	C	%E	JR%	RUAD	Zone
1	Accurately take incoming calls or information from the dispatcher regarding alarms (e.g., fire alarms, requests for emergency medical services).	Match	5.2.1*	88.61%	4.17	4.18	4.15	91.43%	90.49%	48.57%	1.1
2	Be in a response-ready status to respond to alarms at all hours of the day and night.	IOS		97.47%	4.47	4.42	4.44	97.33%	97.38%	74.67%	1.1
3	Respond to a vast range of emergencies including fire alarms, automobile accidents, medical emergencies, hazardous materials, or other incidents.	Match	5.3.3*1	97.47%	4.48	4.31	4.41	98.70%	98.29%	72.73%	1.1
4	Put on situation-appropriate personal protective equipment (PPE) (example: full turnout gear, HAZ-MAT Equipment, Universal Protections [Body Substance Isolation Gear]).	Match	5.3.3*2	97.47%	4.70	4.37	4.58	98.70%	98.29%	75.32%	1.1
5	Put on and wear self-contained breathing apparatus (SCBA).	Match	5.3.1*	98.73%	4.71	3.81	4.40	98.70%	98.71%	83.12%	1.1
6	Carry equipment when needed (RIT Pack, High-Rise Pack, Medical Bag).	Match	5.3.13.2	96.20%	4.04	3.91	3.98	92.00%	93.40%	57.33%	1.1
7	Perform tasks only in established, protected work areas.	NFPA	5.3.3*4	67.95%	3.63	3.42	3.55	74.19%	72.11%	45.90%	1.1
8	Assess fires and situations and report conditions to superiors to receive instructions, using two-way radios.	Match	5.2.3	96.15%	4.46	3.79	4.23	94.59%	95.11%	56.76%	1.1
9	Conduct a mental size-up of the emergency scene.	IOS		96.15%	4.28	4.07	4.19	94.59%	95.11%	55.41%	1.1
10	Check the wind direction in relation to the fire or HAZ-MAT scene.	IOS		93.59%	4.21	3.04	3.80	84.93%	87.81%	64.38%	1.1
11	Assess the potential effects of weather on emergency response.	Match	5.3.3*(A)2	92.31%	3.74	3.30	3.59	75.00%	80.76%	48.61%	1.1
12	Assess the color, location and movement of smoke.	IOS		98.70%	4.19	3.30	3.88	86.67%	90.67%	53.33%	1.1
13	Assess fire conditions to ensure proper fire suppression agent is used.	Match	6.3.2*(A)	93.59%	4.01	3.36	3.79	90.41%	91.47%	55.41%	1.1
14	Determine the safest evacuation route and primary and secondary means of egress.	Match	6.3.3*3	93.51%	4.49	3.54	4.16	93.15%	93.27%	63.01%	1.1
15	Safely shut off utility services to buildings in emergency situations (e.g., electrical and gas valves).	Match	5.3.18	89.74%	4.09	3.01	3.73	87.67%	88.36%	55.56%	1.1
16	Communicate with the dispatcher, other fire vehicles and commanding officers by radio and request any necessary assistance.	Match	6.2.2*1	96.15%	4.14	3.72	3.99	93.24%	94.21%	50.00%	1.1
17	Advise the commanding officer of fire conditions, hazards and exposures at the scene.	Match	6.3.2*7	94.87%	4.27	3.61	4.03	94.52%	94.64%	56.16%	1.1
18	Communicate with the superior during a live fire.	Match	6.2.2*2	98.72%	4.41	3.70	4.17	94.74%	96.06%	59.21%	1.1

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Item#	Task	Origin	NFPA Code	%Rel	I	F	C	%E	JR%	RUAD	Zone
19	Collaborate with other firefighters, supervisors and other firefighter companies to conduct firefighting and rescue operations.	Match	6.3.2*4	98.72%	4.14	3.56	3.93	90.79%	93.43%	48.68%	1.1
20	Illuminate the emergency scene.	NFPA	5.3.17	94.87%	3.80	3.31	3.62	85.14%	88.38%	41.89%	1.1
21	Recognize potential hazards on emergency scenes regarding vehicle traffic.	NFPA	5.3.3*(A)1	97.44%	4.36	3.91	4.20	96.00%	96.48%	61.33%	1.1
22	Discriminate between routine and emergency traffic.	NFPA	5.2.3(B)	80.77%	3.77	3.50	3.68	80.60%	80.65%	40.30%	1.1
23	Use personnel accountability systems to locate team members and communicate loss of air supply.	NFPA	5.3.5*(A)	91.03%	4.58	3.32	4.15	94.44%	93.31%	75.00%	1.1
24	Rescue victims from burning buildings and accident sites.	Match	5.3.9*1a	98.44%	4.67	2.57	3.96	96.77%	97.33%	74.19%	1.1
25	Assist at a water rescue (e.g., swollen rivers, frozen lakes).	IOS		81.25%	3.78	1.86	3.11	64.91%	70.35%	40.35%	1.2
26	Are you paying attention? Please fill in a 'YES' for Applicability, 3 for importance, 5 for frequency, and 'NO-*Learned on-the-job*' for RUAD.			95.24%	2.95	4.86	3.59	96.77%	96.26%	1.61%	1.1
27	Interact with victims or causalities who have sustained severe or life-ending injuries.	IOS		90.77%	4.10	3.02	3.72	88.14%	89.01%	48.33%	1.1
28	Interact with victims who have witnessed the loss or injury of companions.	IOS		84.38%	3.67	2.65	3.32	71.43%	75.74%	38.60%	1.1
29	Safely remove persons from entrapments.	Match	5.3.9*5	96.83%	4.52	3.00	4.01	90.00%	92.27%	65.00%	1.1
30	Safely lift, hoist or drag victim(s), taking care to minimize further injuries.	Match	6.4.1*3	95.31%	4.37	2.95	3.88	91.53%	92.79%	71.19%	1.1
31	Drag or carry a victim(s) out of a building wearing appropriate PPE.	IOS		95.31%	4.45	2.35	3.74	93.22%	93.92%	77.97%	1.1
32	Carry victim(s) via ladders wearing appropriate PPE.	Match	5.3.9*(A)1b	88.89%	4.15	2.14	3.48	87.04%	87.65%	80.00%	1.1
33	Drag or carry victim(s) up or down stairs wearing appropriate PPE.	IOS		90.48%	4.13	2.21	3.48	81.82%	84.70%	72.73%	1.1
34	Evacuate persons from a fire area.	Match	5.2.4*(A)	90.48%	4.26	2.46	3.64	83.93%	86.11%	64.29%	1.1
35	Extricate persons from automobiles.	Match	6.4.1*1	98.39%	4.44	3.15	4.00	93.33%	95.02%	65.00%	1.1
36	Cut vehicle power during extrication.	IOS		96.83%	4.21	3.13	3.84	93.33%	94.50%	65.00%	1.1
37	Strategically position apparatus to protect incident scene from oncoming traffic.	Match	5.3.3*3	95.24%	4.42	3.69	4.17	91.38%	92.66%	60.34%	1.1
38	Bring and use the necessary tools to extricate or free trapped persons.	Match	6.4.1*2	96.83%	4.33	3.27	3.97	93.22%	94.42%	62.71%	1.1
39	Systematically search burning buildings to locate fire victims.	Match	5.3.9*4	93.65%	4.63	2.86	4.03	96.55%	95.59%	82.76%	1.1
40	Gather information (e.g., bystanders, neighbors, family members) about probable victim locations and/or building floor plans.	IOS		85.94%	3.79	2.68	3.41	72.73%	77.13%	52.73%	1.1

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Item#	Task	Origin	NFPA Code	%Rel	I	F	C	%E	JR%	RUAD	Zone
41	Enter unfamiliar, smoke-filled buildings and rooms while wearing PPE and SCBA equipment.	Match	5.3.9*2	93.75%	4.59	3.03	4.07	95.00%	94.58%	83.05%	1.1
42	Systematically search for trapped persons.	Match	5.3.9*1b	92.19%	4.48	2.77	3.90	89.83%	90.62%	79.31%	1.1
43	Operate and/or man firefighting watercraft/boats for civilian rescue.	IOS		54.69%	3.26	1.98	2.82	60.53%	58.58%	30.77%	1.4
44	Assess risk/benefit of rescue and relay to company officer.	Match	6.4.2*(A)2	82.81%	4.02	2.87	3.62	84.31%	83.81%	52.94%	1.1
45	Tie knots to a hose line, ladder, or other object as necessary during a large area search.	Match	5.3.20	89.06%	3.77	2.40	3.30	71.43%	77.30%	71.43%	1.1
46	Maintain team integrity and firefighter safety.	NFPA	5.3.9*6	98.44%	4.61	4.15	4.45	98.36%	98.39%	68.85%	1.1
47	Rescue a firefighter with functioning respiratory protection.	NFPA	5.3.9*(B)*3	93.75%	4.58	2.00	3.72	94.92%	94.53%	76.27%	1.1
48	Rescue a firefighter whose respiratory protection is not functioning.	NFPA	5.3.9*(B)*4	93.75%	4.73	1.92	3.80	98.31%	96.79%	76.27%	1.1
49	Recognize and manage psychological effects resulting from operating in obscured conditions.	NFPA	5.3.9*(A)2	82.81%	4.04	2.42	3.49	81.48%	81.92%	57.41%	1.1
50	Ensure respiratory protection is not compromised.	NFPA	5.3.9*(A)6	98.41%	4.51	3.38	4.12	90.00%	92.80%	76.67%	1.1
51	Choose and apply appropriate techniques for opening or removing trunks, engine compartments, vehicle roofs, doors, windshields, windows, steering wheels or columns, and dashboards.	NFPA	6.4.1*(B)3	95.31%	4.03	2.97	3.66	86.44%	89.39%	47.46%	1.1
52	Administer first aid to injured persons.	IOS		93.22%	4.25	3.76	4.08	87.04%	89.10%	75.93%	1.1
53	Assess a patient's condition (e.g. alertness level, orientation, breathing, circulation).	IOS		91.53%	4.41	3.81	4.19	94.34%	93.40%	77.36%	1.1
54	Gather information from patient or family member regarding medical history.	IOS		83.05%	3.82	3.71	3.78	82.00%	82.35%	66.00%	1.1
55	Control bleeding and bandage wounds.	IOS		91.53%	4.42	3.21	4.01	88.46%	89.48%	75.00%	1.1
56	Perform cardiopulmonary resuscitation.	IOS		91.53%	4.67	3.02	4.11	96.23%	94.66%	83.02%	1.1
57	Operate Defibrillator (AED).	IOS		93.22%	4.57	2.63	3.92	90.57%	91.45%	83.02%	1.1
58	Use airway adjuncts.	IOS		74.14%	4.09	2.32	3.49	76.09%	75.44%	69.57%	1.1
59	Immobilize painful, swollen, or deformed extremities.	IOS		86.44%	3.90	2.69	3.48	80.39%	82.41%	74.51%	1.1
60	Appropriately control patients who are hysterical, mentally disturbed, or in an altered state of consciousness that require medical attention.	IOS		76.27%	3.81	2.46	3.34	72.34%	73.65%	56.25%	1.1
61	Administer appropriate oxygen flow to patients.	IOS		84.75%	4.26	3.32	3.94	84.62%	84.66%	73.08%	1.1
62	Are you paying attention? Please fill in a 'YES' for Applicability, 2 for importance, 1 for frequency, and 'YES' for RUAD.			98.25%	2.12	1.12	1.78	1.79%	33.91%	100.00%	2.2
63	Prepare and transfer a patient to an ambulance.	IOS		88.14%	3.83	3.87	3.83	92.31%	90.92%	54.72%	1.1

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64	Lift a patient into a bed/onto a stretcher; carry patient through tight quarters and down flights of stairs using a stair chair or Reeve stretcher; carry patient to ambulance.	IOS		86.44%	3.78	3.63	3.74	88.00%	87.48%	58.00%	1.1
65	Monitor and provide needed care when transporting a patient to a medical facility.	IOS		52.54%	4.00	2.83	3.62	79.41%	70.46%	62.86%	1.3
66	Properly utilize emergency equipment and supplies.	IOS		89.83%	4.06	3.72	3.93	88.46%	88.92%	64.15%	1.1
67	Know street layouts, addresses, intersections and alternative routes in response area.	IOS		93.10%	4.22	4.17	4.21	92.45%	92.67%	20.37%	1.1
68	Know the location of hydrants and mains in a response area.	Match	6.5.3*(A)1	89.66%	3.98	3.62	3.84	88.00%	88.55%	15.38%	1.1
69	Efficiently and safely drive firefighting emergency equipment to and from a scene.	Match	5.3.2*	94.83%	4.50	4.04	4.33	94.34%	94.50%	49.09%	1.1
70	Operate pumps connected to hoses.	Match	5.3.15*1	96.49%	4.15	3.64	3.96	88.68%	91.28%	47.27%	1.1
71	Check gauges for pressures and proper water flow.	IOS		93.10%	4.20	3.67	4.01	92.45%	92.67%	40.74%	1.1
72	Calculate and/or estimate friction loss rates or other pertinent values.	IOS		84.48%	3.48	2.96	3.33	75.51%	78.50%	40.82%	1.1
73	Maintain constant water supply through proper management of pumping apparatus.	Match	5.3.15*2	91.38%	4.26	3.72	4.07	96.23%	94.61%	43.40%	1.1
74	Monitor apparatus during operations.	IOS		93.10%	4.09	3.71	3.95	90.74%	91.53%	31.48%	1.1
75	Calculate foam amounts.	Match	6.3.1*2	82.76%	3.47	2.45	3.10	62.50%	69.25%	43.75%	1.2
76	Conduct drafting operations.	Match	5.3.15*(B)2	96.55%	3.73	2.48	3.33	70.91%	79.45%	35.19%	1.1
77	Charge lines at officer's command by opening discharge valves to support fire operations.	IOS		93.10%	4.15	3.56	3.94	92.45%	92.67%	48.15%	1.1
78	Control pumper output by regulating engine RPMs, pressure relief valve and output gate valves so that pressure or flow is correct for the given operation.	Match	5.3.10*(A)1	89.66%	3.92	3.48	3.78	88.24%	88.71%	34.62%	1.1
79	Utilize watercraft to supply water for fighting fires.	IOS		32.76%	3.24	2.00	2.83	56.00%	48.26%	36.00%	3.4
80	Operate the ladder pipe as per apparatus specifications.	IOS		49.12%	3.76	2.38	3.30	68.97%	62.36%	41.38%	3.1
81	Position and climb ladders to gain access to upper levels of buildings or to rescue individuals from burning structures.	Match	5.3.6*3	85.96%	4.21	2.42	3.60	89.36%	88.23%	72.92%	1.1
82	Determine the size and type of ladders required.	Match	5.3.6*1	89.47%	3.78	2.58	3.36	81.63%	84.24%	64.00%	1.1
83	Identify proper ladder locations to allow access to upper levels of buildings or to ensure proper evacuation of fire personnel.	Match	5.3.9*3	87.72%	4.08	2.49	3.53	85.42%	86.18%	69.39%	1.1
84	Be aware of electrical lines when setting up ladders.	Match	5.3.6*2	96.49%	4.67	2.91	4.07	96.23%	96.31%	72.22%	1.1

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85	For aerial ladders: position truck, place chocks and set-up truck jacks.	IOS		47.37%	3.86	2.62	3.45	82.76%	70.97%	37.93%	3.1
86	Raise a 24-foot extension ladder and extend the fly section of that ladder.	IOS		89.47%	3.76	2.70	3.41	73.47%	78.80%	72.00%	1.1
87	With assistance, raise a 35-foot extension ladder and extend the fly section of that ladder.	IOS		61.40%	3.66	2.46	3.26	67.65%	65.57%	71.43%	1.3
88	With assistance, carry extension ladders (24-foot, 35-foot) from truck to incident scene.	IOS		84.21%	3.48	2.63	3.19	68.09%	73.45%	70.83%	1.1
89	Climb an aerial ladder to a height up to 100 feet while wearing PPE equipment.	IOS		52.63%	3.38	2.38	3.04	56.25%	55.05%	50.00%	1.4
90	Lower ground ladders and stow them onto the truck.	IOS		91.23%	3.25	2.49	2.98	60.00%	70.40%	66.67%	1.2
91	Create openings in buildings for ventilation or entrance using axes, chisels, crowbars, power saws or core cutters.	Match	5.3.12*1	94.74%	3.87	2.40	3.36	78.85%	84.14%	66.04%	1.1
92	Remove equipment from truck and start power tools.	Match	5.3.12(B)1a	98.25%	3.71	3.27	3.56	77.78%	84.59%	49.09%	1.1
93	Use equipment (e.g., swing axe or sledge hammer) to make forcible entries.	Match	5.3.4*	94.74%	3.62	2.75	3.33	67.31%	76.44%	62.26%	1.1
94	Determine the stability of supporting surfaces such as roofs and fire escapes.	Match	5.3.12*2	92.98%	4.46	2.48	3.82	90.20%	91.12%	71.15%	1.1
95	Cut openings in roof with a fire axe or power saw (e.g., K-12 saw) for ventilation or examination.	Match	5.3.12(B)3	92.98%	3.98	2.31	3.41	84.31%	87.20%	59.62%	1.1
96	Remove ceiling materials, such as plaster and lath, sheet rock, ceiling tiles and insulation by poking from above with pike pole or axe so that smoke and hot gases can escape.	Match	5.3.12*3	96.49%	3.87	2.85	3.51	81.13%	86.25%	59.26%	1.1
97	Are you paying attention? Please fill in a 'YES' for Applicability, 1 for importance, 1 for frequency, and 'NO-*Learned through Continuing Education*' for RUAD.			98.21%	1.07	1.07	1.07	1.82%	33.92%	1.82%	2.2
98	Remove and transport equipment (e.g., electrical extension cords, ventilation fans) from the truck as needed.	Match	5.3.12(B)1b	94.74%	3.28	3.08	3.21	67.31%	76.44%	33.96%	1.1
99	Properly knot and tie rope to hoist equipment weighing up to 50 pounds to upper levels.	Match	5.3.20(A)	89.47%	3.36	2.28	2.99	55.10%	66.55%	68.00%	1.2
100	Retreat from the area as a team when ventilation is accomplished.	NFPA	5.3.12*4	89.47%	4.00	2.56	3.52	80.00%	83.15%	62.00%	1.1
101	Establish an appropriate water supply, lay hose lines and connect them to water supplies.	Match	5.3.15*(A)	100.00%	4.20	3.29	3.90	94.12%	96.08%	82.86%	1.1

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102	Coordinate firefighting and rescue operations with other firefighters, supervisors and other firefighter companies.	Match	6.3.2*1	97.14%	3.77	3.14	3.58	82.35%	87.28%	37.14%	1.1
103	Pull the supply line from an engine to a hydrant.	Match	5.3.15*(B)1	100.00%	3.80	3.03	3.56	81.82%	87.87%	65.71%	1.1
104	Wrap a hose around functioning hydrant, unscrew the hydrant cap, screw the hose connection to the hydrant and turn on the hydrant (i.e., catch the plug).	Match	5.3.15*(B)5	100.00%	3.69	2.91	3.44	79.41%	86.27%	76.47%	1.1
105	Make and unmake coupling connections.	Match	5.3.10*(B)8	100.00%	3.51	3.37	3.50	82.35%	88.23%	82.35%	1.1
106	Carry a high-rise pack up multiple flights of stairs while wearing PPE so that attack line can be set up.	IOS		80.00%	3.17	1.73	2.67	51.72%	61.14%	48.28%	1.2
107	Advance and fully extend a pre-connected, charged or uncharged hose of a diameter between 1¾ to 2½ inches.	Match	5.3.7*(B)5	100.00%	3.89	3.20	3.66	82.35%	88.23%	73.53%	1.1
108	Remove kinks in charged supply line by lifting and/or turning hose so that water flow is not obstructed.	IOS		97.14%	3.68	2.94	3.44	84.85%	88.94%	54.55%	1.1
109	Carry, assemble and operate deluge set (ground monitor).	IOS		91.43%	2.97	1.85	2.60	34.38%	53.37%	34.38%	2.1
110	Connect multiple small lines (example: 50-foot) and extend them to reach fire when required.	IOS		100.00%	3.60	2.77	3.31	79.41%	86.27%	61.76%	1.1
111	Carry a 50-foot section of rolled hose unassisted while in appropriate PPE.	IOS		97.14%	3.03	2.77	2.94	55.88%	69.62%	38.24%	1.2
112	Feed charged hose line of a diameter between 1¾ to 2½ inches to attacking firefighter units.	IOS		97.14%	3.85	3.09	3.62	84.85%	88.94%	69.70%	1.1
113	Re-bed hose line back onto the proper apparatus (e.g., engine or truck).	IOS		97.14%	3.20	3.31	3.25	70.59%	79.43%	48.57%	1.1
114	Select the proper hose size based upon fire scene and method of attack.	Match	5.3.10*(A)8	94.29%	3.71	3.06	3.53	81.82%	85.97%	44.12%	1.1
115	Calculate the height of a building in feet from its floors.	IOS		80.00%	2.77	2.06	2.56	36.67%	51.10%	50.00%	2.1
116	Determine the correct spray pattern based upon fire scene (e.g., solid stream, hollow cone, full cone, fog stream, etc.).	Match	5.3.10*(B)3	100.00%	3.63	3.31	3.56	82.35%	88.23%	60.00%	1.1
117	Hold a charged 1¾ inch hose and open the nozzle.	Match	5.3.10*(B)2	97.14%	3.97	3.38	3.80	93.94%	95.01%	82.35%	1.1
118	While assisted, hold a charged 2½ inch hose and open the nozzle.	IOS		100.00%	3.77	2.71	3.43	82.35%	88.23%	68.57%	1.1
119	Operate a charged hose line from elevated positions and direct spray at fire.	Match	5.3.10*(B)7	91.43%	3.34	2.28	2.99	64.52%	73.48%	50.00%	1.2
120	While on a ladder, operate and direct spray at fire.	Match	5.3.10*(B)4a	94.29%	3.39	2.09	2.99	62.50%	73.08%	63.64%	1.2
121	Operate a charged hose line from confined spaces and direct spray at fire.	Match	5.3.10*(B)4b	91.43%	3.64	2.27	3.18	71.88%	78.39%	62.50%	1.1

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122	Continue to monitor fire suppression and adjust suppression tactics to extinguish fire and prevent the extension of the fire.	Match	6.3.2*5	88.57%	3.74	2.90	3.46	86.67%	87.30%	50.00%	1.1
123	Move toward the source of a fire using knowledge of types of fires, construction design, building materials and physical layout of properties.	Match	5.3.12(A)	94.29%	3.82	3.12	3.63	81.82%	85.97%	51.52%	1.1
124	Enter smoky buildings and rooms with a hose in hand while wearing SCBA.	Match	5.3.10*1	97.14%	4.31	3.26	3.96	88.24%	91.20%	88.24%	1.1
125	Seek the source of a fire and extinguish.	Match	5.3.13.6	100.00%	4.26	3.26	3.92	97.06%	98.04%	76.47%	1.1
126	Select the correct tool or equipment for various firefighting maneuvers.	Match	5.3.8*(A)2	100.00%	3.71	3.29	3.62	79.41%	86.27%	70.59%	1.1
127	Fight fires in smoky buildings when visibility is poor or nonexistent.	Match	5.3.5*(B)	100.00%	4.14	2.97	3.75	91.18%	94.11%	82.35%	1.1
128	Fight fires for prolonged periods of time in extreme temperatures.	IOS		91.43%	3.85	2.79	3.48	75.00%	80.47%	53.13%	1.1
129	Use other senses to find the source of a fire when you cannot see.	IOS		100.00%	3.83	2.69	3.40	76.47%	84.31%	58.82%	1.1
130	Carry equipment up stairs while wearing PPE gear and SCBA.	IOS		97.14%	3.50	2.44	3.13	72.73%	80.86%	60.61%	1.1
131	Climb obstacles while wearing PPE and SCBA.	IOS		91.43%	3.39	2.58	3.09	65.63%	74.22%	50.00%	1.2
132	Identify and respond to hazards at the scene.	Match	5.3.10*6	100.00%	4.31	3.54	4.04	91.18%	94.11%	61.76%	1.1
133	Operate a thermal imaging camera (TIC).	IOS		85.71%	3.31	2.75	3.15	61.29%	69.42%	43.75%	1.2
134	Operate a fire extinguisher by carrying it to objective, aiming and discharging at seat of fire or spill.	Match	5.3.16*	97.14%	3.32	2.59	3.08	64.71%	75.51%	72.73%	1.2
135	Attack a passenger vehicle fire.	NFPA	5.3.7*1	100.00%	3.94	2.89	3.59	91.18%	94.11%	88.24%	1.1
136	Communicate attack techniques to the attack teams	NFPA	6.3.2*3	82.86%	3.83	2.93	3.53	75.86%	78.19%	44.83%	1.1
137	Communicate and manage search, rescue, and ventilation requirements.	NFPA	6.3.2*6	82.86%	3.90	2.53	3.46	82.76%	82.79%	51.72%	1.1
138	Control a flammable gas cylinder fire.	NFPA	6.3.3*1	96.67%	3.93	2.07	3.31	82.76%	87.39%	75.86%	1.1
139	Identify the contents of cylinder.	NFPA	6.3.3*2	100.00%	3.97	2.33	3.42	80.00%	86.66%	76.67%	1.1
140	Close cylinder valves.	NFPA	6.3.3*4	96.67%	3.72	2.14	3.20	75.86%	82.79%	65.52%	1.1
141	Eliminate leaking gas and then extinguish fire.	NFPA	6.3.3*5	93.33%	3.75	2.04	3.18	71.43%	78.72%	60.71%	1.1
142	Evaluate the cylinder integrity and ensure cylinder has cooled.	NFPA	6.3.3*6	80.00%	3.67	2.00	3.11	70.83%	73.89%	58.33%	1.1
143	Face the cylinder during approach and retreat.	NFPA	6.3.3*7	93.33%	3.96	2.14	3.36	89.29%	90.63%	75.00%	1.1
144	Maintain correct body posture during attack operations.	NFPA	5.3.10*5	96.67%	3.72	3.00	3.48	79.31%	85.09%	79.31%	1.1
145	Extinguish fires in exterior Class A materials, given fires in stacked or piled and small unattached structures or storage containers.	NFPA	5.3.8*	100.00%	3.48	2.76	3.24	65.52%	77.00%	82.76%	1.2

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146	Deploy portable water tanks as well as the equipment necessary to transfer water between and draft from them.	NFPA	5.3.15*(B)3	93.10%	3.18	2.07	2.81	46.43%	61.97%	39.29%	2.1
147	Are you paying attention? Please fill in a 'YES' for Applicability, 4 for importance, 4 for frequency, and 'Yes' for RUAD.			100.00%	4.00	4.00	4.00	100.00%	100.00%	100.00%	1.1
148	Prevent water hammers when shutting down nozzles.	NFPA	5.3.10*(B)1	100.00%	3.59	3.34	3.51	82.76%	88.50%	86.21%	1.1
149	Replace burst hose sections.	NFPA	5.3.10*(B)6	96.55%	3.38	1.97	2.91	51.72%	66.65%	58.62%	1.2
150	Anticipate the injuries which could result from common types of accidents.	NFPA	5.3.10*(A)7	86.21%	3.71	3.04	3.49	83.33%	84.29%	58.33%	1.1
151	Prevent exposure to products of combustion.	NFPA	5.3.10*(A)5	96.55%	4.18	3.25	3.87	82.14%	86.94%	85.19%	1.1
152	Follow precautions when advancing hose lines to a fire.	NFPA	5.3.10*(A)2	100.00%	3.76	3.07	3.53	82.76%	88.50%	79.31%	1.1
153	Assess proper application of fire stream.	NFPA	5.3.10*(A)3	100.00%	3.76	2.93	3.48	93.10%	95.40%	72.41%	1.1
154	Use appropriate water application methods for exposure protection and fire extinguishment.	NFPA	5.3.8*(A)4	100.00%	3.59	2.76	3.31	79.31%	86.20%	65.52%	1.1
155	Identify automobile fuel types and assess and control fuel leaks.	NFPA	5.3.10*(A)6	89.66%	3.46	2.54	3.15	65.38%	73.47%	46.15%	1.2
156	Choose attack and control techniques for grade level and above and below grade level fires.	NFPA	6.3.2*2	93.33%	3.68	2.32	3.23	64.29%	73.96%	60.71%	1.2
157	Recognize hazards associated with an automobile fire.	NFPA	5.3.7*(A)5	100.00%	3.90	2.83	3.54	83.33%	88.88%	65.52%	1.1
158	Apply appropriate attack lines and water streams for stacked, piled materials and outdoor fires.	NFPA	5.3.8*(A)1	100.00%	3.27	2.67	3.07	63.33%	75.54%	68.97%	1.2
159	Ensure complete extinguishment of stacked and piled materials.	NFPA	5.3.8*(A)3	100.00%	3.43	2.70	3.19	70.00%	79.99%	55.17%	1.1
160	Recognize dangers of exposure to toxins or hazardous materials associated with storage building and container fires.	NFPA	5.3.8*(A)5	96.67%	4.28	2.90	3.82	93.10%	94.29%	70.37%	1.1
161	Conduct a size-up of HAZ-MAT scene.	IOS		89.29%	4.32	2.00	3.55	96.00%	93.76%	68.00%	1.1
162	Respond to the release or potential release of hazardous material according to outlined protocols.	IOS		96.43%	4.15	2.07	3.46	81.48%	86.46%	62.96%	1.1
163	Identify HAZ-MAT by use of signage and HAZ-MAT reference materials.	IOS		100.00%	4.11	2.14	3.45	92.86%	95.24%	82.14%	1.1
164	Apply a foam blanket or other suppressants.	Match	6.3.1*3	100.00%	3.82	2.14	3.26	71.43%	80.94%	53.57%	1.1
165	Provide onsite crowd control in a HAZ-MAT situation.	Match	6.4.2*(B)	85.71%	3.42	1.88	2.90	58.33%	67.45%	41.67%	1.2
166	Conduct a decontamination setup.	IOS		92.86%	3.62	1.81	3.01	57.69%	69.40%	57.69%	1.2
167	Utilize watercraft to trace source of oil slicks.	IOS		28.57%	2.70	1.20	2.20	0.00%	9.51%	30.00%	4.4
168	Exit a hazardous area as a team.	NFPA	5.3.5*	96.43%	4.04	2.37	3.48	85.19%	88.93%	66.67%	1.1
169	Extinguish an ignitable liquid fire.	NFPA	6.3.1*1	92.86%	3.89	1.96	3.25	74.07%	80.33%	81.48%	1.1

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170	Identify and control leaking flammable liquids, such that protection from flash fire is maintained	NFPA	5.3.7*2	89.29%	4.00	1.88	3.29	92.00%	91.10%	68.00%	1.1
171	Take corrective measures to rectify poor foam generation.	NFPA	6.3.1*(A)1	85.71%	3.46	2.08	3.00	66.67%	73.01%	45.83%	1.1
172	Use the appropriate concentrates on hydrocarbon and polar solvent fuels.	NFPA	6.3.1*(A)2	71.43%	3.35	1.65	2.78	50.00%	57.14%	45.00%	1.2
173	Reduce or avoid hazards associated with firefighting foams.	NFPA	6.3.1*(A)3	89.29%	2.92	1.76	2.53	28.00%	48.41%	56.00%	2.2
174	Use fog nozzles or foam nozzles depending on situation.	NFPA	6.3.1*(A)4	92.86%	3.46	2.35	3.09	50.00%	64.27%	57.69%	1.2
175	Protect property from water and smoke using waterproof salvage covers and/or smoke ejectors (i.e., powered fans).	Match	5.3.14(A)1	96.00%	3.29	2.58	3.06	62.50%	73.66%	62.50%	1.2
176	Place a smoke ejector in strategic locations throughout the fire scene to aid in proper ventilation and smoke removal.	Match	5.3.11.2	96.00%	3.38	2.92	3.22	75.00%	81.99%	70.83%	1.1
177	Gather furniture into an appropriate location and protect it with salvage covers.	Match	5.3.14(B)1	92.00%	2.78	2.00	2.52	39.13%	56.74%	56.52%	2.1
178	Place salvage covers over lower floors to prevent unnecessary damage.	Match	5.3.13(B)4	84.00%	2.48	1.76	2.24	28.57%	47.03%	47.62%	2.2
179	Salvage property by removing broken glass, removing water and ventilating buildings to remove smoke.	Match	5.3.14	92.00%	2.83	2.43	2.70	52.17%	65.44%	43.48%	1.2
180	After a fire is extinguished, drain or pump out water and clean up remaining water on the floors.	Match	5.3.14(B)3	52.00%	2.50	1.64	2.21	35.71%	41.14%	35.71%	2.3
181	Remove burned and charred waste and other debris, if hazardous.	Match	5.3.14(B)5	72.00%	2.79	2.21	2.60	47.37%	55.57%	42.11%	2.1
182	Perform overhaul and salvage operations.	Match	5.3.13.1	96.00%	3.38	3.04	3.26	79.17%	84.77%	62.50%	1.1
183	Check for fire extension or hotspots using thermal imaging camera.	IOS		84.00%	3.62	3.19	3.48	76.19%	78.79%	66.67%	1.1
184	Inspect fire sites after flames have been extinguished to ensure that there is no further danger.	Match	5.3.8*(B)	96.00%	3.75	3.25	3.58	87.50%	90.33%	54.17%	1.1
185	Coordinate inspections with other firefighters, supervisors and other firefighter companies.	IOS		64.00%	2.50	2.31	2.44	56.25%	58.83%	31.25%	1.4
186	Check for smoldering fire inside walls and ceiling by means of fire tools and equipment (e.g., fire axe, ceiling hook).	Match	5.3.10*4	96.00%	3.88	3.08	3.61	91.67%	93.11%	70.83%	1.1
187	Are you paying attention? Please fill in a 'YES' for Applicability, 5 for importance, 1 for frequency, and 'NO-*Learned on-the-job*' for RUAD.			100.00%	5.00	1.00	3.67	100.00%	100.00%	0.00%	1.1
188	Search for missing persons not accounted for.	Match	5.3.9*(A)4	92.00%	4.33	2.63	3.76	87.50%	89.00%	70.83%	1.1
189	Preserve evidence at fire scene.	Match	6.3.4*	88.00%	3.83	3.00	3.55	73.91%	78.60%	82.61%	1.1
190	Secure the fire scene.	Match	5.3.13(A)5	84.00%	3.59	3.00	3.39	81.82%	82.54%	63.64%	1.1

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Item#	Task	Origin	NFPA Code	%Rel	I	F	C	%E	JR%	RUAD	Zone
191	Monitor the air for harmful toxins.	IOS		84.00%	3.81	2.62	3.41	80.95%	81.97%	66.67%	1.1
192	Remove water via water chutes or other devices.	IOS		76.00%	2.63	1.53	2.26	15.79%	35.84%	42.11%	2.2
193	Overhaul all vehicle compartments.	NFPA	5.3.7*3	76.00%	2.90	2.55	2.78	55.00%	61.99%	50.00%	1.2
194	Stop the flow of water from building sprinkler with sprinkler wedges or stoppers.	NFPA	5.3.14(B)6	88.00%	2.95	1.77	2.56	36.36%	53.56%	63.64%	2.1
195	Remove flooring, ceiling, and wall components to expose void spaces without compromising structural integrity.	NFPA	5.3.13.3	84.00%	3.33	2.67	3.11	57.14%	66.09%	80.95%	1.2
196	Roll and fold salvage covers for reuse.	NFPA	5.3.14(B)2	92.00%	2.50	2.33	2.44	37.50%	55.65%	45.83%	2.1
197	Perform horizontal ventilation on a structure, so that the ventilation openings are free of obstructions.	NFPA	5.3.11.1	96.00%	3.50	2.42	3.14	62.50%	73.66%	79.17%	1.2
198	Recognize points of strength and weakness in auto body construction.	NFPA	6.4.1*(A)2	76.00%	3.33	2.62	3.10	57.14%	63.42%	61.90%	1.2
199	Recognize and communicate dangers associated with overhaul.	NFPA	5.3.13(A)4	92.00%	3.65	3.00	3.43	78.26%	82.84%	65.22%	1.1
200	Designate work zones for safe operation at emergency scenes.	NFPA	5.3.3*(A)4	80.00%	3.86	3.05	3.59	85.71%	83.81%	61.90%	1.1
201	Collaborate with other agencies and individuals to respond to accidents and/or disasters.	Match	5.1.1.3	88.89%	3.65	3.16	3.47	75.00%	79.63%	34.62%	1.1
202	Exchange information with law enforcement officials.	IOS		96.43%	3.67	3.50	3.61	80.00%	85.47%	23.08%	1.1
203	Coordinate tasks and responsibilities with law enforcement officials (e.g., traffic control, crowd control).	IOS		85.19%	3.42	3.25	3.25	65.22%	71.87%	16.67%	1.2
204	Monitor emergency scene and request assistance from other agencies as needed.	IOS		92.59%	4.20	3.33	3.86	91.30%	91.73%	44.00%	1.1
205	Clearly and accurately communicate patient information, assessment and treatment via radio on route to a medical facility.	IOS		44.44%	3.81	3.33	3.50	71.43%	62.44%	50.00%	3.1
206	Clearly and accurately communicate patient information and care to medical staff.	IOS		60.71%	3.72	3.59	3.54	75.00%	70.24%	47.06%	1.3
207	Assist medical staff as needed until released by medical staff.	IOS		81.48%	3.61	3.27	3.41	80.95%	81.13%	40.91%	1.1
208	Participate in fire drills and demonstrations of firefighting techniques.	IOS		100.00%	4.04	3.50	3.84	92.00%	94.66%	51.85%	1.1
209	Participate in ongoing training drills to develop and maintain proficiency (e.g., HAZ-MAT, search and rescue operations, SCBA and air management, automobile extrication, rapid intervention team (RIT) training, etc.).	IOS		100.00%	4.19	3.54	3.93	88.00%	92.00%	40.74%	1.1
210	Participate in training drills with new firefighters, assisting in their training through coaching and mentoring.	IOS		100.00%	4.11	3.62	3.88	84.00%	89.33%	22.22%	1.1

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211	Train in equipment operations such as apparatus driving, hydraulics and pump operation and aerial ladder operation.	IOS		100.00%	4.07	3.46	3.80	92.00%	94.66%	33.33%	1.1
212	Participate in demonstrations, Officer classes, company level training or educational reviews (e.g., signs and symptoms of heat stroke, winter fireground operations, review of response zone building construction and floor plans, review of response zone street maps).	IOS		96.30%	3.46	3.04	3.26	66.67%	76.53%	30.77%	1.1
213	Participate in physical training activities to maintain a high level of physical fitness.	Match	5.1.1.5	82.14%	3.80	3.21	3.54	78.26%	79.55%	47.83%	1.1
214	Participate in courses, seminars and conferences, and study fire science literature to learn firefighting techniques.	IOS		89.29%	3.36	3.00	3.32	69.57%	76.13%	8.33%	1.1
215	Complete required training courses such as hazardous materials and automobile extrication.	IOS		96.30%	3.89	3.12	3.57	84.00%	88.09%	37.04%	1.1
216	Read, comprehend and retain information from training materials (e.g., text books and manuals).	IOS		96.30%	3.52	3.50	3.57	82.61%	87.17%	52.00%	1.1
217	Successfully complete and pass written exams that test coursework learning and training objectives.	IOS		81.48%	3.29	2.91	3.20	59.09%	66.55%	50.00%	1.2
218	Take and complete course work required to obtain medical certifications.	IOS		82.14%	3.95	3.62	3.87	90.00%	87.38%	61.90%	1.1
219	Maintain ongoing certification requirement through continuing education or training.	IOS		92.86%	3.85	3.64	3.79	75.00%	80.95%	20.00%	1.1
220	Read and comprehend aspects of the fire department's member assistance program	NFPA	5.1.1.4	74.07%	3.09	2.50	2.77	57.89%	63.28%	10.00%	1.2
221	Are you paying attention? Please fill in a 'YES' for Applicability, 4 for importance, 2 for frequency, and 'YES' for RUAD.			100.00%	4.04	2.21	3.41	100.00%	100.00%	96.15%	1.1
222	Read, comprehend and retain information of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program	NFPA	5.1.1.6	88.89%	3.65	3.30	3.53	77.27%	81.14%	52.17%	1.1
223	Participate in life safety initiatives in support of the fire department mission and to reduce firefighter line-of-duty injuries and fatalities.	NFPA	5.1.1.2	96.30%	4.30	3.46	3.96	76.00%	82.76%	51.85%	1.1
224	Document required information such as personal information of patients or citizens involved in emergency scene.	IOS		69.57%	3.94	3.80	3.93	86.67%	80.97%	33.33%	1.1
225	Summarize incidents that occurred at an emergency scene, detailing tactics, equipment and procedures used through written narratives.	Match	6.2.1	65.22%	3.59	3.69	3.69	75.00%	71.74%	43.75%	1.3

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226	Write descriptions of situations in medical reports, including details of symptoms, actions taken, etc.	IOS		52.17%	4.00	3.91	4.03	81.82%	71.95%	45.45%	1.3
227	Complete reports required of the job (daily maintenance, inspections and truck checks).	Match	6.2.1(B)1	95.45%	3.70	3.53	3.63	73.68%	80.93%	10.00%	1.1
228	Answer routine phone calls in the station.	Match	5.2.2	60.87%	3.62	3.50	3.50	83.33%	75.85%	8.33%	1.3
229	Report for duty on time.	IOS		59.09%	4.46	4.50	4.44	91.67%	80.82%	69.23%	1.3
230	Maintain professional appearance and personal hygiene in accordance with regulations.	IOS		86.36%	3.90	4.58	4.16	84.21%	84.93%	55.00%	1.1
231	Remain on-duty for extended periods of time per department-specific SOGs.	IOS		69.57%	3.75	3.00	3.53	73.33%	72.08%	33.33%	1.1
232	Read all internal communications (emails, handouts, etc.) from department (e.g., SOGs, policies and procedures, rules and regulations, etc.).	Match	5.1.1.1	95.45%	3.86	3.55	3.75	80.00%	85.15%	28.57%	1.1
233	Document presentations and use prepared materials.	NFPA	6.5.2*(B)	52.17%	3.00	2.54	2.85	61.54%	58.42%	23.08%	1.4
234	Clean and maintain fire stations and firefighting equipment and apparatus.	Match	5.5.1(A)	100.00%	4.08	3.91	4.03	95.65%	97.10%	29.17%	1.1
235	Ensure apparatus is in response-ready state, including decontaminating and disinfecting the unit and equipment, restocking of supplies and inspection of equipment.	Match	6.5.4*3a	100.00%	4.29	4.00	4.17	95.65%	97.10%	25.00%	1.1
236	Ensure proper function of SCBA by inspecting and performing daily tests at the start of each shift; service SCBA if malfunctioning.	IOS		75.00%	4.67	4.29	4.53	100.00%	91.68%	66.67%	1.1
237	Coordinate with firefighters from off-going shift as to the actions needed to ensure the apparatus is in a response ready state.	IOS		48.00%	4.21	4.00	4.10	92.31%	77.55%	7.69%	3.1
238	Checks bells and other signaling devices in the fire station by operating them to ensure that they work properly.	IOS		47.83%	4.00	3.31	3.72	76.92%	67.23%	7.14%	3.1
239	Report damaged and out of service equipment to company officer.	Match	6.5.4*3b	100.00%	4.42	3.65	4.14	91.30%	94.20%	25.00%	1.1
240	Perform maintenance and upkeep for equipment and apparatus as necessary to ensure a response-ready state.	Match	6.5.4*1	95.83%	4.39	3.91	4.21	95.45%	95.58%	21.74%	1.1
241	Wash used hoses and re-bed them on the truck.	Match	5.5.2	95.83%	3.65	3.27	3.55	81.82%	86.49%	39.13%	1.1
242	Maintain all personal protective equipment (PPEs).	Match	5.5.1	100.00%	4.75	4.39	4.62	100.00%	100.00%	54.17%	1.1
243	Maintain an inventory of tools and equipment.	IOS		87.50%	4.38	3.90	4.20	95.00%	92.50%	19.05%	1.1
244	Maintain maintenance records of all equipment and apparatus.	Match	6.5.4*2	70.83%	4.11	3.65	3.92	88.24%	82.44%	11.11%	1.1

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245	Perform daily chores to ensure a neat and clean working and living environment at the fire station.	IOS		68.00%	3.65	3.94	3.69	81.25%	76.84%	6.25%	1.1
246	Perform and coordinate kitchen chores such as planning meals, cooking meals and cleaning up after meals.	IOS		40.00%	3.60	3.78	3.56	77.78%	65.20%	11.11%	3.1
247	Maintain the exterior of fire station: lawns, walkways and driveways.	IOS		52.00%	3.23	3.33	3.17	75.00%	67.34%	0.00%	1.3
248	Perform an annual service test on fire hose, using a pump, a marking device, pressure gauges, and a timer.	NFPA	6.5.5	70.83%	4.28	2.94	3.84	82.35%	78.52%	33.33%	1.1
249	Engage in pre-planning operations such as documenting building layouts, building construction, fire suppression and other tactical information such as location of exits to assist in future operations.	Match	6.5.3*	56.52%	3.93	3.08	3.64	84.62%	75.26%	21.43%	1.3
250	Inspect fire hydrant functioning in response zones and conduct hydrant flow tests.	IOS		39.13%	3.82	3.30	3.70	90.00%	73.06%	18.18%	3.1
251	Inspect businesses and non-owner occupied private dwellings.	Match	6.5.1*1	25.00%	3.57	3.17	3.50	83.33%	63.91%	0.00%	3.3
252	Identify code enforcement issues and alert superiors.	Match	6.5.1*2	33.33%	3.30	2.44	3.04	77.78%	62.98%	11.11%	3.1
253	Complete smoke detector certifications.	IOS		16.67%	2.83	2.80	2.80	60.00%	45.57%	0.00%	3.4
254	Identify illegal occupant dwellings or other occupancies.	IOS		12.50%	2.40	1.75	2.08	25.00%	20.84%	0.00%	4.4
255	Use commonly recognized symbols when diagramming construction features, utilities, hazards, and fire protection systems.	NFPA	6.5.3*(A)3	33.33%	3.75	3.14	3.43	71.43%	58.74%	14.29%	3.1
256	Maintain a log of visitors to the fire station by recording their names, date, time and other relevant information so a written record is available.	IOS		28.00%	3.25	3.14	3.14	71.43%	56.97%	14.29%	3.3
257	At superior's command, accompany owners/occupants into burned structure to allow them to retrieve possessions safely and to reduce liability risk to the fire department.	IOS		76.00%	3.68	2.17	3.13	66.67%	69.77%	11.11%	1.1
258	Inform and educate the public on fire prevention.	Match	6.5.2*	84.00%	3.71	3.10	3.47	80.00%	81.33%	10.00%	1.1
259	Perform community service and outreach programs such as fire alarm installations, child safety seat installations, etc.	IOS		56.00%	3.53	3.00	3.38	71.43%	66.29%	14.29%	1.3
260	Conduct fire station tours for groups of individuals and children.	Match	6.5.2*(A)	64.00%	3.00	2.50	2.74	64.29%	64.19%	0.00%	1.4
261	Maintain a service orientation or public servant mentality when dealing with the public.	IOS		88.00%	4.05	3.60	3.87	80.00%	82.66%	30.00%	1.1
262	Use tact and diplomacy in dealing with the public under times of high stress or with disgruntled, agitated or hysterical persons.	IOS		88.00%	4.36	3.71	4.13	95.24%	92.83%	38.10%	1.1
263	Interact and work with citizens.	IOS		92.00%	4.14	3.86	4.02	90.48%	90.98%	33.33%	1.1

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264	Are you paying attention? Please fill in a 'YES' for Applicability, 4 for importance, 3 for frequency, and 'YES' for RUAD.	IOS		100.00%	4.04	3.09	3.73	100.00%	100.00%	100.00%	1.1
265	Attend community meetings, ceremonies and parades as representatives of the department.	IOS		87.50%	3.00	2.80	2.93	70.00%	75.83%	14.29%	1.1
266	Establish perimeter lines to prevent unauthorized persons from entering areas near emergencies.	IOS		96.00%	4.04	3.26	3.81	86.96%	89.97%	34.78%	1.1
267	Provide assistance to victims.	IOS		79.17%	4.55	4.00	4.35	100.00%	93.06%	55.00%	1.1
268	Control the emergency scene to protect yourself, coworkers and the patient or victim.	IOS		95.83%	4.55	3.86	4.30	95.24%	95.44%	63.64%	1.1
269	Communicate with the public to prevent them from crossing perimeter lines.	IOS		91.67%	4.36	3.71	4.16	95.24%	94.05%	42.86%	1.1
270	Assist rescue operation teams so that rescue items are recognized and retrieved in the time as prescribed by the Authorities Having Jurisdiction (AHJ).	NFPA	6.4.2*	66.67%	4.31	3.40	3.98	93.33%	84.45%	37.50%	1.1
271	Support and conduct community risk reduction programs.	IOS		40.00%	3.20	3.11	3.19	66.67%	57.79%	0.00%	3.1
272	**PPE:** SCBA, turnout gear (pants, jacket, helmet, gloves, hood), PASS (Personal Alert Safety System) Device	Match	5.3.2*(B)	100.00%	4.88	4.61	4.78	100.00%	100.00%	91.67%	1.1
273	**Blocks or pulleys:** Block and tackle equipment, pulleys, riggings, carabiners, anchors, straps, ropes	IOS		72.00%	3.78	2.65	3.35	82.35%	78.91%	41.18%	1.1
274	**Fire extinguishers:** Carbon dioxide CO_2 fire extinguishers, dry chemical fire extinguishers, multipurpose fire extinguishers, water extinguisher, K-Type	IOS		95.83%	4.43	3.50	4.11	90.91%	92.55%	86.96%	1.1
275	**Fire hoses:** Charged fire hoses, uncharged fire hoses	IOS		100.00%	4.63	4.09	4.43	95.65%	97.10%	79.17%	1.1
276	**Nozzles & Appliances:** Fire hose nozzles, hose couplings, wyes, siamese, adapters, reducers	IOS		100.00%	4.54	3.96	4.33	95.65%	97.10%	79.17%	1.1
277	**Fire or rescue trucks:** Aerial trucks, ladder trucks, engine trucks, rescue vehicles, other apparatus, brush apparatus	IOS		100.00%	4.50	4.13	4.36	100.00%	100.00%	58.33%	1.1
278	**Fire hand tools:** Fire axes, McLeod tools, pick head axes, Pulaski tools, pike pole, claw hammers, rubber mallet, non-sparking hammers, sledgehammers, Halligan bars, Hux bars, pinch bars	Match	6.4.1*(A)3a	100.00%	4.33	3.96	4.19	95.65%	97.10%	62.50%	1.1
279	**Stabilizing Tools:** Struts, lift jackets, cribbing	Match	6.4.1*(B)2	91.67%	4.27	3.33	3.94	95.24%	94.05%	40.91%	1.1
280	**Ropes & Webbing**	IOS		83.33%	4.00	3.05	3.65	78.95%	80.41%	65.00%	1.1
281	**Hydraulic Rescue Tools:** Spreaders, cutters, Jaws of Life, rams, air bags	IOS		87.50%	4.38	3.25	3.98	85.00%	85.83%	42.86%	1.1

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282	**Ladders:** Aluminum ladders, extension ladders, roof ladders, A-Frame ladders	IOS		100.00%	4.13	3.35	3.84	86.96%	91.30%	70.83%	1.1
283	**Power Equipment:** Chain saws, circular saws, K-12 saws, reciprocating saws, electric/hydraulic generators	Match	6.4.1*(A)3b	100.00%	4.08	3.39	3.83	86.96%	91.30%	58.33%	1.1
284	**Ventilation:** Positive pressure fans, negative pressure fans, hydraulic ventilation, electric fans	IOS		100.00%	4.25	3.43	3.96	91.30%	94.20%	66.67%	1.1
285	**First Responder:** Collars, backboard, dressings, AED, stethoscope, Stokes basket, airway adjuncts	IOS		88.00%	4.41	3.67	4.14	90.48%	89.65%	90.48%	1.1
286	**Meters:** Thermal imaging camera (TIC), CO_2 monitors, gas detectors, radiation meters	IOS		70.83%	4.24	3.25	3.88	93.75%	86.12%	31.25%	1.1
287	**Saws:** Hacksaws, handsaws, tree saws	IOS		88.00%	3.59	2.95	3.33	66.67%	73.77%	33.33%	1.1
288	**Maps & Manuals:** City maps, county maps, building layout maps, equipment manuals, apparatus manuals, repair manuals, Dangerous Goods Manual (HAZMAT)	IOS		92.00%	4.27	3.81	4.10	90.48%	90.98%	28.57%	1.1
289	**Specialty wrenches:** Hydrant shutoff wrenches, lug wrenches, non-sparking bung wrenches, gas-utility wrenches, spanner wrenches, adjustable wrenches	IOS		100.00%	4.04	3.09	3.70	91.30%	94.20%	58.33%	1.1
290	**Database user interface and query software:** Affiliated Computer Services (ACS), FIREHOUSE, Fire incident reporting systems, Microsoft Access, Scientific Software	IOS		45.83%	3.33	3.18	3.18	72.73%	63.77%	8.33%	3.1
291	**Computer software:** E-mail software, internet browsing software, drafting software, spreadsheet software, word processing software, project management software	Match	6.2.1(B)2	70.83%	3.17	2.82	2.98	64.71%	66.75%	27.78%	1.2
292	**Lighting Equipment:** Power supply and lighting equipment, cords and connectors, and ground-fault interpreter (GFI) devices.	NFPA	5.3.17(B)	92.00%	3.55	3.19	3.38	80.95%	84.63%	33.33%	1.1
293	Perform all fireground tasks wearing full turnout gear (coat, bunker pants, boots, helmet, gloves and hood) and SCBA	Match	5.1.2	97.62%	4.43	4.00	4.28	90.24%	92.70%	82.93%	1.1
294	Perform physically demanding tasks for extended periods of time	IOS		100.00%	4.31	3.76	4.11	95.12%	96.75%	80.49%	1.1
295	Perform in extreme heat and cold conditions	IOS		100.00%	4.22	3.98	4.12	90.00%	93.33%	80.49%	1.1
296	Perform operations in inclement weather	IOS		100.00%	3.73	3.37	3.60	82.50%	88.33%	56.10%	1.1
297	Walk long distances in full turnout gear	IOS		85.71%	3.13	2.55	2.93	59.46%	68.20%	57.89%	1.2
298	Operate in dark environments	IOS		100.00%	4.20	3.56	3.98	92.50%	95.00%	75.61%	1.1

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Item#	Task	Origin	NFPA Code	%Rel	I	F	C	%E	JR%	RUAD	Zone
299	Are you paying attention? Please fill in a 'YES' for Applicability, 3 for importance, 5 for frequency, and 'NO-*Learned through Continuing Education*' for RUAD.			100.00%	3.10	4.93	3.71	100.00%	100.00%	11.90%	1.1
300	Operate at high elevations	IOS		73.81%	3.16	2.32	2.87	64.86%	67.84%	47.37%	1.2
301	Operate in confined areas	IOS		90.24%	4.10	2.87	3.69	86.84%	87.97%	58.97%	1.1
302	Lift and carry heavy equipment and tools (e.g., high-rise pack containing hoseline and tools, gas-powered circular saw, chain saw, hydraulic cutters/spreaders, hydraulic tool power supply, gas-powered fans, portable hydrants, EMS bag containing oxygen bottle)	Match	5.3.4*(B)1a	97.37%	4.11	3.92	4.09	91.89%	93.72%	73.68%	1.1
303	Lift and carry a stretcher/gurney with assistance	IOS		94.87%	3.68	3.41	3.55	80.56%	85.32%	45.95%	1.1
304	Lift and push a stretcher/gurney into an ambulance with assistance	IOS		89.47%	3.54	3.49	3.48	73.53%	78.84%	37.14%	1.1
305	Lift and transfer victims from ground to stretcher with assistance	IOS		97.44%	3.82	3.45	3.66	83.78%	88.33%	44.74%	1.1
306	Carry heavy equipment and tools for extended distances	IOS		97.44%	3.58	3.08	3.37	75.68%	82.92%	57.89%	1.1
307	Drag unconscious human victims and/or firefighters out of dangerous environments	IOS		100.00%	4.46	2.23	3.71	89.47%	92.98%	71.79%	1.1
308	Carry unconscious or injured victims and/or firefighters out of dangerous conditions	IOS		100.00%	4.51	2.21	3.74	89.47%	92.98%	69.23%	1.1
309	Remove heavy equipment from apparatus compartments	IOS		100.00%	3.82	3.56	3.70	81.58%	87.71%	58.97%	1.1
310	Individually drag charged 1 ¾ inch hoseline	IOS		100.00%	4.36	3.87	4.18	100.00%	100.00%	79.49%	1.1
311	Individually drag charged 2 ½ inch hoseline	IOS		97.44%	3.84	2.76	3.49	78.38%	84.72%	68.42%	1.1
312	Individually feed charged 1¾ inch hoseline to firefighter(s) at nozzle to assist in moving hoseline around obstacles, up stairs, etc.	IOS		100.00%	4.18	3.38	3.89	92.11%	94.73%	74.36%	1.1
313	Drag uncharged or charged hoseline	IOS		100.00%	4.26	3.77	4.08	92.11%	94.73%	76.92%	1.1
314	Hold and operate a hoseline	Match	5.3.13(B)1	100.00%	4.51	3.92	4.30	97.37%	98.24%	79.49%	1.1
315	Open a hydrant valve or hydrant cap using a hydrant wrench	IOS		100.00%	4.13	3.58	3.93	83.78%	89.18%	73.68%	1.1
316	Connect hoseline sections using a spanner tool	IOS		100.00%	4.18	3.61	3.96	86.49%	90.99%	81.58%	1.1
317	Penetrate and tear down ceiling using a pike pole	IOS		100.00%	3.92	3.18	3.64	91.89%	94.59%	65.79%	1.1
318	Hold and operate gas-powered saws and hydraulic tools	Match	5.3.4*(B)1b	100.00%	4.05	3.50	3.84	89.19%	92.79%	57.89%	1.1
319	Lift, swing and strike targets using sledge hammers and axes	Match	5.3.4*(B)2	100.00%	3.79	3.11	3.52	81.08%	87.38%	60.53%	1.1
320	Lift and carry ground ladders	IOS		100.00%	4.18	3.18	3.83	91.89%	94.59%	81.58%	1.1
321	Position, heel and raise ground ladders	IOS		100.00%	4.16	3.24	3.83	91.89%	94.59%	81.58%	1.1
322	Extend ground ladders using halyard	IOS		100.00%	4.08	3.08	3.73	86.49%	90.99%	78.95%	1.1

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Item#	Task	Origin	NFPA Code	%Rel	I	F	C	%E	JR%	RUAD	Zone
323	Hoist equipment using a rope	Match	5.3.12(B)2	97.37%	3.55	2.58	3.20	70.27%	79.29%	60.53%	1.1
324	Climb, crawl and/or maneuver in confined or restricted spaces while wearing SCBA and appropriate PPE	Match	5.3.9*(B)*1	100.00%	4.35	2.89	3.85	90.91%	93.94%	79.41%	1.1
325	Crawl, duck-under, crawl-over and maneuver around obstacles in confined and restricted spaces while wearing SCBA and appropriate PPE	IOS		97.14%	4.26	2.71	3.77	96.97%	97.03%	68.57%	1.1
326	Climb through windows and openings while wearing SCBA and appropriate PPE	IOS		100.00%	4.26	2.83	3.78	90.91%	93.94%	74.29%	1.1
327	Crawl along ceiling joists and rafters while wearing SCBA and appropriate PPE	IOS		82.86%	3.62	2.43	3.30	75.00%	77.62%	50.00%	1.1
328	Climb to the top and back down ground ladders while wearing SCBA and appropriate PPE	IOS		100.00%	3.97	2.86	3.59	78.79%	85.85%	71.43%	1.1
329	Climb to the top and back down aerial ladders/buckets/baskets/platforms while wearing SCBA and appropriate PPE	IOS		85.71%	3.97	2.52	3.54	79.31%	81.44%	54.84%	1.1
330	Rappel down from the top of structures while wearing SCBA and appropriate PPE	IOS		71.43%	3.11	1.57	2.62	50.00%	57.14%	32.14%	1.2
331	Climb stairs while wearing PPE and carrying equipment while wearing SCBA and appropriate PPE	IOS		100.00%	4.18	3.03	3.76	90.91%	93.94%	65.71%	1.1

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Appendix E: KSAO Analysis Results for Career Position

Item #	KSAO	Origin	%A	I	RvR	BP	RUAD
332	**Basic Arithmetic**: Ability to perform mathematical operations, such as counting, addition, subtraction, multiplication and division.	IOS	96.11%	3.73		94.72%	88.26%
333	**Deductive Reasoning:** The ability to apply general rules to specific problems to produce answers that make sense. (Example: Interpretation of SOPs and SOGs).	IOS	99.61%	4.14		97.22%	71.26%
334	**Flexibility of Closure:** The ability to identify or detect a known pattern (a figure, object, word or sound) that is hidden in other distracting material. (Example: Listening to Engine RPM's in order to identify issues).	IOS	91.83%	3.51		94.51%	35.71%
335	**Inductive Reasoning:** The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events). (Example: Reading the various clues of smoke/heat to reach a decision regarding the extent of fire).	IOS	98.44%	3.96		98.80%	48.81%
336	**Information Ordering:** The ability to arrange things or actions in a certain order or pattern according to a specific rule or set of rules (e.g., patterns of numbers, letters, words, pictures, mathematical operations). (Example: Using SOPs to follow procedures for hoseline operation).	IOS	96.88%	3.70		94.33%	54.22%
337	**Mathematical Reasoning:** The ability to choose the right mathematical methods or formulas to solve a problem. (Example: Friction loss, ladder or hose length calculation).	IOS	92.19%	3.53		95.40%	37.92%
338	**Memorization:** The ability to remember information such as words, numbers, pictures, and procedures. (Example: Hydrant locations, previous building layouts).	IOS	98.05%	3.61		97.97%	43.55%
339	**Number Facility:** The ability to add, subtract, multiply or divide quickly and correctly.	IOS	92.58%	3.43		96.22%	71.01%
340	**Oral Comprehension:** The ability to listen to and understand information and ideas presented through spoken words and sentences.	IOS	100.00%	4.26		99.20%	83.73%
341	**Are you paying attention?** Please fill in a 'YES' for Applicability, 5 for Importance, 'YES' for RUAD, and a 'NO' for Better Performance.		99.60%	4.98		4.02%	100.00%
342	**Oral Expression:** The ability to communicate information and ideas in speaking so others will understand.	IOS	99.61%	4.15		97.61%	78.80%
343	**Problem Sensitivity:** The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.	IOS	99.61%	4.13		96.39%	55.02%
344	**Selective Attention:** The ability to concentrate on a task over a period of time without being distracted. (Example: Being the only pump operator on-duty).	IOS	94.86%	3.96		97.91%	58.82%
345	**Spatial Orientation:** The ability to know your location in relation to the environment or to know where other objects are in relation to you.	IOS	99.60%	3.97		95.16%	59.68%
346	**Visualization:** The ability to imagine how something will look after it is moved around or when its parts are moved or rearranged.	IOS	85.83%	3.22		88.55%	46.90%
347	**Written Comprehension:** The ability to read and understand information and ideas presented in writing.	IOS	99.61%	3.88		96.39%	80.00%
348	**Written Expression:** The ability to communicate information and ideas in writing so others will understand. (Example: Filling out maintenance records or logbooks).	IOS	98.82%	3.66		95.14%	58.87%
349	**Reaction Time:** The ability to quickly respond (with the hand, finger or foot) to a signal (sound, light, picture) when it appears.	IOS	94.63%	3.69		93.45%	70.48%
350	**Arm-Hand Steadiness:** The ability to keep your hand and arm steady while moving your arm or while holding your arm and	IOS	95.88%	3.50		88.31%	57.33%

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Item #	KSAO	Origin	%A	I	RvR	BP	RUAD
	hand in one position. (Example: Operating power tools for extrication).						
351	**Manual Dexterity:** The ability to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate or assemble objects.	IOS	95.87%	3.64		92.17%	69.00%
352	**Multi-limb Coordination:** The ability to coordinate two or more limbs (for example, two arms, two legs, or one leg and one arm) while sitting, standing or lying down. It does not involve performing the activities while the whole body is in motion.	IOS	90.38%	3.42		88.18%	68.33%
353	**Response Orientation:** The ability to choose quickly between two or more movements in response to two or more different signals (lights, sounds, pictures). It includes the speed with which the correct response is started with the hand, foot or other body part.	IOS	89.21%	3.38		88.53%	62.67%
354	**Rate Control:** The ability to time your movements or the movement of a piece of equipment in anticipation of changes in the speed and/or direction of a moving object or scene. (Example: Controlling for water hammer).	IOS	94.61%	3.47		91.23%	55.11%
355	**Static Strength:** The ability to exert maximum muscle force to lift, push, pull or carry objects.	IOS	99.58%	3.73		93.22%	79.15%
356	**Control Precision:** The ability to quickly and repeatedly adjust the controls of a machine or a vehicle to exact positions. (Example: Operating the aerial ladder).	IOS	92.92%	3.61		92.79%	34.84%
357	**Stamina:** The ability to exert yourself physically over long periods of time without getting winded or out of breath.	IOS	100.00%	4.30		97.03%	87.61%
358	**Near Vision:** The ability to see details at close range (within a few feet of the observer).	IOS	96.22%	3.70		88.21%	86.46%
359	**Dynamic Strength:** The ability to exert muscle force repeatedly or continuously over time. This involves muscular endurance and resistance to muscle fatigue.	IOS	98.32%	3.94		95.28%	80.69%
360	**Trunk Strength:** The ability to use your abdominal and lower back muscles to support part of the body repeatedly or continuously over time without 'giving out' or fatiguing.	IOS	98.34%	3.97		96.58%	82.98%
361	**Extent Flexibility:** The ability to bend, stretch, twist or reach with your body, arms and/or legs.	IOS	97.08%	3.77		94.83%	82.68%
362	**Depth Perception:** The ability to judge which of several objects is closer or farther away from you, or to judge the distance between you and an object. (Example: Placement of aerial).	IOS	95.85%	3.72		93.48%	73.59%
363	**Auditory Attention:** The ability to focus on a single source of sound in the presence of other distracting sounds. (Example: Focusing on your PASS device in a chaotic environment).	IOS	98.75%	3.98		91.45%	74.79%
364	**Gross Body Coordination:** The ability to coordinate the movement of your arms, legs and torso together when the whole body is in motion.	IOS	96.67%	3.70		92.61%	81.30%
365	**Gross Body Equilibrium:** The ability to keep or regain your body balance or stay upright when in an unstable position. (Example: Gusting winds while firefighting from the aerial ladder).	IOS	97.51%	3.80		92.70%	74.25%
366	**Far Vision:** The ability to see details at a distance.	IOS	95.02%	3.46		88.55%	85.46%
367	**Problem Analysis:** Quickly perceiving problem areas, identifying options and the potential impact of various solutions.	IOS	97.45%	3.79		98.67%	54.19%
368	**Problem-Solving:** Determining courses of action/solutions to problems. Implementing targeted solutions.	IOS	95.32%	3.74		98.65%	50.45%
369	**Decision-Making**: Understanding when a decision must be made and to have the willingness to make a decision. Quickly and efficiently determining an appropriate course of action to target a particular situation.	IOS	95.28%	3.94		99.10%	52.04%
370	**Planning and Organization**: Skill in establishing a course of action for oneself and others to accomplish goals. Skill in properly planning assignments, work duties and tasks; appropriate allocation of resources to ensure efficient, timely and smooth department operations.	IOS	85.53%	3.50		97.04%	40.39%
371	**Interpersonal Skill**: Listening to others and being considerate of the concerns of others.	IOS	98.72%	4.01		97.83%	70.43%
372	**Oral Communication**: Speaking in a clear, concise, understandable and appropriate manner.	IOS	99.57%	4.07		99.57%	77.92%

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Item #	KSAO	Origin	%A	I	RvR	BP	RUAD
373	**Self-Motivation**: Working without supervision and accomplishing tasks without prodding.	IOS	97.87%	4.04		98.68%	75.11%
374	**Composure**: Working under stress and performing in unpleasant or traumatic circumstances.	IOS	99.57%	4.39		98.70%	61.64%
375	**Conflict Resolution**: Skill in de-escalating tense situations and quieting potential disturbances.	IOS	93.62%	3.73		95.87%	42.01%
376	**Critical Thinking:** Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.	IOS	93.56%	3.81		98.17%	52.73%
377	**Leadership:** Willingness to lead, take charge and offer opinions and direction, and having people respond positively to those directions such that there are behavioral changes.	IOS	87.98%	3.46		96.17%	32.86%
378	**Monitoring:** Monitoring/Assessing your performance or the performance of other individuals or organizations to make improvements or take corrective action.	IOS	78.63%	3.18		95.83%	31.09%
379	**Operation and Control:** Watching gauges, dials or other indicators to make sure a machine is working properly.	IOS	93.19%	3.65		96.79%	33.94%
380	**Instructing:** Teaching others how to do something.	IOS	84.55%	3.18		95.02%	19.40%
381	**Judgment and Decision Making:** Considering the relative costs and benefits of potential actions to choose the most appropriate one.	IOS	85.96%	3.62		98.02%	43.56%
382	**Are you paying attention?** Please fill in a 'YES' for Applicability, 3 for Importance, 'YES' for RUAD, and a 'YES' for Better Performance.		99.13%	3.00		99.57%	100.00%
383	**Social Perceptiveness:** Being aware of others' reactions and understanding why they react as they do.	IOS	91.45%	3.29		94.44%	45.58%
384	**Negotiation:** Bringing others together and trying to reconcile differences.	IOS	74.79%	2.94		91.16%	26.11%
385	**Public Relations Skill:** Dealing with the public in such a way as to protect the image and reputation of the department while providing the public or individuals with necessary or requested information.	IOS	94.47%	3.91		96.36%	42.08%
386	**Persuasion:** Persuading others to change their minds or behavior.	IOS	69.23%	2.75		82.76%	29.31%
387	**Achievement/Effort:** Establishing and maintaining personally challenging achievement goals and exerting effort toward mastering tasks.	IOS	97.11%	3.58		96.62%	41.91%
388	**Adaptability/Flexibility:** Being open to change (positive or negative) and to considerable variety in the workplace.	IOS	98.92%	3.89		96.67%	60.81%
389	**Attention to Detail:** Being careful about detail and thorough in completing work tasks.	IOS	99.64%	4.14		96.67%	66.79%
390	**Concern for Others:** Being sensitive to others' needs and feelings and being understanding and helpful on the job. Showing compassion for others.	IOS	98.19%	3.78		92.91%	71.85%
391	**Cooperation:** Being pleasant with others on the job and displaying a good-natured, cooperative attitude.	IOS	98.92%	3.95		95.91%	74.63%
392	**Dependability:** Being reliable, responsible and dependable and fulfilling obligations.	IOS	100.00%	4.55		97.77%	88.24%
393	**Ethics.** Acting in an honest and fair manner. Willingness to accept responsibility for actions when things go wrong. Displaying a high degree of integrity and professionalism in action and word**.**	IOS	100.00%	4.56		97.77%	90.11%
394	**Independence:** Developing one's own ways of doing things, guiding oneself with little or no supervision and depending on oneself to get things done.	IOS	90.25%	3.29		89.49%	33.46%
395	**Initiative:** Willingness to take on responsibilities and challenges.	IOS	98.54%	3.72		97.37%	57.68%
396	**Innovation:** Tendency towards creativity and alternative thinking to develop new ideas for and answers to work-related problems.	IOS	91.30%	3.16		92.52%	31.13%
397	**Integrity:** Being honest and ethical, especially in situations where others could be taken advantage of.	IOS	99.28%	4.57		98.13%	90.04%
398	**Persistence:** In the face of obstacles, one continues to engage to overcome the obstacle.	IOS	98.55%	3.90		96.99%	60.00%
399	**Self-Control:** Maintaining composure, keeping emotions in check, controlling anger and avoiding aggressive behavior, even	IOS	100.00%	4.28		97.39%	77.57%

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Item #	KSAO	Origin	%A	I	RvR	BP	RUAD
	in very difficult situations.						
400	**Service Orientation:** Actively looking for ways to help people; a desire to place others' interests ahead of your own; showing compassion for others.	IOS	98.91%	3.65		95.51%	58.15%
401	**Social/Teamwork Orientation:** Preferring to work with others rather than alone, and being personally connected with others on the job. The ability to work with others (teamwork) to achieve a mutual end.	IOS	99.28%	4.12		97.40%	60.52%
402	**Stress Tolerance:** Accepting criticism and dealing calmly and effectively with high stress situations.	IOS	99.64%	4.27		96.64%	57.04%
403	Knowledge of motor vehicle rules and regulations.	IOS	95.13%	4.02	4.04	93.09%	61.75%
404	Knowledge of common hand tools, such as wrenches, pliers, screw drivers, hammers and mauls, axes, prying tools, etc., e.g., their use, operation, limits and safety precautions/procedures.	IOS	99.56%	3.92	4.12	98.67%	57.78%
405	Knowledge of basic science terms and concepts, e.g., force, gravity, pressure, vacuum, etc.	IOS	93.81%	2.94	3.28	89.72%	26.85%
406	Knowledge of ratios and terms, expressing ratios and the practical use of ratios, e.g., pounds per square inch, gallons per minute, etc.	IOS	95.13%	3.03	3.35	94.86%	25.12%
407	Knowledge of basic mechanical principles, e.g., leverage, gears, pulleys, screws, etc.	IOS	95.56%	3.10	3.41	95.33%	35.65%
408	Knowledge of typical occupancy activity at a given time of day.	IOS	93.36%	3.40	3.65	96.68%	21.70%
409	Knowledge of the science behind fire propagation.	TEXT	93.75%	3.86	3.81	95.31%	53.74%
410	Are you paying attention? Please fill in a 'YES' for Applicability, 4 for importance, 'YES' for RUAD, a 'NO' for Better Performance, and 'Seldom Referenced' for Ref vs. Recall.		98.20%	4.00	3.87	7.37%	97.72%
411	Knowledge of common heat energy sources: chemical, electrical, and mechanical energy.	TEXT	98.67%	3.40	3.60	94.12%	61.99%
412	Knowledge of heat transmission and the mechanisms by which heat transfer occurs: conduction, convection, and radiation.	TEXT	99.56%	3.66	3.92	95.95%	71.62%
413	Knowledge of common products of combustion and their toxic effects.	TEXT	99.11%	4.11	3.91	95.02%	69.09%
414	Knowledge of classification of fires: class A, B, C, D, and K fires.	TEXT	99.56%	3.93	4.04	97.30%	83.78%
415	Knowledge of Fire Control Theory: temperature reduction, fuel removal, oxygen exclusion, and chemical flame inhibition.	TEXT	99.56%	4.12	4.11	98.20%	77.13%
416	Knowledge of common materials found in building construction.	TEXT	99.56%	3.84	3.78	97.75%	61.43%
417	Knowledge of the strengths and weaknesses associated with different types of building construction types.	TEXT	97.78%	4.00	3.82	98.17%	53.21%
418	Knowledge of types of extinguishers and their common uses.	TEXT	99.11%	3.83	3.97	97.74%	76.13%
419	Knowledge of types of knots, ropes, and webbing materials.	TEXT	99.56%	3.47	3.84	95.93%	68.02%
420	Knowledge of types of ladders.	TEXT	99.56%	3.83	4.10	96.38%	76.58%
421	Knowledge of search operations.	TEXT	99.11%	4.41	4.46	99.09%	70.59%
422	Knowledge of rescue operations.	TEXT	99.11%	4.39	4.31	99.55%	65.16%
423	Knowledge of extrication operations.	TEXT	97.78%	4.10	4.17	99.09%	52.73%
424	Knowledge of types of carries.	TEXT	97.76%	3.33	3.81	93.09%	60.83%
425	Knowledge of victim removal methods.	TEXT	98.48%	4.04	4.21	98.96%	71.35%
426	Knowledge of forcible entry methods.	TEXT	98.46%	4.13	4.17	98.95%	77.49%
427	Knowledge of ventilation methods.	TEXT	97.45%	4.15	4.16	99.47%	77.78%
428	Knowledge of types of hydrants and alternative water supplies.	TEXT	96.43%	3.62	3.70	91.94%	54.84%
429	Knowledge of methods of moving water in a system.	TEXT	85.64%	3.05	3.20	86.71%	37.21%
430	Knowledge of static pressure, flow pressure, and residual pressure.	TEXT	89.74%	2.93	3.30	89.27%	36.93%

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Item #	KSAO	Origin	%A	I	RvR	BP	RUAD
431	Knowledge of common hose rolls.	**TEXT**	96.92%	2.97	3.60	86.32%	68.59%
432	Knowledge of friction loss, elevation loss/gain, and water hammers.	**TEXT**	89.23%	3.19	3.46	91.48%	40.57%
433	Knowledge of size classifications of fire streams.	**TEXT**	93.81%	3.34	3.70	95.08%	63.93%
434	Knowledge of foam techniques.	**TEXT**	97.95%	3.35	3.62	95.21%	54.79%
435	Knowledge of direct attacks.	**TEXT**	98.45%	4.15	4.33	97.88%	80.42%
436	Knowledge of indirect attacks.	**TEXT**	98.46%	4.09	4.25	97.88%	81.05%
437	Knowledge of combination attacks.	**TEXT**	98.46%	4.04	4.18	98.41%	77.25%
438	Knowledge of salvage operations.	**TEXT**	97.44%	3.22	3.72	94.12%	64.17%
439	Knowledge of overhaul operations.	**TEXT**	98.45%	3.51	3.91	95.21%	66.14%
440	Knowledge of hidden fire indicators.	**TEXT**	98.46%	4.05	4.15	98.40%	62.96%
441	Knowledge of evidence protection methods.	**TEXT**	94.82%	3.46	3.72	93.92%	49.72%
442	Knowledge of procedures the public should use to report a fire or other emergency.	**TEXT**	83.94%	3.02	3.24	79.76%	46.43%
443	Knowledge of necessary skills for fire department communications.	**TEXT**	92.78%	3.49	3.71	90.00%	33.15%
444	Knowledge of the types of information required for arrival and progress reports.	**TEXT**	85.49%	3.47	3.76	91.81%	29.82%
445	Knowledge of preincident surveys and inspections.	**TEXT**	90.72%	2.99	3.09	92.13%	19.55%
446	Knowledge of common fire hazards.	**TEXT**	99.48%	3.83	3.81	97.88%	65.96%
447	Knowledge of the steps in presenting fire and life safety information to the public.	**TEXT**	85.14%	2.90	2.94	83.87%	17.42%
448	Knowledge of the components of personal protective equipment.	**TEXT**	98.86%	4.71	4.49	97.69%	90.75%
449	Knowledge of the physiological aspects of stress.	**TEXT**	94.86%	3.82	3.77	93.41%	59.52%
450	Knowledge of cardiopulmonary resuscitation (CPR).	**TEXT**	98.86%	4.73	4.67	97.09%	94.22%
451	Knowledge of scene safety considerations as hazardous materials incidents and rescue operations.	**TEXT**	98.28%	4.28	4.02	98.82%	72.51%
452	Knowledge of the types and states of shock of victims and/or other fire personnel.	**TEXT**	97.70%	4.05	4.13	95.88%	71.18%
453	Knowledge of methods to managing shock of victims and/or other fire personnel.	**TEXT**	97.11%	4.08	4.14	95.86%	71.60%
454	Knowledge of Body Substance Isolation (BSI) or infection control precautions.	**TEXT**	98.84%	4.60	4.51	94.19%	86.63%
455	Knowledge of methods to prevent and/or reduce the effects of heat exposure while wearing protective clothing.	**TEXT**	98.28%	4.28	4.23	98.25%	76.61%
456	Knowledge of the main routes through which hazardous materials can enter the body.	**TEXT**	98.85%	4.20	4.10	94.74%	75.44%
457	Knowledge of the clues which indicate the presence of hazardous materials.	**TEXT**	95.95%	4.22	3.95	97.60%	66.07%
458	Knowledge of chemical attack indicators.	**TEXT**	92.49%	3.79	3.61	94.51%	49.09%
459	Knowledge of incident priorities at all HAZMAT and terrorist incidents.	**TEXT**	86.78%	3.71	3.55	96.08%	43.23%
460	Knowledge of types of decontamination.	**TEXT**	95.40%	3.64	3.62	94.61%	47.62%
461	Knowledge of hazard-control zones.	**TEXT**	98.28%	3.68	3.60	93.49%	53.80%
462	Knowledge of defensive confinement and spill control actions.	**TEXT**	93.06%	3.43	3.46	93.94%	42.77%
463	Knowledge of factors to address during large-scale evacuations.	**TEXT**	82.66%	3.31	3.31	92.57%	31.08%
464	Knowledge of the organization of the fire department.	**NFPA**	94.77%	3.13	3.37	81.10%	44.51%
465	Knowledge of the role of the Fire Fighter I in the organization.	**NFPA**	92.44%	3.75	3.83	94.27%	61.39%
466	Knowledge of the mission of fire service.	**NFPA**	95.32%	3.51	3.67	86.59%	58.90%
467	Knowledge of the fire department's standard operating procedures (SOPs) and rules and regulations.	**NFPA**	95.91%	4.12	3.70	96.34%	14.63%

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Item #	KSAO	Origin	%A	I	RvR	BP	RUAD
468	Knowledge of the role of other agencies as they relate to the fire department.	**NFPA**	90.12%	2.92	3.12	87.18%	21.29%
469	Are you paying attention? Please fill in a 'YES' for Applicability, 2 for importance, 'YES' for RUAD, a 'YES' for Better Performance, and 'Referenced' for Ref vs. Recall.		98.21%	2.06	1.08	99.40%	99.39%
470	Knowledge of the critical aspects of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program.	**NFPA**	92.98%	3.09	2.93	87.58%	45.34%
471	Knowledge of procedures for reporting an emergency; departmental SOPs for taking and receiving alarms, radio codes, or procedures; and information needs of dispatch center.	**NFPA**	85.47%	3.32	3.48	92.62%	16.22%
472	Knowledge of fire department procedures for answering nonemergency telephone calls.	**NFPA**	81.87%	2.61	3.40	81.88%	6.76%
473	Knowledge of departmental radio procedures and etiquette for routine traffic, emergency traffic, and emergency evacuation signals.	**NFPA**	94.19%	3.91	4.08	96.32%	25.31%
474	Knowledge of personnel accountability systems, emergency communication procedures, and emergency evacuation methods.	**NFPA**	96.49%	4.43	4.41	99.39%	52.73%
475	Knowledge of basic construction of typical doors, windows, and walls within the department's community or service area.	**NFPA**	95.95%	3.66	3.90	97.01%	41.57%
476	Knowledge of personnel accountability systems and communication procedures.	**NFPA**	97.09%	4.26	4.26	99.40%	52.41%
477	Principles of fire streams as they relate to fighting automobile fires.	**NFPA**	97.09%	3.83	4.18	98.80%	72.46%
478	Knowledge of SOPs for alarm assignments and fire department radio communication procedures.	**NFPA**	91.86%	3.40	3.69	93.71%	17.20%
479	Knowledge of the methods to assess the origin and cause of fires.	**NFPA**	81.50%	2.83	3.21	91.10%	20.55%
480	Knowledge of the characteristics of pressurized flammable gases.	**NFPA**	95.93%	3.84	3.99	97.58%	72.56%

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Appendix F: KSAO Analysis Results for Volunteer Position

Item #	KSAO	Origin	%A	I	RvR	BP	RUAD
332	**Basic Arithmetic**: Ability to perform mathematical operations, such as counting, addition, subtraction, multiplication and division.	IOS	88.24%	3.43	N/A	90.00%	73.33%
333	**Deductive Reasoning:** The ability to apply general rules to specific problems to produce answers that make sense. (Example: Interpretation of SOPs and SOGs).	IOS	97.06%	4.00	N/A	93.94%	45.45%
334	**Flexibility of Closure:** The ability to identify or detect a known pattern (a figure, object, word or sound) that is hidden in other distracting material. (Example: Listening to Engine RPM's in order to identify issues).	IOS	94.12%	3.28	N/A	93.75%	31.25%
335	**Inductive Reasoning:** The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events). (Example: Reading the various clues of smoke/heat to reach a decision regarding the extent of fire).	IOS	97.06%	3.70	N/A	96.97%	42.42%
336	**Information Ordering:** The ability to arrange things or actions in a certain order or pattern according to a specific rule or set of rules (e.g., patterns of numbers, letters, words, pictures, mathematical operations). (Example: Using SOPs to follow procedures for hoseline operation).	IOS	97.06%	3.73	N/A	93.94%	42.42%
337	**Mathematical Reasoning:** The ability to choose the right mathematical methods or formulas to solve a problem. (Example: Friction loss, ladder or hose length calculation).	IOS	94.12%	3.47	N/A	90.63%	40.63%
338	**Memorization:** The ability to remember information such as words, numbers, pictures, and procedures. (Example: Hydrant locations, previous building layouts).	IOS	93.94%	3.81	N/A	93.55%	32.26%
339	**Number Facility:** The ability to add, subtract, multiply or divide quickly and correctly.	IOS	88.24%	3.26	N/A	90.32%	41.94%
340	**Oral Comprehension:** The ability to listen to and understand information and ideas presented through spoken words and sentences.	IOS	97.06%	4.36	N/A	90.91%	63.64%
341	**Are you paying attention?** Please fill in a 'YES' for Applicability, 5 for Importance, 'YES' for RUAD, and a 'NO' for Better Performance.	IOS	100.00%	4.85	N/A	11.76%	97.06%
342	**Oral Expression:** The ability to communicate information and ideas in speaking so others will understand.	IOS	100.00%	4.21	N/A	91.18%	50.00%
343	**Problem Sensitivity:** The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.	IOS	94.12%	3.94	N/A	87.88%	42.42%
344	**Selective Attention:** The ability to concentrate on a task over a period of time without being distracted. (Example: Being the only pump operator on-duty).	IOS	97.06%	3.79	N/A	90.91%	45.45%
345	**Spatial Orientation:** The ability to know your location in relation to the environment or to know where other objects are in relation to you.	IOS	97.06%	3.91	N/A	87.88%	50.00%
346	**Visualization:** The ability to imagine how something will look after it is moved around or when its parts are moved or rearranged.	IOS	76.47%	3.00	N/A	82.14%	42.86%
347	**Written Comprehension:** The ability to read and understand information and ideas presented in writing.	IOS	91.18%	3.75	N/A	90.63%	62.50%

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Item #	KSAO	Origin	%A	I	RvR	BP	RUAD
348	**Written Expression:** The ability to communicate information and ideas in writing so others will understand. (Example: Filling out maintenance records or logbooks).	IOS	94.12%	3.56	N/A	87.10%	40.63%
349	**Reaction Time:** The ability to quickly respond (with the hand, finger or foot) to a signal (sound, light, picture) when it appears.	IOS	87.88%	3.93	N/A	90.00%	70.00%
350	**Arm-Hand Steadiness:** The ability to keep your hand and arm steady while moving your arm or while holding your arm and hand in one position. (Example: Operating power tools for extrication).	IOS	93.94%	3.52	N/A	90.32%	48.39%
351	**Manual Dexterity:** The ability to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate or assemble objects.	IOS	93.75%	3.67	N/A	80.00%	70.00%
352	**Multi-limb Coordination:** The ability to coordinate two or more limbs (for example, two arms, two legs, or one leg and one arm) while sitting, standing or lying down. It does not involve performing the activities while the whole body is in motion.	IOS	78.79%	3.65	N/A	84.00%	73.08%
353	**Response Orientation:** The ability to choose quickly between two or more movements in response to two or more different signals (lights, sounds, pictures). It includes the speed with which the correct response is started with the hand, foot or other body part.	IOS	84.85%	3.54	N/A	85.71%	75.00%
354	**Rate Control:** The ability to time your movements or the movement of a piece of equipment in anticipation of changes in the speed and/or direction of a moving object or scene. (Example: Controlling for water hammer).	IOS	93.94%	3.63	N/A	87.50%	53.13%
355	**Static Strength:** The ability to exert maximum muscle force to lift, push, pull or carry objects.	IOS	100.00%	3.76	N/A	87.88%	63.64%
356	**Control Precision:** The ability to quickly and repeatedly adjust the controls of a machine or a vehicle to exact positions. (Example: Operating the aerial ladder).	IOS	87.88%	3.90	N/A	86.67%	36.67%
357	**Stamina:** The ability to exert yourself physically over long periods of time without getting winded or out of breath.	IOS	96.88%	4.06	N/A	90.63%	59.38%
358	**Near Vision:** The ability to see details at close range (within a few feet of the observer).	IOS	90.63%	3.67	N/A	80.00%	76.67%
359	**Dynamic Strength:** The ability to exert muscle force repeatedly or continuously over time. This involves muscular endurance and resistance to muscle fatigue.	IOS	87.50%	3.73	N/A	86.67%	70.00%
360	**Trunk Strength:** The ability to use your abdominal and lower back muscles to support part of the body repeatedly or continuously over time without 'giving out' or fatiguing.	IOS	90.63%	3.83	N/A	90.00%	70.00%
361	**Extent Flexibility:** The ability to bend, stretch, twist or reach with your body, arms and/or legs.	IOS	93.75%	3.71	N/A	83.87%	74.19%
362	**Depth Perception:** The ability to judge which of several objects is closer or farther away from you, or to judge the distance between you and an object. (Example: Placement of aerial).	IOS	90.91%	3.84	N/A	87.10%	67.74%
363	**Auditory Attention:** The ability to focus on a single source of sound in the presence of other distracting sounds. (Example: Focusing on your PASS device in a chaotic environment).	IOS	100.00%	4.00	N/A	84.85%	72.73%
364	**Gross Body Coordination:** The ability to coordinate the movement of your arms, legs and torso together	IOS	93.94%	3.65	N/A	87.10%	80.65%

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Item #	KSAO	Origin	%A	I	RvR	BP	RUAD
	when the whole body is in motion.						
365	**Gross Body Equilibrium:** The ability to keep or regain your body balance or stay upright when in an unstable position. (Example: Gusting winds while firefighting from the aerial ladder).	IOS	93.94%	3.71	N/A	83.87%	70.97%
366	**Far Vision:** The ability to see details at a distance.	IOS	96.97%	3.48	N/A	84.85%	72.73%
367	**Problem Analysis:** Quickly perceiving problem areas, identifying options and the potential impact of various solutions.	IOS	96.67%	3.90	N/A	89.66%	48.28%
368	**Problem-Solving:** Determining courses of action/solutions to problems. Implementing targeted solutions.	IOS	90.00%	3.96	N/A	92.59%	46.15%
369	**Decision-Making**: Understanding when a decision must be made and to have the willingness to make a decision. Quickly and efficiently determining an appropriate course of action to target a particular situation.	IOS	96.67%	4.24	N/A	93.10%	41.38%
370	**Planning and Organization**: Skill in establishing a course of action for oneself and others to accomplish goals. Skill in properly planning assignments, work duties and tasks; appropriate allocation of resources to ensure efficient, timely and smooth department operations.	IOS	80.00%	3.71	N/A	91.67%	37.50%
371	**Interpersonal Skill**: Listening to others and being considerate of the concerns of others.	IOS	90.00%	3.89	N/A	96.30%	48.15%
372	**Oral Communication**: Speaking in a clear, concise, understandable and appropriate manner.	IOS	93.33%	4.29	N/A	89.29%	60.71%
373	**Self-Motivation**: Working without supervision and accomplishing tasks without prodding.	IOS	93.33%	3.68	N/A	92.86%	57.14%
374	**Composure**: Working under stress and performing in unpleasant or traumatic circumstances.	IOS	100.00%	4.33	N/A	90.00%	43.33%
375	**Conflict Resolution**: Skill in de-escalating tense situations and quieting potential disturbances.	IOS	86.67%	3.88	N/A	92.31%	28.00%
376	**Critical Thinking:** Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.	IOS	96.67%	3.82	N/A	89.29%	39.29%
377	**Leadership:** Willingness to lead, take charge and offer opinions and direction, and having people respond positively to those directions such that there are behavioral changes.	IOS	86.67%	3.64	N/A	92.00%	36.00%
378	**Monitoring:** Monitoring/Assessing your performance or the performance of other individuals or organizations to make improvements or take corrective action.	IOS	76.67%	3.55	N/A	90.91%	31.82%
379	**Operation and Control:** Watching gauges, dials or other indicators to make sure a machine is working properly.	IOS	86.67%	4.16	N/A	92.00%	44.00%
380	**Instructing:** Teaching others how to do something.	IOS	90.32%	3.48	N/A	88.89%	22.22%
381	**Judgment and Decision Making:** Considering the relative costs and benefits of potential actions to choose the most appropriate one.	IOS	80.65%	4.00	N/A	87.50%	50.00%
382	**Are you paying attention?** Please fill in a 'YES' for Applicability, 3 for Importance, 'YES' for RUAD, and a 'YES' for Better Performance.	IOS	100.00%	3.06	N/A	100.00%	96.77%

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Item #	KSAO	Origin	%A	I	RvR	BP	RUAD
383	**Social Perceptiveness:** Being aware of others' reactions and understanding why they react as they do.	**IOS**	87.10%	3.23	N/A	96.00%	38.46%
384	**Negotiation:** Bringing others together and trying to reconcile differences.	**IOS**	70.97%	3.26	N/A	95.45%	26.09%
385	**Public Relations Skill:** Dealing with the public in such a way as to protect the image and reputation of the department while providing the public or individuals with necessary or requested information.	**IOS**	87.10%	3.75	N/A	88.89%	35.71%
386	**Persuasion:** Persuading others to change their minds or behavior.	**IOS**	64.52%	2.95	N/A	85.00%	20.00%
387	**Achievement/Effort:** Establishing and maintaining personally challenging achievement goals and exerting effort toward mastering tasks.	**IOS**	97.30%	3.44	N/A	97.22%	41.67%
388	**Adaptability/Flexibility:** Being open to change (positive or negative) and to considerable variety in the workplace.	**IOS**	100.00%	3.68	N/A	83.78%	44.44%
389	**Attention to Detail:** Being careful about detail and thorough in completing work tasks.	**IOS**	100.00%	4.19	N/A	94.59%	61.11%
390	**Concern for Others:** Being sensitive to others' needs and feelings and being understanding and helpful on the job. Showing compassion for others.	**IOS**	100.00%	3.97	N/A	86.49%	72.22%
391	**Cooperation:** Being pleasant with others on the job and displaying a good-natured, cooperative attitude.	**IOS**	97.30%	4.05	N/A	89.19%	69.44%
392	**Dependability:** Being reliable, responsible and dependable and fulfilling obligations.	**IOS**	97.30%	4.57	N/A	94.59%	94.44%
393	**Ethics.** Acting in an honest and fair manner. Willingness to accept responsibility for actions when things go wrong. Displaying a high degree of integrity and professionalism in action and word**.**	**IOS**	100.00%	4.62	N/A	94.59%	86.11%
394	**Independence:** Developing one's own ways of doing things, guiding oneself with little or no supervision and depending on oneself to get things done.	**IOS**	78.38%	3.40	N/A	86.67%	41.38%
395	**Initiative:** Willingness to take on responsibilities and challenges.	**IOS**	100.00%	3.84	N/A	91.89%	61.11%
396	**Innovation:** Tendency towards creativity and alternative thinking to develop new ideas for and answers to work-related problems.	**IOS**	100.00%	3.19	N/A	86.49%	27.78%
397	**Integrity:** Being honest and ethical, especially in situations where others could be taken advantage of.	**IOS**	100.00%	4.76	N/A	91.89%	94.44%
398	**Persistence:** In the face of obstacles, one continues to engage to overcome the obstacle.	**IOS**	100.00%	3.89	N/A	94.59%	50.00%
399	**Self-Control:** Maintaining composure, keeping emotions in check, controlling anger and avoiding aggressive behavior, even in very difficult situations.	**IOS**	100.00%	4.57	N/A	94.59%	83.33%
400	**Service Orientation:** Actively looking for ways to help people; a desire to place others' interests ahead of your own; showing compassion for others.	**IOS**	97.30%	3.76	N/A	86.49%	66.67%
401	**Social/Teamwork Orientation:** Preferring to work with others rather than alone, and being personally connected with others on the job. The ability to work with others (teamwork) to achieve a mutual end.	**IOS**	97.30%	4.32	N/A	97.30%	75.00%
402	**Stress Tolerance:** Accepting criticism and dealing calmly and effectively with high stress situations.	**IOS**	97.30%	4.54	N/A	97.30%	75.00%

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Item #	KSAO	Origin	%A	I	RvR	BP	RUAD
403	Knowledge of motor vehicle rules and regulations.	**IOS**	96.77%	4.23	4.34	90.32%	66.67%
404	Knowledge of common hand tools, such as wrenches, pliers, screw drivers, hammers and mauls, axes, prying tools, etc., e.g., their use, operation, limits and safety precautions/procedures.	**IOS**	96.77%	4.10	4.21	96.77%	46.67%
405	Knowledge of basic science terms and concepts, e.g., force, gravity, pressure, vacuum, etc.	**IOS**	87.10%	3.45	3.30	93.10%	42.86%
406	Knowledge of ratios and terms, expressing ratios and the practical use of ratios, e.g., pounds per square inch, gallons per minute, etc.	**IOS**	100.00%	3.16	3.31	93.55%	36.67%
407	Knowledge of basic mechanical principles, e.g., leverage, gears, pulleys, screws, etc.	**IOS**	96.77%	3.43	3.68	96.67%	44.83%
408	Knowledge of typical occupancy activity at a given time of day	**IOS**	87.10%	3.37	3.54	85.19%	18.52%
409	Knowledge of the science behind fire propagation	**TEXT**	96.77%	3.90	4.07	86.67%	68.97%
410	Are you paying attention? Please fill in a 'YES' for Applicability, 4 for importance, 'YES' for RUAD, a 'NO' for Better Performance, and 'Seldom Referenced' for Ref vs. Recall.	**TEXT**	96.77%	3.93	3.73	6.67%	100.00%
411	Knowledge of common heat energy sources: chemical, electrical, and mechanical energy	**TEXT**	96.77%	3.58	3.79	83.87%	63.33%
412	Knowledge of heat transmission and the mechanisms by which heat transfer occurs: conduction, convection, and radiation	**TEXT**	100.00%	4.03	3.97	80.65%	76.67%
413	Knowledge of common products of combustion and their toxic effects	**TEXT**	100.00%	4.03	4.03	83.87%	80.00%
414	Knowledge of classification of fires: class A, B, C, D, and K fires	**TEXT**	100.00%	3.97	4.07	90.32%	75.86%
415	Knowledge of Fire Control Theory: temperature reduction, fuel removal, oxygen exclusion, and chemical flame inhibition	**TEXT**	100.00%	4.10	4.17	90.32%	80.00%
416	Knowledge of common materials found in building construction	**TEXT**	96.77%	3.97	3.93	86.67%	63.33%
417	Knowledge of the strengths and weaknesses associated with different types of building construction types	**TEXT**	100.00%	4.13	4.03	87.10%	66.67%
418	Knowledge of types of extinguishers and their common uses	**TEXT**	100.00%	3.84	3.86	87.10%	73.33%
419	Knowledge of types of knots, ropes, and webbing materials	**TEXT**	96.77%	3.48	3.97	83.87%	63.33%
420	Knowledge of types of ladders	**TEXT**	100.00%	4.03	4.07	83.87%	73.33%
421	Knowledge of search operations	**TEXT**	100.00%	4.29	4.31	90.32%	60.00%
422	Knowledge of rescue operations	**TEXT**	100.00%	4.26	4.21	96.77%	63.33%
423	Knowledge of extrication operations	**TEXT**	100.00%	4.26	4.17	96.77%	60.00%
424	Knowledge of types of carries	**TEXT**	93.55%	3.47	4.00	83.33%	65.52%
425	Knowledge of victim removal methods	**TEXT**	100.00%	3.93	4.12	88.89%	73.08%
426	Knowledge of forcible entry methods	**TEXT**	100.00%	3.96	4.31	92.59%	69.23%
427	Knowledge of ventilation methods	**TEXT**	100.00%	3.86	4.15	88.89%	69.23%
428	Knowledge of types of hydrants and alternative water supplies	**TEXT**	96.43%	3.75	4.00	92.59%	69.23%
429	Knowledge of methods of moving water in a system	**TEXT**	82.14%	3.42	3.83	86.96%	54.55%
430	Knowledge of static pressure, flow pressure, and residual pressure	**TEXT**	100.00%	3.14	3.77	96.30%	34.62%
431	Knowledge of common hose rolls	**TEXT**	100.00%	3.18	3.92	85.19%	65.38%

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Item #	KSAO	Origin	%A	I	RvR	BP	RUAD
432	Knowledge of friction loss, elevation loss/gain, and water hammers	**TEXT**	100.00%	3.43	3.73	85.19%	53.85%
433	Knowledge of size classifications of fire streams	**TEXT**	96.43%	3.33	3.64	84.62%	68.00%
434	Knowledge of foam techniques	**TEXT**	92.86%	3.36	3.73	81.48%	50.00%
435	Knowledge of direct attacks	**TEXT**	100.00%	3.96	4.19	96.30%	80.77%
436	Knowledge of indirect attacks	**TEXT**	100.00%	3.89	4.15	92.59%	76.92%
437	Knowledge of combination attacks	**TEXT**	100.00%	3.75	4.15	92.59%	76.92%
438	Knowledge of salvage operations	**TEXT**	100.00%	3.11	3.73	77.78%	53.85%
439	Knowledge of overhaul operations	**TEXT**	96.43%	3.21	3.77	85.19%	57.69%
440	Knowledge of hidden fire indicators	**TEXT**	96.43%	3.93	4.12	88.89%	65.38%
441	Knowledge of evidence protection methods	**TEXT**	100.00%	3.43	3.76	81.48%	57.69%
442	Knowledge of procedures the public should use to report a fire or other emergency	**TEXT**	92.86%	3.23	3.75	76.00%	54.17%
443	Knowledge of necessary skills for fire department communications	**TEXT**	96.43%	4.07	4.28	96.15%	60.00%
444	Knowledge of the types of information required for arrival and progress reports	**TEXT**	89.29%	3.46	4.00	84.00%	29.17%
445	Knowledge of preincident surveys and inspections	**TEXT**	85.71%	3.00	3.12	84.00%	29.17%
446	Knowledge of common fire hazards	**TEXT**	100.00%	3.79	3.73	88.89%	57.69%
447	Knowledge of the steps in presenting fire and life safety information to the public	**TEXT**	77.78%	2.91	3.38	85.71%	35.00%
448	Knowledge of the components of personal protective equipment	**TEXT**	100.00%	4.77	4.56	96.15%	96.00%
449	Knowledge of the physiological aspects of stress	**TEXT**	92.59%	4.08	4.21	83.33%	69.57%
450	Knowledge of cardiopulmonary resuscitation (CPR)	**TEXT**	100.00%	4.62	4.76	100.00%	88.00%
451	Knowledge of scene safety considerations as hazardous materials incidents and rescue operations	**TEXT**	96.30%	4.28	4.29	92.00%	79.17%
452	Knowledge of the types and states of shock of victims and/or other fire personnel	**TEXT**	100.00%	4.35	4.44	100.00%	76.00%
453	Knowledge of methods to managing shock of victims and/or other fire personnel	**TEXT**	100.00%	4.31	4.36	100.00%	72.00%
454	Knowledge of Body Substance Isolation (BSI) or infection control precautions	**TEXT**	100.00%	4.54	4.56	100.00%	88.00%
455	Knowledge of methods to prevent and/or reduce the effects of heat exposure while wearing protective clothing	**TEXT**	100.00%	4.50	4.40	96.15%	80.00%
456	Knowledge of the main routes through which hazardous materials can enter the body	**TEXT**	100.00%	4.23	4.20	96.15%	76.00%
457	Knowledge of the clues which indicate the presence of hazardous materials	**TEXT**	100.00%	4.15	4.12	92.31%	72.00%
458	Knowledge of chemical attack indicators	**TEXT**	81.48%	4.00	3.86	90.48%	45.00%
459	Knowledge of incident priorities at all HAZMAT and terrorist incidents	**TEXT**	88.89%	3.91	3.73	86.96%	54.55%
460	Knowledge of types of decontamination	**TEXT**	96.30%	3.68	3.67	84.00%	58.33%
461	Knowledge of hazard-control zones	**TEXT**	92.59%	3.96	3.96	87.50%	73.91%
462	Knowledge of defensive confinement and spill control actions	**TEXT**	92.59%	3.75	4.09	87.50%	60.87%
463	Knowledge of factors to address during large-scale evacuations	**TEXT**	85.19%	3.36	3.55	72.73%	52.38%
464	Knowledge of the organization of the fire department	**NFPA**	100.00%	3.36	3.76	88.00%	58.33%

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Item #	KSAO	Origin	%A	I	RvR	BP	RUAD
465	Knowledge of the role of the Fire Fighter I in the organization	**NFPA**	100.00%	4.08	4.12	92.00%	66.67%
466	Knowledge of the mission of fire service	**NFPA**	100.00%	4.04	4.04	80.00%	75.00%
467	Knowledge of the fire department's standard operating procedures (SOPs) and rules and regulations	**NFPA**	100.00%	4.36	3.96	96.00%	33.33%
468	Knowledge of the role of other agencies as they relate to the fire department	**NFPA**	96.00%	3.38	3.40	79.17%	34.78%
469	Are you paying attention? Please fill in a 'YES' for Applicability, 2 for importance, 'YES' for RUAD, a 'YES' for Better Performance, and 'Referenced' for Ref vs. Recall.	**NFPA**	100.00%	2.04	1.00	100.00%	100.00%
470	Knowledge of the critical aspects of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program.	**NFPA**	96.00%	3.54	3.38	83.33%	78.26%
471	Knowledge of procedures for reporting an emergency; departmental SOPs for taking and receiving alarms, radio codes, or procedures; and information needs of dispatch center.	**NFPA**	88.00%	4.09	4.32	95.45%	66.67%
472	Knowledge of fire department procedures for answering nonemergency telephone calls.	**NFPA**	88.00%	3.14	3.68	86.36%	28.57%
473	Knowledge of departmental radio procedures and etiquette for routine traffic, emergency traffic, and emergency evacuation signals.	**NFPA**	96.00%	4.04	4.21	95.83%	43.48%
474	Knowledge of personnel accountability systems, emergency communication procedures, and emergency evacuation methods.	**NFPA**	100.00%	4.16	4.40	92.00%	66.67%
475	Knowledge of basic construction of typical doors, windows, and walls within the department's community or service area	**NFPA**	96.00%	3.79	3.88	91.67%	43.48%
476	Knowledge of personnel accountability systems and communication procedures	**NFPA**	100.00%	4.16	4.28	96.00%	70.83%
477	Principles of fire streams as they relate to fighting automobile fires	**NFPA**	100.00%	4.16	4.20	96.00%	73.91%
478	Knowledge of SOPs for alarm assignments and fire department radio communication procedures.	**NFPA**	100.00%	4.00	4.04	96.00%	45.83%
479	Knowledge of the methods to assess the origin and cause of fires.	**NFPA**	84.00%	3.23	3.55	86.36%	47.62%
480	Knowledge of the characteristics of pressurized flammable gases	**NFPA**	96.00%	4.00	3.92	88.00%	79.17%

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Appendix G: RUAD Categorization for Career Position

Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
1	Accurately take incoming calls or information from the dispatcher regarding alarms (e.g., fire alarms, requests for emergency medical services).	Match		X	
2	Be in a response-ready status to respond to alarms at all hours of the day and night.	IOS	X		
3	Respond to a vast range of emergencies including fire alarms, automobile accidents, medical emergencies, hazardous materials, or other incidents.	Match	X		
4	Put on situation-appropriate personal protective equipment (PPE) (example: full turnout gear, HAZ-MAT Equipment, Universal Protections [Body Substance Isolation Gear]).	Match	X		
5	Put on and wear self-contained breathing apparatus (SCBA).	Match	X		
6	Carry equipment when needed (RIT Pack, High-Rise Pack, Medical Bag).	Match	X		
7	Perform tasks only in established, protected work areas.	NFPA	X		
8	Assess fires and situations and report conditions to superiors to receive instructions, using two-way radios.	Match		X	
9	Conduct a mental size-up of the emergency scene.	IOS	X		
10	Check the wind direction in relation to the fire or HAZ-MAT scene.	IOS	X		
11	Assess the potential effects of weather on emergency response.	Match		X	
12	Assess the color, location and movement of smoke.	IOS	X		
13	Assess fire conditions to ensure proper fire suppression agent is used.	Match	X		
14	Determine the safest evacuation route and primary and secondary means of egress.	Match	X		
15	Safely shut off utility services to buildings in emergency situations (e.g., electrical and gas valves).	Match	X		
16	Communicate with the dispatcher, other fire vehicles and commanding officers by radio and request any necessary assistance.	Match		X	
17	Advise the commanding officer of fire conditions, hazards and exposures at the scene.	Match		X	
18	Communicate with the superior during a live fire.	Match	X		
19	Collaborate with other firefighters, supervisors and other firefighter companies to conduct firefighting and rescue operations.	Match	X		
20	Illuminate the emergency scene.	NFPA		X	

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Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
21	Recognize potential hazards on emergency scenes regarding vehicle traffic.	NFPA	X		
22	Discriminate between routine and emergency traffic.	NFPA		X	
23	Use personnel accountability systems to locate team members and communicate loss of air supply.	NFPA	X		
24	Rescue victims from burning buildings and accident sites.	Match	X		
25	Assist at a water rescue (e.g., swollen rivers, frozen lakes).	IOS		X	
26	Are you paying attention? Please fill in a 'YES' for Applicability, 3 for importance, 5 for frequency, and 'NO-*Learned on-the-job*' for RUAD.				
27	Interact with victims or causalities who have sustained severe or life-ending injuries.	IOS	X		
28	Interact with victims who have witnessed the loss or injury of companions.	IOS		X	
29	Safely remove persons from entrapments.	Match	X		
30	Safely lift, hoist or drag victim(s), taking care to minimize further injuries.	Match	X		
31	Drag or carry a victim(s) out of a building wearing appropriate PPE.	IOS	X		
32	Carry victim(s) via ladders wearing appropriate PPE.	Match	X		
33	Drag or carry victim(s) up or down stairs wearing appropriate PPE.	IOS	X		
34	Evacuate persons from a fire area.	Match	X		
35	Extricate persons from automobiles.	Match	X		
36	Cut vehicle power during extrication.	IOS	X		
37	Strategically position apparatus to protect incident scene from oncoming traffic.	Match	X		
38	Bring and use the necessary tools to extricate or free trapped persons.	Match	X		
39	Systematically search burning buildings to locate fire victims.	Match	X		
40	Gather information (e.g., bystanders, neighbors, family members) about probable victim locations and/or building floor plans.	IOS	X		
41	Enter unfamiliar, smoke-filled buildings and rooms while wearing PPE and SCBA equipment.	Match	X		
42	Systematically search for trapped persons.	Match	X		
43	Operate and/or man firefighting watercraft/boats for civilian rescue.	IOS		X	
44	Assess risk/benefit of rescue and relay to company officer.	Match		X	

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Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
45	Tie knots to a hose line, ladder, or other object as necessary during a large area search.	**Match**	**X**		
46	Maintain team integrity and firefighter safety.	**NFPA**	**X**		
47	Rescue a firefighter with functioning respiratory protection.	**NFPA**	**X**		
48	Rescue a firefighter whose respiratory protection is not functioning.	**NFPA**	**X**		
49	Recognize and manage psychological effects resulting from operating in obscured conditions.	**NFPA**	**X**		
50	Ensure respiratory protection is not compromised.	**NFPA**	**X**		
51	Choose and apply appropriate techniques for opening or removing trunks, engine compartments, vehicle roofs, doors, windshields, windows, steering wheels or columns, and dashboards.	**NFPA**	**X**		
52	Administer first aid to injured persons.	**IOS**	**X**		
53	Assess a patient's condition (e.g. alertness level, orientation, breathing, circulation).	**IOS**	**X**		
54	Gather information from patient or family member regarding medical history.	**IOS**	**X**		
55	Control bleeding and bandage wounds.	**IOS**	**X**		
56	Perform cardiopulmonary resuscitation.	**IOS**	**X**		
57	Operate Defibrillator (AED).	**IOS**	**X**		
58	Use airway adjuncts.	**IOS**	**X**		
59	Immobilize painful, swollen, or deformed extremities.	**IOS**	**X**		
60	Appropriately control patients who are hysterical, mentally disturbed, or in an altered state of consciousness that require medical attention.	**IOS**	**X**		
61	Administer appropriate oxygen flow to patients.	**IOS**	**X**		
62	Are you paying attention? Please fill in a 'YES' for Applicability, 2 for importance, 1 for frequency, and 'YES' for RUAD.				
63	Prepare and transfer a patient to an ambulance.	**IOS**	**X**		
64	Lift a patient into a bed/onto a stretcher; carry patient through tight quarters and down flights of stairs using a stair chair or Reeve stretcher; carry patient to ambulance.	**IOS**	**X**		
65	Monitor and provide needed care when transporting a patient to a medical facility.	**IOS**	**X**		
66	Properly utilize emergency equipment and supplies.	**IOS**	**X**		
67	Know street layouts, addresses, intersections and alternative routes in response area.	**IOS**		**X**	

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Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
68	Know the location of hydrants and mains in a response area.	**Match**		**X**	
69	Efficiently and safely drive firefighting emergency equipment to and from a scene.	**Match**		**X**	
70	Operate pumps connected to hoses.	**Match**		**X**	
71	Check gauges for pressures and proper water flow.	**IOS**		**X**	
72	Calculate and/or estimate friction loss rates or other pertinent values.	**IOS**		**X**	
73	Maintain constant water supply through proper management of pumping apparatus.	**Match**		**X**	
74	Monitor apparatus during operations.	**IOS**		**X**	
75	Calculate foam amounts.	**Match**		**X**	
76	Conduct drafting operations.	**Match**		**X**	
77	Charge lines at officer's command by opening discharge valves to support fire operations.	**IOS**		**X**	
78	Control pumper output by regulating engine RPMs, pressure relief valve and output gate valves so that pressure or flow is correct for the given operation.	**Match**		**X**	
79	Utilize watercraft to supply water for fighting fires.	**IOS**		**X**	
80	Operate the ladder pipe as per apparatus specifications.	**IOS**		**X**	
81	Position and climb ladders to gain access to upper levels of buildings or to rescue individuals from burning structures.	**Match**	**X**		
82	Determine the size and type of ladders required.	**Match**	**X**		
83	Identify proper ladder locations to allow access to upper levels of buildings or to ensure proper evacuation of fire personnel.	**Match**	**X**		
84	Be aware of electrical lines when setting up ladders.	**Match**	**X**		
85	For aerial ladders: position truck, place chocks and set-up truck jacks.	**IOS**		**X**	
86	Raise a 24-foot extension ladder and extend the fly section of that ladder.	**IOS**	**X**		
87	With assistance, raise a 35-foot extension ladder and extend the fly section of that ladder.	**IOS**	**X**		
88	With assistance, carry extension ladders (24-foot, 35-foot) from truck to incident scene.	**IOS**	**X**		
89	Climb an aerial ladder to a height up to 100 feet while wearing PPE equipment.	**IOS**	**X**		
90	Lower ground ladders and stow them onto the truck.	**IOS**	**X**		

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Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
91	Create openings in buildings for ventilation or entrance using axes, chisels, crowbars, power saws or core cutters.	**Match**	**X**		
92	Remove equipment from truck and start power tools.	**Match**	**X**		
93	Use equipment (e.g., swing axe or sledge hammer) to make forcible entries.	**Match**	**X**		
94	Determine the stability of supporting surfaces such as roofs and fire escapes.	**Match**	**X**		
95	Cut openings in roof with a fire axe or power saw (e.g., K-12 saw) for ventilation or examination.	**Match**	**X**		
96	Remove ceiling materials, such as plaster and lath, sheet rock, ceiling tiles and insulation by poking from above with pike pole or axe so that smoke and hot gases can escape.	**Match**	**X**		
97	Are you paying attention? Please fill in a 'YES' for Applicability, 1 for importance, 1 for frequency, and 'NO-*Learned through Continuing Education*' for RUAD.				
98	Remove and transport equipment (e.g., electrical extension cords, ventilation fans) from the truck as needed.	**Match**	**X**		
99	Properly knot and tie rope to hoist equipment weighing up to 50 pounds to upper levels.	**Match**	**X**		
100	Retreat from the area as a team when ventilation is accomplished.	**NFPA**	**X**		
101	Establish an appropriate water supply, lay hose lines and connect them to water supplies.	**Match**	**X**		
102	Coordinate firefighting and rescue operations with other firefighters, supervisors and other firefighter companies.	**Match**	**X**		
103	Pull the supply line from an engine to a hydrant.	**Match**	**X**		
104	Wrap a hose around functioning hydrant, unscrew the hydrant cap, screw the hose connection to the hydrant and turn on the hydrant (i.e., catch the plug).	**Match**	**X**		
105	Make and unmake coupling connections.	**Match**	**X**		
106	Carry a high-rise pack up multiple flights of stairs while wearing PPE so that attack line can be set up.	**IOS**	**X**		
107	Advance and fully extend a pre-connected, charged or uncharged hose of a diameter between 1¾ to 2½ inches.	**Match**	**X**		
108	Remove kinks in charged supply line by lifting and/or turning hose so that water flow is not obstructed.	**IOS**	**X**		
109	Carry, assemble and operate deluge set (ground monitor).	**IOS**	**X**		
110	Connect multiple small lines (example: 50-foot) and extend them to reach fire when required.	**IOS**	**X**		

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Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
111	Carry a 50-foot section of rolled hose unassisted while in appropriate PPE.	**IOS**	**X**		
112	Feed charged hose line of a diameter between 1¾ to 2½ inches to attacking firefighter units.	**IOS**	**X**		
113	Re-bed hose line back onto the proper apparatus (e.g., engine or truck).	**IOS**	**X**		
114	Select the proper hose size based upon fire scene and method of attack.	**Match**	**X**		
115	Calculate the height of a building in feet from its floors.	**IOS**	**X**		
116	Determine the correct spray pattern based upon fire scene (e.g., solid stream, hollow cone, full cone, fog stream, etc.).	**Match**	**X**		
117	Hold a charged 1¾ inch hose and open the nozzle.	**Match**	**X**		
118	While assisted, hold a charged 2½ inch hose and open the nozzle.	**IOS**	**X**		
119	Operate a charged hose line from elevated positions and direct spray at fire.	**Match**	**X**		
120	While on a ladder, operate and direct spray at fire.	**Match**	**X**		
121	Operate a charged hose line from confined spaces and direct spray at fire.	**Match**	**X**		
122	Continue to monitor fire suppression and adjust suppression tactics to extinguish fire and prevent the extension of the fire.	**Match**	**X**		
123	Move toward the source of a fire using knowledge of types of fires, construction design, building materials and physical layout of properties.	**Match**	**X**		
124	Enter smoky buildings and rooms with a hose in hand while wearing SCBA.	**Match**	**X**		
125	Seek the source of a fire and extinguish.	**Match**	**X**		
126	Select the correct tool or equipment for various firefighting maneuvers.	**Match**	**X**		
127	Fight fires in smoky buildings when visibility is poor or nonexistent.	**Match**	**X**		
128	Fight fires for prolonged periods of time in extreme temperatures.	**IOS**	**X**		
129	Use other senses to find the source of a fire when you cannot see.	**IOS**	**X**		
130	Carry equipment up stairs while wearing PPE gear and SCBA.	**IOS**	**X**		
131	Climb obstacles while wearing PPE and SCBA.	**IOS**	**X**		
132	Identify and respond to hazards at the scene.	**Match**	**X**		
133	Operate a thermal imaging camera (TIC).	**IOS**		**X**	

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Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
134	Operate a fire extinguisher by carrying it to objective, aiming and discharging at seat of fire or spill.	**Match**	**X**		
135	Attack a passenger vehicle fire.	**NFPA**	**X**		
136	Communicate attack techniques to the attack teams	**NFPA**	**X**		
137	Communicate and manage search, rescue, and ventilation requirements.	**NFPA**	**X**		
138	Control a flammable gas cylinder fire.	**NFPA**	**X**		
139	Identify the contents of cylinder.	**NFPA**	**X**		
140	Close cylinder valves.	**NFPA**	**X**		
141	Eliminate leaking gas and then extinguish fire.	**NFPA**	**X**		
142	Evaluate the cylinder integrity and ensure cylinder has cooled.	**NFPA**	**X**		
143	Face the cylinder during approach and retreat.	**NFPA**	**X**		
144	Maintain correct body posture during attack operations.	**NFPA**	**X**		
145	Extinguish fires in exterior Class A materials, given fires in stacked or piled and small unattached structures or storage containers.	**NFPA**	**X**		
146	Deploy portable water tanks as well as the equipment necessary to transfer water between and draft from them.	**NFPA**		**X**	
147	Are you paying attention? Please fill in a 'YES' for Applicability, 4 for importance, 4 for frequency, and 'Yes' for RUAD.				
148	Prevent water hammers when shutting down nozzles.	**NFPA**	**X**		
149	Replace burst hose sections.	**NFPA**	**X**		
150	Anticipate the injuries which could result from common types of accidents.	**NFPA**	**X**		
151	Prevent exposure to products of combustion.	**NFPA**	**X**		
152	Follow precautions when advancing hose lines to a fire.	**NFPA**	**X**		
153	Assess proper application of fire stream.	**NFPA**	**X**		
154	Use appropriate water application methods for exposure protection and fire extinguishment.	**NFPA**	**X**		
155	Identify automobile fuel types and assess and control fuel leaks.	**NFPA**	**X**		
156	Choose attack and control techniques for grade level and above and below grade level fires.	**NFPA**	**X**		

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Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
157	Recognize hazards associated with an automobile fire.	**NFPA**	**X**		
158	Apply appropriate attack lines and water streams for stacked, piled materials and outdoor fires.	**NFPA**	**X**		
159	Ensure complete extinguishment of stacked and piled materials.	**NFPA**	**X**		
160	Recognize dangers of exposure to toxins or hazardous materials associated with storage building and container fires.	**NFPA**	**X**		
161	Conduct a size-up of HAZ-MAT scene.	**IOS**	**X**		
162	Respond to the release or potential release of hazardous material according to outlined protocols.	**IOS**	**X**		
163	Identify HAZ-MAT by use of signage and HAZ-MAT reference materials.	**IOS**	**X**		
164	Apply a foam blanket or other suppressants.	**Match**	**X**		
165	Provide onsite crowd control in a HAZ-MAT situation.	**Match**	**X**		
166	Conduct a decontamination setup.	**IOS**	**X**		
167	Utilize watercraft to trace source of oil slicks.	**IOS**		**X**	
168	Exit a hazardous area as a team.	**NFPA**	**X**		
169	Extinguish an ignitable liquid fire.	**NFPA**	**X**		
170	Identify and control leaking flammable liquids, such that protection from flash fire is maintained	**NFPA**	**X**		
171	Take corrective measures to rectify poor foam generation.	**NFPA**	**X**		
172	Use the appropriate concentrates on hydrocarbon and polar solvent fuels.	**NFPA**	**X**		
173	Reduce or avoid hazards associated with firefighting foams.	**NFPA**	**X**		
174	Use fog nozzles or foam nozzles depending on situation.	**NFPA**	**X**		
175	Protect property from water and smoke using waterproof salvage covers and/or smoke ejectors (i.e., powered fans).	**Match**	**X**		
176	Place a smoke ejector in strategic locations throughout the fire scene to aid in proper ventilation and smoke removal.	**Match**	**X**		
177	Gather furniture into an appropriate location and protect it with salvage covers.	**Match**	**X**		
178	Place salvage covers over lower floors to prevent unnecessary damage.	**Match**	**X**		
179	Salvage property by removing broken glass, removing water and ventilating buildings to remove smoke.	**Match**	**X**		

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Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
180	After a fire is extinguished, drain or pump out water and clean up remaining water on the floors.	**Match**		**X**	
181	Remove burned and charred waste and other debris, if hazardous.	**Match**	**X**		
182	Perform overhaul and salvage operations.	**Match**	**X**		
183	Check for fire extension or hotspots using thermal imaging camera.	**IOS**	**X**		
184	Inspect fire sites after flames have been extinguished to ensure that there is no further danger.	**Match**	**X**		
185	Coordinate inspections with other firefighters, supervisors and other firefighter companies.	**IOS**		**X**	
186	Check for smoldering fire inside walls and ceiling by means of fire tools and equipment (e.g., fire axe, ceiling hook).	**Match**	**X**		
187	Are you paying attention? Please fill in a 'YES' for Applicability, 5 for importance, 1 for frequency, and 'NO-*Learned on-the-job*' for RUAD.				
188	Search for missing persons not accounted for.	**Match**	**X**		
189	Preserve evidence at fire scene.	**Match**	**X**		
190	Secure the fire scene.	**Match**	**X**		
191	Monitor the air for harmful toxins.	**IOS**	**X**		
192	Remove water via water chutes or other devices.		**X**		
193	Overhaul all vehicle compartments.	**NFPA**	**X**		
194	Stop the flow of water from building sprinkler with sprinkler wedges or stoppers.	**NFPA**	**X**		
195	Remove flooring, ceiling, and wall components to expose void spaces without compromising structural integrity.	**NFPA**	**X**		
196	Roll and fold salvage covers for reuse.	**NFPA**	**X**		
197	Perform horizontal ventilation on a structure, so that the ventilation openings are free of obstructions.	**NFPA**	**X**		
198	Recognize points of strength and weakness in auto body construction.	**NFPA**	**X**		
199	Recognize and communicate dangers associated with overhaul.	**NFPA**	**X**		
200	Designate work zones for safe operation at emergency scenes.	**NFPA**	**X**		
201	Collaborate with other agencies and individuals to respond to accidents and/or disasters.	**Match**		**X**	
202	Exchange information with law enforcement officials.	**IOS**		**X**	

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Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
203	Coordinate tasks and responsibilities with law enforcement officials (e.g., traffic control, crowd control).	**IOS**		**X**	
204	Monitor emergency scene and request assistance from other agencies as needed.	**IOS**		**X**	
205	Clearly and accurately communicate patient information, assessment and treatment via radio on route to a medical facility.	**IOS**	**X**		
206	Clearly and accurately communicate patient information and care to medical staff.	**IOS**	**X**		
207	Assist medical staff as needed until released by medical staff.	**IOS**		**X**	
208	Participate in fire drills and demonstrations of firefighting techniques.	**IOS**	**X**		
209	Participate in ongoing training drills to develop and maintain proficiency (e.g., HAZ-MAT, search and rescue operations, SCBA and air management, automobile extrication, rapid intervention team (RIT) training, etc.).	**IOS**	**X**		
210	Participate in training drills with new firefighters, assisting in their training through coaching and mentoring.	**IOS**		**X**	
211	Train in equipment operations such as apparatus driving, hydraulics and pump operation and aerial ladder operation.	**IOS**		**X**	
212	Participate in demonstrations, Officer classes, company level training or educational reviews (e.g., signs and symptoms of heat stroke, winter fireground operations, review of response zone building construction and floor plans, review of response zone street maps).	**IOS**		**X**	
213	Participate in physical training activities to maintain a high level of physical fitness.	**Match**	**X**		
214	Participate in courses, seminars and conferences, and study fire science literature to learn firefighting techniques.	**IOS**			**X**
215	Complete required training courses such as hazardous materials and automobile extrication.	**IOS**			**X**
216	Read, comprehend and retain information from training materials (e.g., text books and manuals).	**IOS**	**X**		
217	Successfully complete and pass written exams that test coursework learning and training objectives.	**IOS**	**X**		
218	Take and complete course work required to obtain medical certifications.	**IOS**	**X**		
219	Maintain ongoing certification requirement through continuing education or training.	**IOS**			**X**
220	Read and comprehend aspects of the fire department's member assistance program	**NFPA**		**X**	

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Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
221	Are you paying attention? Please fill in a 'YES' for Applicability, 4 for importance, 2 for frequency, and 'YES' for RUAD.				
222	Read, comprehend and retain information of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program	**NFPA**	**X**		
223	Participate in life safety initiatives in support of the fire department mission and to reduce firefighter line-of-duty injuries and fatalities.	**NFPA**		**X**	
224	Document required information such as personal information of patients or citizens involved in emergency scene.	**IOS**		**X**	
225	Summarize incidents that occurred at an emergency scene, detailing tactics, equipment and procedures used through written narratives.	**Match**		**X**	
226	Write descriptions of situations in medical reports, including details of symptoms, actions taken, etc.	**IOS**	**X**		
227	Complete reports required of the job (daily maintenance, inspections and truck checks).	**Match**		**X**	
228	Answer routine phone calls in the station.	**Match**		**X**	
229	Report for duty on time.	**IOS**	**X**		
230	Maintain professional appearance and personal hygiene in accordance with regulations.	**IOS**	**X**		
231	Remain on-duty for extended periods of time per department-specific SOGs.	**IOS**	**X**		
232	Read all internal communications (emails, handouts, etc.) from department (e.g., SOGs, policies and procedures, rules and regulations, etc.).	**Match**		**X**	
233	Document presentations and use prepared materials.	**NFPA**		**X**	
234	Clean and maintain fire stations and firefighting equipment and apparatus.	**Match**		**X**	
235	Ensure apparatus is in response-ready state, including decontaminating and disinfecting the unit and equipment, restocking of supplies and inspection of equipment.	**Match**		**X**	
236	Ensure proper function of SCBA by inspecting and performing daily tests at the start of each shift; service SCBA if malfunctioning.	**IOS**	**X**		
237	Coordinate with firefighters from off-going shift as to the actions needed to ensure the apparatus is in a response ready state.	**IOS**		**X**	
238	Checks bells and other signaling devices in the fire station by operating them to ensure that they work properly.	**IOS**		**X**	
239	Report damaged and out of service equipment to company officer.	**Match**		**X**	

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Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
240	Perform maintenance and upkeep for equipment and apparatus as necessary to ensure a response-ready state.	**Match**		**X**	
241	Wash used hoses and re-bed them on the truck.	**Match**	**X**		
242	Maintain all personal protective equipment (PPEs).	**Match**	**X**		
243	Maintain an inventory of tools and equipment.	**IOS**		**X**	
244	Maintain maintenance records of all equipment and apparatus.	**Match**		**X**	
245	Perform daily chores to ensure a neat and clean working and living environment at the fire station.	**IOS**		**X**	
246	Perform and coordinate kitchen chores such as planning meals, cooking meals and cleaning up after meals.	**IOS**		**X**	
247	Maintain the exterior of fire station: lawns, walkways and driveways.	**IOS**		**X**	
248	Perform an annual service test on fire hose, using a pump, a marking device, pressure gauges, and a timer.	**NFPA**		**X**	
249	Engage in pre-planning operations such as documenting building layouts, building construction, fire suppression and other tactical information such as location of exits to assist in future operations.	**Match**		**X**	
250	Inspect fire hydrant functioning in response zones and conduct hydrant flow tests.	**IOS**		**X**	
251	Inspect businesses and non-owner occupied private dwellings.	**Match**		**X**	
252	Identify code enforcement issues and alert superiors.	**Match**		**X**	
253	Complete smoke detector certifications.	**IOS**		**X**	
254	Identify illegal occupant dwellings or other occupancies.	**IOS**		**X**	
255	Use commonly recognized symbols when diagramming construction features, utilities, hazards, and fire protection systems.	**NFPA**		**X**	
256	Maintain a log of visitors to the fire station by recording their names, date, time and other relevant information so a written record is available.	**IOS**		**X**	
257	At superior's command, accompany owners/occupants into burned structure to allow them to retrieve possessions safely and to reduce liability risk to the fire department.	**IOS**		**X**	
258	Inform and educate the public on fire prevention.	**Match**		**X**	
259	Perform community service and outreach programs such as fire alarm installations, child safety seat installations, etc.	**IOS**		**X**	

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Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
260	Conduct fire station tours for groups of individuals and children.	**Match**		X	
261	Maintain a service orientation or public servant mentality when dealing with the public.	**IOS**	X		
262	Use tact and diplomacy in dealing with the public under times of high stress or with disgruntled, agitated or hysterical persons.	**IOS**	X		
263	Interact and work with citizens.	**IOS**	X		
264	Are you paying attention? Please fill in a 'YES' for Applicability, 4 for importance, 3 for frequency, and 'YES' for RUAD.				
265	Attend community meetings, ceremonies and parades as representatives of the department.	**IOS**		X	
266	Establish perimeter lines to prevent unauthorized persons from entering areas near emergencies.	**IOS**		X	
267	Provide assistance to victims.	**IOS**	X		
268	Control the emergency scene to protect yourself, coworkers and the patient or victim.	**IOS**	X		
269	Communicate with the public to prevent them from crossing perimeter lines.	**IOS**		X	
270	Assist rescue operation teams so that rescue items are recognized and retrieved in the time as prescribed by the Authorities Having Jurisdiction (AHJ).	**NFPA**		X	
271	Support and conduct community risk reduction programs.	**IOS**		X	
272	**PPE:** SCBA, turnout gear (pants, jacket, helmet, gloves, hood), PASS (Personal Alert Safety System) Device	**Match**	X		
273	**Blocks or pulleys:** Block and tackle equipment, pulleys, riggings, carabiners, anchors, straps, ropes	**IOS**		X	
274	**Fire extinguishers:** Carbon dioxide CO_2 fire extinguishers, dry chemical fire extinguishers, multipurpose fire extinguishers, water extinguisher, K-Type	**IOS**	X		
275	**Fire hoses:** Charged fire hoses, uncharged fire hoses	**IOS**	X		
276	**Nozzles & Appliances:** Fire hose nozzles, hose couplings, wyes, siamese, adapters, reducers	**IOS**	X		
277	**Fire or rescue trucks:** Aerial trucks, ladder trucks, engine trucks, rescue vehicles, other apparatus, brush apparatus	**IOS**	X		
278	**Fire hand tools:** Fire axes, McLeod tools, pick head axes, Pulaski tools, pike pole, claw hammers, rubber mallet, non-sparking hammers, sledgehammers, Halligan bars, Hux bars, pinch bars	**Match**	X		
279	**Stabilizing Tools:** Struts, lift jackets, cribbing	**Match**	X		
280	**Ropes & Webbing**	**IOS**	X		

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Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
281	**Hydraulic Rescue Tools:** Spreaders, cutters, Jaws of Life, rams, air bags	**IOS**	**X**		
282	**Ladders:** Aluminum ladders, extension ladders, roof ladders, A-Frame ladders	**IOS**	**X**		
283	**Power Equipment:** Chain saws, circular saws, K-12 saws, reciprocating saws, electric/hydraulic generators	**Match**	**X**		
284	**Ventilation:** Positive pressure fans, negative pressure fans, hydraulic ventilation, electric fans	**IOS**	**X**		
285	**First Responder:** Collars, backboard, dressings, AED, stethoscope, Stokes basket, airway adjuncts	**IOS**	**X**		
286	**Meters:** Thermal imaging camera (TIC), CO_2 monitors, gas detectors, radiation meters	**IOS**		**X**	
287	**Saws:** Hacksaws, handsaws, tree saws	**IOS**	**X**		
288	**Maps & Manuals:** City maps, county maps, building layout maps, equipment manuals, apparatus manuals, repair manuals, Dangerous Goods Manual (HAZMAT)	**IOS**		**X**	
289	**Specialty wrenches:** Hydrant shutoff wrenches, lug wrenches, non-sparking bung wrenches, gas-utility wrenches, spanner wrenches, adjustable wrenches	**IOS**	**X**		
290	**Database user interface and query software:** Affiliated Computer Services (ACS), FIREHOUSE, Fire incident reporting systems, Microsoft Access, Scientific Software	**IOS**		**X**	
291	**Computer software:** E-mail software, internet browsing software, drafting software, spreadsheet software, word processing software, project management software	**Match**		**X**	
292	**Lighting Equipment:** Power supply and lighting equipment, cords and connectors, and ground-fault interpreter (GFI) devices.	**NFPA**	**X**		
293	Perform all fireground tasks wearing full turnout gear (coat, bunker pants, boots, helmet, gloves and hood) and SCBA	**Match**	**X**		
294	Perform physically demanding tasks for extended periods of time	**IOS**	**X**		
295	Perform in extreme heat and cold conditions	**IOS**	**X**		
296	Perform operations in inclement weather	**IOS**	**X**		
297	Walk long distances in full turnout gear	**IOS**	**X**		
298	Operate in dark environments	**IOS**	**X**		
299	Are you paying attention? Please fill in a 'YES' for Applicability, 3 for importance, 5 for frequency, and 'NO-*Learned through Continuing Education*' for RUAD.				
300	Operate at high elevations	**IOS**	**X**		

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Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
301	Operate in confined areas	**IOS**	**X**		
302	Lift and carry heavy equipment and tools (e.g., high-rise pack containing hoseline and tools, gas-powered circular saw, chain saw, hydraulic cutters/spreaders, hydraulic tool power supply, gas-powered fans, portable hydrants, EMS bag containing oxygen bottle)	**Match**	**X**		
303	Lift and carry a stretcher/gurney with assistance	**IOS**	**X**		
304	Lift and push a stretcher/gurney into an ambulance with assistance	**IOS**	**X**		
305	Lift and transfer victims from ground to stretcher with assistance	**IOS**	**X**		
306	Carry heavy equipment and tools for extended distances	**IOS**	**X**		
307	Drag unconscious human victims and/or firefighters out of dangerous environments	**IOS**	**X**		
308	Carry unconscious or injured victims and/or firefighters out of dangerous conditions	**IOS**	**X**		
309	Remove heavy equipment from apparatus compartments	**IOS**	**X**		
310	Individually drag charged 1 ¾ inch hoseline	**IOS**	**X**		
311	Individually drag charged 2 ½ inch hoseline	**IOS**	**X**		
312	Individually feed charged 1¾ inch hoseline to firefighter(s) at nozzle to assist in moving hoseline around obstacles, up stairs, etc.	**IOS**	**X**		
313	Drag uncharged or charged hoseline	**IOS**	**X**		
314	Hold and operate a hoseline	**Match**	**X**		
315	Open a hydrant valve or hydrant cap using a hydrant wrench	**IOS**	**X**		
316	Connect hoseline sections using a spanner tool	**IOS**	**X**		
317	Penetrate and tear down ceiling using a pike pole	**IOS**	**X**		
318	Hold and operate gas-powered saws and hydraulic tools	**Match**	**X**		
319	Lift, swing and strike targets using sledge hammers and axes	**Match**	**X**		
320	Lift and carry ground ladders	**IOS**	**X**		
321	Position, heel and raise ground ladders	**IOS**	**X**		
322	Extend ground ladders using halyard	**IOS**	**X**		
323	Hoist equipment using a rope	**Match**	**X**		

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Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
324	Climb, crawl and/or maneuver in confined or restricted spaces while wearing SCBA and appropriate PPE	**Match**	**X**		
325	Crawl, duck-under, crawl-over and maneuver around obstacles in confined and restricted spaces while wearing SCBA and appropriate PPE	**IOS**	**X**		
326	Climb through windows and openings while wearing SCBA and appropriate PPE	**IOS**	**X**		
327	Crawl along ceiling joists and rafters while wearing SCBA and appropriate PPE	**IOS**	**X**		
328	Climb to the top and back down ground ladders while wearing SCBA and appropriate PPE	**IOS**	**X**		
329	Climb to the top and back down aerial ladders/buckets/baskets/platforms while wearing SCBA and appropriate PPE	**IOS**	**X**		
330	Rappel down from the top of structures while wearing SCBA and appropriate PPE	**IOS**	**X**		
331	Climb stairs while wearing PPE and carrying equipment while wearing SCBA and appropriate PPE	**IOS**	**X**		
332	**Basic Arithmetic**: Ability to perform mathematical operations, such as counting, addition, subtraction, multiplication and division.	**IOS**	**X**		
333	**Deductive Reasoning:** The ability to apply general rules to specific problems to produce answers that make sense. (Example: Interpretation of SOPs and SOGs).	**IOS**	**X**		
334	**Flexibility of Closure:** The ability to identify or detect a known pattern (a figure, object, word or sound) that is hidden in other distracting material. (Example: Listening to Engine RPM's in order to identify issues).	**IOS**		**X**	
335	**Inductive Reasoning:** The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events). (Example: Reading the various clues of smoke/heat to reach a decision regarding the extent of fire).	**IOS**	**X**		
336	**Information Ordering:** The ability to arrange things or actions in a certain order or pattern according to a specific rule or set of rules (e.g., patterns of numbers, letters, words, pictures, mathematical operations). (Example: Using SOPs to follow procedures for hoseline operation).	**IOS**	**X**		
337	**Mathematical Reasoning:** The ability to choose the right mathematical methods or formulas to solve a problem. (Example: Friction loss, ladder or hose length calculation).	**IOS**	**X**		
338	**Memorization:** The ability to remember information such as words, numbers, pictures, and procedures. (Example: Hydrant locations, previous building layouts).	**IOS**		**X**	
339	**Number Facility:** The ability to add, subtract, multiply or divide quickly and correctly.	**IOS**	**X**		

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Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
340	**Oral Comprehension:** The ability to listen to and understand information and ideas presented through spoken words and sentences.	IOS	X		
341	**Are you paying attention?** Please fill in a 'YES' for Applicability, 5 for Importance, 'YES' for RUAD, and a 'NO' for Better Performance.				
342	**Oral Expression:** The ability to communicate information and ideas in speaking so others will understand.	IOS	X		
343	**Problem Sensitivity:** The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.	IOS	X		
344	**Selective Attention:** The ability to concentrate on a task over a period of time without being distracted. (Example: Being the only pump operator on-duty).	IOS	X		
345	**Spatial Orientation:** The ability to know your location in relation to the environment or to know where other objects are in relation to you.	IOS	X		
346	**Visualization:** The ability to imagine how something will look after it is moved around or when its parts are moved or rearranged.	IOS	X		
347	**Written Comprehension:** The ability to read and understand information and ideas presented in writing.	IOS	X		
348	**Written Expression:** The ability to communicate information and ideas in writing so others will understand. (Example: Filling out maintenance records or logbooks).	IOS	X		
349	**Reaction Time:** The ability to quickly respond (with the hand, finger or foot) to a signal (sound, light, picture) when it appears.	IOS	X		
350	**Arm-Hand Steadiness:** The ability to keep your hand and arm steady while moving your arm or while holding your arm and hand in one position. (Example: Operating power tools for extrication).	IOS	X		
351	**Manual Dexterity:** The ability to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate or assemble objects.	IOS	X		
352	**Multi-limb Coordination:** The ability to coordinate two or more limbs (for example, two arms, two legs, or one leg and one arm) while sitting, standing or lying down. It does not involve performing the activities while the whole body is in motion.	IOS	X		
353	**Response Orientation:** The ability to choose quickly between two or more movements in response to two or more different signals (lights, sounds, pictures). It includes the speed with which the correct response is started with the hand, foot or other body part.	IOS	X		

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Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
354	**Rate Control:** The ability to time your movements or the movement of a piece of equipment in anticipation of changes in the speed and/or direction of a moving object or scene. (Example: Controlling for water hammer).	IOS	X		
355	**Static Strength:** The ability to exert maximum muscle force to lift, push, pull or carry objects.	IOS	X		
356	**Control Precision:** The ability to quickly and repeatedly adjust the controls of a machine or a vehicle to exact positions. (Example: Operating the aerial ladder).	IOS		X	
357	**Stamina:** The ability to exert yourself physically over long periods of time without getting winded or out of breath.	IOS	X		
358	**Near Vision:** The ability to see details at close range (within a few feet of the observer).	IOS	X		
359	**Dynamic Strength:** The ability to exert muscle force repeatedly or continuously over time. This involves muscular endurance and resistance to muscle fatigue.	IOS	X		
360	**Trunk Strength:** The ability to use your abdominal and lower back muscles to support part of the body repeatedly or continuously over time without 'giving out' or fatiguing.	IOS	X		
361	**Extent Flexibility:** The ability to bend, stretch, twist or reach with your body, arms and/or legs.	IOS	X		
362	**Depth Perception:** The ability to judge which of several objects is closer or farther away from you, or to judge the distance between you and an object. (Example: Placement of aerial).	IOS	X		
363	**Auditory Attention:** The ability to focus on a single source of sound in the presence of other distracting sounds. (Example: Focusing on your PASS device in a chaotic environment).	IOS	X		
364	**Gross Body Coordination:** The ability to coordinate the movement of your arms, legs and torso together when the whole body is in motion.	IOS	X		
365	**Gross Body Equilibrium:** The ability to keep or regain your body balance or stay upright when in an unstable position. (Example: Gusting winds while firefighting from the aerial ladder).	IOS	X		
366	**Far Vision:** The ability to see details at a distance.	IOS	X		
367	**Problem Analysis:** Quickly perceiving problem areas, identifying options and the potential impact of various solutions.	IOS	X		
368	**Problem-Solving:** Determining courses of action/solutions to problems. Implementing targeted solutions.	IOS	X		
369	**Decision-Making**: Understanding when a decision must be made and to have the willingness to make a decision. Quickly and efficiently determining an appropriate course of action to target a particular situation.	IOS	X		

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Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
370	**Planning and Organization**: Skill in establishing a course of action for oneself and others to accomplish goals. Skill in properly planning assignments, work duties and tasks; appropriate allocation of resources to ensure efficient, timely and smooth department operations.	IOS		X	
371	**Interpersonal Skill**: Listening to others and being considerate of the concerns of others.	IOS	X		
372	**Oral Communication**: Speaking in a clear, concise, understandable and appropriate manner.	IOS	X		
373	**Self-Motivation**: Working without supervision and accomplishing tasks without prodding.	IOS	X		
374	**Composure**: Working under stress and performing in unpleasant or traumatic circumstances.	IOS	X		
375	**Conflict Resolution**: Skill in de-escalating tense situations and quieting potential disturbances.	IOS		X	
376	**Critical Thinking:** Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.	IOS	X		
377	**Leadership:** Willingness to lead, take charge and offer opinions and direction, and having people respond positively to those directions such that there are behavioral changes.	IOS		X	
378	**Monitoring:** Monitoring/Assessing your performance or the performance of other individuals or organizations to make improvements or take corrective action.	IOS		X	
379	**Operation and Control:** Watching gauges, dials or other indicators to make sure a machine is working properly.	IOS		X	
380	**Instructing:** Teaching others how to do something.	IOS		X	
381	**Judgment and Decision Making:** Considering the relative costs and benefits of potential actions to choose the most appropriate one.	IOS	X		
382	**Are you paying attention?** Please fill in a 'YES' for Applicability, 3 for Importance, 'YES' for RUAD, and a 'YES' for Better Performance.				
383	**Social Perceptiveness:** Being aware of others' reactions and understanding why they react as they do.	IOS	X		
384	**Negotiation:** Bringing others together and trying to reconcile differences.	IOS		X	
385	**Public Relations Skill:** Dealing with the public in such a way as to protect the image and reputation of the department while providing the public or individuals with necessary or requested information.	IOS		X	
386	**Persuasion:** Persuading others to change their minds or behavior.	IOS		X	
387	**Achievement/Effort:** Establishing and maintaining personally challenging achievement goals and exerting effort toward mastering tasks.	IOS	X		

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Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
388	**Adaptability/Flexibility:** Being open to change (positive or negative) and to considerable variety in the workplace.	IOS	X		
389	**Attention to Detail:** Being careful about detail and thorough in completing work tasks.	IOS	X		
390	**Concern for Others:** Being sensitive to others' needs and feelings and being understanding and helpful on the job. Showing compassion for others.	IOS	X		
391	**Cooperation:** Being pleasant with others on the job and displaying a good-natured, cooperative attitude.	IOS	X		
392	**Dependability:** Being reliable, responsible and dependable and fulfilling obligations.	IOS	X		
393	**Ethics.** Acting in an honest and fair manner. Willingness to accept responsibility for actions when things go wrong. Displaying a high degree of integrity and professionalism in action and word**.**	IOS	X		
394	**Independence:** Developing one's own ways of doing things, guiding oneself with little or no supervision and depending on oneself to get things done.	IOS		X	
395	**Initiative:** Willingness to take on responsibilities and challenges.	IOS	X		
396	**Innovation:** Tendency towards creativity and alternative thinking to develop new ideas for and answers to work-related problems.	IOS		X	
397	**Integrity:** Being honest and ethical, especially in situations where others could be taken advantage of.	IOS	X		
398	**Persistence:** In the face of obstacles, one continues to engage to overcome the obstacle.	IOS	X		
399	**Self-Control:** Maintaining composure, keeping emotions in check, controlling anger and avoiding aggressive behavior, even in very difficult situations.	IOS	X		
400	**Service Orientation:** Actively looking for ways to help people; a desire to place others' interests ahead of your own; showing compassion for others.	IOS	X		
401	**Social/Teamwork Orientation:** Preferring to work with others rather than alone, and being personally connected with others on the job. The ability to work with others (teamwork) to achieve a mutual end.	IOS	X		
402	**Stress Tolerance:** Accepting criticism and dealing calmly and effectively with high stress situations.	IOS	X		
403	Knowledge of motor vehicle rules and regulations.	IOS	X		
404	Knowledge of common hand tools, such as wrenches, pliers, screw drivers, hammers and mauls, axes, prying tools, etc., e.g., their use, operation, limits and safety precautions/procedures.	IOS	X		
405	Knowledge of basic science terms and concepts, e.g., force, gravity, pressure, vacuum, etc.	IOS		X	

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Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
406	Knowledge of ratios and terms, expressing ratios and the practical use of ratios, e.g., pounds per square inch, gallons per minute, etc.	**IOS**		**X**	
407	Knowledge of basic mechanical principles, e.g., leverage, gears, pulleys, screws, etc.	**IOS**		**X**	
408	Knowledge of typical occupancy activity at a given time of day	**IOS**		**X**	
409	Knowledge of the science behind fire propagation	**TEXT**	**X**		
410	Are you paying attention? Please fill in a 'YES' for Applicability, 4 for importance, 'YES' for RUAD, a 'NO' for Better Performance, and 'Seldom Referenced' for Ref vs. Recall.				
411	Knowledge of common heat energy sources: chemical, electrical, and mechanical energy	**TEXT**	**X**		
412	Knowledge of heat transmission and the mechanisms by which heat transfer occurs: conduction, convection, and radiation	**TEXT**	**X**		
413	Knowledge of common products of combustion and their toxic effects	**TEXT**	**X**		
414	Knowledge of classification of fires: class A, B, C, D, and K fires	**TEXT**	**X**		
415	Knowledge of Fire Control Theory: temperature reduction, fuel removal, oxygen exclusion, and chemical flame inhibition	**TEXT**	**X**		
416	Knowledge of common materials found in building construction	**TEXT**	**X**		
417	Knowledge of the strengths and weaknesses associated with different types of building construction types	**TEXT**	**X**		
418	Knowledge of types of extinguishers and their common uses	**TEXT**	**X**		
419	Knowledge of types of knots, ropes, and webbing materials	**TEXT**	**X**		
420	Knowledge of types of ladders	**TEXT**	**X**		
421	Knowledge of search operations	**TEXT**	**X**		
422	Knowledge of rescue operations	**TEXT**	**X**		
423	Knowledge of extrication operations	**TEXT**	**X**		
424	Knowledge of types of carries	**TEXT**	**X**		
425	Knowledge of victim removal methods	**TEXT**	**X**		
426	Knowledge of forcible entry methods	**TEXT**	**X**		
427	Knowledge of ventilation methods	**TEXT**	**X**		

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Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
428	Knowledge of types of hydrants and alternative water supplies	**TEXT**	**X**		
429	Knowledge of methods of moving water in a system	**TEXT**		**X**	
430	Knowledge of static pressure, flow pressure, and residual pressure	**TEXT**		**X**	
431	Knowledge of common hose rolls	**TEXT**	**X**		
432	Knowledge of friction loss, elevation loss/gain, and water hammers	**TEXT**	**X**		
433	Knowledge of size classifications of fire streams	**TEXT**	**X**		
434	Knowledge of foam techniques	**TEXT**	**X**		
435	Knowledge of direct attacks	**TEXT**	**X**		
436	Knowledge of indirect attacks	**TEXT**	**X**		
437	Knowledge of combination attacks	**TEXT**	**X**		
438	Knowledge of salvage operations	**TEXT**	**X**		
439	Knowledge of overhaul operations	**TEXT**	**X**		
440	Knowledge of hidden fire indicators	**TEXT**	**X**		
441	Knowledge of evidence protection methods	**TEXT**	**X**		
442	Knowledge of procedures the public should use to report a fire or other emergency	**TEXT**	**X**		
443	Knowledge of necessary skills for fire department communications	**TEXT**		**X**	
444	Knowledge of the types of information required for arrival and progress reports	**TEXT**		**X**	
445	Knowledge of preincident surveys and inspections	**TEXT**		**X**	
446	Knowledge of common fire hazards	**TEXT**	**X**		
447	Knowledge of the steps in presenting fire and life safety information to the public	**TEXT**		**X**	
448	Knowledge of the components of personal protective equipment	**TEXT**	**X**		
449	Knowledge of the physiological aspects of stress	**TEXT**	**X**		
450	Knowledge of cardiopulmonary resuscitation (CPR)	**TEXT**	**X**		
451	Knowledge of scene safety considerations as hazardous materials incidents and rescue operations	**TEXT**	**X**		
452	Knowledge of the types and states of shock of victims and/or other fire personnel	**TEXT**	**X**		

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Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
453	Knowledge of methods to managing shock of victims and/or other fire personnel	**TEXT**	**X**		
454	Knowledge of Body Substance Isolation (BSI) or infection control precautions	**TEXT**	**X**		
455	Knowledge of methods to prevent and/or reduce the effects of heat exposure while wearing protective clothing	**TEXT**	**X**		
456	Knowledge of the main routes through which hazardous materials can enter the body	**TEXT**	**X**		
457	Knowledge of the clues which indicate the presence of hazardous materials	**TEXT**	**X**		
458	Knowledge of chemical attack indicators	**TEXT**	**X**		
459	Knowledge of incident priorities at all HAZMAT and terrorist incidents	**TEXT**	**X**		
460	Knowledge of types of decontamination	**TEXT**	**X**		
461	Knowledge of hazard-control zones	**TEXT**	**X**		
462	Knowledge of defensive confinement and spill control actions	**TEXT**	**X**		
463	Knowledge of factors to address during large-scale evacuations	**TEXT**		**X**	
464	Knowledge of the organization of the fire department	**NFPA**		**X**	
465	Knowledge of the role of the Fire Fighter I in the organization	**NFPA**	**X**		
466	Knowledge of the mission of fire service	**NFPA**	**X**		
467	Knowledge of the fire department's standard operating procedures (SOPs) and rules and regulations	**NFPA**		**X**	
468	Knowledge of the role of other agencies as they relate to the fire department	**NFPA**		**X**	
469	Are you paying attention? Please fill in a 'YES' for Applicability, 2 for importance, 'YES' for RUAD, a 'YES' for Better Performance, and 'Referenced' for Ref vs. Recall.				
470	Knowledge of the critical aspects of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program.	**NFPA**	**X**		
471	Knowledge of procedures for reporting an emergency; departmental SOPs for taking and receiving alarms, radio codes, or procedures; and information needs of dispatch center.	**NFPA**		**X**	
472	Knowledge of fire department procedures for answering nonemergency telephone calls.	**NFPA**		**X**	
473	Knowledge of departmental radio procedures and etiquette for routine traffic, emergency traffic, and emergency evacuation signals.	**NFPA**		**X**	

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Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
474	Knowledge of personnel accountability systems, emergency communication procedures, and emergency evacuation methods.	**NFPA**	**X**		
475	Knowledge of basic construction of typical doors, windows, and walls within the department's community or service area	**NFPA**		**X**	
476	Knowledge of personnel accountability systems and communication procedures	**NFPA**	**X**		
477	Principles of fire streams as they relate to fighting automobile fires	**NFPA**	**X**		
478	Knowledge of SOPs for alarm assignments and fire department radio communication procedures.	**NFPA**		**X**	
479	Knowledge of the methods to assess the origin and cause of fires.	**NFPA**			**X**
480	Knowledge of the characteristics of pressurized flammable gases	**NFPA**	**X**		

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Appendix H: RUAD Categorization for Volunteer Position

Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
1	Accurately take incoming calls or information from the dispatcher regarding alarms (e.g., fire alarms, requests for emergency medical services).	Match	X		
2	Be in a response-ready status to respond to alarms at all hours of the day and night.	IOS	X		
3	Respond to a vast range of emergencies including fire alarms, automobile accidents, medical emergencies, hazardous materials, or other incidents.	Match	X		
4	Put on situation-appropriate personal protective equipment (PPE) (example: full turnout gear, HAZ-MAT Equipment, Universal Protections [Body Substance Isolation Gear]).	Match	X		
5	Put on and wear self-contained breathing apparatus (SCBA).	Match	X		
6	Carry equipment when needed (RIT Pack, High-Rise Pack, Medical Bag).	Match	X		
7	Perform tasks only in established, protected work areas.	NFPA	X		
8	Assess fires and situations and report conditions to superiors to receive instructions, using two-way radios.	Match	X		
9	Conduct a mental size-up of the emergency scene.	IOS	X		
10	Check the wind direction in relation to the fire or HAZ-MAT scene.	IOS	X		
11	Assess the potential effects of weather on emergency response.	Match	X		
12	Assess the color, location and movement of smoke.	IOS	X		
13	Assess fire conditions to ensure proper fire suppression agent is used.	Match	X		
14	Determine the safest evacuation route and primary and secondary means of egress.	Match	X		
15	Safely shut off utility services to buildings in emergency situations (e.g., electrical and gas valves).	Match	X		
16	Communicate with the dispatcher, other fire vehicles and commanding officers by radio and request any necessary assistance.	Match	X		
17	Advise the commanding officer of fire conditions, hazards and exposures at the scene.	Match	X		
18	Communicate with the superior during a live fire.	Match	X		
19	Collaborate with other firefighters, supervisors and other firefighter companies to conduct firefighting and rescue operations.	Match	X		
20	Illuminate the emergency scene.	NFPA		X	
21	Recognize potential hazards on emergency scenes regarding vehicle traffic.	NFPA	X		
22	Discriminate between routine and emergency traffic.	NFPA		X	
23	Use personnel accountability systems to locate team members and communicate loss of air supply.	NFPA	X		
24	Rescue victims from burning buildings and accident sites.	Match	X		
25	Assist at a water rescue (e.g., swollen rivers, frozen lakes).	IOS	X		

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Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
26	Are you paying attention? Please fill in a 'YES' for Applicability, 3 for importance, 5 for frequency, and 'NO-*Learned on-the-job*' for RUAD.				
27	Interact with victims or causalities who have sustained severe or life-ending injuries.	**IOS**	**X**		
28	Interact with victims who have witnessed the loss or injury of companions.	**IOS**		**X**	
29	Safely remove persons from entrapments.	**Match**	**X**		
30	Safely lift, hoist or drag victim(s), taking care to minimize further injuries.	**Match**	**X**		
31	Drag or carry a victim(s) out of a building wearing appropriate PPE.	**IOS**	**X**		
32	Carry victim(s) via ladders wearing appropriate PPE.	**Match**	**X**		
33	Drag or carry victim(s) up or down stairs wearing appropriate PPE.	**IOS**	**X**		
34	Evacuate persons from a fire area.	**Match**	**X**		
35	Extricate persons from automobiles.	**Match**	**X**		
36	Cut vehicle power during extrication.	**IOS**	**X**		
37	Strategically position apparatus to protect incident scene from oncoming traffic.	**Match**	**X**		
38	Bring and use the necessary tools to extricate or free trapped persons.	**Match**	**X**		
39	Systematically search burning buildings to locate fire victims.	**Match**	**X**		
40	Gather information (e.g., bystanders, neighbors, family members) about probable victim locations and/or building floor plans.	**IOS**	**X**		
41	Enter unfamiliar, smoke-filled buildings and rooms while wearing PPE and SCBA equipment.	**Match**	**X**		
42	Systematically search for trapped persons.	**Match**	**X**		
43	Operate and/or man firefighting watercraft/boats for civilian rescue.	**IOS**		**X**	
44	Assess risk/benefit of rescue and relay to company officer.	**Match**	**X**		
45	Tie knots to a hose line, ladder, or other object as necessary during a large area search.	**Match**	**X**		
46	Maintain team integrity and firefighter safety.	**NFPA**	**X**		
47	Rescue a firefighter with functioning respiratory protection.	**NFPA**	**X**		
48	Rescue a firefighter whose respiratory protection is not functioning.	**NFPA**	**X**		
49	Recognize and manage psychological effects resulting from operating in obscured conditions.	**NFPA**	**X**		
50	Ensure respiratory protection is not compromised.	**NFPA**	**X**		
51	Choose and apply appropriate techniques for opening or removing trunks, engine compartments, vehicle roofs, doors, windshields, windows, steering wheels or columns, and dashboards.	**NFPA**	**X**		
52	Administer first aid to injured persons.	**IOS**	**X**		
53	Assess a patient's condition (e.g. alertness level, orientation, breathing, circulation).	**IOS**	**X**		

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Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
54	Gather information from patient or family member regarding medical history.	**IOS**	**X**		
55	Control bleeding and bandage wounds.	**IOS**	**X**		
56	Perform cardiopulmonary resuscitation.	**IOS**	**X**		
57	Operate Defibrillator (AED).	**IOS**	**X**		
58	Use airway adjuncts.	**IOS**	**X**		
59	Immobilize painful, swollen, or deformed extremities.	**IOS**	**X**		
60	Appropriately control patients who are hysterical, mentally disturbed, or in an altered state of consciousness that require medical attention.	**IOS**	**X**		
61	Administer appropriate oxygen flow to patients.	**IOS**	**X**		
62	Are you paying attention? Please fill in a 'YES' for Applicability, 2 for importance, 1 for frequency, and 'YES' for RUAD.				
63	Prepare and transfer a patient to an ambulance.	**IOS**	**X**		
64	Lift a patient into a bed/onto a stretcher; carry patient through tight quarters and down flights of stairs using a stair chair or Reeve stretcher; carry patient to ambulance.	**IOS**	**X**		
65	Monitor and provide needed care when transporting a patient to a medical facility.	**IOS**	**X**		
66	Properly utilize emergency equipment and supplies.	**IOS**	**X**		
67	Know street layouts, addresses, intersections and alternative routes in response area.	**IOS**		**X**	
68	Know the location of hydrants and mains in a response area.	**Match**		**X**	
69	Efficiently and safely drive firefighting emergency equipment to and from a scene.	**Match**	**X**		
70	Operate pumps connected to hoses.	**Match**	**X**		
71	Check gauges for pressures and proper water flow.	**IOS**		**X**	
72	Calculate and/or estimate friction loss rates or other pertinent values.	**IOS**	**X**		
73	Maintain constant water supply through proper management of pumping apparatus.	**Match**	**X**		
74	Monitor apparatus during operations.	**IOS**		**X**	
75	Calculate foam amounts.	**Match**	**X**		
76	Conduct drafting operations.	**Match**		**X**	
77	Charge lines at officer's command by opening discharge valves to support fire operations.	**IOS**	**X**		
78	Control pumper output by regulating engine RPMs, pressure relief valve and output gate valves so that pressure or flow is correct for the given operation.	**Match**		**X**	
79	Utilize watercraft to supply water for fighting fires.	**IOS**		**X**	
80	Operate the ladder pipe as per apparatus specifications.	**IOS**		**X**	

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Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
81	Position and climb ladders to gain access to upper levels of buildings or to rescue individuals from burning structures.	**Match**	**X**		
82	Determine the size and type of ladders required.	**Match**	**X**		
83	Identify proper ladder locations to allow access to upper levels of buildings or to ensure proper evacuation of fire personnel.	**Match**	**X**		
84	Be aware of electrical lines when setting up ladders.	**Match**	**X**		
85	For aerial ladders: position truck, place chocks and set-up truck jacks.	**IOS**		**X**	
86	Raise a 24-foot extension ladder and extend the fly section of that ladder.	**IOS**	**X**		
87	With assistance, raise a 35-foot extension ladder and extend the fly section of that ladder.	**IOS**	**X**		
88	With assistance, carry extension ladders (24-foot, 35-foot) from truck to incident scene.	**IOS**	**X**		
89	Climb an aerial ladder to a height up to 100 feet while wearing PPE equipment.	**IOS**	**X**		
90	Lower ground ladders and stow them onto the truck.	**IOS**	**X**		
91	Create openings in buildings for ventilation or entrance using axes, chisels, crowbars, power saws or core cutters.	**Match**	**X**		
92	Remove equipment from truck and start power tools.	**Match**	**X**		
93	Use equipment (e.g., swing axe or sledge hammer) to make forcible entries.	**Match**	**X**		
94	Determine the stability of supporting surfaces such as roofs and fire escapes.	**Match**	**X**		
95	Cut openings in roof with a fire axe or power saw (e.g., K-12 saw) for ventilation or examination.	**Match**	**X**		
96	Remove ceiling materials, such as plaster and lath, sheet rock, ceiling tiles and insulation by poking from above with pike pole or axe so that smoke and hot gases can escape.	**Match**	**X**		
97	Are you paying attention? Please fill in a 'YES' for Applicability, 1 for importance, 1 for frequency, and 'NO-*Learned through Continuing Education*' for RUAD.				
98	Remove and transport equipment (e.g., electrical extension cords, ventilation fans) from the truck as needed.	**Match**		**X**	
99	Properly knot and tie rope to hoist equipment weighing up to 50 pounds to upper levels.	**Match**	**X**		
100	Retreat from the area as a team when ventilation is accomplished.	**NFPA**	**X**		
101	Establish an appropriate water supply, lay hose lines and connect them to water supplies.	**Match**	**X**		
102	Coordinate firefighting and rescue operations with other firefighters, supervisors and other firefighter companies.	**Match**		**X**	
103	Pull the supply line from an engine to a hydrant.	**Match**	**X**		
104	Wrap a hose around functioning hydrant, unscrew the hydrant cap, screw the hose connection to the hydrant and turn on the hydrant (i.e., catch the plug).	**Match**	**X**		
105	Make and unmake coupling connections.	**Match**	**X**		

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Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
106	Carry a high-rise pack up multiple flights of stairs while wearing PPE so that attack line can be set up.	**IOS**		**X**	
107	Advance and fully extend a pre-connected, charged or uncharged hose of a diameter between 1¾ to 2½ inches.	**Match**	**X**		
108	Remove kinks in charged supply line by lifting and/or turning hose so that water flow is not obstructed.	**IOS**	**X**		
109	Carry, assemble and operate deluge set (ground monitor).	**IOS**		**X**	
110	Connect multiple small lines (example: 50-foot) and extend them to reach fire when required.	**IOS**	**X**		
111	Carry a 50-foot section of rolled hose unassisted while in appropriate PPE.	**IOS**		**X**	
112	Feed charged hose line of a diameter between 1¾ to 2½ inches to attacking firefighter units.	**IOS**	**X**		
113	Re-bed hose line back onto the proper apparatus (e.g., engine or truck).	**IOS**		**X**	
114	Select the proper hose size based upon fire scene and method of attack.	**Match**		**X**	
115	Calculate the height of a building in feet from its floors.	**IOS**	**X**		
116	Determine the correct spray pattern based upon fire scene (e.g., solid stream, hollow cone, full cone, fog stream, etc.).	**Match**	**X**		
117	Hold a charged 1¾ inch hose and open the nozzle.	**Match**	**X**		
118	While assisted, hold a charged 2½ inch hose and open the nozzle.	**IOS**	**X**		
119	Operate a charged hose line from elevated positions and direct spray at fire.	**Match**	**X**		
120	While on a ladder, operate and direct spray at fire.	**Match**	**X**		
121	Operate a charged hose line from confined spaces and direct spray at fire.	**Match**	**X**		
122	Continue to monitor fire suppression and adjust suppression tactics to extinguish fire and prevent the extension of the fire.	**Match**	**X**		
123	Move toward the source of a fire using knowledge of types of fires, construction design, building materials and physical layout of properties.	**Match**	**X**		
124	Enter smoky buildings and rooms with a hose in hand while wearing SCBA.	**Match**	**X**		
125	Seek the source of a fire and extinguish.	**Match**	**X**		
126	Select the correct tool or equipment for various firefighting maneuvers.	**Match**	**X**		
127	Fight fires in smoky buildings when visibility is poor or nonexistent.	**Match**	**X**		
128	Fight fires for prolonged periods of time in extreme temperatures.	**IOS**	**X**		
129	Use other senses to find the source of a fire when you cannot see.	**IOS**	**X**		
130	Carry equipment up stairs while wearing PPE gear and SCBA.	**IOS**	**X**		
131	Climb obstacles while wearing PPE and SCBA.	**IOS**	**X**		
132	Identify and respond to hazards at the scene.	**Match**	**X**		
133	Operate a thermal imaging camera (TIC).	**IOS**		**X**	

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Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
134	Operate a fire extinguisher by carrying it to objective, aiming and discharging at seat of fire or spill.	**Match**	**X**		
135	Attack a passenger vehicle fire.	**NFPA**	**X**		
136	Communicate attack techniques to the attack teams	**NFPA**	**X**		
137	Communicate and manage search, rescue, and ventilation requirements.	**NFPA**	**X**		
138	Control a flammable gas cylinder fire.	**NFPA**	**X**		
139	Identify the contents of cylinder.	**NFPA**	**X**		
140	Close cylinder valves.	**NFPA**	**X**		
141	Eliminate leaking gas and then extinguish fire.	**NFPA**	**X**		
142	Evaluate the cylinder integrity and ensure cylinder has cooled.	**NFPA**	**X**		
143	Face the cylinder during approach and retreat.	**NFPA**	**X**		
144	Maintain correct body posture during attack operations.	**NFPA**	**X**		
145	Extinguish fires in exterior Class A materials, given fires in stacked or piled and small unattached structures or storage containers.	**NFPA**	**X**		
146	Deploy portable water tanks as well as the equipment necessary to transfer water between and draft from them.	**NFPA**		**X**	
147	Are you paying attention? Please fill in a 'YES' for Applicability, 4 for importance, 4 for frequency, and 'Yes' for RUAD.				
148	Prevent water hammers when shutting down nozzles.	**NFPA**	**X**		
149	Replace burst hose sections.	**NFPA**	**X**		
150	Anticipate the injuries which could result from common types of accidents.	**NFPA**	**X**		
151	Prevent exposure to products of combustion.	**NFPA**	**X**		
152	Follow precautions when advancing hose lines to a fire.	**NFPA**	**X**		
153	Assess proper application of fire stream.	**NFPA**	**X**		
154	Use appropriate water application methods for exposure protection and fire extinguishment.	**NFPA**	**X**		
155	Identify automobile fuel types and assess and control fuel leaks.	**NFPA**		**X**	
156	Choose attack and control techniques for grade level and above and below grade level fires.	**NFPA**	**X**		
157	Recognize hazards associated with an automobile fire.	**NFPA**	**X**		
158	Apply appropriate attack lines and water streams for stacked, piled materials and outdoor fires.	**NFPA**	**X**		
159	Ensure complete extinguishment of stacked and piled materials.	**NFPA**	**X**		
160	Recognize dangers of exposure to toxins or hazardous materials associated with storage building and container fires.	**NFPA**	**X**		

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Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
161	Conduct a size-up of HAZ-MAT scene.	**IOS**	**X**		
162	Respond to the release or potential release of hazardous material according to outlined protocols.	**IOS**	**X**		
163	Identify HAZ-MAT by use of signage and HAZ-MAT reference materials.	**IOS**	**X**		
164	Apply a foam blanket or other suppressants.	**Match**	**X**		
165	Provide onsite crowd control in a HAZ-MAT situation.	**Match**		**X**	
166	Conduct a decontamination setup.	**IOS**	**X**		
167	Utilize watercraft to trace source of oil slicks.	**IOS**		**X**	
168	Exit a hazardous area as a team.	**NFPA**	**X**		
169	Extinguish an ignitable liquid fire.	**NFPA**	**X**		
170	Identify and control leaking flammable liquids, such that protection from flash fire is maintained	**NFPA**	**X**		
171	Take corrective measures to rectify poor foam generation.	**NFPA**	**X**		
172	Use the appropriate concentrates on hydrocarbon and polar solvent fuels.	**NFPA**	**X**		
173	Reduce or avoid hazards associated with firefighting foams.	**NFPA**	**X**		
174	Use fog nozzles or foam nozzles depending on situation.	**NFPA**	**X**		
175	Protect property from water and smoke using waterproof salvage covers and/or smoke ejectors (i.e., powered fans).	**Match**	**X**		
176	Place a smoke ejector in strategic locations throughout the fire scene to aid in proper ventilation and smoke removal.	**Match**	**X**		
177	Gather furniture into an appropriate location and protect it with salvage covers.	**Match**	**X**		
178	Place salvage covers over lower floors to prevent unnecessary damage.	**Match**	**X**		
179	Salvage property by removing broken glass, removing water and ventilating buildings to remove smoke.	**Match**		**X**	
180	After a fire is extinguished, drain or pump out water and clean up remaining water on the floors.	**Match**		**X**	
181	Remove burned and charred waste and other debris, if hazardous.	**Match**		**X**	
182	Perform overhaul and salvage operations.	**Match**	**X**		
183	Check for fire extension or hotspots using thermal imaging camera.	**IOS**	**X**		
184	Inspect fire sites after flames have been extinguished to ensure that there is no further danger.	**Match**	**X**		
185	Coordinate inspections with other firefighters, supervisors and other firefighter companies.	**IOS**		**X**	
186	Check for smoldering fire inside walls and ceiling by means of fire tools and equipment (e.g., fire axe, ceiling hook).	**Match**	**X**		
187	Are you paying attention? Please fill in a 'YES' for Applicability, 5 for importance, 1 for frequency, and 'NO-*Learned on-the-job*' for RUAD.				

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Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
188	Search for missing persons not accounted for.	**Match**	**X**		
189	Preserve evidence at fire scene.	**Match**	**X**		
190	Secure the fire scene.	**Match**	**X**		
191	Monitor the air for harmful toxins.	**IOS**	**X**		
192	Remove water via water chutes or other devices.			**X**	
193	Overhaul all vehicle compartments.	**NFPA**	**X**		
194	Stop the flow of water from building sprinkler with sprinkler wedges or stoppers.	**NFPA**	**X**		
195	Remove flooring, ceiling, and wall components to expose void spaces without compromising structural integrity.	**NFPA**	**X**		
196	Roll and fold salvage covers for reuse.	**NFPA**		**X**	
197	Perform horizontal ventilation on a structure, so that the ventilation openings are free of obstructions.	**NFPA**	**X**		
198	Recognize points of strength and weakness in auto body construction.	**NFPA**	**X**		
199	Recognize and communicate dangers associated with overhaul.	**NFPA**	**X**		
200	Designate work zones for safe operation at emergency scenes.	**NFPA**	**X**		
201	Collaborate with other agencies and individuals to respond to accidents and/or disasters.	**Match**		**X**	
202	Exchange information with law enforcement officials.	**IOS**		**X**	
203	Coordinate tasks and responsibilities with law enforcement officials (e.g., traffic control, crowd control).	**IOS**		**X**	
204	Monitor emergency scene and request assistance from other agencies as needed.	**IOS**		**X**	
205	Clearly and accurately communicate patient information, assessment and treatment via radio on route to a medical facility.	**IOS**	**X**		
206	Clearly and accurately communicate patient information and care to medical staff.	**IOS**	**X**		
207	Assist medical staff as needed until released by medical staff.	**IOS**		**X**	
208	Participate in fire drills and demonstrations of firefighting techniques.	**IOS**	**X**		
209	Participate in ongoing training drills to develop and maintain proficiency (e.g., HAZ-MAT, search and rescue operations, SCBA and air management, automobile extrication, rapid intervention team (RIT) training, etc.).	**IOS**	**X**		
210	Participate in training drills with new firefighters, assisting in their training through coaching and mentoring.	**IOS**		**X**	
211	Train in equipment operations such as apparatus driving, hydraulics and pump operation and aerial ladder operation.	**IOS**		**X**	
212	Participate in demonstrations, Officer classes, company level training or educational reviews (e.g., signs and symptoms of heat stroke, winter fireground operations, review of response zone building construction and floor plans, review of response zone street maps).	**IOS**		**X**	
213	Participate in physical training activities to maintain a high level of physical fitness.	**Match**		**X**	

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Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
214	Participate in courses, seminars and conferences, and study fire science literature to learn firefighting techniques.	**IOS**			**X**
215	Complete required training courses such as hazardous materials and automobile extrication.	**IOS**			**X**
216	Read, comprehend and retain information from training materials (e.g., text books and manuals).	**IOS**	**X**		
217	Successfully complete and pass written exams that test coursework learning and training objectives.	**IOS**	**X**		
218	Take and complete course work required to obtain medical certifications.	**IOS**	**X**		
219	Maintain ongoing certification requirement through continuing education or training.	**IOS**			**X**
220	Read and comprehend aspects of the fire department's member assistance program	**NFPA**		**X**	
221	Are you paying attention? Please fill in a 'YES' for Applicability, 4 for importance, 2 for frequency, and 'YES' for RUAD.				
222	Read, comprehend and retain information of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program	**NFPA**	**X**		
223	Participate in life safety initiatives in support of the fire department mission and to reduce firefighter line-of-duty injuries and fatalities.	**NFPA**	**X**		
224	Document required information such as personal information of patients or citizens involved in emergency scene.	**IOS**		**X**	
225	Summarize incidents that occurred at an emergency scene, detailing tactics, equipment and procedures used through written narratives.	**Match**		**X**	
226	Write descriptions of situations in medical reports, including details of symptoms, actions taken, etc.	**IOS**	**X**		
227	Complete reports required of the job (daily maintenance, inspections and truck checks).	**Match**		**X**	
228	Answer routine phone calls in the station.	**Match**		**X**	
229	Report for duty on time.	**IOS**	**X**		
230	Maintain professional appearance and personal hygiene in accordance with regulations.	**IOS**	**X**		
231	Remain on-duty for extended periods of time per department-specific SOGs.	**IOS**		**X**	
232	Read all internal communications (emails, handouts, etc.) from department (e.g., SOGs, policies and procedures, rules and regulations, etc.).	**Match**		**X**	
233	Document presentations and use prepared materials.	**NFPA**		**X**	
234	Clean and maintain fire stations and firefighting equipment and apparatus.	**Match**		**X**	
235	Ensure apparatus is in response-ready state, including decontaminating and disinfecting the unit and equipment, restocking of supplies and inspection of equipment.	**Match**		**X**	
236	Ensure proper function of SCBA by inspecting and performing daily tests at the start of each shift; service SCBA if malfunctioning.	**IOS**	**X**		

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Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
237	Coordinate with firefighters from off-going shift as to the actions needed to ensure the apparatus is in a response ready state.	**IOS**		**X**	
238	Checks bells and other signaling devices in the fire station by operating them to ensure that they work properly.	**IOS**		**X**	
239	Report damaged and out of service equipment to company officer.	**Match**		**X**	
240	Perform maintenance and upkeep for equipment and apparatus as necessary to ensure a response-ready state.	**Match**		**X**	
241	Wash used hoses and re-bed them on the truck.	**Match**		**X**	
242	Maintain all personal protective equipment (PPEs).	**Match**	**X**		
243	Maintain an inventory of tools and equipment.	**IOS**		**X**	
244	Maintain maintenance records of all equipment and apparatus.	**Match**		**X**	
245	Perform daily chores to ensure a neat and clean working and living environment at the fire station.	**IOS**		**X**	
246	Perform and coordinate kitchen chores such as planning meals, cooking meals and cleaning up after meals.	**IOS**		**X**	
247	Maintain the exterior of fire station: lawns, walkways and driveways.	**IOS**		**X**	
248	Perform an annual service test on fire hose, using a pump, a marking device, pressure gauges, and a timer.	**NFPA**		**X**	
249	Engage in pre-planning operations such as documenting building layouts, building construction, fire suppression and other tactical information such as location of exits to assist in future operations.	**Match**		**X**	
250	Inspect fire hydrant functioning in response zones and conduct hydrant flow tests.	**IOS**		**X**	
251	Inspect businesses and non-owner occupied private dwellings.	**Match**		**X**	
252	Identify code enforcement issues and alert superiors.	**Match**		**X**	
253	Complete smoke detector certifications.	**IOS**		**X**	
254	Identify illegal occupant dwellings or other occupancies.	**IOS**		**X**	
255	Use commonly recognized symbols when diagramming construction features, utilities, hazards, and fire protection systems.	**NFPA**		**X**	
256	Maintain a log of visitors to the fire station by recording their names, date, time and other relevant information so a written record is available.	**IOS**		**X**	
257	At superior's command, accompany owners/occupants into burned structure to allow them to retrieve possessions safely and to reduce liability risk to the fire department.	**IOS**		**X**	
258	Inform and educate the public on fire prevention.	**Match**		**X**	
259	Perform community service and outreach programs such as fire alarm installations, child safety seat installations, etc.	**IOS**		**X**	
260	Conduct fire station tours for groups of individuals and children.	**Match**		**X**	
261	Maintain a service orientation or public servant mentality when dealing with the public.	**IOS**		**X**	

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Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
262	Use tact and diplomacy in dealing with the public under times of high stress or with disgruntled, agitated or hysterical persons.	**IOS**		**X**	
263	Interact and work with citizens.	**IOS**		**X**	
264	Are you paying attention? Please fill in a 'YES' for Applicability, 4 for importance, 3 for frequency, and 'YES' for RUAD.				
265	Attend community meetings, ceremonies and parades as representatives of the department.	**IOS**		**X**	
266	Establish perimeter lines to prevent unauthorized persons from entering areas near emergencies.	**IOS**		**X**	
267	Provide assistance to victims.	**IOS**	**X**		
268	Control the emergency scene to protect yourself, coworkers and the patient or victim.	**IOS**	**X**		
269	Communicate with the public to prevent them from crossing perimeter lines.	**IOS**		**X**	
270	Assist rescue operation teams so that rescue items are recognized and retrieved in the time as prescribed by the Authorities Having Jurisdiction (AHJ).	**NFPA**		**X**	
271	Support and conduct community risk reduction programs.	**IOS**		**X**	
272	**PPE:** SCBA, turnout gear (pants, jacket, helmet, gloves, hood), PASS (Personal Alert Safety System) Device	**Match**	**X**		
273	**Blocks or pulleys:** Block and tackle equipment, pulleys, riggings, carabiners, anchors, straps, ropes	**IOS**	**X**		
274	**Fire extinguishers:** Carbon dioxide CO_2 fire extinguishers, dry chemical fire extinguishers, multipurpose fire extinguishers, water extinguisher, K-Type	**IOS**	**X**		
275	**Fire hoses:** Charged fire hoses, uncharged fire hoses	**IOS**	**X**		
276	**Nozzles & Appliances:** Fire hose nozzles, hose couplings, wyes, siamese, adapters, reducers	**IOS**	**X**		
277	**Fire or rescue trucks:** Aerial trucks, ladder trucks, engine trucks, rescue vehicles, other apparatus, brush apparatus	**IOS**	**X**		
278	**Fire hand tools:** Fire axes, McLeod tools, pick head axes, Pulaski tools, pike pole, claw hammers, rubber mallet, non-sparking hammers, sledgehammers, Halligan bars, Hux bars, pinch bars	**Match**	**X**		
279	**Stabilizing Tools:** Struts, lift jackets, cribbing	**Match**	**X**		
280	**Ropes & Webbing**	**IOS**	**X**		
281	**Hydraulic Rescue Tools:** Spreaders, cutters, Jaws of Life, rams, air bags	**IOS**	**X**		
282	**Ladders:** Aluminum ladders, extension ladders, roof ladders, A-Frame ladders	**IOS**	**X**		
283	**Power Equipment:** Chain saws, circular saws, K-12 saws, reciprocating saws, electric/hydraulic generators	**Match**	**X**		
284	**Ventilation:** Positive pressure fans, negative pressure fans, hydraulic ventilation, electric fans	**IOS**	**X**		
285	**First Responder:** Collars, backboard, dressings, AED, stethoscope, Stokes basket, airway adjuncts	**IOS**	**X**		
286	**Meters:** Thermal imaging camera (TIC), CO_2 monitors, gas detectors, radiation meters	**IOS**		**X**	

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Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
287	**Saws:** Hacksaws, handsaws, tree saws	**IOS**		X	
288	**Maps & Manuals:** City maps, county maps, building layout maps, equipment manuals, apparatus manuals, repair manuals, Dangerous Goods Manual (HAZMAT)	**IOS**		X	
289	**Specialty wrenches:** Hydrant shutoff wrenches, lug wrenches, non-sparking bung wrenches, gas-utility wrenches, spanner wrenches, adjustable wrenches	**IOS**	X		
290	**Database user interface and query software:** Affiliated Computer Services (ACS), FIREHOUSE, Fire incident reporting systems, Microsoft Access, Scientific Software	**IOS**		X	
291	**Computer software:** E-mail software, internet browsing software, drafting software, spreadsheet software, word processing software, project management software	**Match**		X	
292	**Lighting Equipment:** Power supply and lighting equipment, cords and connectors, and ground-fault interpreter (GFI) devices.	**NFPA**		X	
293	Perform all fireground tasks wearing full turnout gear (coat, bunker pants, boots, helmet, gloves and hood) and SCBA	**Match**	X		
294	Perform physically demanding tasks for extended periods of time	**IOS**	X		
295	Perform in extreme heat and cold conditions	**IOS**	X		
296	Perform operations in inclement weather	**IOS**	X		
297	Walk long distances in full turnout gear	**IOS**	X		
298	Operate in dark environments	**IOS**	X		
299	Are you paying attention? Please fill in a 'YES' for Applicability, 3 for importance, 5 for frequency, and 'NO-*Learned through Continuing Education*' for RUAD.				
300	Operate at high elevations	**IOS**	X		
301	Operate in confined areas	**IOS**	X		
302	Lift and carry heavy equipment and tools (e.g., high-rise pack containing hoseline and tools, gas-powered circular saw, chain saw, hydraulic cutters/spreaders, hydraulic tool power supply, gas-powered fans, portable hydrants, EMS bag containing oxygen bottle)	**Match**	X		
303	Lift and carry a stretcher/gurney with assistance	**IOS**	X		
304	Lift and push a stretcher/gurney into an ambulance with assistance	**IOS**		X	
305	Lift and transfer victims from ground to stretcher with assistance	**IOS**	X		
306	Carry heavy equipment and tools for extended distances	**IOS**	X		
307	Drag unconscious human victims and/or firefighters out of dangerous environments	**IOS**	X		
308	Carry unconscious or injured victims and/or firefighters out of dangerous conditions	**IOS**	X		
309	Remove heavy equipment from apparatus compartments	**IOS**	X		

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Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
310	Individually drag charged 1 ¾ inch hoseline	**IOS**	**X**		
311	Individually drag charged 2 ½ inch hoseline	**IOS**	**X**		
312	Individually feed charged 1¾ inch hoseline to firefighter(s) at nozzle to assist in moving hoseline around obstacles, up stairs, etc.	**IOS**	**X**		
313	Drag uncharged or charged hoseline	**IOS**	**X**		
314	Hold and operate a hoseline	**Match**	**X**		
315	Open a hydrant valve or hydrant cap using a hydrant wrench	**IOS**	**X**		
316	Connect hoseline sections using a spanner tool	**IOS**	**X**		
317	Penetrate and tear down ceiling using a pike pole	**IOS**	**X**		
318	Hold and operate gas-powered saws and hydraulic tools	**Match**	**X**		
319	Lift, swing and strike targets using sledge hammers and axes	**Match**	**X**		
320	Lift and carry ground ladders	**IOS**	**X**		
321	Position, heel and raise ground ladders	**IOS**	**X**		
322	Extend ground ladders using halyard	**IOS**	**X**		
323	Hoist equipment using a rope	**Match**	**X**		
324	Climb, crawl and/or maneuver in confined or restricted spaces while wearing SCBA and appropriate PPE	**Match**	**X**		
325	Crawl, duck-under, crawl-over and maneuver around obstacles in confined and restricted spaces while wearing SCBA and appropriate PPE	**IOS**	**X**		
326	Climb through windows and openings while wearing SCBA and appropriate PPE	**IOS**	**X**		
327	Crawl along ceiling joists and rafters while wearing SCBA and appropriate PPE	**IOS**	**X**		
328	Climb to the top and back down ground ladders while wearing SCBA and appropriate PPE	**IOS**	**X**		
329	Climb to the top and back down aerial ladders/buckets/baskets/platforms while wearing SCBA and appropriate PPE	**IOS**	**X**		
330	Rappel down from the top of structures while wearing SCBA and appropriate PPE	**IOS**			**X**
331	Climb stairs while wearing PPE and carrying equipment while wearing SCBA and appropriate PPE	**IOS**	**X**		
332	**Basic Arithmetic**: Ability to perform mathematical operations, such as counting, addition, subtraction, multiplication and division.	**IOS**	**X**		
333	**Deductive Reasoning:** The ability to apply general rules to specific problems to produce answers that make sense. (Example: Interpretation of SOPs and SOGs).	**IOS**	**X**		
334	**Flexibility of Closure:** The ability to identify or detect a known pattern (a figure, object, word or sound) that is hidden in other distracting material. (Example: Listening to Engine RPM's in order to identify issues).	**IOS**		**X**	

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Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
335	**Inductive Reasoning:** The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events). (Example: Reading the various clues of smoke/heat to reach a decision regarding the extent of fire).	IOS	X		
336	**Information Ordering:** The ability to arrange things or actions in a certain order or pattern according to a specific rule or set of rules (e.g., patterns of numbers, letters, words, pictures, mathematical operations). (Example: Using SOPs to follow procedures for hoseline operation).	IOS	X		
337	**Mathematical Reasoning:** The ability to choose the right mathematical methods or formulas to solve a problem. (Example: Friction loss, ladder or hose length calculation).	IOS	X		
338	**Memorization:** The ability to remember information such as words, numbers, pictures, and procedures. (Example: Hydrant locations, previous building layouts).	IOS		X	
339	**Number Facility:** The ability to add, subtract, multiply or divide quickly and correctly.	IOS	X		
340	**Oral Comprehension:** The ability to listen to and understand information and ideas presented through spoken words and sentences.	IOS	X		
341	**Are you paying attention?** Please fill in a 'YES' for Applicability, 5 for Importance, 'YES' for RUAD, and a 'NO' for Better Performance.				
342	**Oral Expression:** The ability to communicate information and ideas in speaking so others will understand.	IOS	X		
343	**Problem Sensitivity:** The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.	IOS	X		
344	**Selective Attention:** The ability to concentrate on a task over a period of time without being distracted. (Example: Being the only pump operator on-duty).	IOS	X		
345	**Spatial Orientation:** The ability to know your location in relation to the environment or to know where other objects are in relation to you.	IOS	X		
346	**Visualization:** The ability to imagine how something will look after it is moved around or when its parts are moved or rearranged.	IOS		X	
347	**Written Comprehension:** The ability to read and understand information and ideas presented in writing.	IOS	X		
348	**Written Expression:** The ability to communicate information and ideas in writing so others will understand. (Example: Filling out maintenance records or logbooks).	IOS		X	
349	**Reaction Time:** The ability to quickly respond (with the hand, finger or foot) to a signal (sound, light, picture) when it appears.	IOS	X		
350	**Arm-Hand Steadiness:** The ability to keep your hand and arm steady while moving your arm or while holding your arm and hand in one position. (Example: Operating power tools for extrication).	IOS	X		
351	**Manual Dexterity:** The ability to quickly move your hand, your hand together with your arm, or your two hands	IOS	X		

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Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
	to grasp, manipulate or assemble objects.				
352	**Multi-limb Coordination:** The ability to coordinate two or more limbs (for example, two arms, two legs, or one leg and one arm) while sitting, standing or lying down. It does not involve performing the activities while the whole body is in motion.	IOS	X		
353	**Response Orientation:** The ability to choose quickly between two or more movements in response to two or more different signals (lights, sounds, pictures). It includes the speed with which the correct response is started with the hand, foot or other body part.	IOS	X		
354	**Rate Control:** The ability to time your movements or the movement of a piece of equipment in anticipation of changes in the speed and/or direction of a moving object or scene. (Example: Controlling for water hammer).	IOS	X		
355	**Static Strength:** The ability to exert maximum muscle force to lift, push, pull or carry objects.	IOS	X		
356	**Control Precision:** The ability to quickly and repeatedly adjust the controls of a machine or a vehicle to exact positions. (Example: Operating the aerial ladder).	IOS		X	
357	**Stamina:** The ability to exert yourself physically over long periods of time without getting winded or out of breath.	IOS	X		
358	**Near Vision:** The ability to see details at close range (within a few feet of the observer).	IOS	X		
359	**Dynamic Strength:** The ability to exert muscle force repeatedly or continuously over time. This involves muscular endurance and resistance to muscle fatigue.	IOS	X		
360	**Trunk Strength:** The ability to use your abdominal and lower back muscles to support part of the body repeatedly or continuously over time without 'giving out' or fatiguing.	IOS	X		
361	**Extent Flexibility:** The ability to bend, stretch, twist or reach with your body, arms and/or legs.	IOS	X		
362	**Depth Perception:** The ability to judge which of several objects is closer or farther away from you, or to judge the distance between you and an object. (Example: Placement of aerial).	IOS	X		
363	**Auditory Attention:** The ability to focus on a single source of sound in the presence of other distracting sounds. (Example: Focusing on your PASS device in a chaotic environment).	IOS	X		
364	**Gross Body Coordination:** The ability to coordinate the movement of your arms, legs and torso together when the whole body is in motion.	IOS	X		
365	**Gross Body Equilibrium:** The ability to keep or regain your body balance or stay upright when in an unstable position. (Example: Gusting winds while firefighting from the aerial ladder).	IOS	X		
366	**Far Vision:** The ability to see details at a distance.	IOS	X		
367	**Problem Analysis:** Quickly perceiving problem areas, identifying options and the potential impact of various solutions.	IOS	X		
368	**Problem-Solving:** Determining courses of action/solutions to problems. Implementing targeted solutions.	IOS	X		

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Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
369	**Decision-Making**: Understanding when a decision must be made and to have the willingness to make a decision. Quickly and efficiently determining an appropriate course of action to target a particular situation.	IOS	X		
370	**Planning and Organization**: Skill in establishing a course of action for oneself and others to accomplish goals. Skill in properly planning assignments, work duties and tasks; appropriate allocation of resources to ensure efficient, timely and smooth department operations.	IOS	X		
371	**Interpersonal Skill**: Listening to others and being considerate of the concerns of others.	IOS	X		
372	**Oral Communication**: Speaking in a clear, concise, understandable and appropriate manner.	IOS	X		
373	**Self-Motivation**: Working without supervision and accomplishing tasks without prodding.	IOS	X		
374	**Composure**: Working under stress and performing in unpleasant or traumatic circumstances.	IOS	X		
375	**Conflict Resolution**: Skill in de-escalating tense situations and quieting potential disturbances.	IOS		X	
376	**Critical Thinking:** Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.	IOS	X		
377	**Leadership:** Willingness to lead, take charge and offer opinions and direction, and having people respond positively to those directions such that there are behavioral changes.	IOS		X	
378	**Monitoring:** Monitoring/Assessing your performance or the performance of other individuals or organizations to make improvements or take corrective action.	IOS		X	
379	**Operation and Control:** Watching gauges, dials or other indicators to make sure a machine is working properly.	IOS	X		
380	**Instructing:** Teaching others how to do something.	IOS		X	
381	**Judgment and Decision Making:** Considering the relative costs and benefits of potential actions to choose the most appropriate one.	IOS	X		
382	**Are you paying attention?** Please fill in a 'YES' for Applicability, 3 for Importance, 'YES' for RUAD, and a 'YES' for Better Performance.				
383	**Social Perceptiveness:** Being aware of others' reactions and understanding why they react as they do.	IOS		X	
384	**Negotiation:** Bringing others together and trying to reconcile differences.	IOS		X	
385	**Public Relations Skill:** Dealing with the public in such a way as to protect the image and reputation of the department while providing the public or individuals with necessary or requested information.	IOS	X		
386	**Persuasion:** Persuading others to change their minds or behavior.	IOS		X	
387	**Achievement/Effort:** Establishing and maintaining personally challenging achievement goals and exerting effort toward mastering tasks.	IOS	X		
388	**Adaptability/Flexibility:** Being open to change (positive or negative) and to considerable variety in the workplace.	IOS		X	
389	**Attention to Detail:** Being careful about detail and thorough in completing work tasks.	IOS	X		

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Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
390	**Concern for Others:** Being sensitive to others' needs and feelings and being understanding and helpful on the job. Showing compassion for others.	IOS	X		
391	**Cooperation:** Being pleasant with others on the job and displaying a good-natured, cooperative attitude.	IOS	X		
392	**Dependability:** Being reliable, responsible and dependable and fulfilling obligations.	IOS	X		
393	**Ethics.** Acting in an honest and fair manner. Willingness to accept responsibility for actions when things go wrong. Displaying a high degree of integrity and professionalism in action and word**.**	IOS	X		
394	**Independence:** Developing one's own ways of doing things, guiding oneself with little or no supervision and depending on oneself to get things done.	IOS	X		
395	**Initiative:** Willingness to take on responsibilities and challenges.	IOS	X		
396	**Innovation:** Tendency towards creativity and alternative thinking to develop new ideas for and answers to work-related problems.	IOS		X	
397	**Integrity:** Being honest and ethical, especially in situations where others could be taken advantage of.	IOS	X		
398	**Persistence:** In the face of obstacles, one continues to engage to overcome the obstacle.	IOS	X		
399	**Self-Control:** Maintaining composure, keeping emotions in check, controlling anger and avoiding aggressive behavior, even in very difficult situations.	IOS	X		
400	**Service Orientation:** Actively looking for ways to help people; a desire to place others' interests ahead of your own; showing compassion for others.	IOS	X		
401	**Social/Teamwork Orientation:** Preferring to work with others rather than alone, and being personally connected with others on the job. The ability to work with others (teamwork) to achieve a mutual end.	IOS	X		
402	**Stress Tolerance:** Accepting criticism and dealing calmly and effectively with high stress situations.	IOS	X		
403	Knowledge of motor vehicle rules and regulations.	IOS	X		
404	Knowledge of common hand tools, such as wrenches, pliers, screw drivers, hammers and mauls, axes, prying tools, etc., e.g., their use, operation, limits and safety precautions/procedures.	IOS	X		
405	Knowledge of basic science terms and concepts, e.g., force, gravity, pressure, vacuum, etc.	IOS	X		
406	Knowledge of ratios and terms, expressing ratios and the practical use of ratios, e.g., pounds per square inch, gallons per minute, etc.	IOS		X	
407	Knowledge of basic mechanical principles, e.g., leverage, gears, pulleys, screws, etc.	IOS	X		
408	Knowledge of typical occupancy activity at a given time of day	IOS		X	
409	Knowledge of the science behind fire propagation	TEXT	X		
410	Are you paying attention? Please fill in a 'YES' for Applicability, 4 for importance, 'YES' for RUAD, a 'NO' for Better Performance, and 'Seldom Referenced' for Ref vs. Recall.				
411	Knowledge of common heat energy sources: chemical, electrical, and mechanical energy	TEXT	X		

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Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
412	Knowledge of heat transmission and the mechanisms by which heat transfer occurs: conduction, convection, and radiation	**TEXT**	**X**		
413	Knowledge of common products of combustion and their toxic effects	**TEXT**	**X**		
414	Knowledge of classification of fires: class A, B, C, D, and K fires	**TEXT**	**X**		
415	Knowledge of Fire Control Theory: temperature reduction, fuel removal, oxygen exclusion, and chemical flame inhibition	**TEXT**	**X**		
416	Knowledge of common materials found in building construction	**TEXT**	**X**		
417	Knowledge of the strengths and weaknesses associated with different types of building construction types	**TEXT**	**X**		
418	Knowledge of types of extinguishers and their common uses	**TEXT**	**X**		
419	Knowledge of types of knots, ropes, and webbing materials	**TEXT**	**X**		
420	Knowledge of types of ladders	**TEXT**	**X**		
421	Knowledge of search operations	**TEXT**	**X**		
422	Knowledge of rescue operations	**TEXT**	**X**		
423	Knowledge of extrication operations	**TEXT**	**X**		
424	Knowledge of types of carries	**TEXT**	**X**		
425	Knowledge of victim removal methods	**TEXT**	**X**		
426	Knowledge of forcible entry methods	**TEXT**	**X**		
427	Knowledge of ventilation methods	**TEXT**	**X**		
428	Knowledge of types of hydrants and alternative water supplies	**TEXT**	**X**		
429	Knowledge of methods of moving water in a system	**TEXT**	**X**		
430	Knowledge of static pressure, flow pressure, and residual pressure	**TEXT**			**X**
431	Knowledge of common hose rolls	**TEXT**	**X**		
432	Knowledge of friction loss, elevation loss/gain, and water hammers	**TEXT**	**X**		
433	Knowledge of size classifications of fire streams	**TEXT**	**X**		
434	Knowledge of foam techniques	**TEXT**	**X**		
435	Knowledge of direct attacks	**TEXT**	**X**		
436	Knowledge of indirect attacks	**TEXT**	**X**		
437	Knowledge of combination attacks	**TEXT**	**X**		
438	Knowledge of salvage operations	**TEXT**	**X**		
439	Knowledge of overhaul operations	**TEXT**	**X**		
440	Knowledge of hidden fire indicators	**TEXT**	**X**		

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Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
441	Knowledge of evidence protection methods	**TEXT**	**X**		
442	Knowledge of procedures the public should use to report a fire or other emergency	**TEXT**	**X**		
443	Knowledge of necessary skills for fire department communications	**TEXT**	**X**		
444	Knowledge of the types of information required for arrival and progress reports	**TEXT**		**X**	
445	Knowledge of preincident surveys and inspections	**TEXT**		**X**	
446	Knowledge of common fire hazards	**TEXT**	**X**		
447	Knowledge of the steps in presenting fire and life safety information to the public	**TEXT**		**X**	
448	Knowledge of the components of personal protective equipment	**TEXT**	**X**		
449	Knowledge of the physiological aspects of stress	**TEXT**	**X**		
450	Knowledge of cardiopulmonary resuscitation (CPR)	**TEXT**	**X**		
451	Knowledge of scene safety considerations as hazardous materials incidents and rescue operations	**TEXT**	**X**		
452	Knowledge of the types and states of shock of victims and/or other fire personnel	**TEXT**	**X**		
453	Knowledge of methods to managing shock of victims and/or other fire personnel	**TEXT**	**X**		
454	Knowledge of Body Substance Isolation (BSI) or infection control precautions	**TEXT**	**X**		
455	Knowledge of methods to prevent and/or reduce the effects of heat exposure while wearing protective clothing	**TEXT**	**X**		
456	Knowledge of the main routes through which hazardous materials can enter the body	**TEXT**	**X**		
457	Knowledge of the clues which indicate the presence of hazardous materials	**TEXT**	**X**		
458	Knowledge of chemical attack indicators	**TEXT**	**X**		
459	Knowledge of incident priorities at all HAZMAT and terrorist incidents	**TEXT**	**X**		
460	Knowledge of types of decontamination	**TEXT**	**X**		
461	Knowledge of hazard-control zones	**TEXT**	**X**		
462	Knowledge of defensive confinement and spill control actions	**TEXT**	**X**		
463	Knowledge of factors to address during large-scale evacuations	**TEXT**	**X**		
464	Knowledge of the organization of the fire department	**NFPA**	**X**		
465	Knowledge of the role of the Fire Fighter I in the organization	**NFPA**	**X**		
466	Knowledge of the mission of fire service	**NFPA**	**X**		
467	Knowledge of the fire department's standard operating procedures (SOPs) and rules and regulations	**NFPA**		**X**	
468	Knowledge of the role of other agencies as they relate to the fire department	**NFPA**		**X**	
469	Are you paying attention? Please fill in a 'YES' for Applicability, 2 for importance, 'YES' for RUAD, a 'YES' for Better Performance, and 'Referenced' for Ref vs. Recall.				
470	Knowledge of the critical aspects of NFPA 1500, Standard on Fire Department Occupational Safety and Health	**NFPA**	**X**		

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Item #	Task/KSAO	Origin	RUAD Type		
			Yes; RUAD	*No; OTJ*	*No; Continuing Ed*
	Program.				
471	Knowledge of procedures for reporting an emergency; departmental SOPs for taking and receiving alarms, radio codes, or procedures; and information needs of dispatch center.	**NFPA**	**X**		
472	Knowledge of fire department procedures for answering nonemergency telephone calls.	**NFPA**		**X**	
473	Knowledge of departmental radio procedures and etiquette for routine traffic, emergency traffic, and emergency evacuation signals.	**NFPA**		**X**	
474	Knowledge of personnel accountability systems, emergency communication procedures, and emergency evacuation methods.	**NFPA**	**X**		
475	Knowledge of basic construction of typical doors, windows, and walls within the department's community or service area	**NFPA**		**X**	
476	Knowledge of personnel accountability systems and communication procedures	**NFPA**	**X**		
477	Principles of fire streams as they relate to fighting automobile fires	**NFPA**	**X**		
478	Knowledge of SOPs for alarm assignments and fire department radio communication procedures.	**NFPA**		**X**	
479	Knowledge of the methods to assess the origin and cause of fires.	**NFPA**	**X**		
480	Knowledge of the characteristics of pressurized flammable gases	**NFPA**	**X**		

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Appendix I: RUAD Pie Chart Breakdown Across all JAQ Respondents

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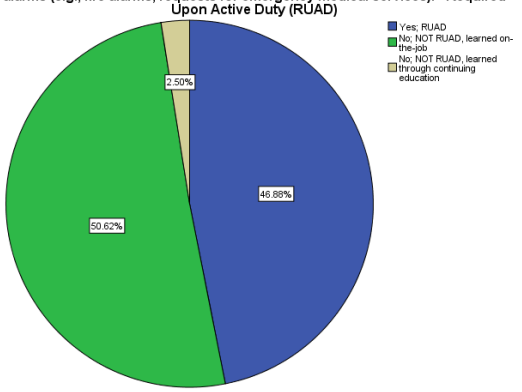
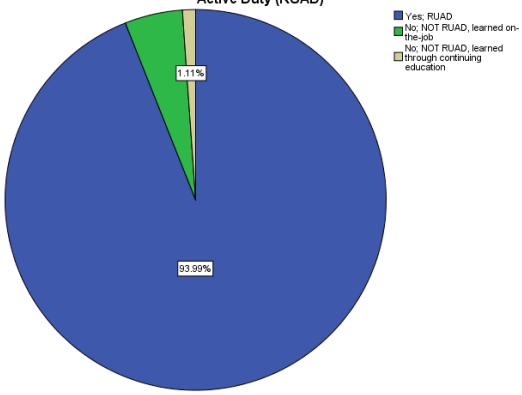
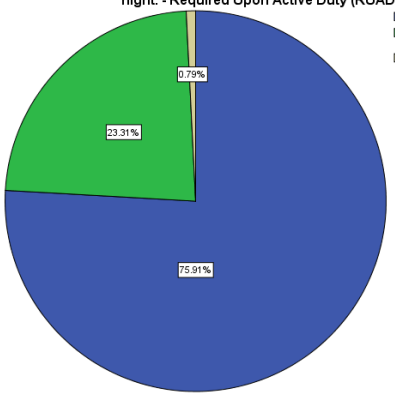
1. Accurately take incoming calls or information from the dispatcher regarding alarms (e.g., fire alarms, requests for emergency medical services). - Required Upon Active Duty (RUAD)



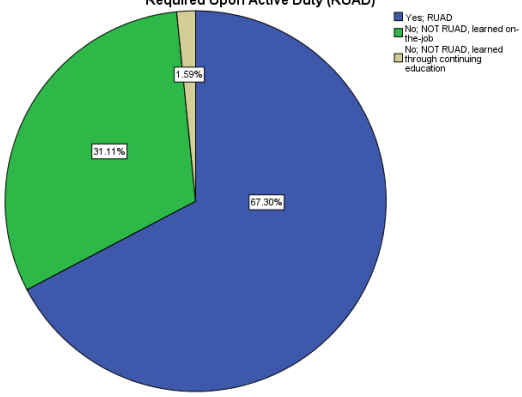
5. Put on and wear self-contained breathing apparatus (SCBA). - Required Upon Active Duty (RUAD)



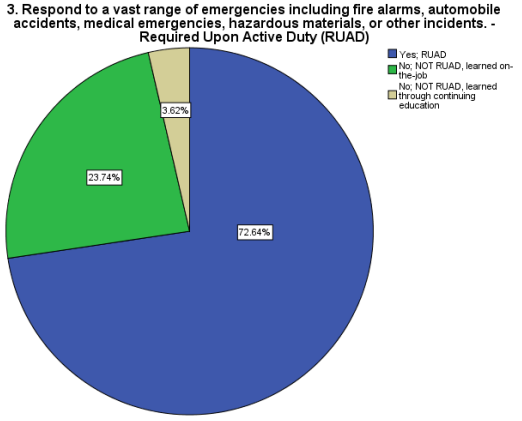
2. Be in a response-ready status to respond to alarms at all hours of the day and night. - Required Upon Active Duty (RUAD)



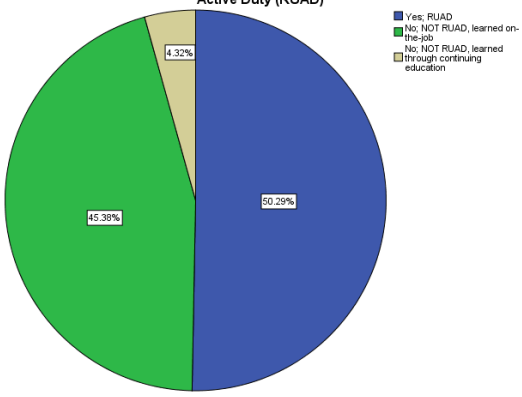
6. Carry equipment when needed (RIT Pack, High-Rise Pack, Medical Bag). - Required Upon Active Duty (RUAD)



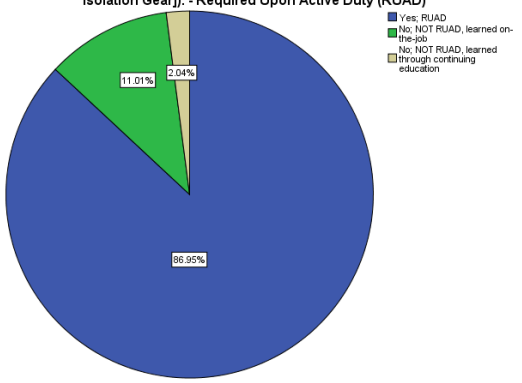
3. Respond to a vast range of emergencies including fire alarms, automobile accidents, medical emergencies, hazardous materials, or other incidents. - Required Upon Active Duty (RUAD)



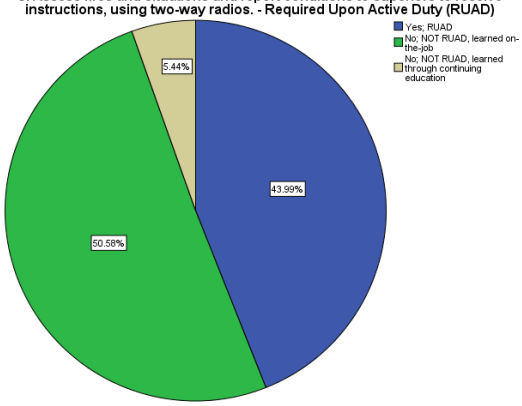
7. Perform tasks only in established, protected work areas. - Required Upon Active Duty (RUAD)



4. Put on situation-appropriate personal protective equipment (PPE) (example: full turnout gear, HAZ-MAT Equipment, Universal Protections [Body Substance Isolation Gear]). - Required Upon Active Duty (RUAD)



8. Assess fires and situations and report conditions to superiors to receive instructions, using two-way radios. - Required Upon Active Duty (RUAD)



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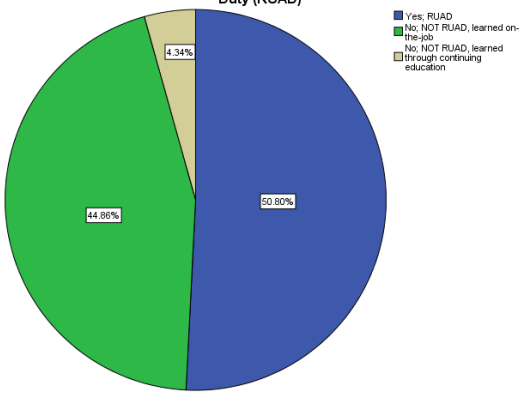
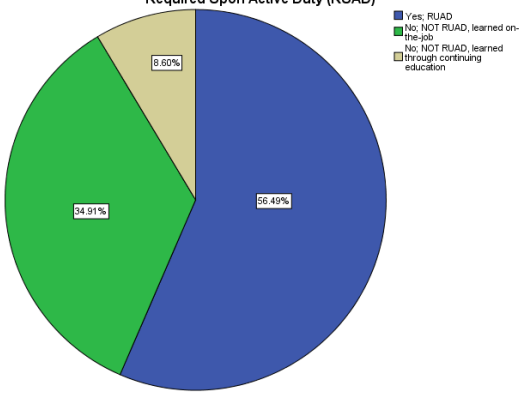
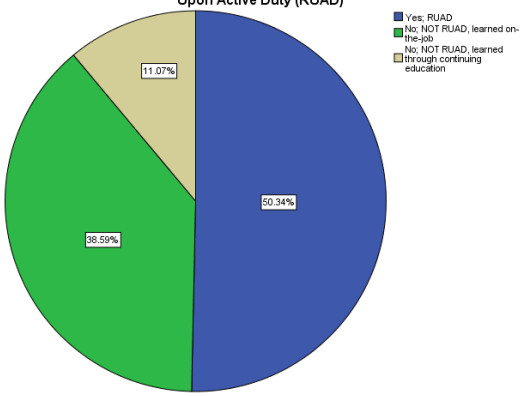
9. Conduct a mental size-up of the emergency scene. - Required Upon Active Duty (RUAD)



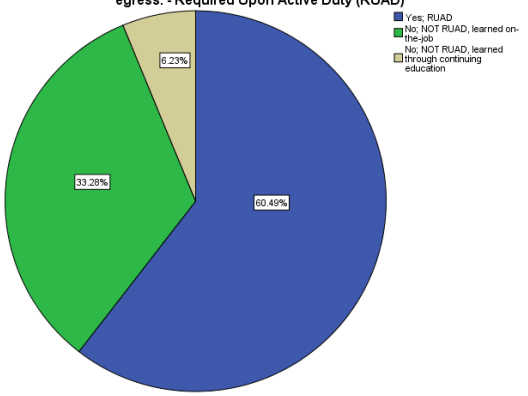
13. Assess fire conditions to ensure proper fire suppression agent is used. - Required Upon Active Duty (RUAD)



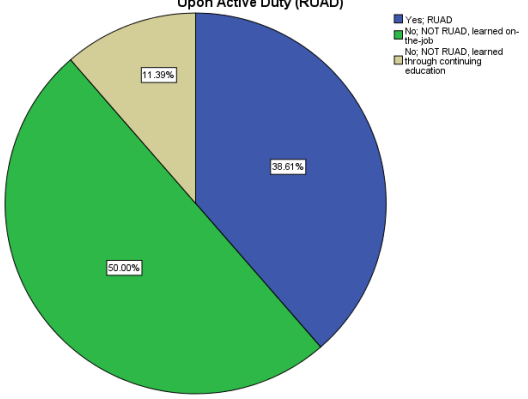
10. Check the wind direction in relation to the fire or HAZ-MAT scene. - Required Upon Active Duty (RUAD)



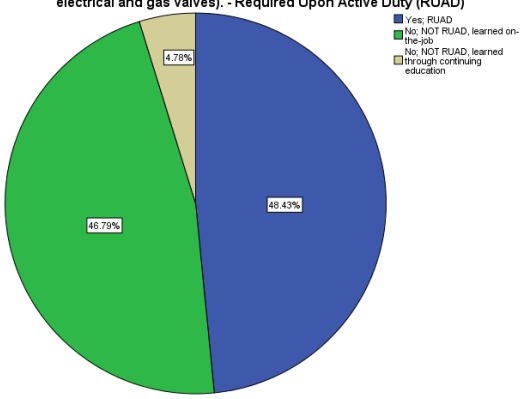
14. Determine the safest evacuation route and primary and secondary means of egress. - Required Upon Active Duty (RUAD)



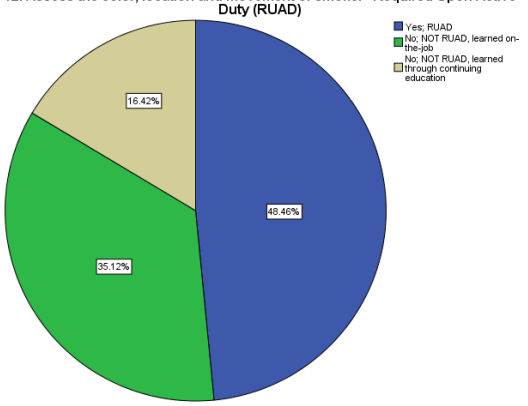
11. Assess the potential effects of weather on emergency response. - Required Upon Active Duty (RUAD)



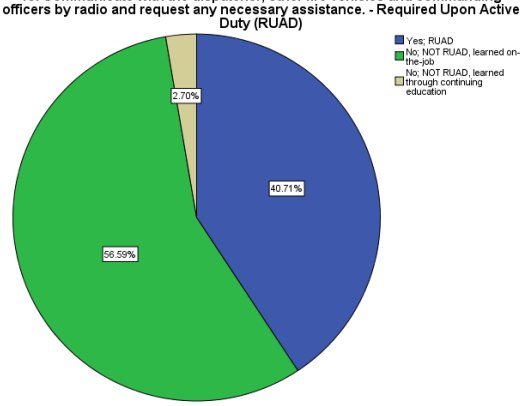
15. Safely shut off utility services to buildings in emergency situations (e.g., electrical and gas valves). - Required Upon Active Duty (RUAD)



12. Assess the color, location and movement of smoke. - Required Upon Active Duty (RUAD)



16. Communicate with the dispatcher, other fire vehicles and commanding officers by radio and request any necessary assistance. - Required Upon Active Duty (RUAD)



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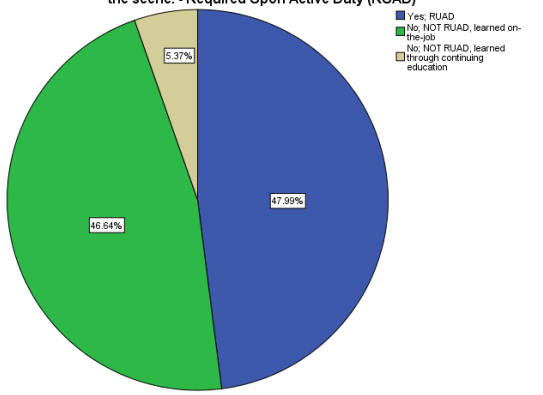
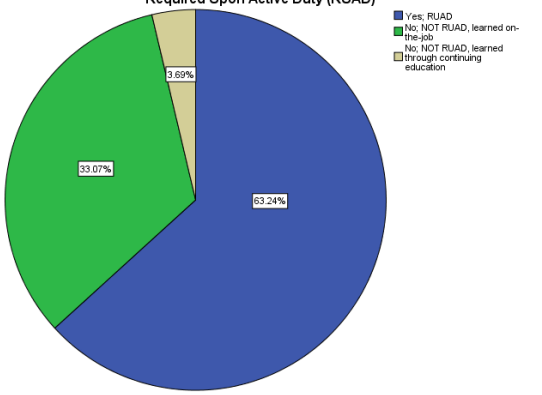
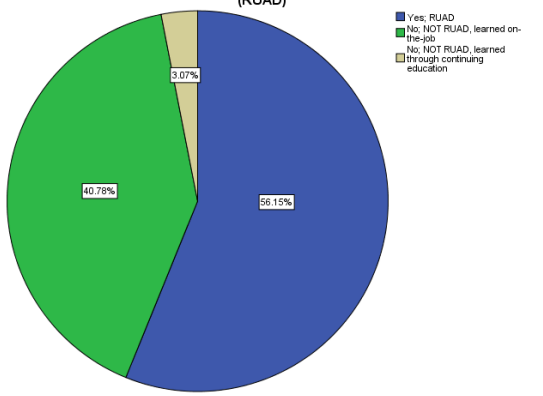
17. Advise the commanding officer of fire conditions, hazards and exposures at the scene. - Required Upon Active Duty (RUAD)



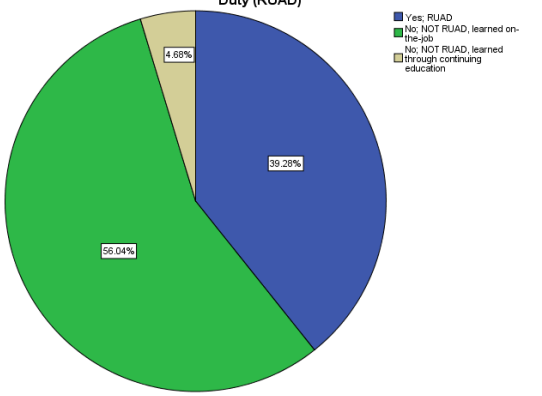
21. Recognize potential hazards on emergency scenes regarding vehicle traffic. - Required Upon Active Duty (RUAD)



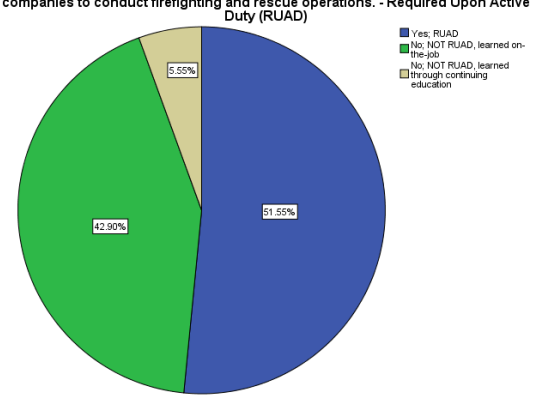
18. Communicate with the superior during a live fire. - Required Upon Active Duty (RUAD)



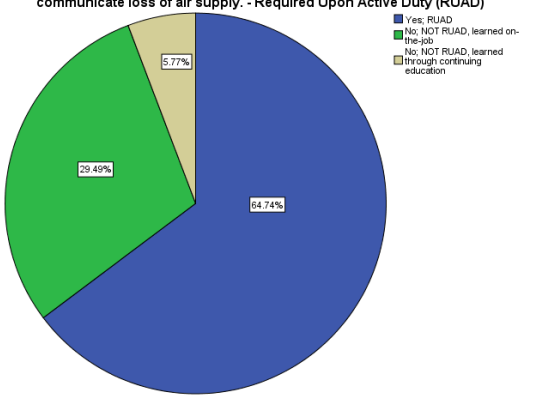
22. Discriminate between routine and emergency traffic. - Required Upon Active Duty (RUAD)



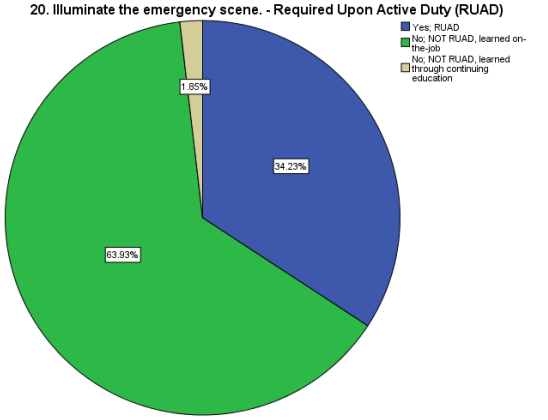
19. Collaborate with other firefighters, supervisors and other firefighter companies to conduct firefighting and rescue operations. - Required Upon Active Duty (RUAD)



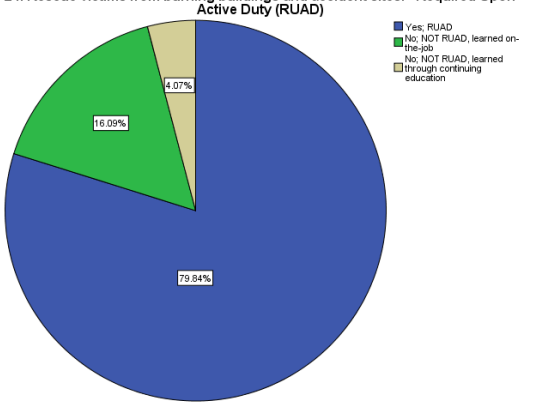
23. Use personnel accountability systems to locate team members and communicate loss of air supply. - Required Upon Active Duty (RUAD)



20. Illuminate the emergency scene. - Required Upon Active Duty (RUAD)



24. Rescue victims from burning buildings and accident sites. - Required Upon Active Duty (RUAD)



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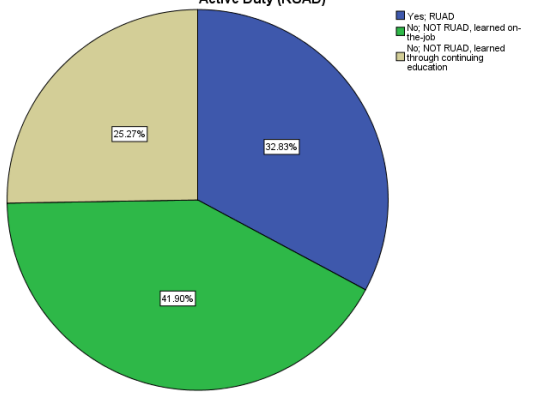
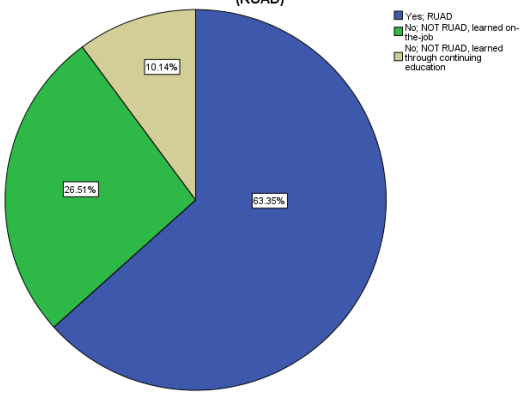
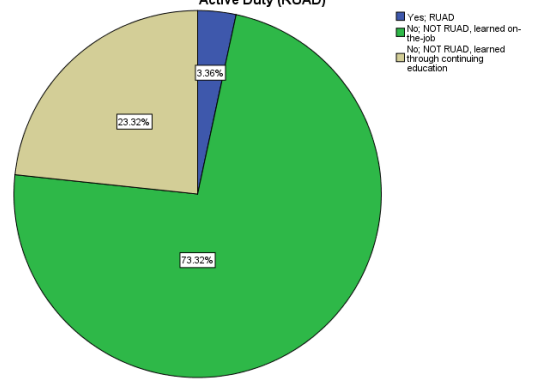
25. Assist at a water rescue (e.g., swollen rivers, frozen lakes) - Required Upon Active Duty (RUAD)



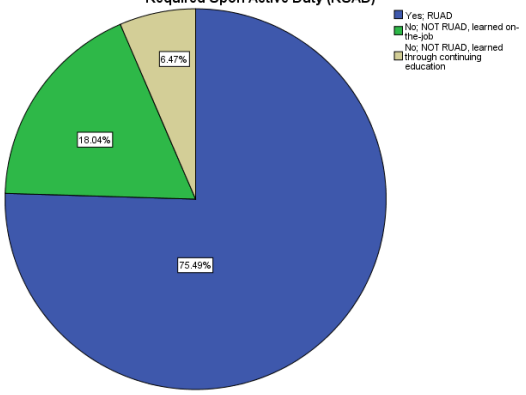
29. Safely remove persons from entrapments. - Required Upon Active Duty (RUAD)



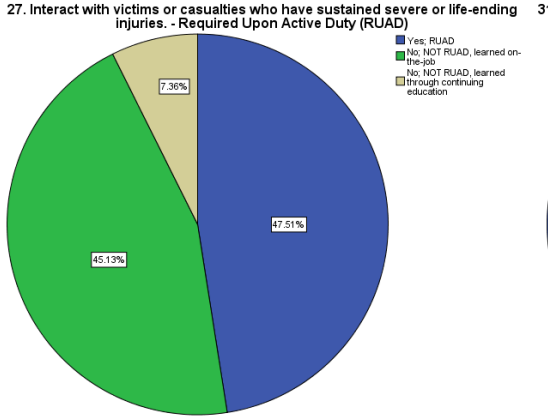
26. Are you paying attention? Please fill in a 'YES' for Applicability, 'Moderate' for Importance, 'Constantly' for Frequency, and 'NO' for RUAD. - Required Upon Active Duty (RUAD)



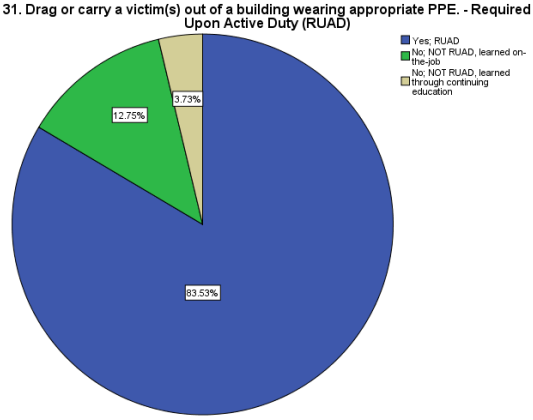
30. Safely lift, hoist or drag victim(s), taking care to minimize further injuries. - Required Upon Active Duty (RUAD)



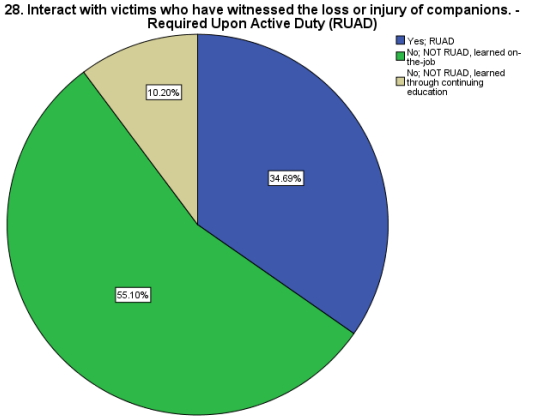
27. Interact with victims or casualties who have sustained severe or life-ending injuries. - Required Upon Active Duty (RUAD)



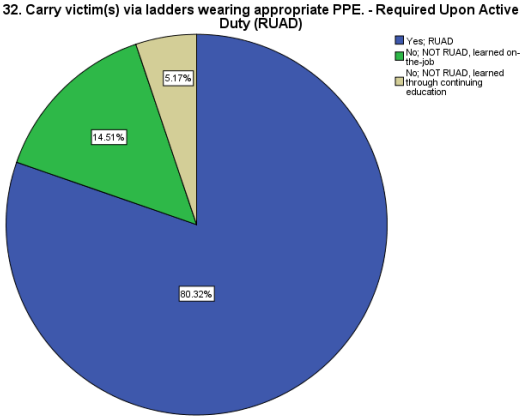
31. Drag or carry a victim(s) out of a building wearing appropriate PPE. - Required Upon Active Duty (RUAD)



28. Interact with victims who have witnessed the loss or injury of companions. - Required Upon Active Duty (RUAD)



32. Carry victim(s) via ladders wearing appropriate PPE. - Required Upon Active Duty (RUAD)



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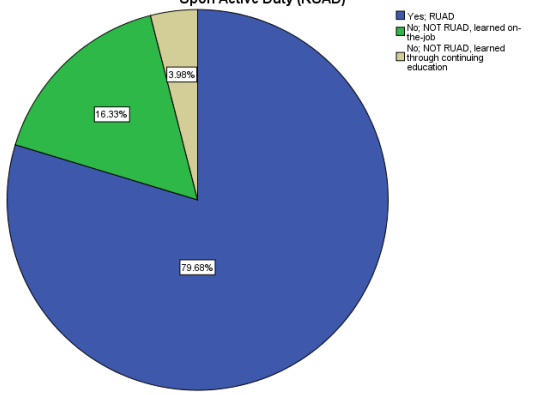
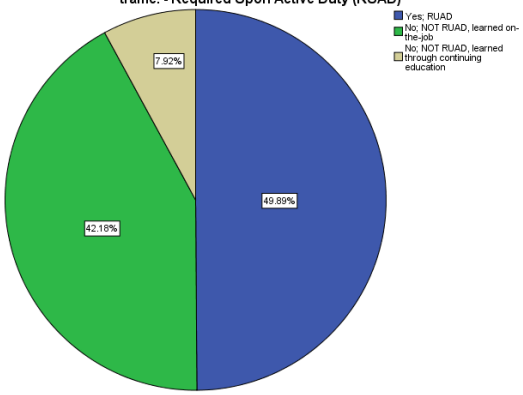
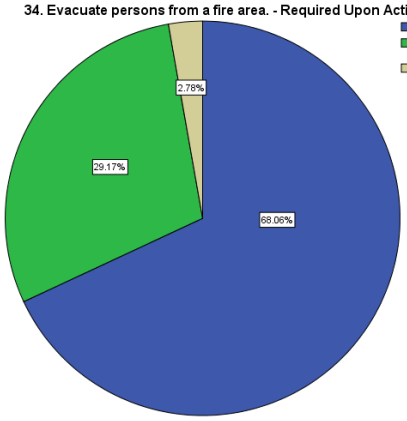
33. Drag or carry victim(s) up or down stairs wearing appropriate PPE. - Required Upon Active Duty (RUAD)



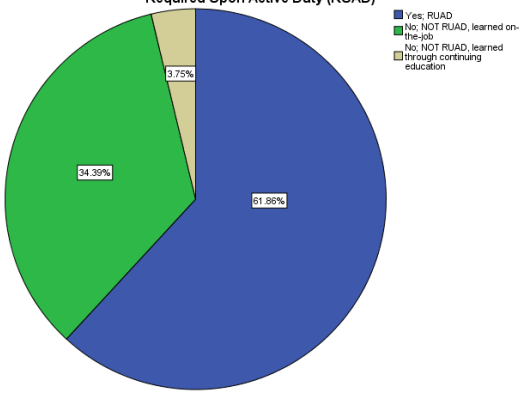
37. Strategically position apparatus to protect incident scene from oncoming traffic. - Required Upon Active Duty (RUAD)



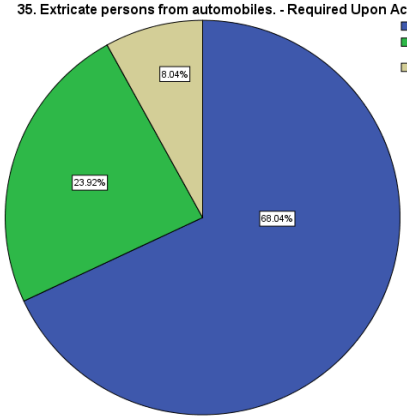
34. Evacuate persons from a fire area. - Required Upon Active Duty (RUAD)



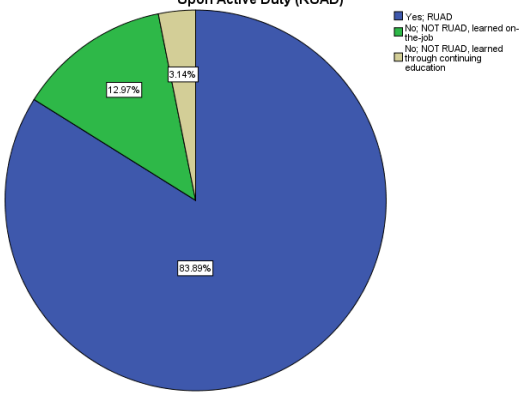
38. Bring and use the necessary tools to extricate or free trapped persons. - Required Upon Active Duty (RUAD)



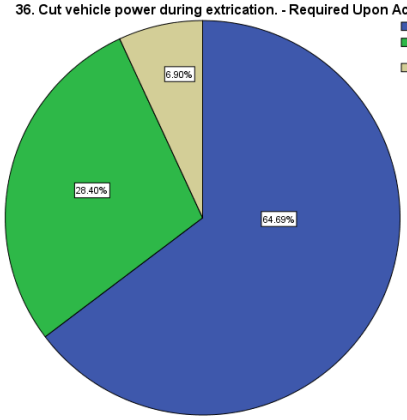
35. Extricate persons from automobiles. - Required Upon Active Duty (RUAD)



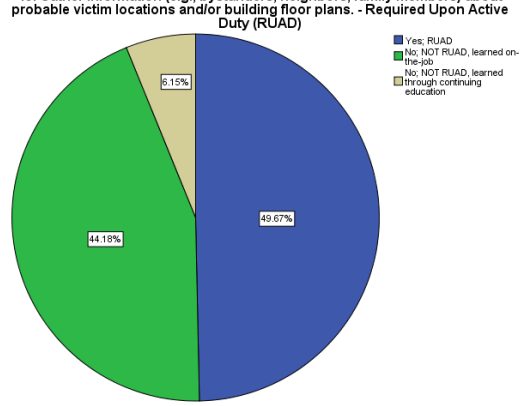
39. Systematically search burning buildings to locate fire victims. - Required Upon Active Duty (RUAD)



36. Cut vehicle power during extrication. - Required Upon Active Duty (RUAD)



40. Gather information (e.g., bystanders, neighbors, family members) about probable victim locations and/or building floor plans. - Required Upon Active Duty (RUAD)



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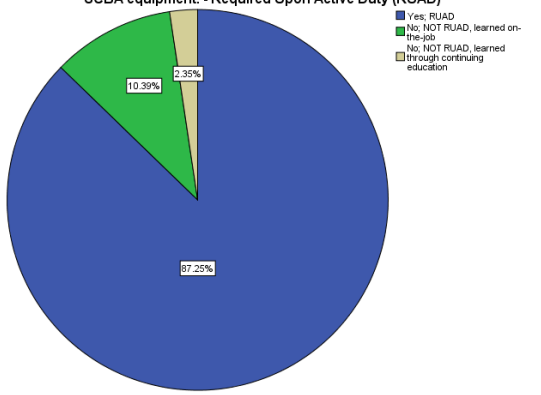
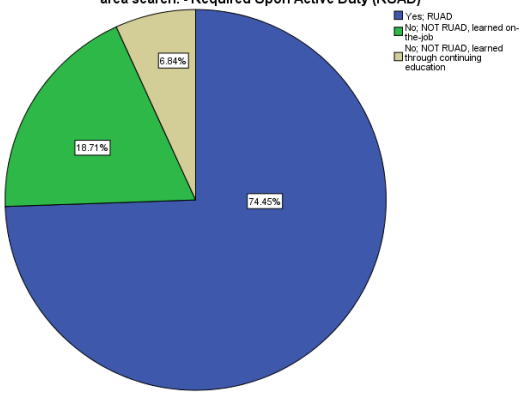
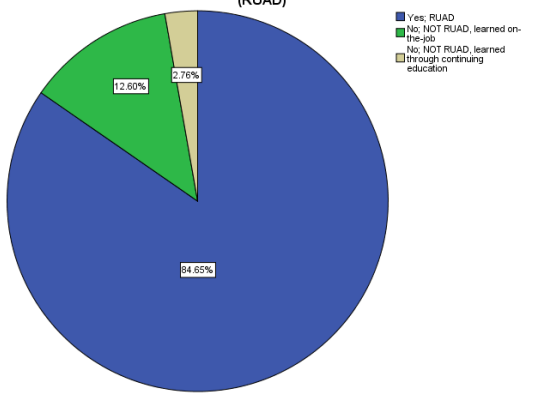
41. Enter unfamiliar, smoke-filled buildings and rooms while wearing PPE and SCBA equipment. - Required Upon Active Duty (RUAD)



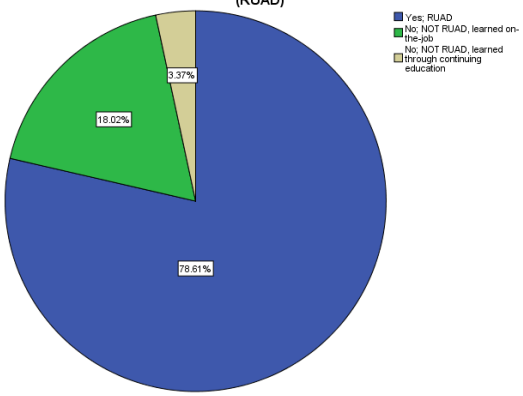
45. Tie knots to a hose line, ladder, or other object as necessary during a large area search. - Required Upon Active Duty (RUAD)



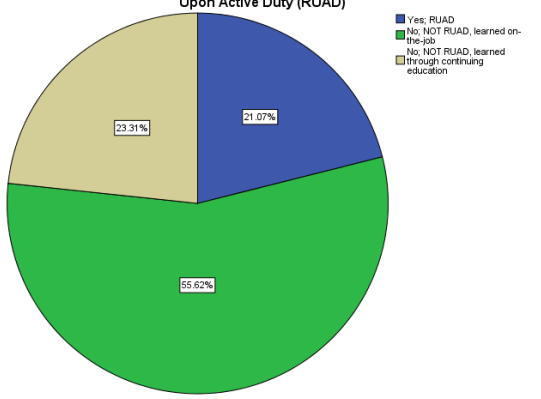
42. Systematically search for trapped persons. - Required Upon Active Duty (RUAD)



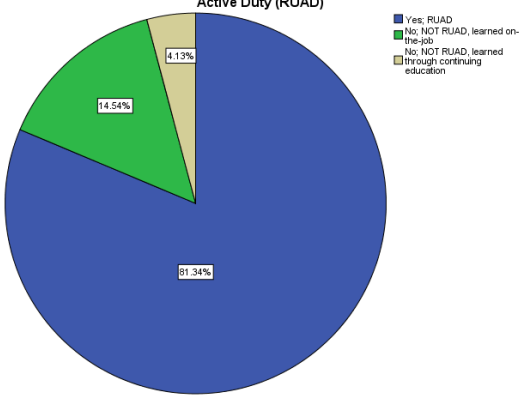
46. Maintain team integrity and firefighter safety. - Required Upon Active Duty (RUAD)



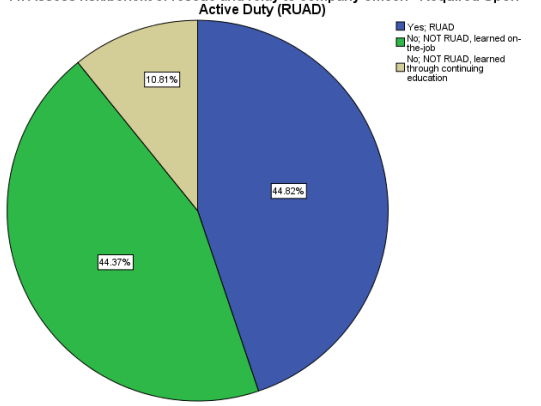
43. Operate and/or man firefighting watercraft/boats for civilian rescue. - Required Upon Active Duty (RUAD)



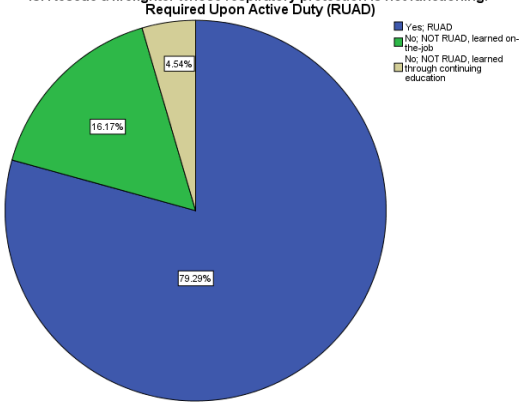
47. Rescue a firefighter with functioning respiratory protection. - Required Upon Active Duty (RUAD)



44. Assess risk/benefit of rescue and relay to company officer. - Required Upon Active Duty (RUAD)



48. Rescue a firefighter whose respiratory protection is not functioning. - Required Upon Active Duty (RUAD)



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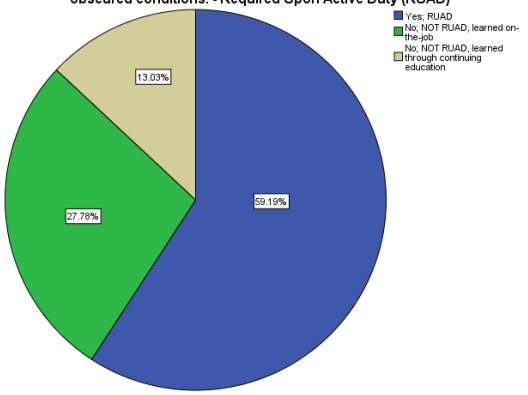
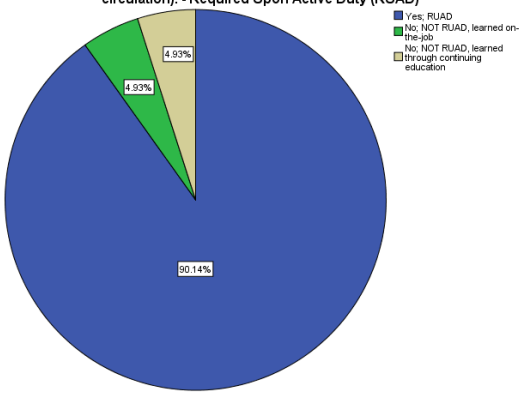
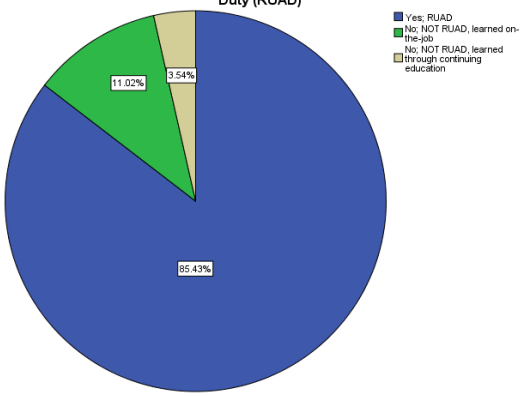
49. Recognize and manage psychological effects resulting from operating in obscured conditions. - Required Upon Active Duty (RUAD)



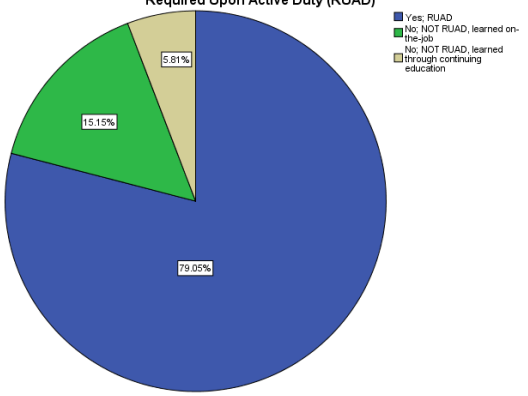
53. Assess a patient's condition (e.g. alertness level, orientation, breathing, circulation). - Required Upon Active Duty (RUAD)



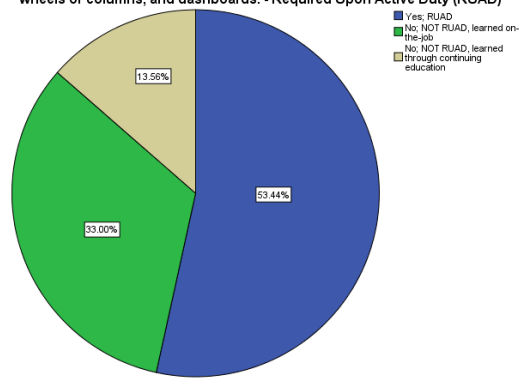
50. Ensure respiratory protection is not compromised. - Required Upon Active Duty (RUAD)



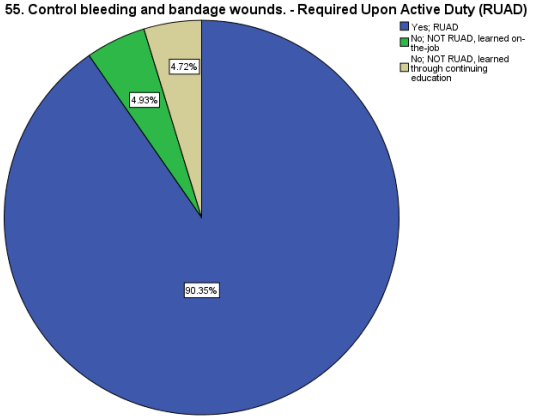
54. Gather information from patient or family member regarding medical history. - Required Upon Active Duty (RUAD)



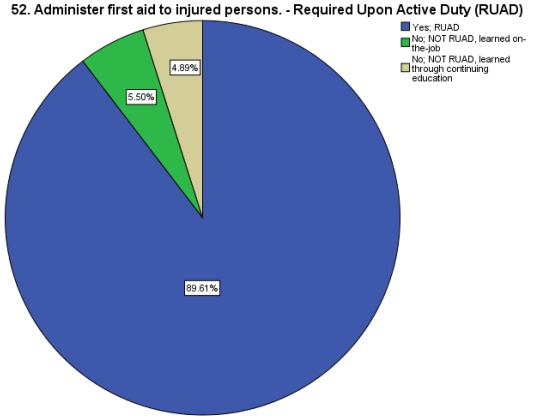
51. Choose and apply appropriate techniques for opening or removing trunks, engine compartments, vehicle roofs, doors, windshields, windows, steering wheels or columns, and dashboards. - Required Upon Active Duty (RUAD)



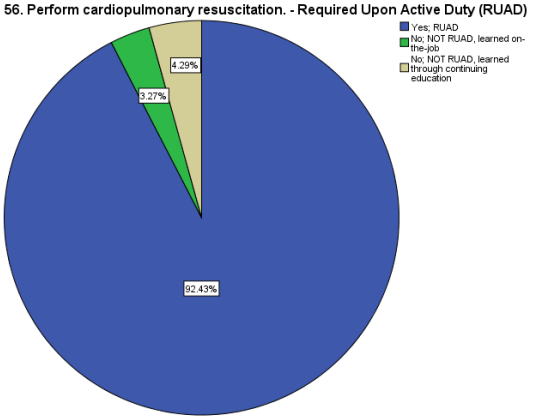
55. Control bleeding and bandage wounds. - Required Upon Active Duty (RUAD)



52. Administer first aid to injured persons. - Required Upon Active Duty (RUAD)



56. Perform cardiopulmonary resuscitation. - Required Upon Active Duty (RUAD)



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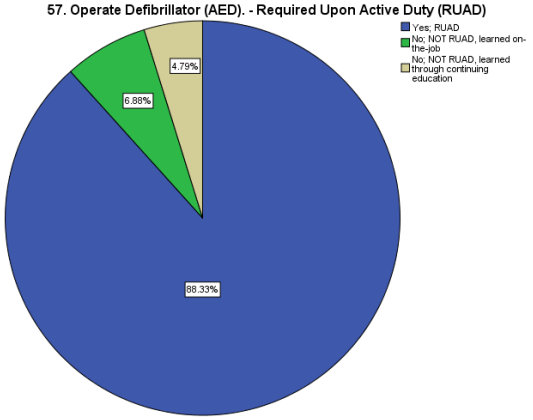
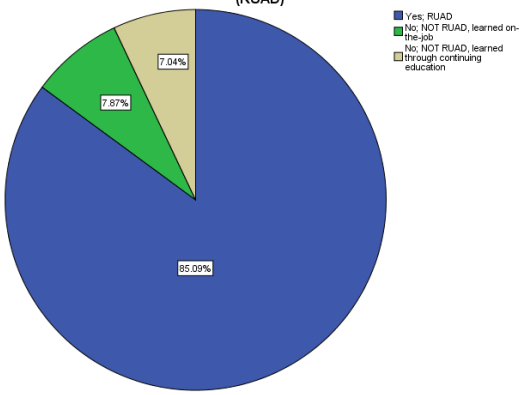
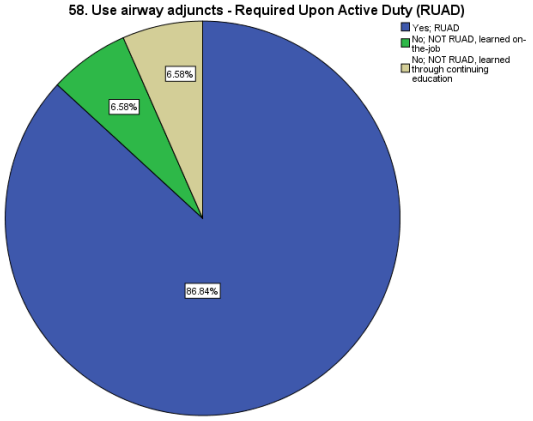
57. Operate Defibrillator (AED). - Required Upon Active Duty (RUAD)



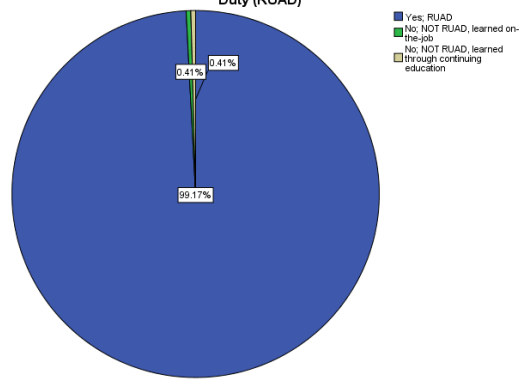
61. Administer appropriate oxygen flow to patients. - Required Upon Active Duty (RUAD)



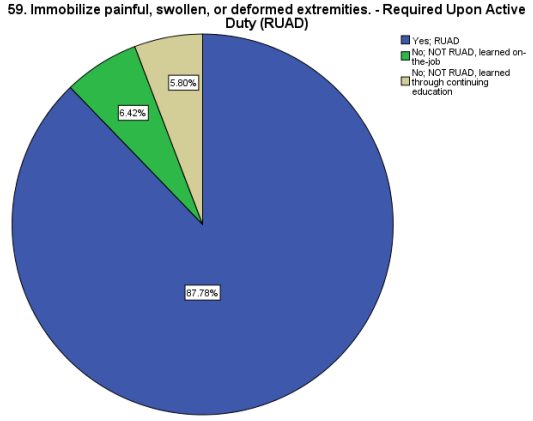
58. Use airway adjuncts - Required Upon Active Duty (RUAD)



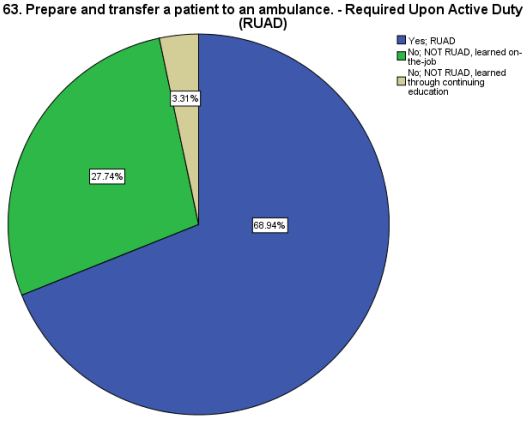
62. Are you paying attention? Please fill in a 'YES' for Applicability, 'Modest' for Importance, 'Rarely' for Frequency, and 'YES' for RUAD. - Required Upon Active Duty (RUAD)



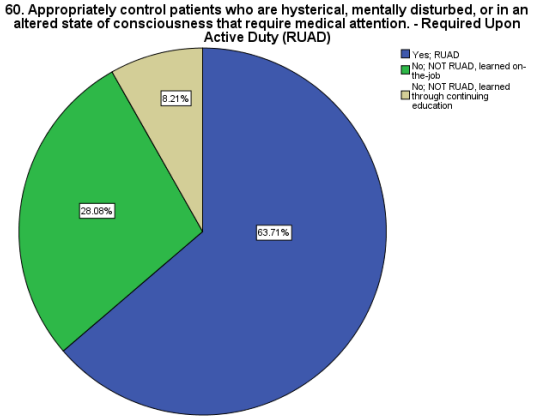
59. Immobilize painful, swollen, or deformed extremities. - Required Upon Active Duty (RUAD)



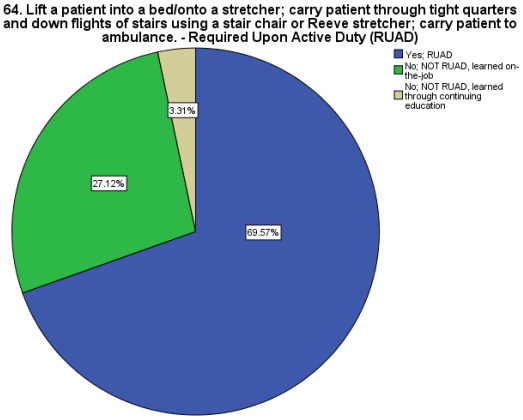
63. Prepare and transfer a patient to an ambulance. - Required Upon Active Duty (RUAD)



60. Appropriately control patients who are hysterical, mentally disturbed, or in an altered state of consciousness that require medical attention. - Required Upon Active Duty (RUAD)



64. Lift a patient into a bed/onto a stretcher; carry patient through tight quarters and down flights of stairs using a stair chair or Reeve stretcher; carry patient to ambulance. - Required Upon Active Duty (RUAD)



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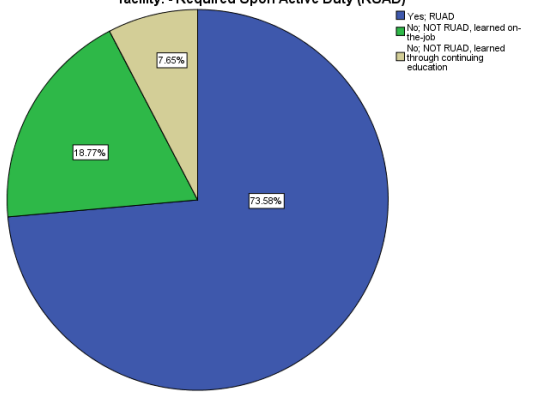
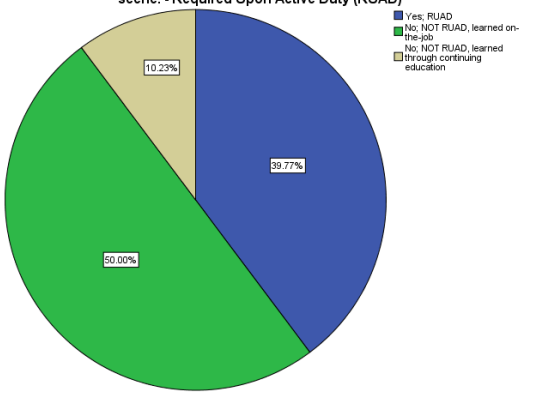
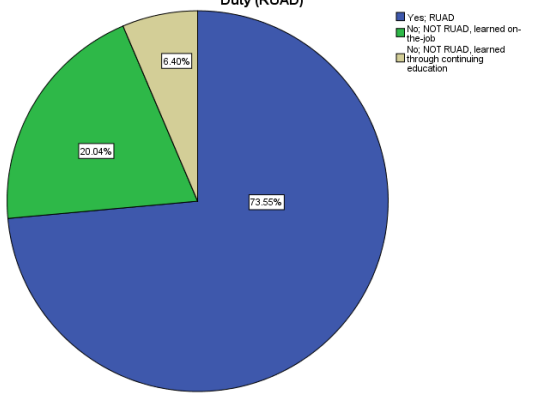
65. Monitor and provide needed care when transporting a patient to a medical facility. - Required Upon Active Duty (RUAD)



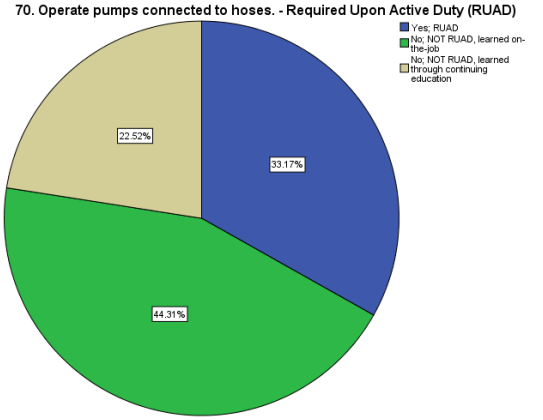
69. Efficiently and safely drive firefighting emergency equipment to and from a scene. - Required Upon Active Duty (RUAD)



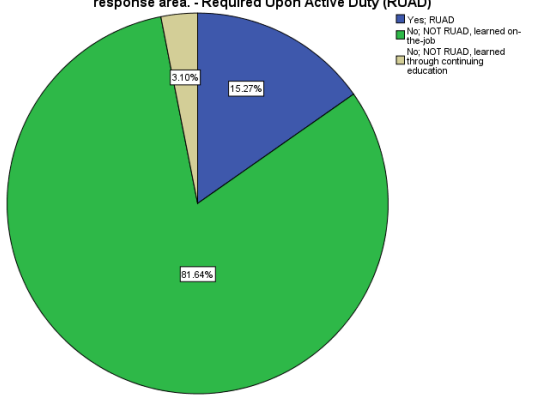
66. Properly utilize emergency equipment and supplies. - Required Upon Active Duty (RUAD)



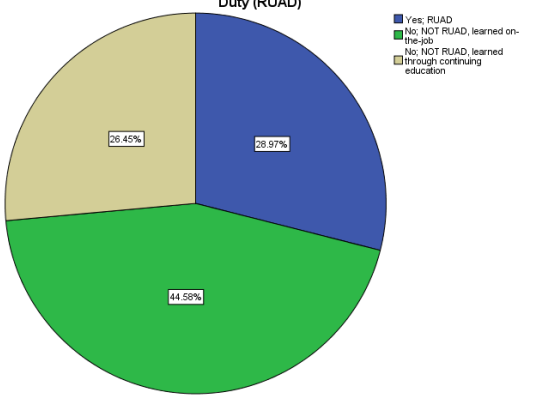
70. Operate pumps connected to hoses. - Required Upon Active Duty (RUAD)



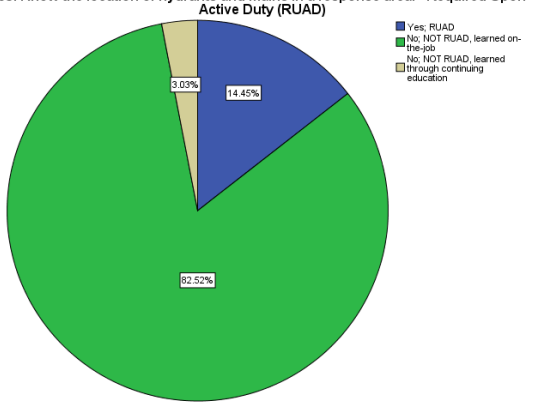
67. Know street layouts, addresses, intersections and alternative routes in response area. - Required Upon Active Duty (RUAD)



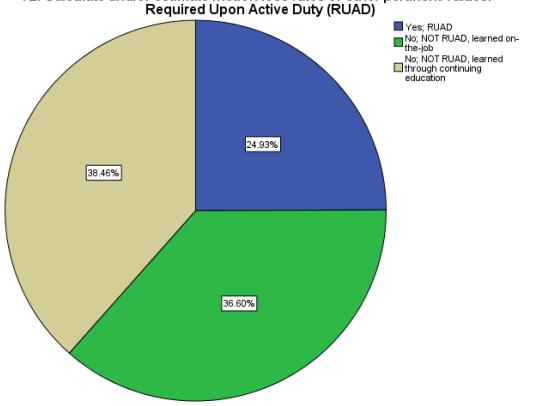
71. Check gauges for pressures and proper water flow. - Required Upon Active Duty (RUAD)



68. Know the location of hydrants and mains in a response area. - Required Upon Active Duty (RUAD)



72. Calculate and/or estimate friction loss rates or other pertinent values. - Required Upon Active Duty (RUAD)



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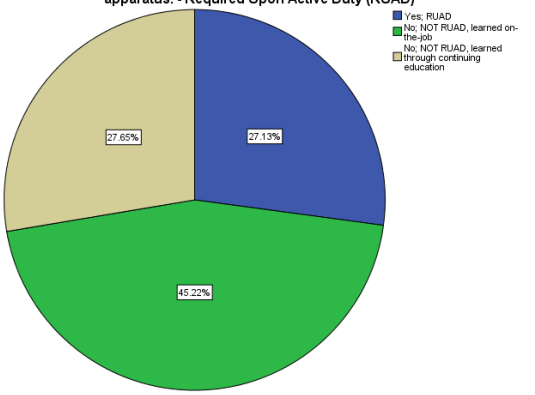
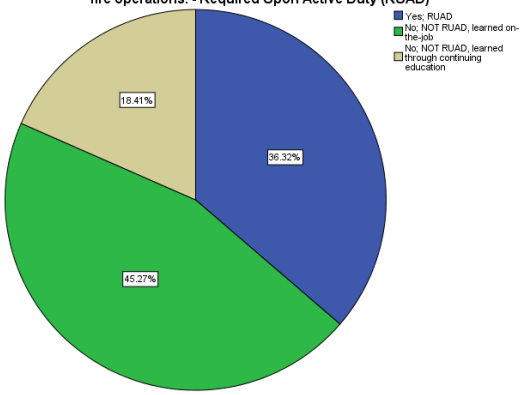
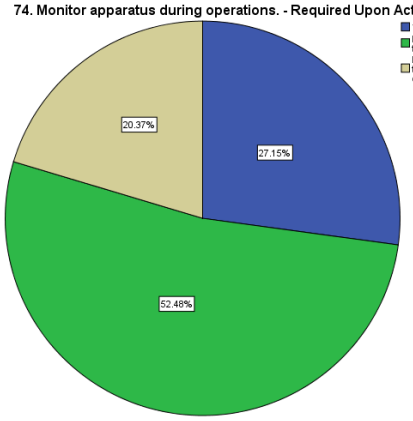
73. Maintain constant water supply through proper management of pumping apparatus. - Required Upon Active Duty (RUAD)



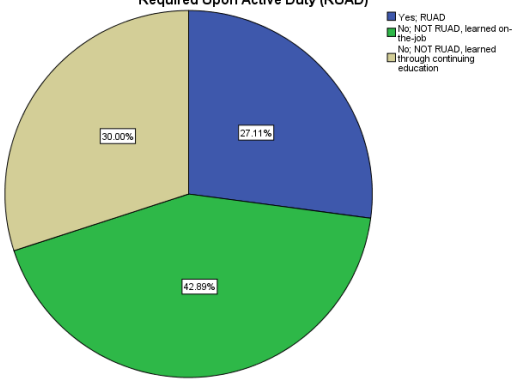
77. Charge lines at officer's command by opening discharge valves to support fire operations. - Required Upon Active Duty (RUAD)



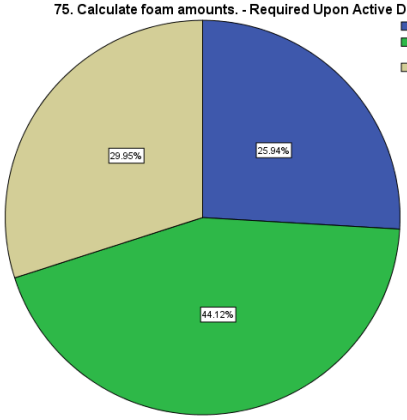
74. Monitor apparatus during operations. - Required Upon Active Duty (RUAD)



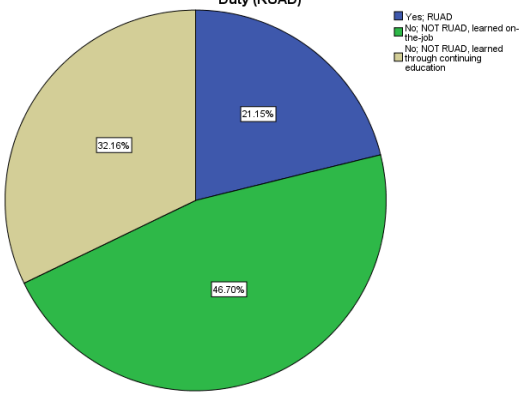
78. Control pumper output by regulating engine RPMs, pressure relief valve and output gate valves so that pressure or flow is correct for the given operation. - Required Upon Active Duty (RUAD)



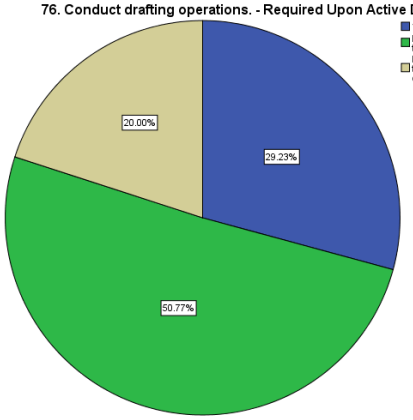
75. Calculate foam amounts. - Required Upon Active Duty (RUAD)



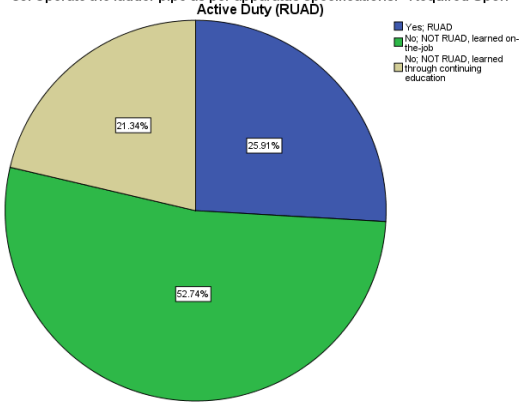
79. Utilize watercraft to supply water for fighting fires. - Required Upon Active Duty (RUAD)



76. Conduct drafting operations. - Required Upon Active Duty (RUAD)



80. Operate the ladder pipe as per apparatus specifications. - Required Upon Active Duty (RUAD)



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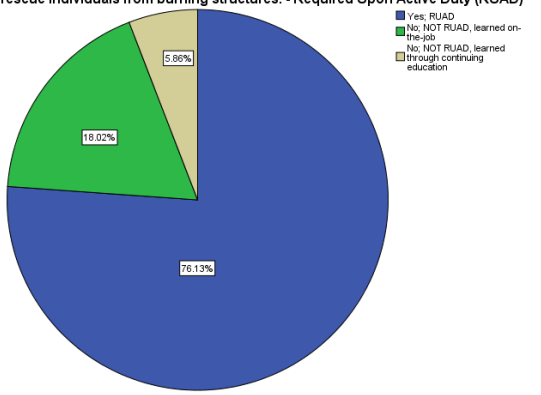
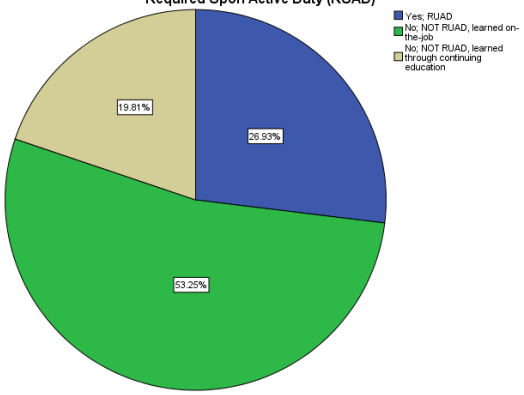
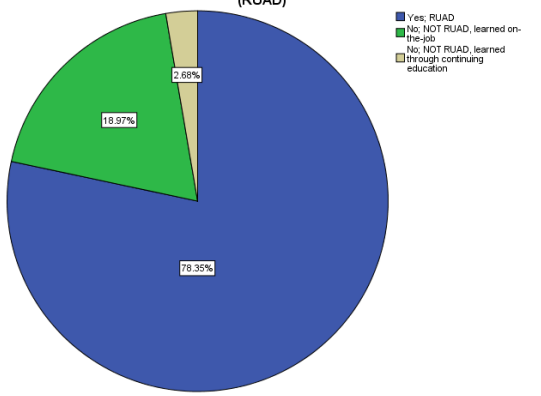
81. Position and climb ladders to gain access to upper levels of buildings or to rescue individuals from burning structures. - Required Upon Active Duty (RUAD)



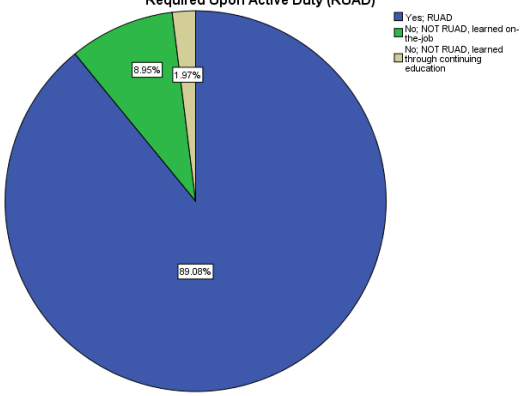
85. For aerial ladders: position truck, place chocks and set-up truck jacks. - Required Upon Active Duty (RUAD)



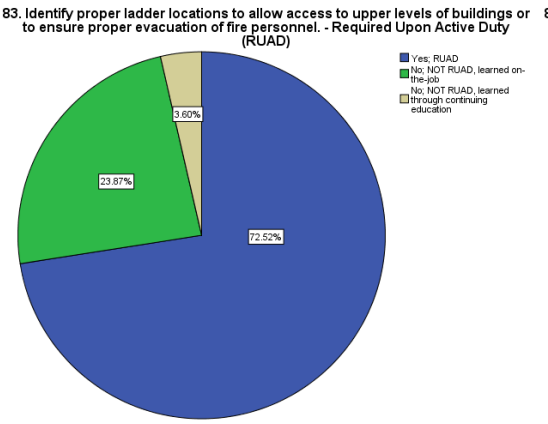
82. Determine the size and type of ladders required. - Required Upon Active Duty (RUAD)



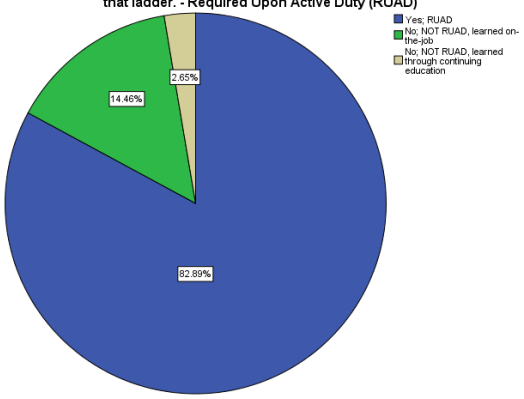
86. Raise a 24-foot extension ladder and extend the fly section of that ladder. - Required Upon Active Duty (RUAD)



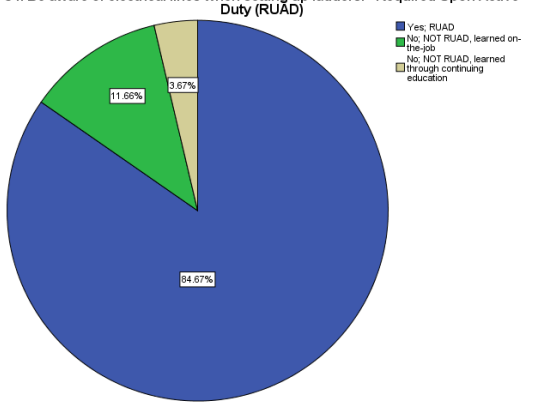
83. Identify proper ladder locations to allow access to upper levels of buildings or to ensure proper evacuation of fire personnel. - Required Upon Active Duty (RUAD)



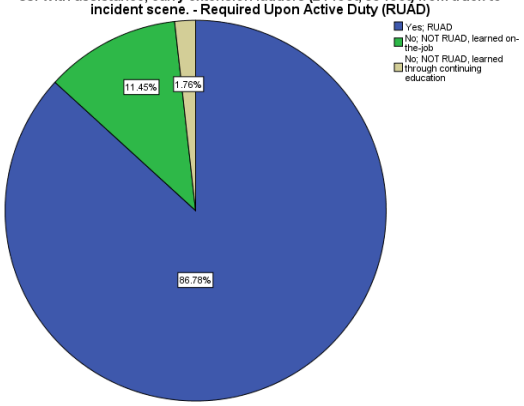
87. With assistance, raise a 35-foot extension ladder and extend the fly section of that ladder. - Required Upon Active Duty (RUAD)



84. Be aware of electrical lines when setting up ladders. - Required Upon Active Duty (RUAD)



88. With assistance, carry extension ladders (24-foot, 35-foot) from truck to incident scene. - Required Upon Active Duty (RUAD)



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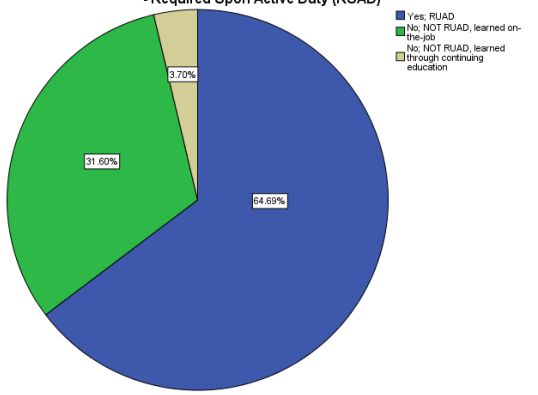
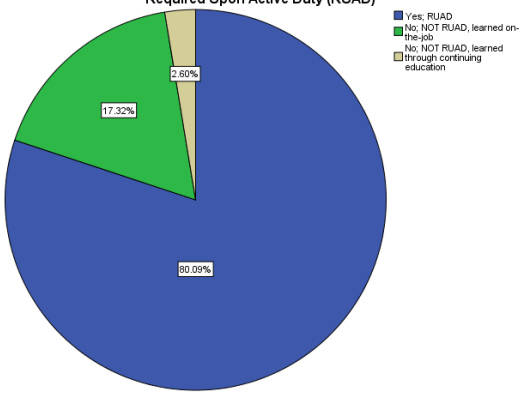
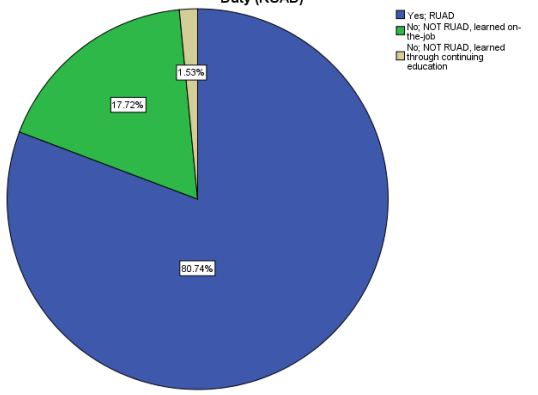
89. Climb an aerial ladder to a height up to 100 feet while wearing PPE equipment. - Required Upon Active Duty (RUAD)



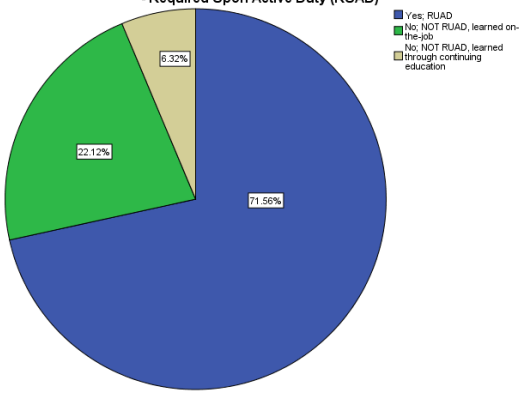
93. Use equipment (e.g., swing axe or sledge hammer) to make forcible entries. - Required Upon Active Duty (RUAD)



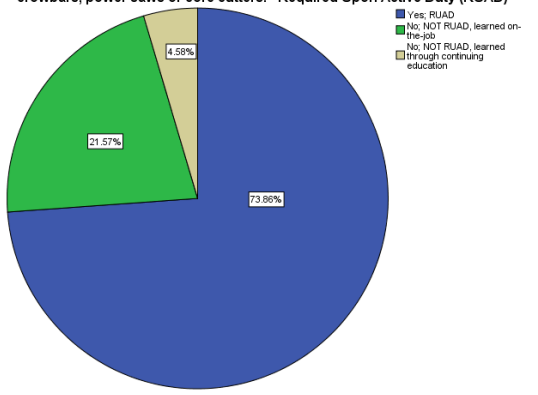
90. Lower ground ladders and stow them onto the truck. - Required Upon Active Duty (RUAD)



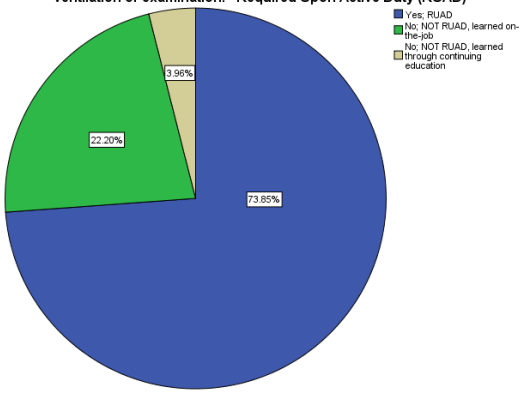
94. Determine the stability of supporting surfaces such as roofs and fire escapes. - Required Upon Active Duty (RUAD)



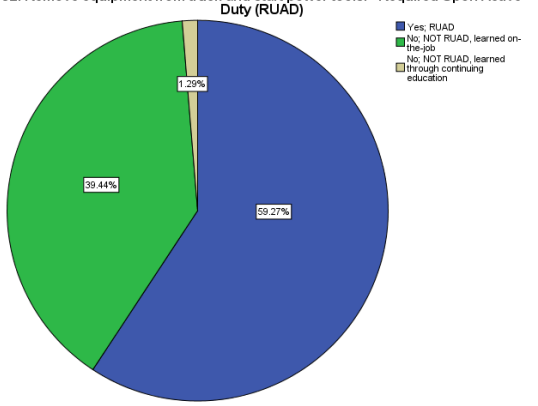
91. Create openings in buildings for ventilation or entrance using axes, chisels, crowbars, power saws or core cutters. - Required Upon Active Duty (RUAD)



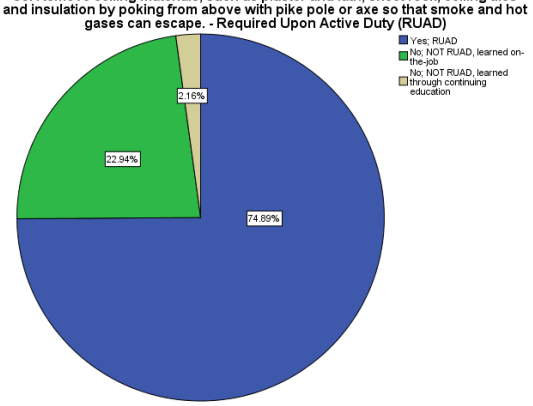
95. Cut openings in roof with a fire axe or power saw (e.g., K-12 saw) for ventilation or examination. - Required Upon Active Duty (RUAD)



92. Remove equipment from truck and start power tools. - Required Upon Active Duty (RUAD)



96. Remove ceiling materials, such as plaster and lath, sheet rock, ceiling tiles and insulation by poking from above with pike pole or axe so that smoke and hot gases can escape. - Required Upon Active Duty (RUAD)



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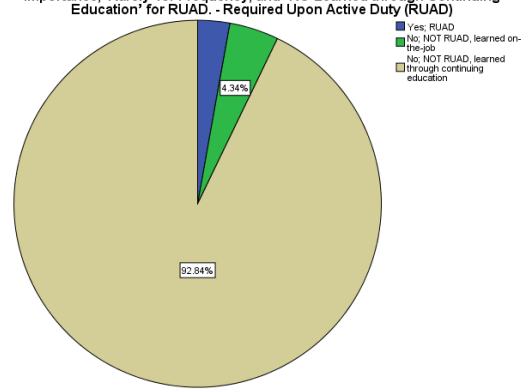
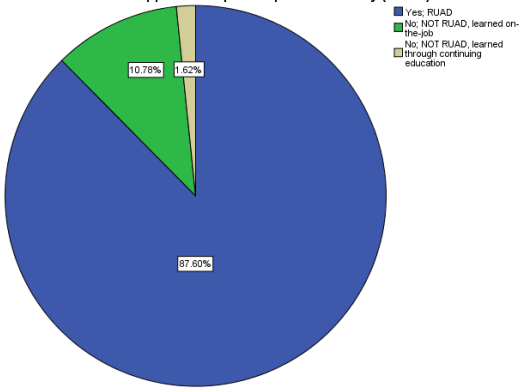
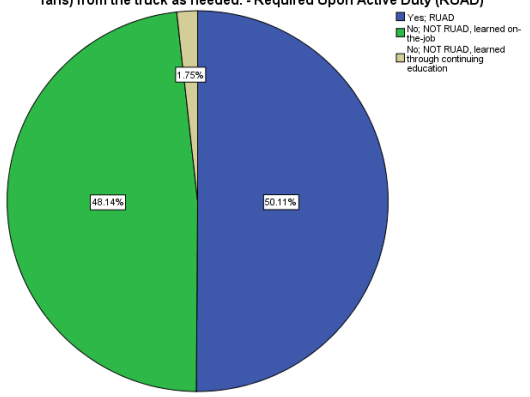
97. Are you paying attention? Please fill in a 'YES' for Applicability, 'Minimal' for Importance, 'Rarely' for Frequency, and 'NO-Learned through Continuing Education' for RUAD. - Required Upon Active Duty (RUAD)



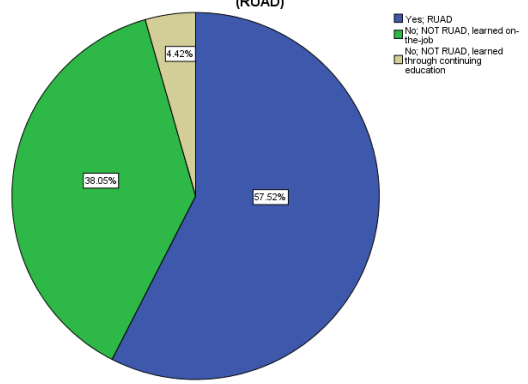
101. Establish an appropriate water supply, lay hose lines and connect them to water supplies. - Required Upon Active Duty (RUAD)



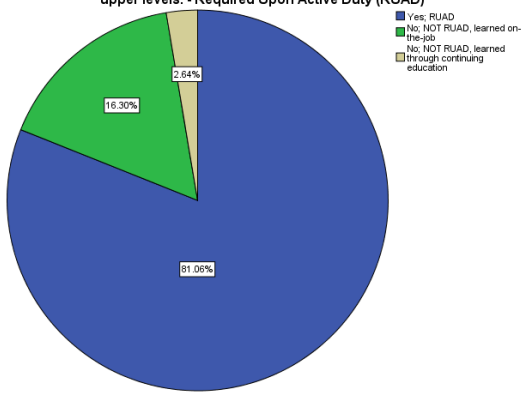
98. Remove and transport equipment (e.g., electrical extension cords, ventilation fans) from the truck as needed. - Required Upon Active Duty (RUAD)



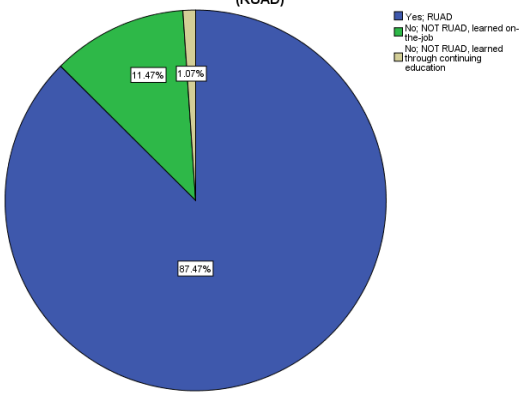
102. Coordinate firefighting and rescue operations with other firefighters, supervisors and other firefighter companies. - Required Upon Active Duty (RUAD)



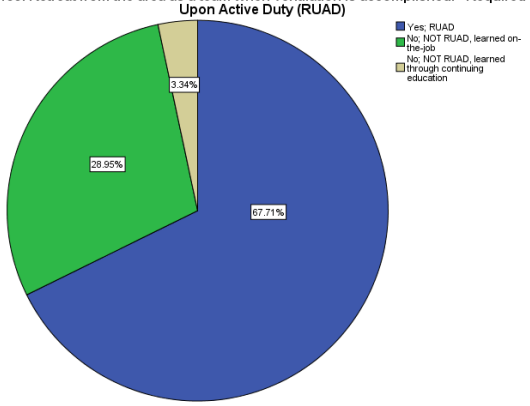
99. Properly knot and tie rope to hoist equipment weighing up to 50 pounds to upper levels. - Required Upon Active Duty (RUAD)



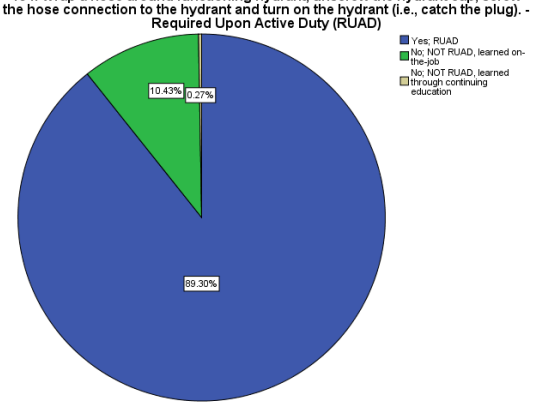
103. Pull the supply line from an engine to a hydrant. - Required Upon Active Duty (RUAD)



100. Retreat from the area as a team when ventilation is accomplished. - Required Upon Active Duty (RUAD)



104. Wrap a hose around functioning hydrant, unscrew the hydrant cap, screw the hose connection to the hydrant and turn on the hydrant (i.e., catch the plug). - Required Upon Active Duty (RUAD)



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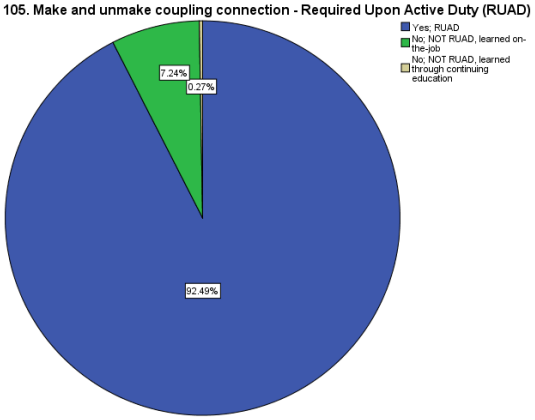
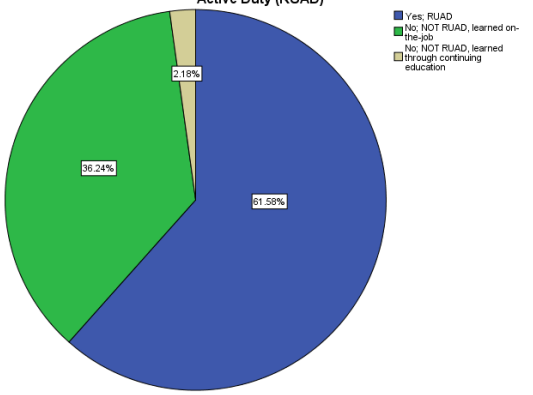
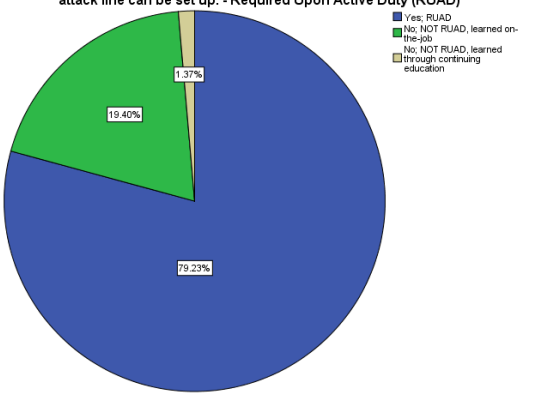
105. Make and unmake coupling connection - Required Upon Active Duty (RUAD)



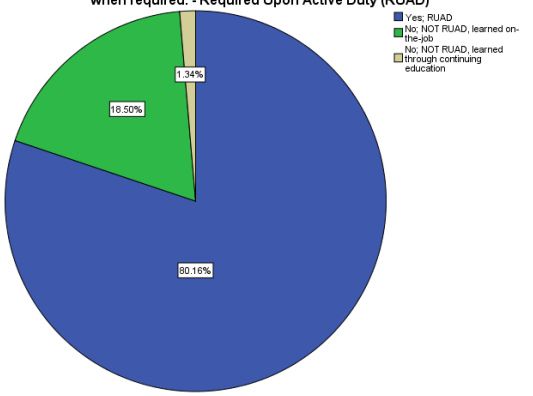
109. Carry, assemble and operate deluge set (ground monitor). - Required Upon Active Duty (RUAD)



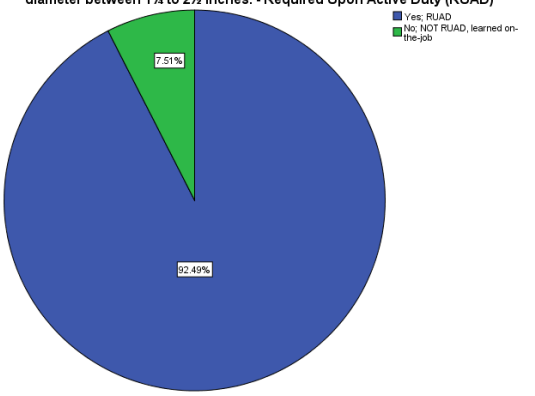
106. Carry a high-rise pack up multiple flights of stairs while wearing PPE so that attack line can be set up. - Required Upon Active Duty (RUAD)



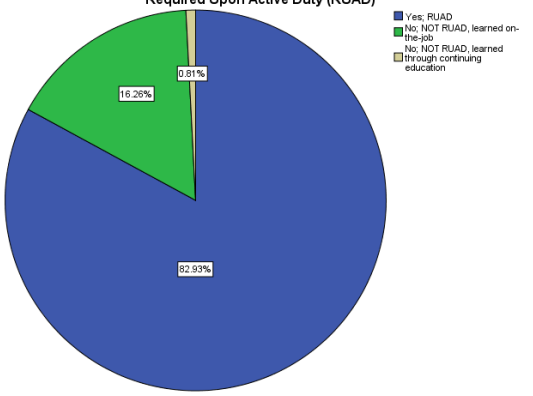
110. Connect multiple small lines (example: 50-foot) and extend them to reach fire when required. - Required Upon Active Duty (RUAD)



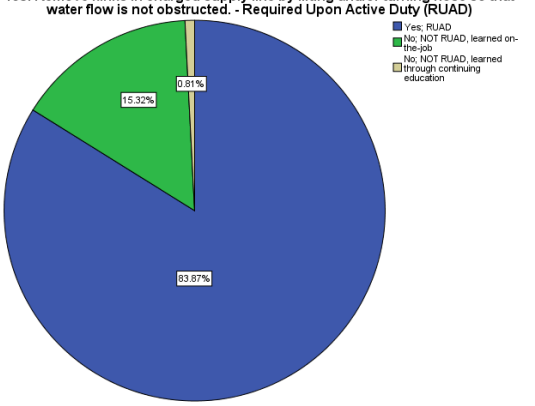
107. Advance and fully extend a pre-connected, charged or uncharged hose of a diameter between 1¾ to 2½ inches. - Required Upon Active Duty (RUAD)



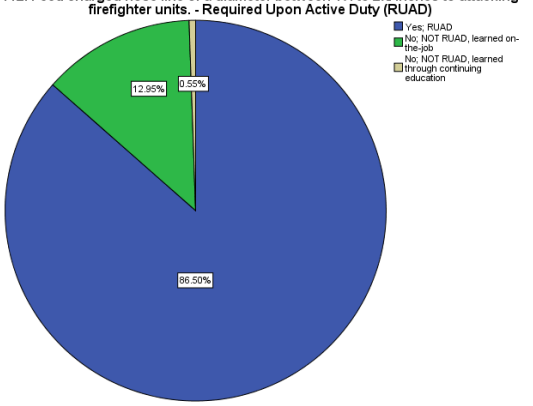
111. Carry a 50-foot section of rolled hose unassisted while in appropriate PPE. - Required Upon Active Duty (RUAD)



108. Remove kinks in charged supply line by lifting and/or turning hose so that water flow is not obstructed. - Required Upon Active Duty (RUAD)



112. Feed charged hose line of a diameter between 1¾ to 2½ inches to attacking firefighter units. - Required Upon Active Duty (RUAD)



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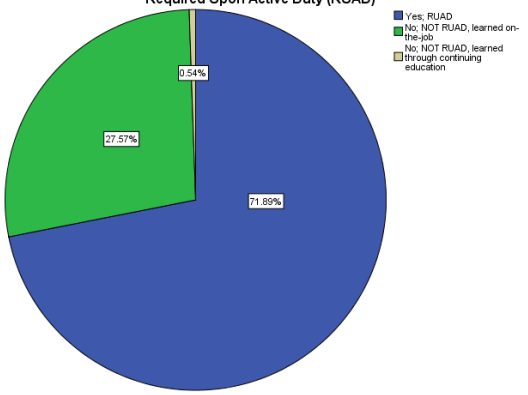
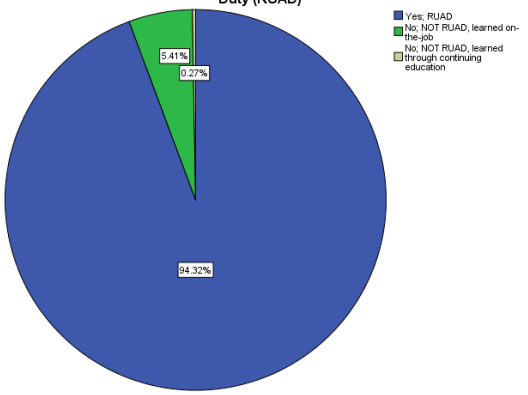
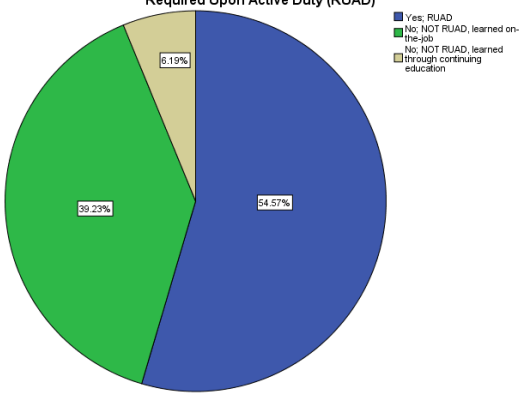
113. Re-bed hose line back onto the proper apparatus (e.g., engine or truck). - Required Upon Active Duty (RUAD)



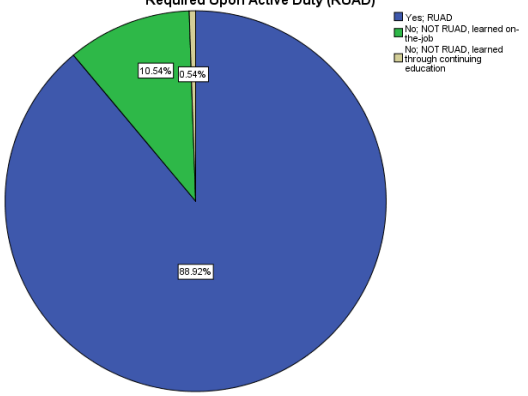
117. Hold a charged 1¾ inch hose and open the nozzle. - Required Upon Active Duty (RUAD)



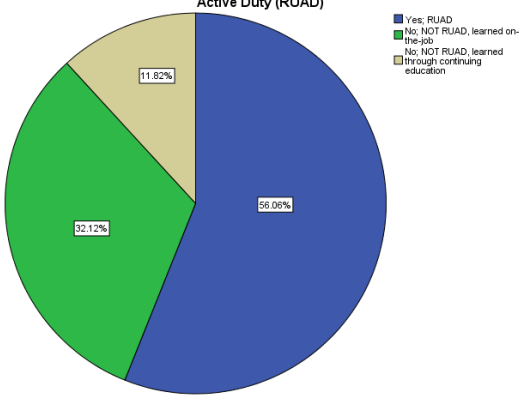
114. Select the proper hose size based upon fire scene and method of attack. - Required Upon Active Duty (RUAD)



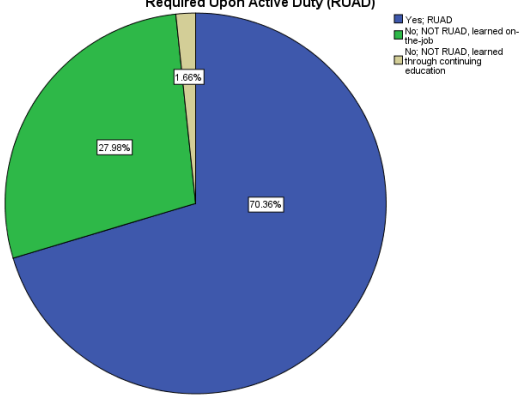
118. While assisted, hold a charged 2½ inch hose and open the nozzle. - Required Upon Active Duty (RUAD)



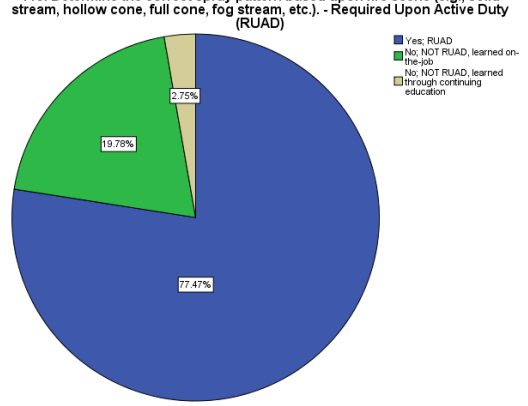
115. Calculate the height of a building in feet from its floors. - Required Upon Active Duty (RUAD)



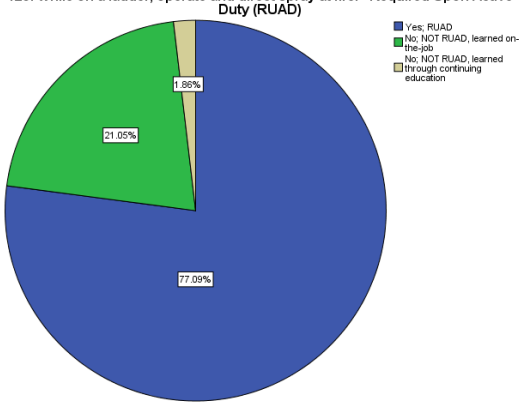
119. Operate a charged hose line from elevated positions and direct spray at fire. - Required Upon Active Duty (RUAD)



116. Determine the correct spray pattern based upon fire scene (e.g., solid stream, hollow cone, full cone, fog stream, etc.). - Required Upon Active Duty (RUAD)



120. While on a ladder, operate and direct spray at fire. - Required Upon Active Duty (RUAD)



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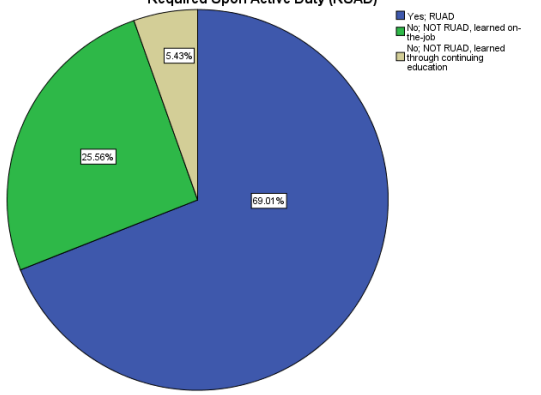
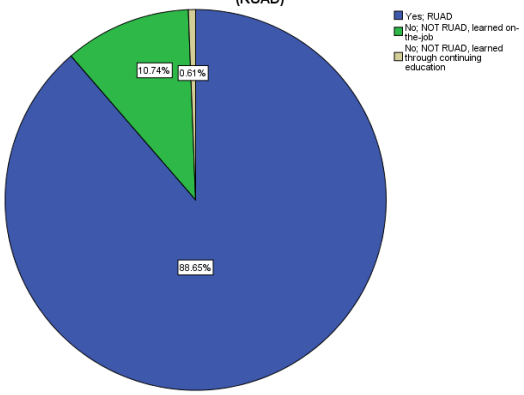
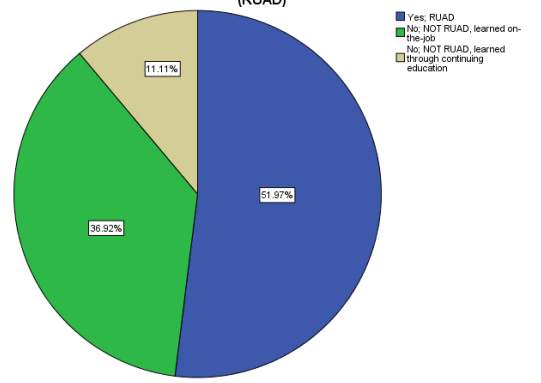
121. Operate a charged hose line from confined spaces and direct spray at fire. - Required Upon Active Duty (RUAD)



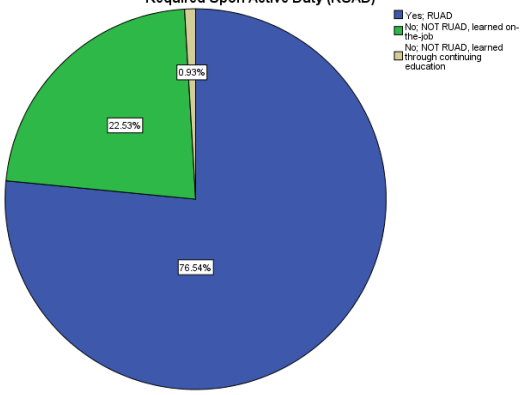
125. Seek the source of a fire and extinguish. - Required Upon Active Duty (RUAD)



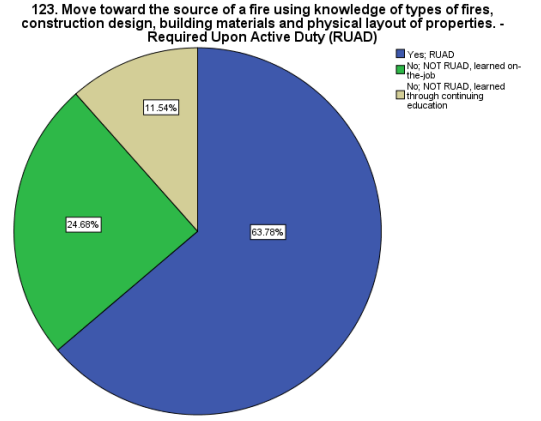
122. Continue to monitor fire suppression and adjust suppression tactics to extinguish fire and prevent the extension of the fire. - Required Upon Active Duty (RUAD)



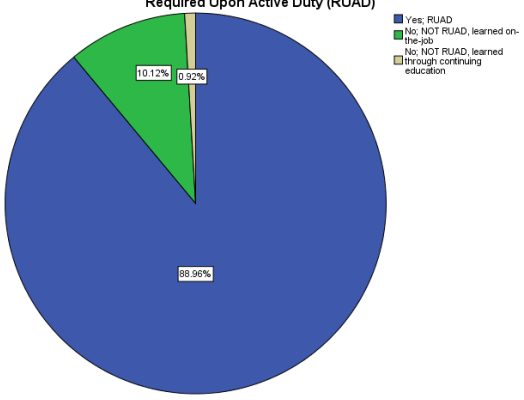
126. Select the correct tool or equipment for various firefighting maneuvers. - Required Upon Active Duty (RUAD)



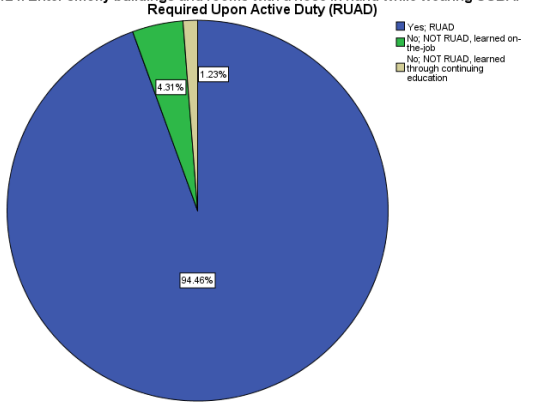
123. Move toward the source of a fire using knowledge of types of fires, construction design, building materials and physical layout of properties. - Required Upon Active Duty (RUAD)



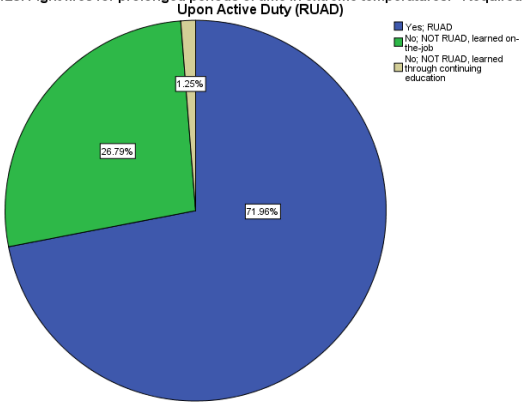
127. Fight fires in smoky buildings when visibility is poor or nonexistent. - Required Upon Active Duty (RUAD)



124. Enter smoky buildings and rooms with a hose in hand while wearing SCBA. - Required Upon Active Duty (RUAD)



128. Fight fires for prolonged periods of time in extreme temperatures. - Required Upon Active Duty (RUAD)



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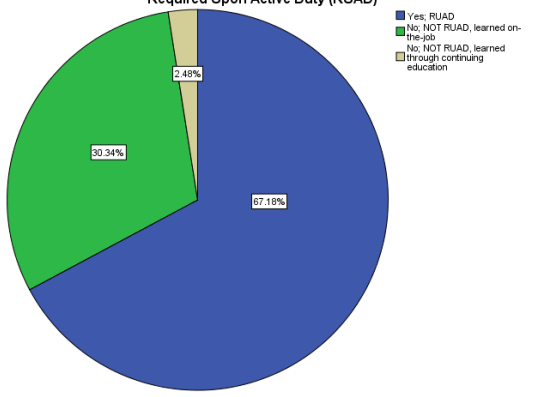
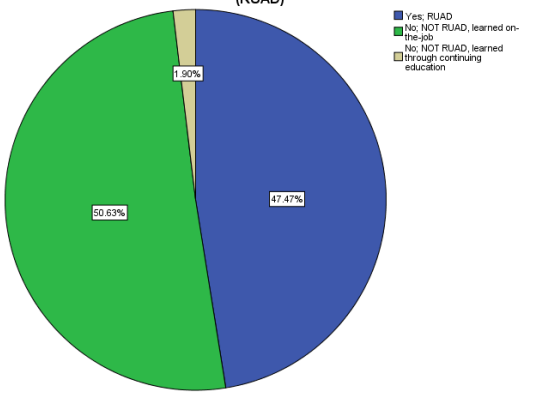
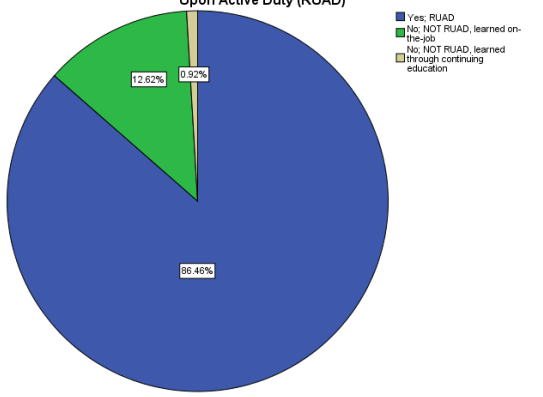
129. Use other senses to find the source of a fire when you cannot see. - Required Upon Active Duty (RUAD)



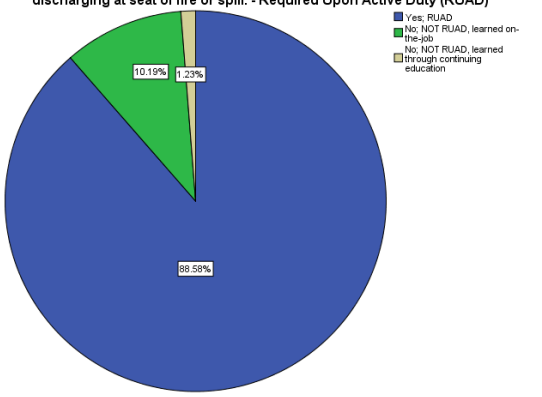
133. Operate a thermal imaging camera (TIC). - Required Upon Active Duty (RUAD)



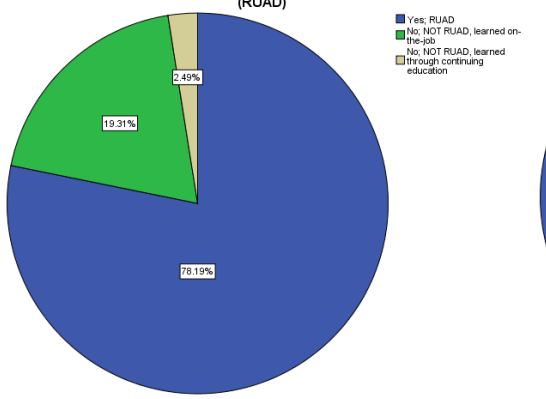
130. Carry equipment up stairs while wearing PPE gear and SCBA. - Required Upon Active Duty (RUAD)



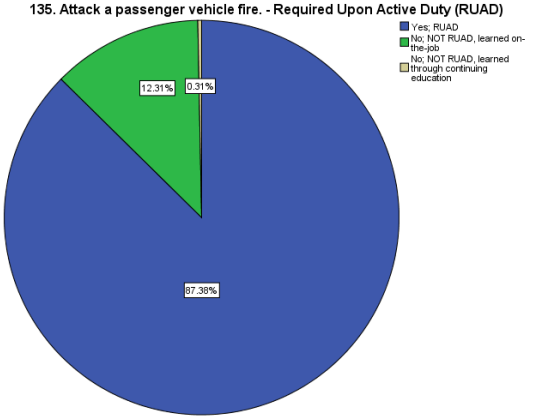
134. Operate a fire extinguisher by carrying it to objective, aiming and discharging at seat of fire or spill. - Required Upon Active Duty (RUAD)



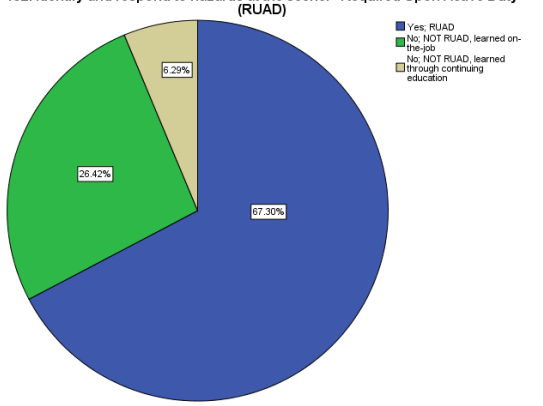
131. Climb obstacles while wearing PPE and SCBA. - Required Upon Active Duty (RUAD)



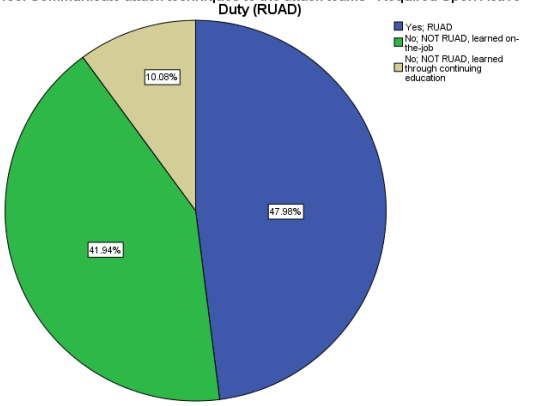
135. Attack a passenger vehicle fire. - Required Upon Active Duty (RUAD)



132. Identify and respond to hazards at the scene. - Required Upon Active Duty (RUAD)



136. Communicate attack techniques to the attack teams - Required Upon Active Duty (RUAD)



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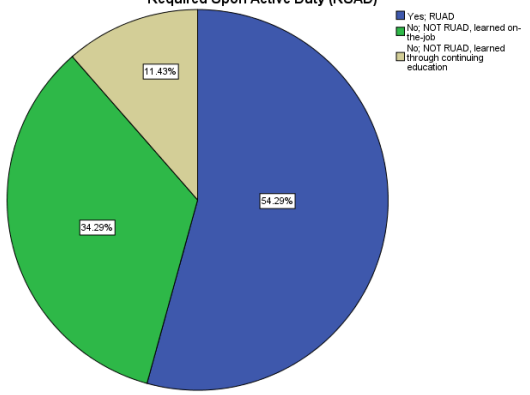
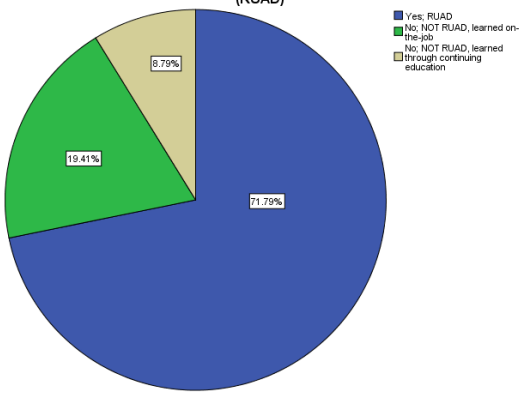
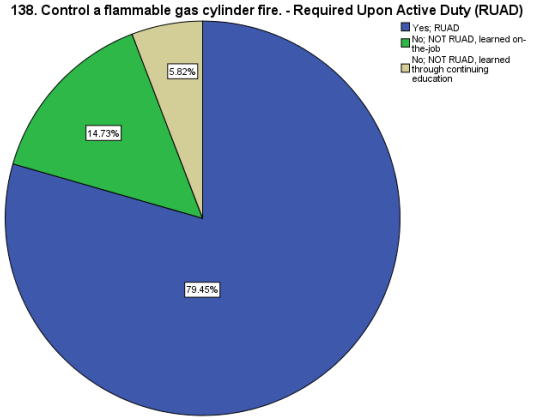
137. Communicate and manage search, rescue, and ventilation requirements. - Required Upon Active Duty (RUAD)



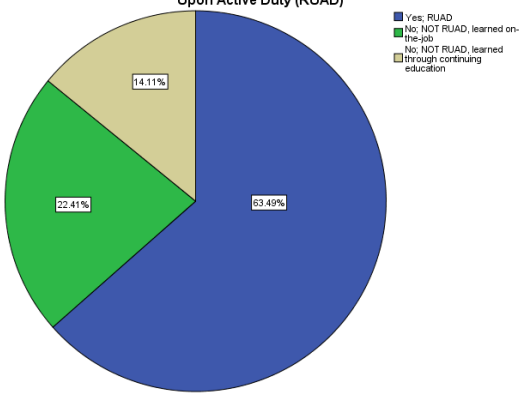
141. Eliminate leaking gas and then extinguish fire. - Required Upon Active Duty (RUAD)



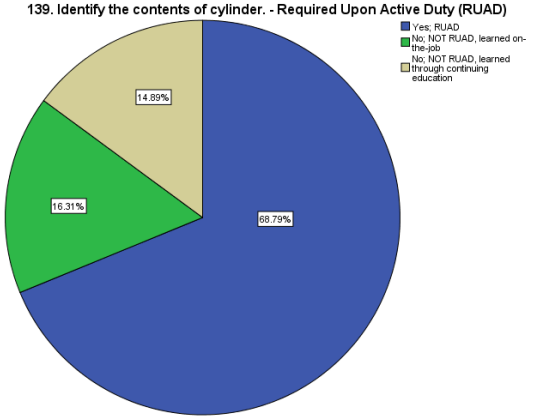
138. Control a flammable gas cylinder fire. - Required Upon Active Duty (RUAD)



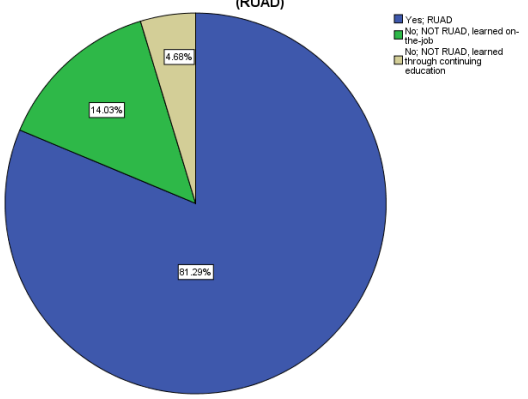
142. Evaluate the cylinder integrity and ensure cylinder has cooled. - Required Upon Active Duty (RUAD)



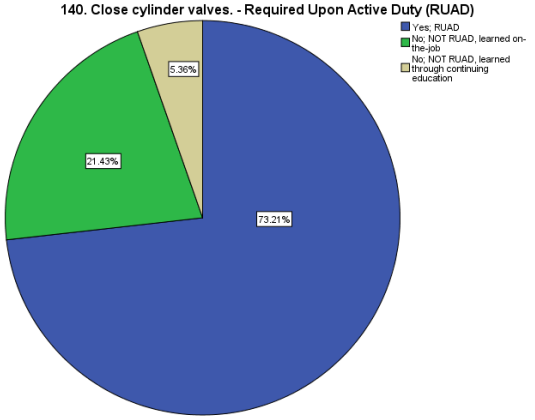
139. Identify the contents of cylinder. - Required Upon Active Duty (RUAD)



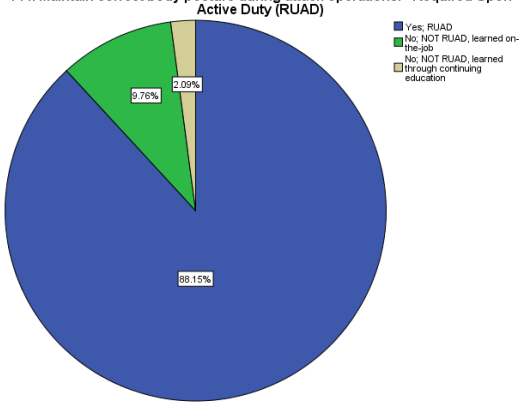
143. Face the cylinder during approach and retreat. - Required Upon Active Duty (RUAD)



140. Close cylinder valves. - Required Upon Active Duty (RUAD)



144. Maintain correct body posture during attack operations. - Required Upon Active Duty (RUAD)



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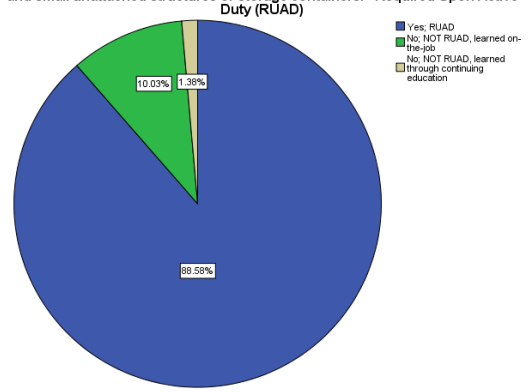
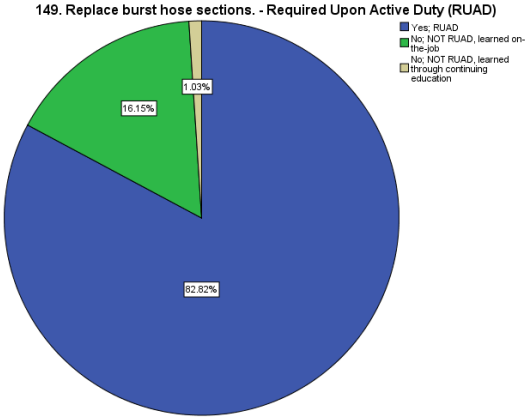
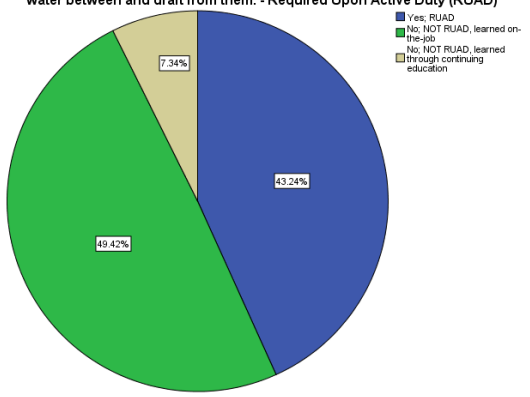
145. Extinguish fires in exterior Class A materials, given fires in stacked or piled and small unattached structures or storage containers. - Required Upon Active Duty (RUAD)



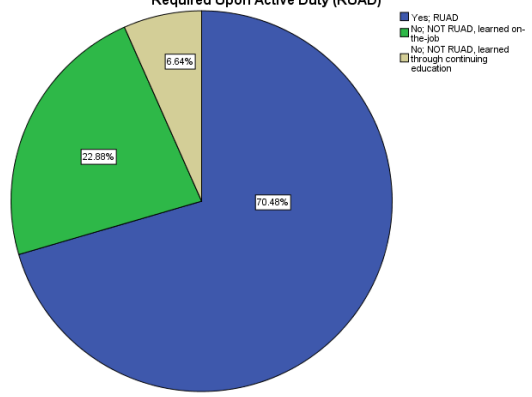
149. Replace burst hose sections. - Required Upon Active Duty (RUAD)



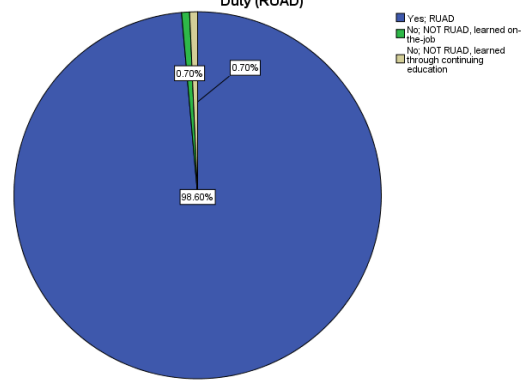
146. Deploy portable water tanks as well as the equipment necessary to transfer water between and draft from them. - Required Upon Active Duty (RUAD)



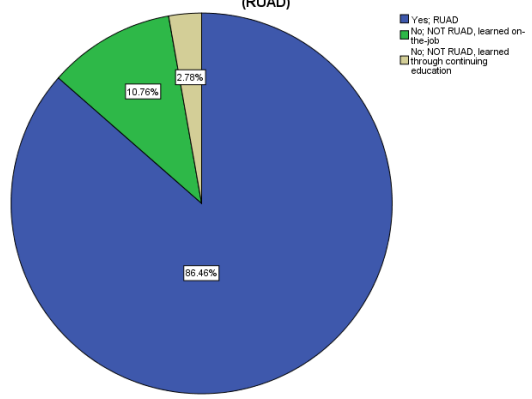
150. Anticipate the injuries which could result from common types of accidents. - Required Upon Active Duty (RUAD)



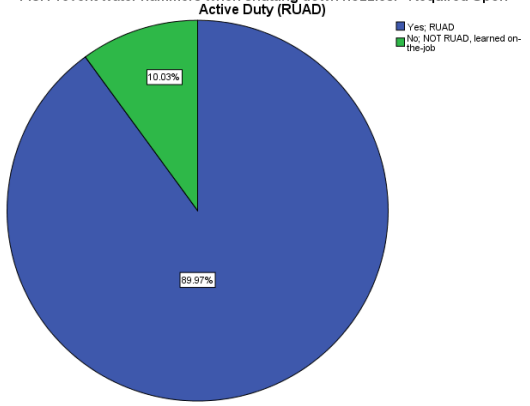
147. Are you paying attention? Please fill in a 'YES' for Applicability, 'Major' for Importance, 'Often' for Frequency, and 'Yes' for RUAD. - Required Upon Active Duty (RUAD)



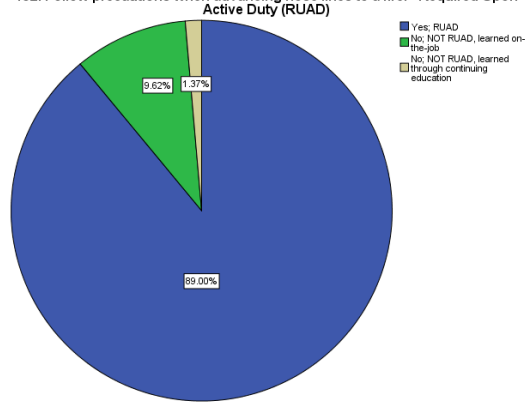
151. Prevent exposure to products of combustion. - Required Upon Active Duty (RUAD)



148. Prevent water hammers when shutting down nozzles. - Required Upon Active Duty (RUAD)



152. Follow precautions when advancing hose lines to a fire. - Required Upon Active Duty (RUAD)



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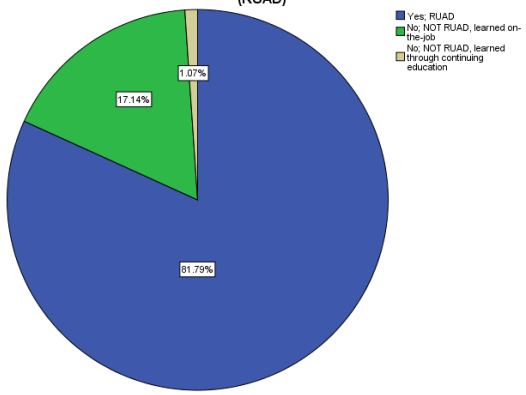
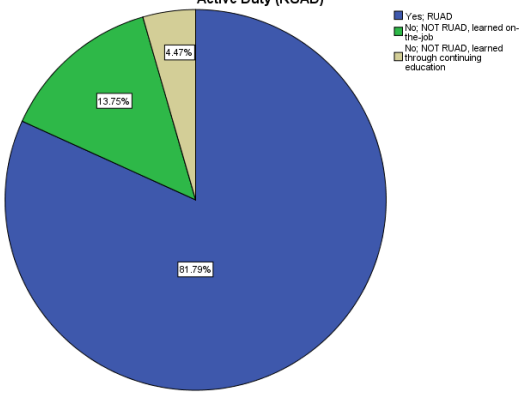
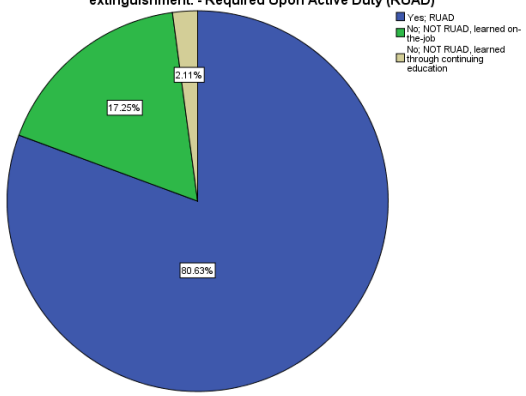
153. Assess proper application of fire stream. - Required Upon Active Duty (RUAD)



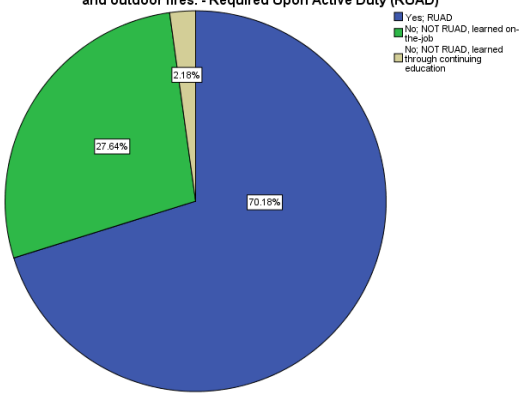
157. Recognize hazards associated with an automobile fire. - Required Upon Active Duty (RUAD)



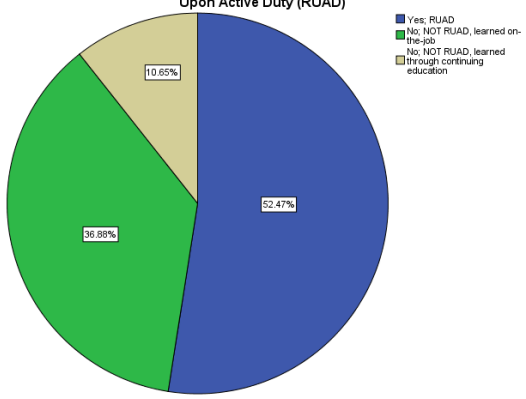
154. Use appropriate water application methods for exposure protection and fire extinguishment. - Required Upon Active Duty (RUAD)



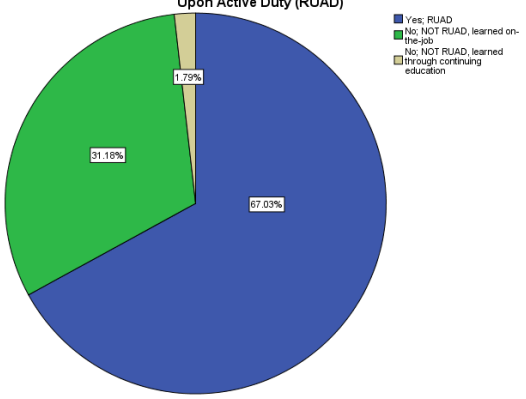
158. Apply appropriate attack lines and water streams for stacked, piled materials and outdoor fires. - Required Upon Active Duty (RUAD)



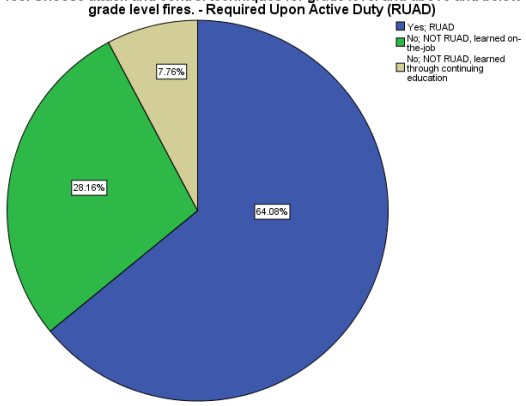
155. Identify automobile fuel types and assess and control fuel leaks. - Required Upon Active Duty (RUAD)



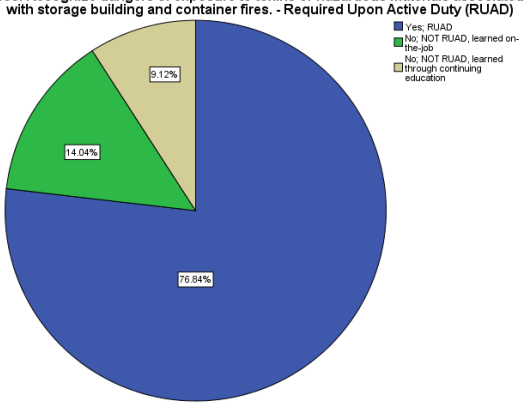
159. Ensure complete extinguishment of stacked and piled materials. - Required Upon Active Duty (RUAD)



156. Choose attack and control techniques for grade level and above and below grade level fires. - Required Upon Active Duty (RUAD)



160. Recognize dangers of exposure to toxins or hazardous materials associated with storage building and container fires. - Required Upon Active Duty (RUAD)



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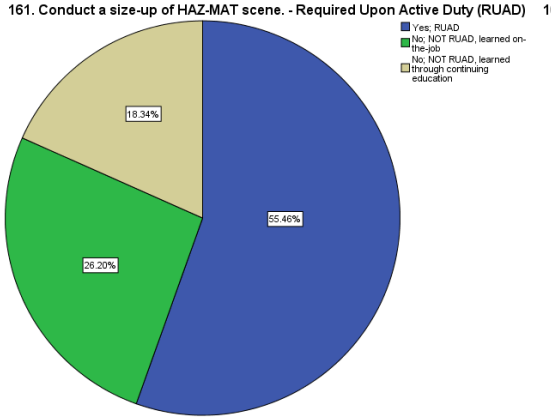
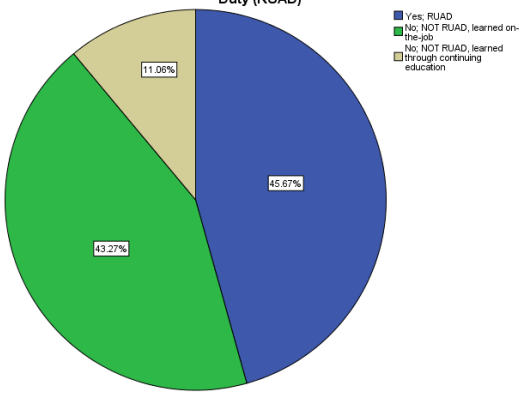
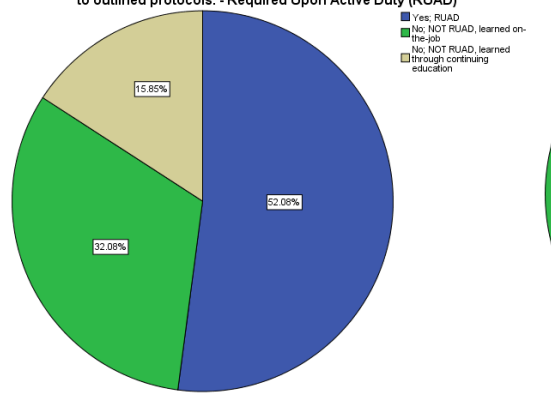
161. Conduct a size-up of HAZ-MAT scene. - Required Upon Active Duty (RUAD)



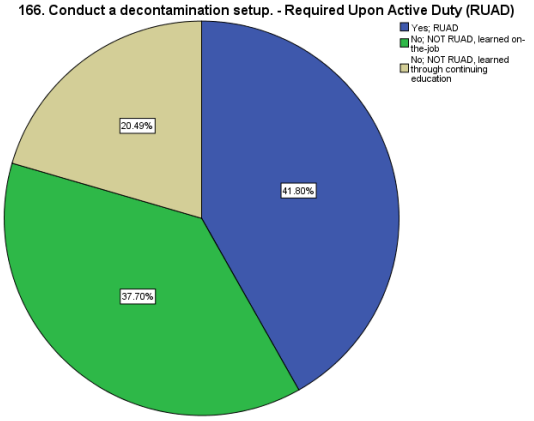
165. Provide onsite crowd control in a HAZ-MAT situation. - Required Upon Active Duty (RUAD)



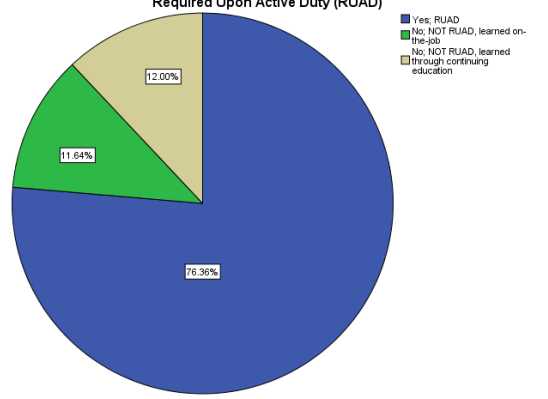
162. Respond to the release or potential release of hazardous material according to outlined protocols. - Required Upon Active Duty (RUAD)



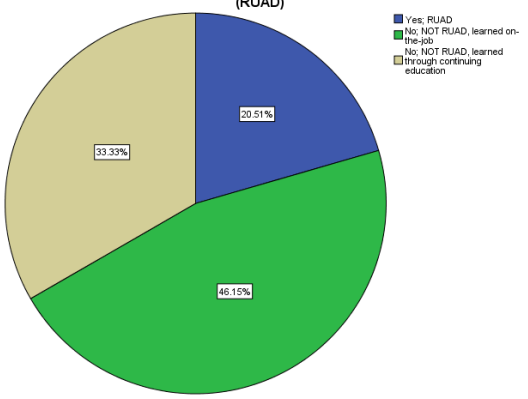
166. Conduct a decontamination setup. - Required Upon Active Duty (RUAD)



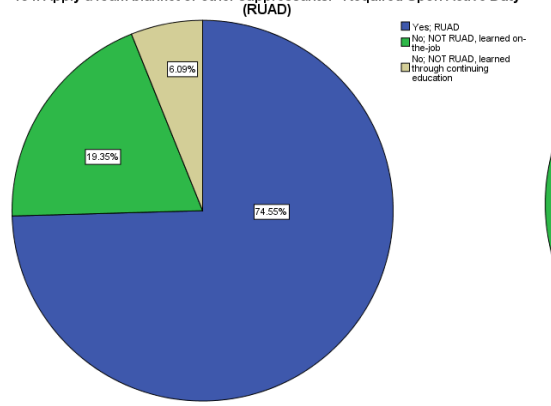
163. Identify HAZ-MAT by use of signage and HAZ-MAT reference materials. - Required Upon Active Duty (RUAD)



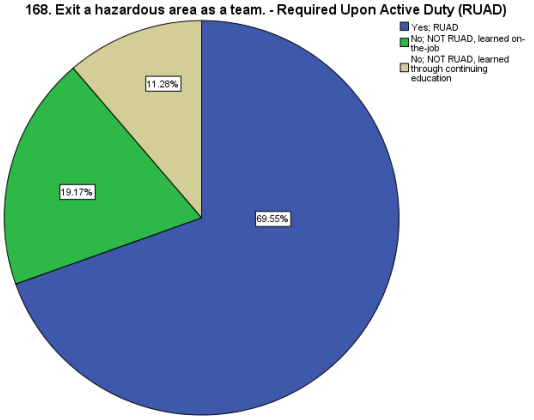
167. Utilize watercraft to trace source of oil slicks. - Required Upon Active Duty (RUAD)



164. Apply a foam blanket or other suppressants. - Required Upon Active Duty (RUAD)



168. Exit a hazardous area as a team. - Required Upon Active Duty (RUAD)



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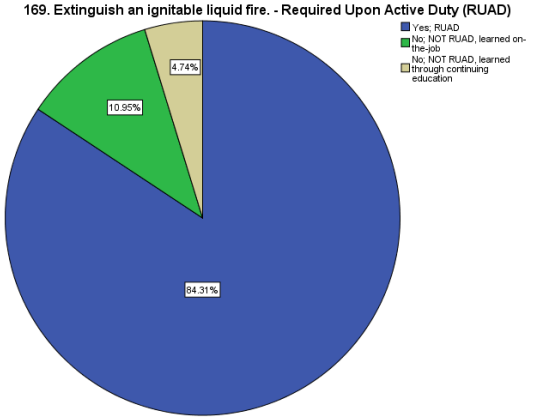
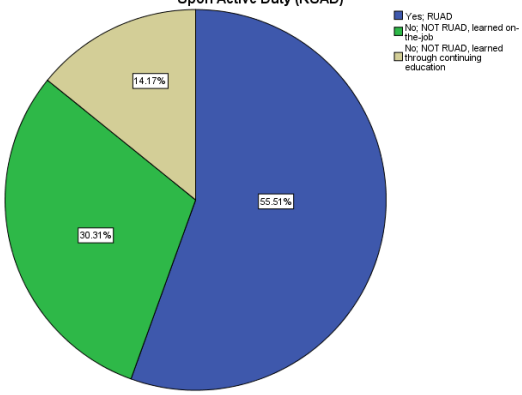
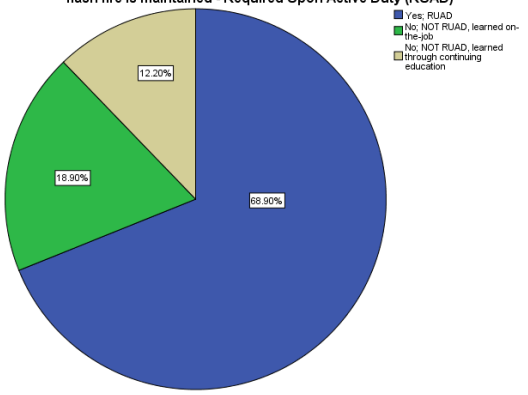
169. Extinguish an ignitable liquid fire. - Required Upon Active Duty (RUAD)



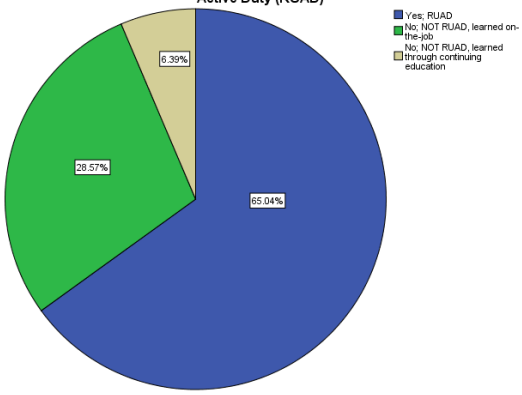
173. Reduce or avoid hazards associated with firefighting foams. - Required Upon Active Duty (RUAD)



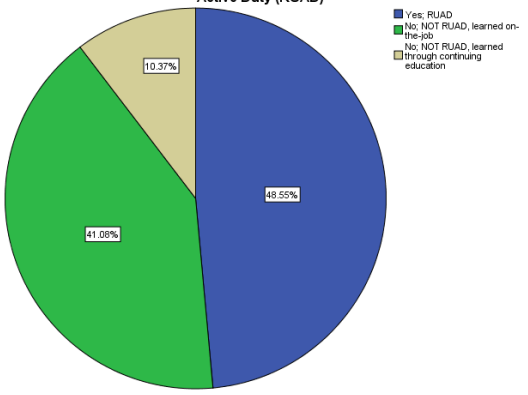
170. Identify and control leaking flammable liquids, such that protection from flash fire is maintained - Required Upon Active Duty (RUAD)



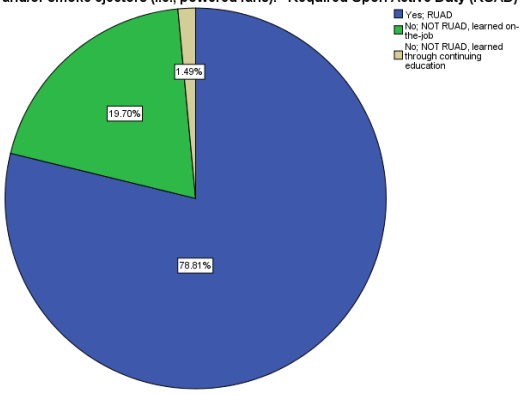
174. Use fog nozzles or foam nozzles depending on situation. - Required Upon Active Duty (RUAD)



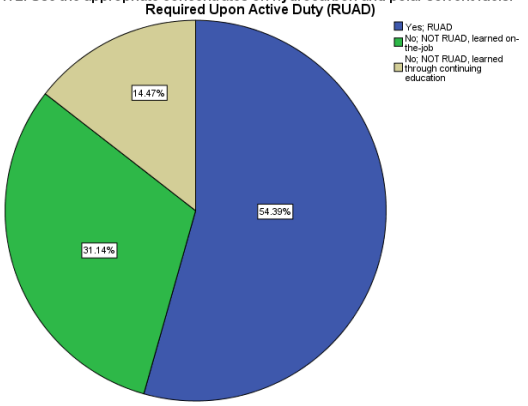
171. Take corrective measures to rectify poor foam generation. - Required Upon Active Duty (RUAD)



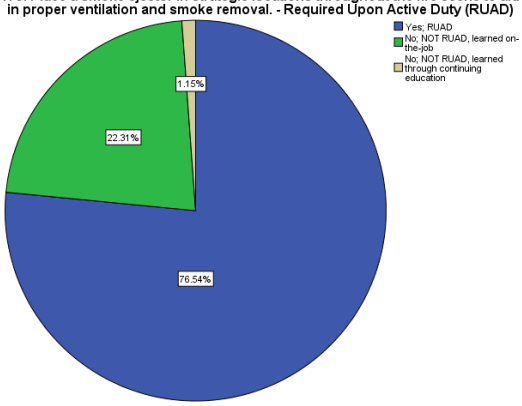
175. Protect property from water and smoke using waterproof salvage covers and/or smoke ejectors (i.e., powered fans). - Required Upon Active Duty (RUAD)



172. Use the appropriate concentrates on hydrocarbon and polar solvent fuels. - Required Upon Active Duty (RUAD)



176. Place a smoke ejector in strategic locations throughout the fire scene to aid in proper ventilation and smoke removal. - Required Upon Active Duty (RUAD)



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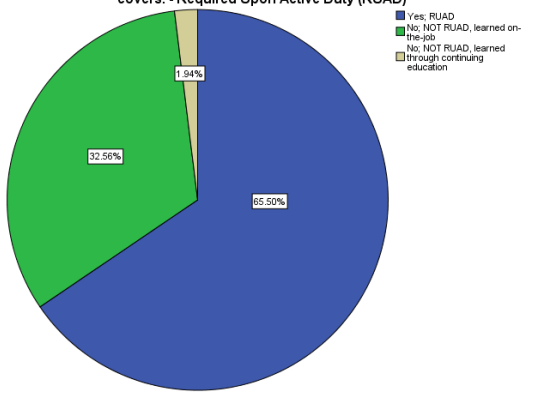
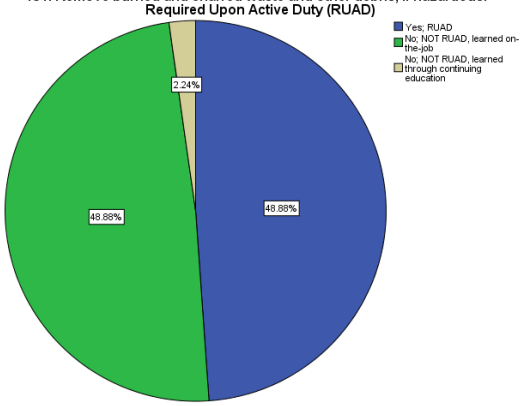
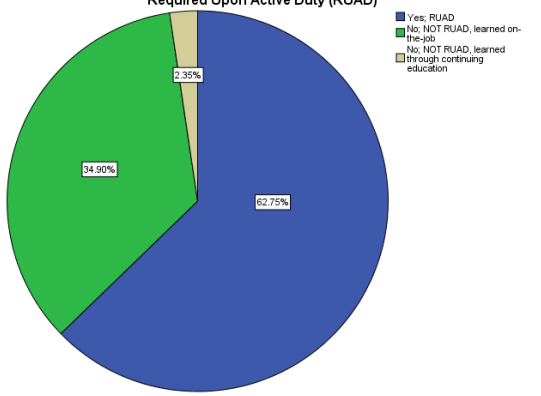
177. Gather furniture into an appropriate location and protect it with salvage covers. - Required Upon Active Duty (RUAD)



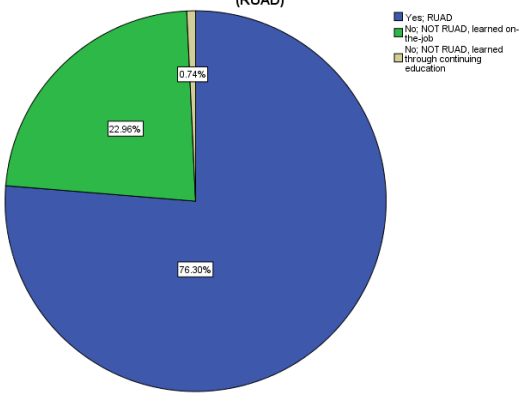
181. Remove burned and charred waste and other debris, if hazardous. - Required Upon Active Duty (RUAD)



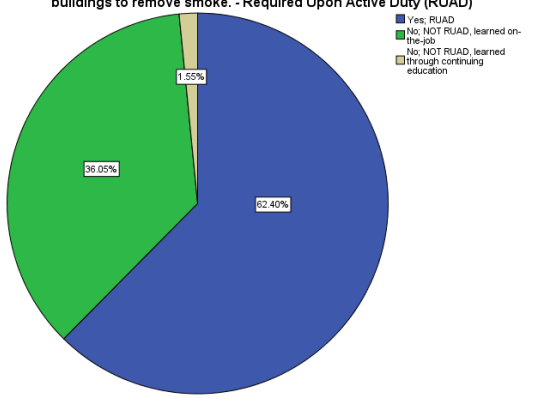
178. Place salvage covers over lower floors to prevent unnecessary damage. - Required Upon Active Duty (RUAD)



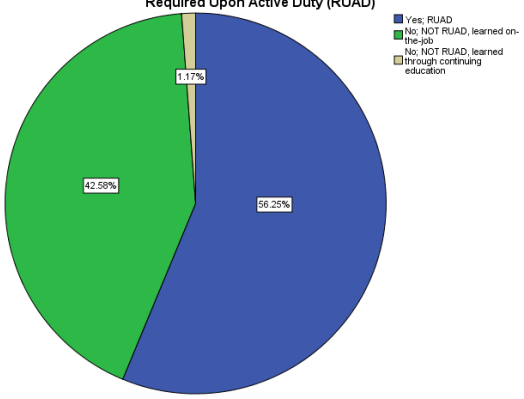
182. Perform overhaul and salvage operations. - Required Upon Active Duty (RUAD)



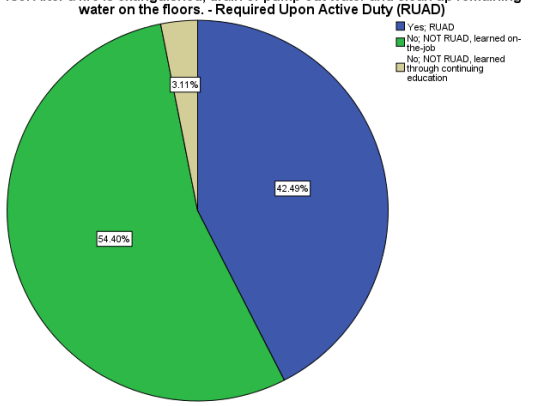
179. Salvage property by removing broken glass, removing water and ventilating buildings to remove smoke. - Required Upon Active Duty (RUAD)



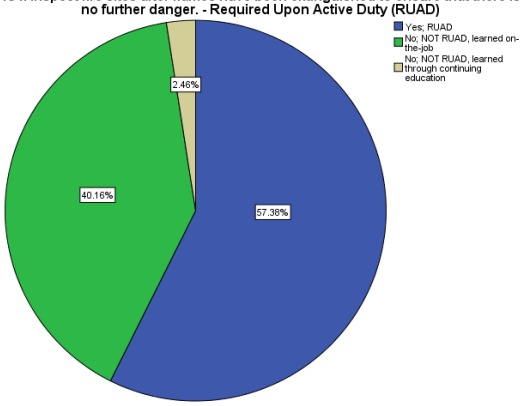
183. Check for fire extension or hotspots using thermal imaging camera. - Required Upon Active Duty (RUAD)



180. After a fire is extinguished, drain or pump out water and clean up remaining water on the floors. - Required Upon Active Duty (RUAD)



184. Inspect fire sites after flames have been extinguished to ensure that there is no further danger. - Required Upon Active Duty (RUAD)



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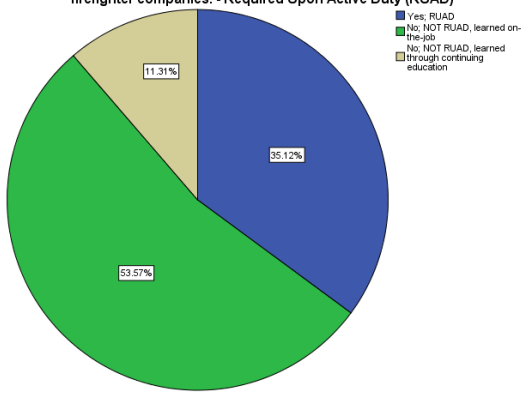
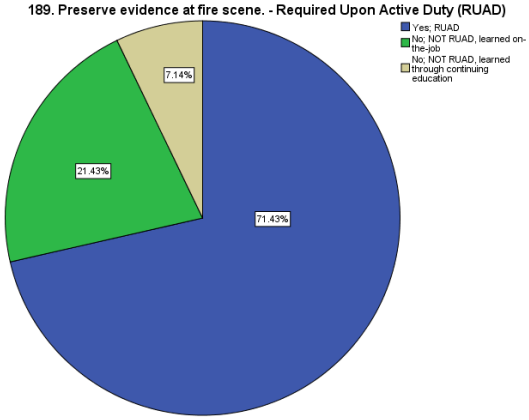
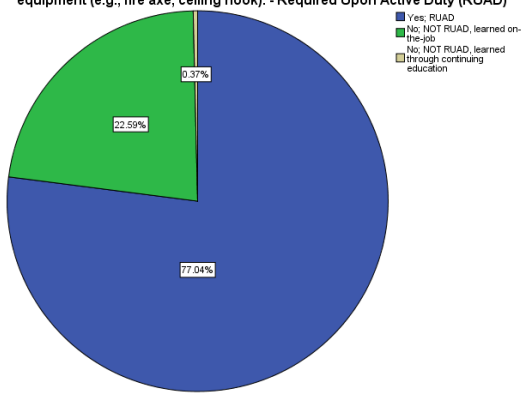
185. Coordinate inspections with other firefighters, supervisors and other firefighter companies. - Required Upon Active Duty (RUAD)



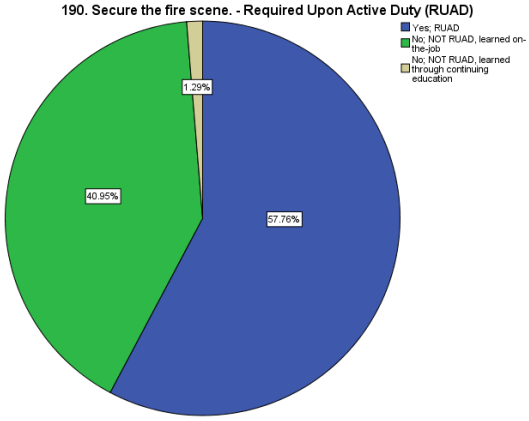
189. Preserve evidence at fire scene. - Required Upon Active Duty (RUAD)



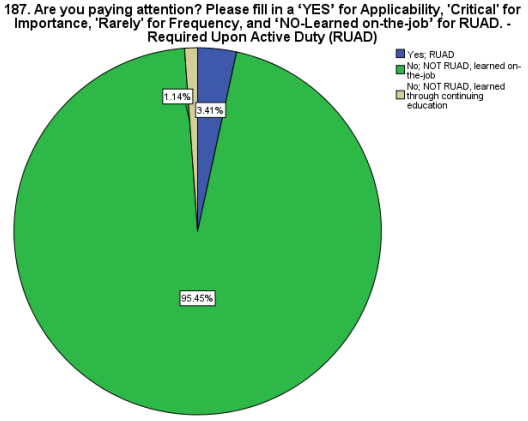
186. Check for smoldering fire inside walls and ceiling by means of fire tools and equipment (e.g., fire axe, ceiling hook). - Required Upon Active Duty (RUAD)



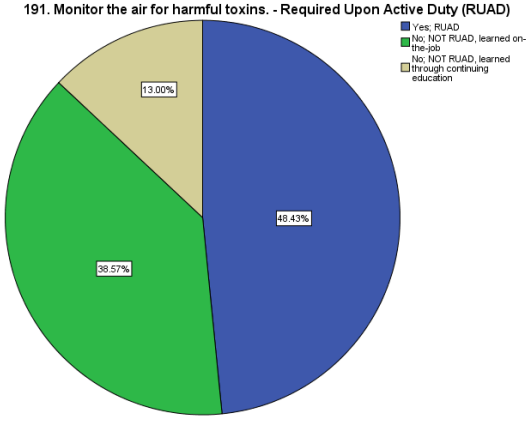
190. Secure the fire scene. - Required Upon Active Duty (RUAD)



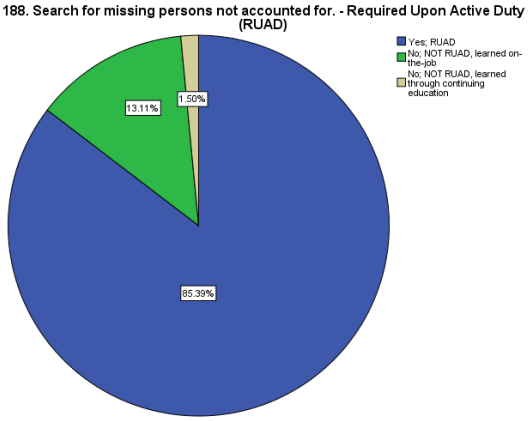
187. Are you paying attention? Please fill in a 'YES' for Applicability, 'Critical' for Importance, 'Rarely' for Frequency, and 'NO-Learned on-the-job' for RUAD. - Required Upon Active Duty (RUAD)



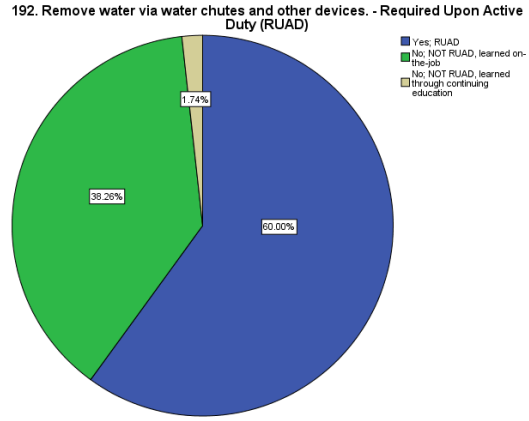
191. Monitor the air for harmful toxins. - Required Upon Active Duty (RUAD)



188. Search for missing persons not accounted for. - Required Upon Active Duty (RUAD)



192. Remove water via water chutes and other devices. - Required Upon Active Duty (RUAD)



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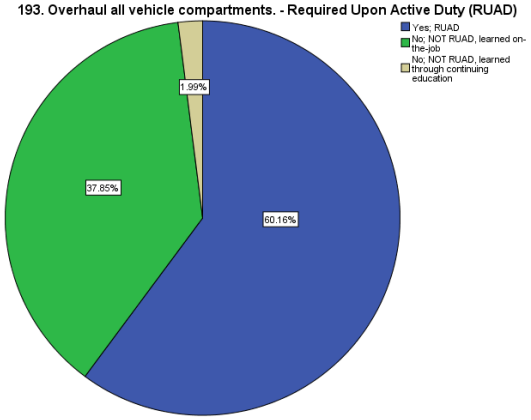
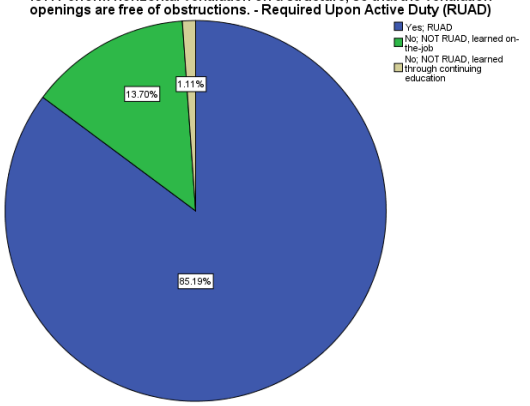
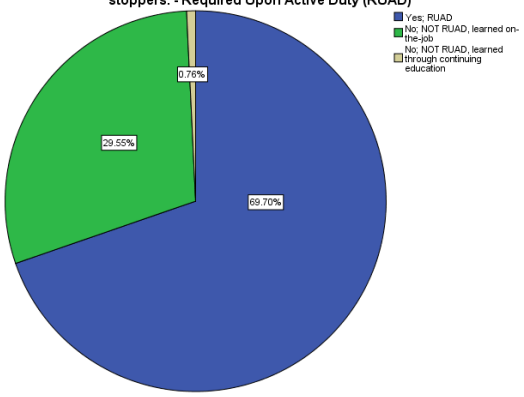
193. Overhaul all vehicle compartments. - Required Upon Active Duty (RUAD)



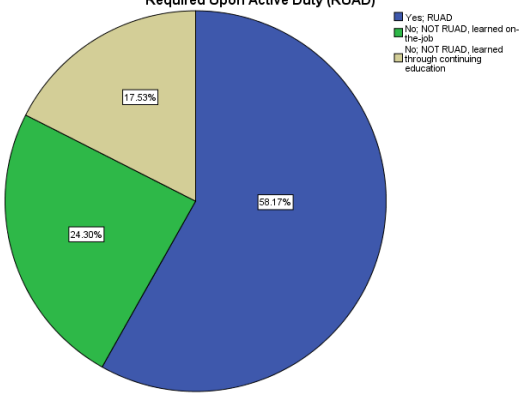
197. Perform horizontal ventilation on a structure, so that the ventilation openings are free of obstructions. - Required Upon Active Duty (RUAD)



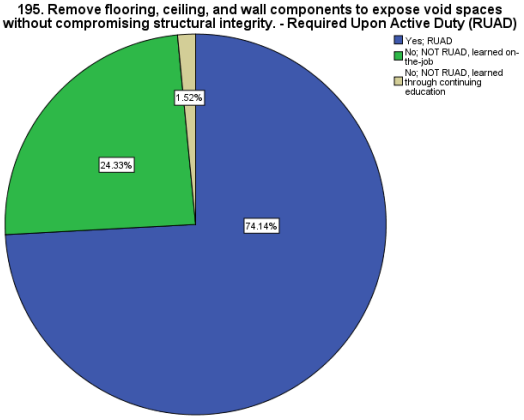
194. Stop the flow of water from building sprinkler with sprinkler wedges or stoppers. - Required Upon Active Duty (RUAD)



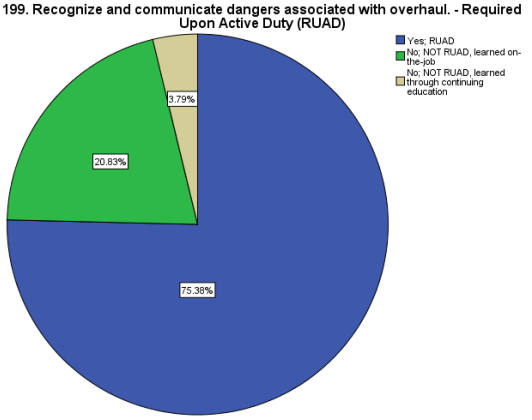
198. Recognize points of strength and weakness in auto body construction. - Required Upon Active Duty (RUAD)



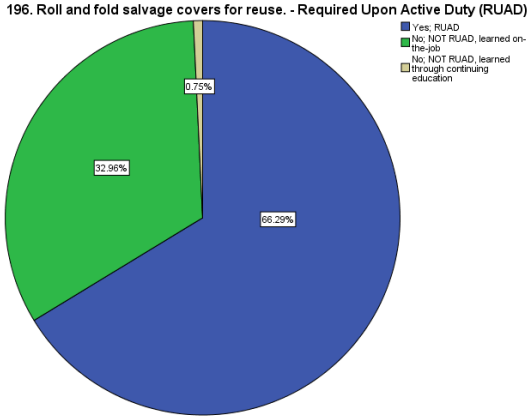
195. Remove flooring, ceiling, and wall components to expose void spaces without compromising structural integrity. - Required Upon Active Duty (RUAD)



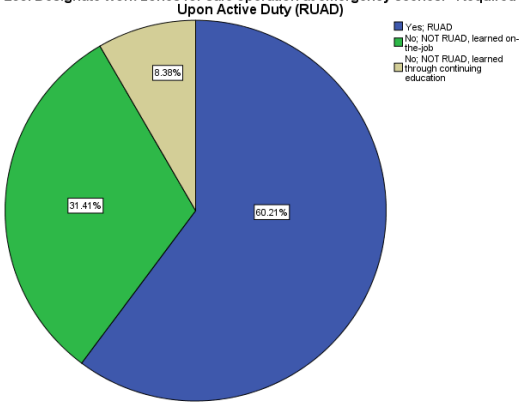
199. Recognize and communicate dangers associated with overhaul. - Required Upon Active Duty (RUAD)



196. Roll and fold salvage covers for reuse. - Required Upon Active Duty (RUAD)



200. Designate work zones for safe operation at emergency scenes. - Required Upon Active Duty (RUAD)



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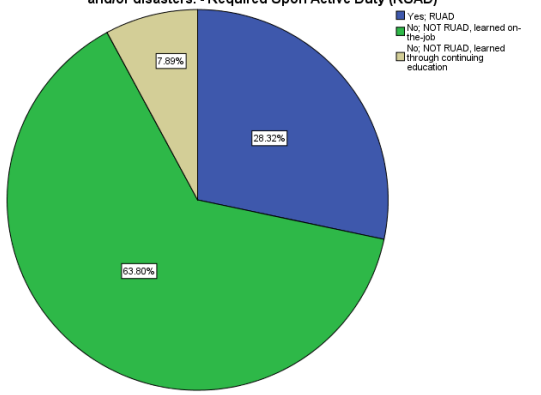
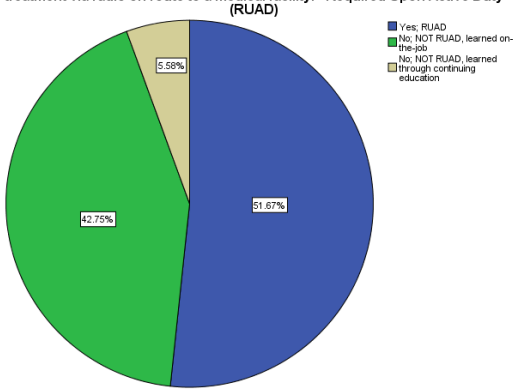
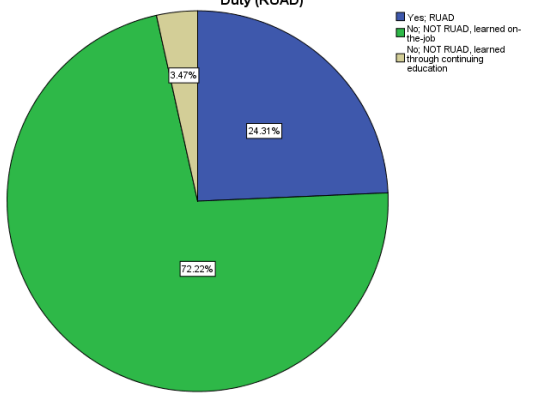
201. Collaborate with other agencies and individuals to respond to accidents and/or disasters. - Required Upon Active Duty (RUAD)



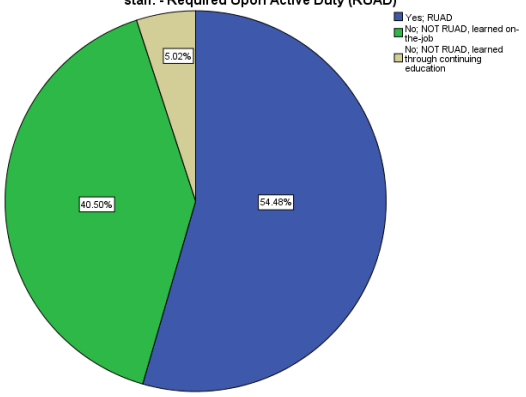
205. Clearly and accurately communicate patient information, assessment and treatment via radio on route to a medical facility. - Required Upon Active Duty (RUAD)



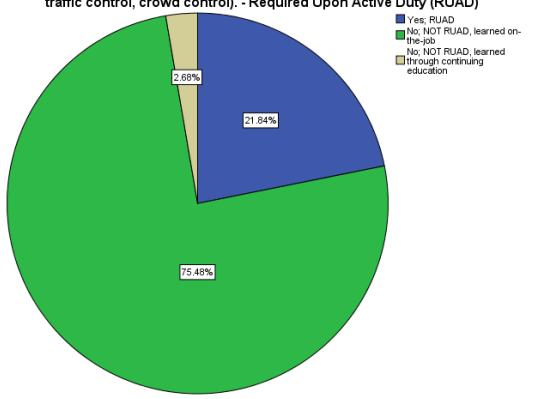
202. Exchange information with law enforcement officials. - Required Upon Active Duty (RUAD)



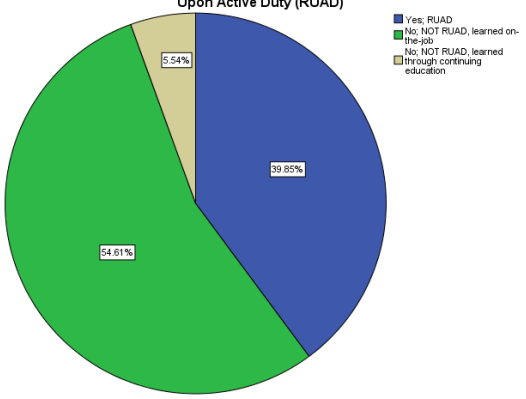
206. Clearly and accurately communicate patient information and care to medical staff. - Required Upon Active Duty (RUAD)



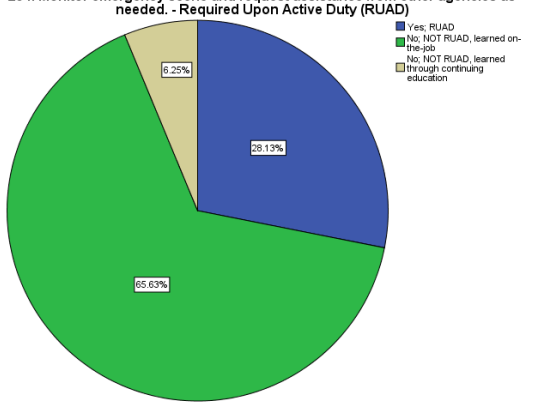
203. Coordinate tasks and responsibilities with law enforcement officials (e.g., traffic control, crowd control). - Required Upon Active Duty (RUAD)



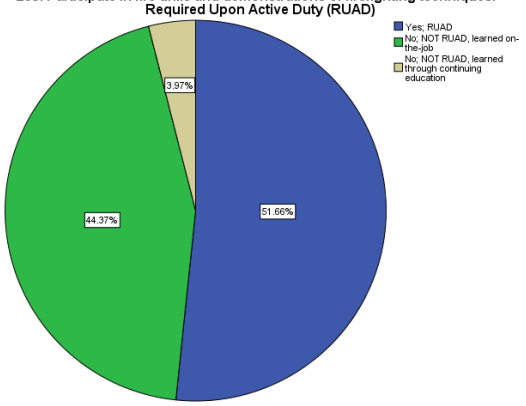
207. Assist medical staff as needed until released by medical staff. - Required Upon Active Duty (RUAD)



204. Monitor emergency scene and request assistance from other agencies as needed. - Required Upon Active Duty (RUAD)



208. Participate in fire drills and demonstrations of firefighting techniques. - Required Upon Active Duty (RUAD)



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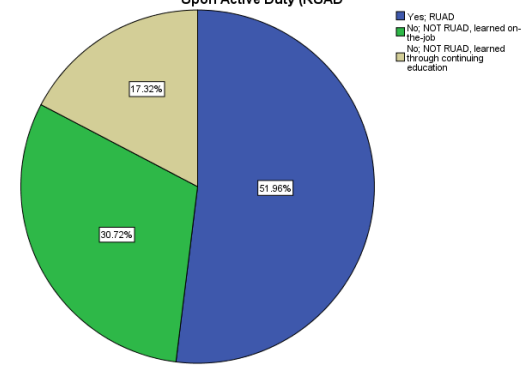
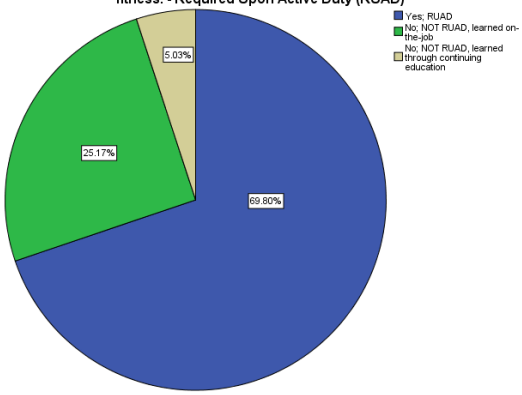
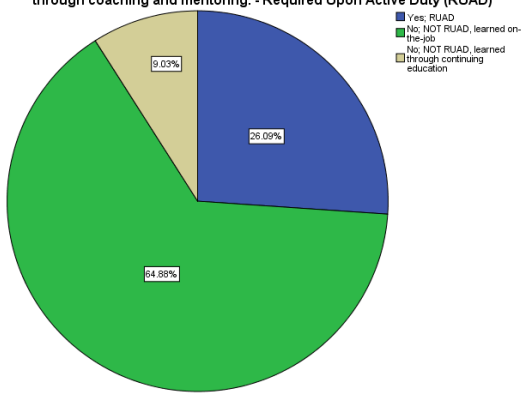
209. Participate in ongoing training drills to develop and maintain proficiency (e. g., HAZ-MAT, search and rescue operations, SCBA and air management, automobile extrication, rapid intervention team (RIT) training, etc.). - Required Upon Active Duty (RUAD



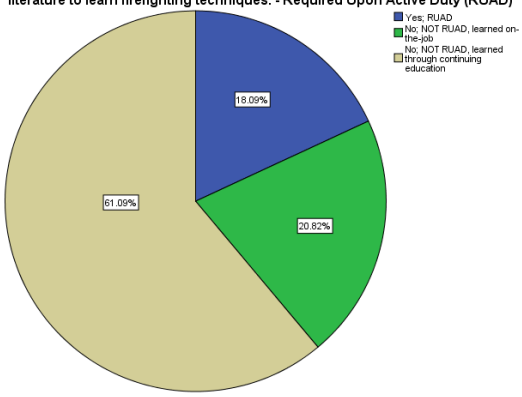
213. Participate in physical training activities to maintain a high level of physical fitness. - Required Upon Active Duty (RUAD)



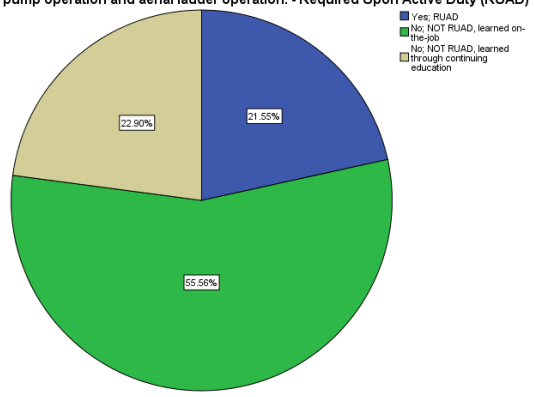
210. Participate in training drills with new firefighters, assisting in their training through coaching and mentoring. - Required Upon Active Duty (RUAD)



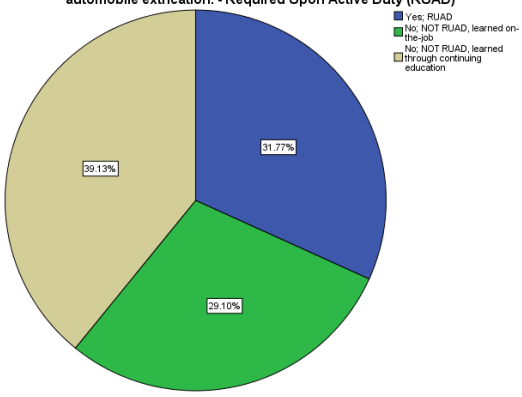
214. Participate in courses, seminars and conferences, and study fire science literature to learn firefighting techniques. - Required Upon Active Duty (RUAD)



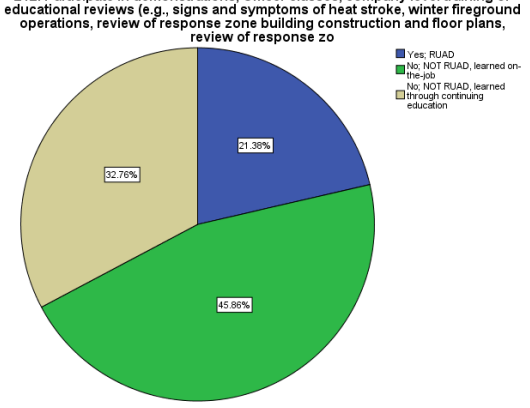
211. Train in equipment operations such as apparatus driving, hydraulics and pump operation and aerial ladder operation. - Required Upon Active Duty (RUAD)



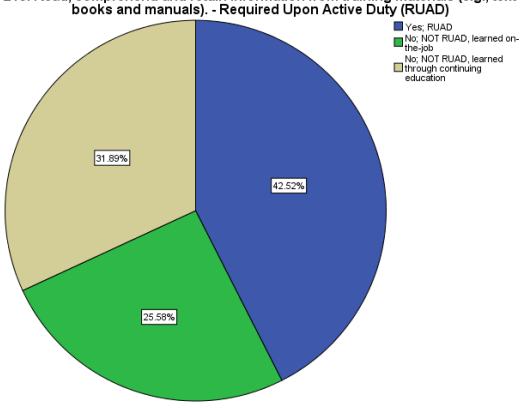
215. Complete required training courses such as hazardous materials and automobile extrication. - Required Upon Active Duty (RUAD)



212. Participate in demonstrations, Officer classes, company level training or educational reviews (e.g., signs and symptoms of heat stroke, winter fireground operations, review of response zone building construction and floor plans, review of response zo



216. Read, comprehend and retain information from training materials (e.g., text books and manuals). - Required Upon Active Duty (RUAD)



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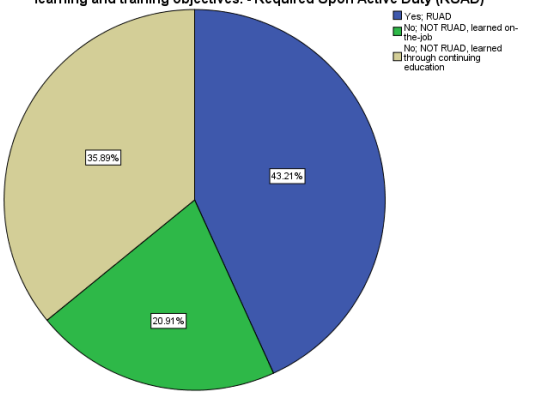
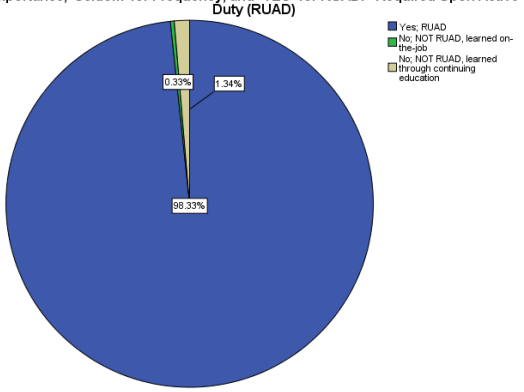
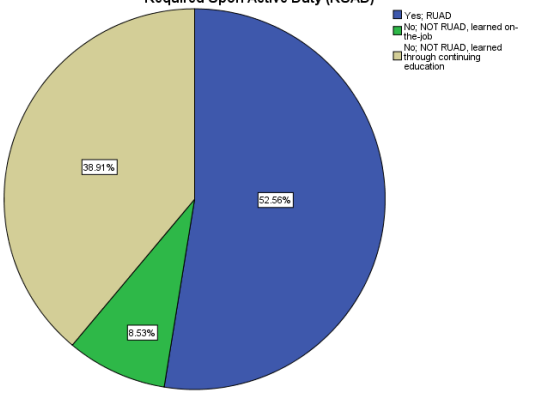
217. Successfully complete and pass written exams that test coursework learning and training objectives. - Required Upon Active Duty (RUAD)



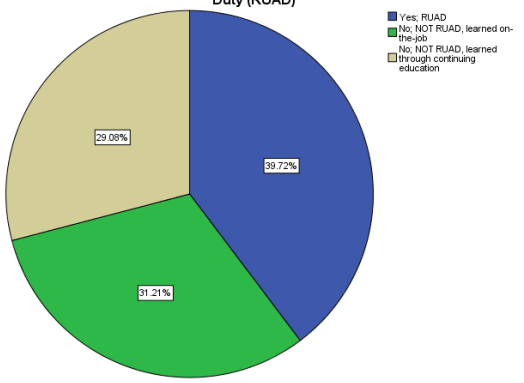
221. Are you paying attention? Please fill in a 'YES' for Applicability, 'Major' for Importance, 'Seldom' for Frequency, and 'YES' for RUAD. - Required Upon Active Duty (RUAD)



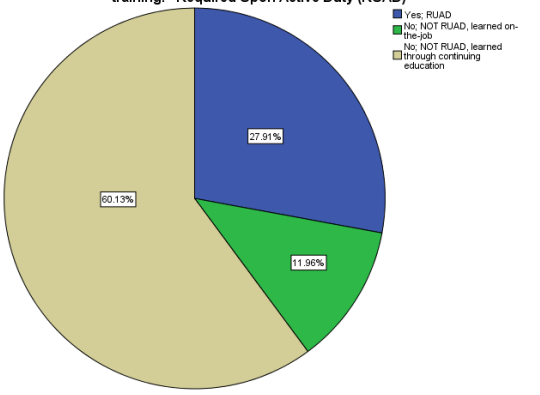
218. Take and complete course work required to obtain medical certifications. - Required Upon Active Duty (RUAD)



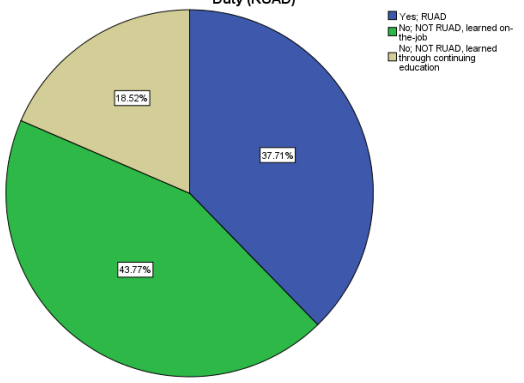
222. Read, comprehend and retain information of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program - Required Upon Active Duty (RUAD)



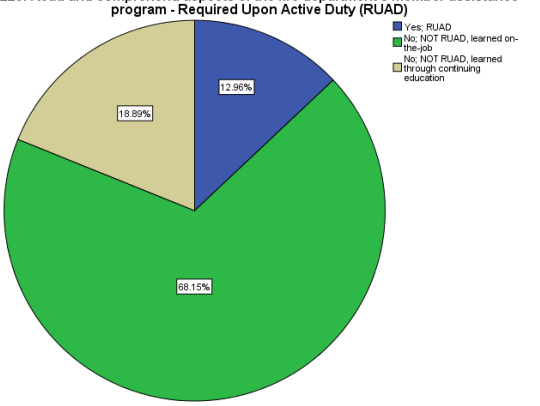
219. Maintain ongoing certification requirement through continuing education or training. - Required Upon Active Duty (RUAD)



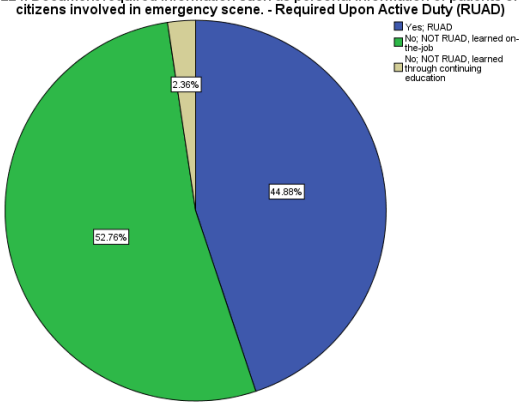
223. Participate in life safety initiatives in support of the fire department mission and to reduce firefighter line-of-duty injuries and fatalities. - Required Upon Active Duty (RUAD)



220. Read and comprehend aspects of the fire department's member assistance program - Required Upon Active Duty (RUAD)



224. Document required information such as personal information of patients or citizens involved in emergency scene. - Required Upon Active Duty (RUAD)



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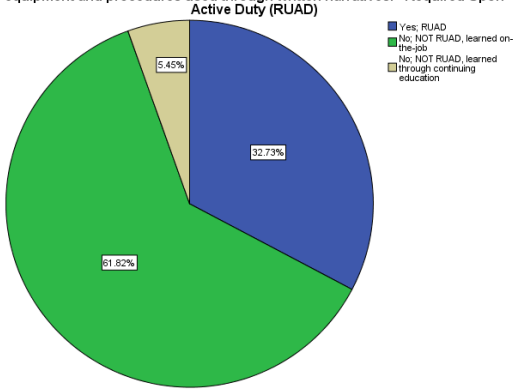
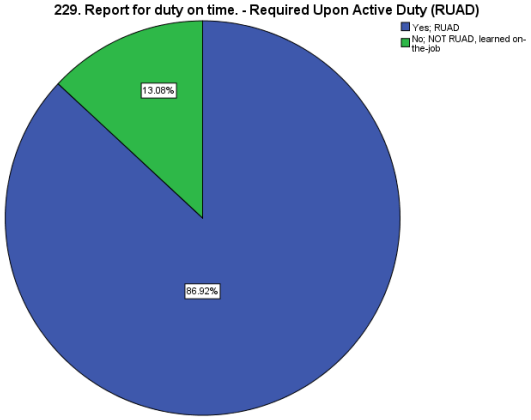
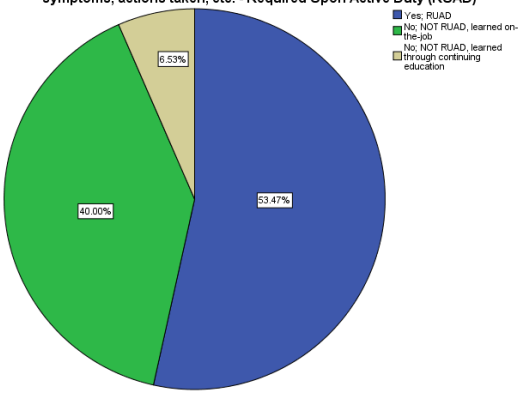
225. Summarize incidents that occurred at an emergency scene, detailing tactics, equipment and procedures used through written narratives. - Required Upon Active Duty (RUAD)



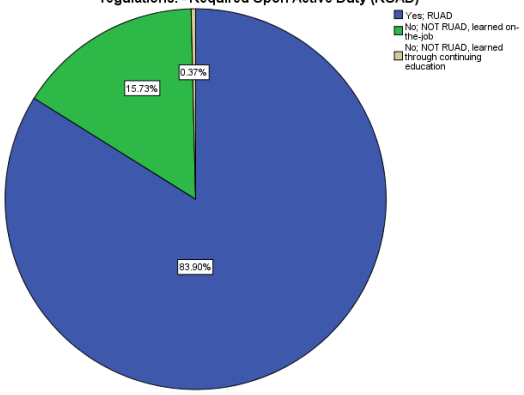
229. Report for duty on time. - Required Upon Active Duty (RUAD)



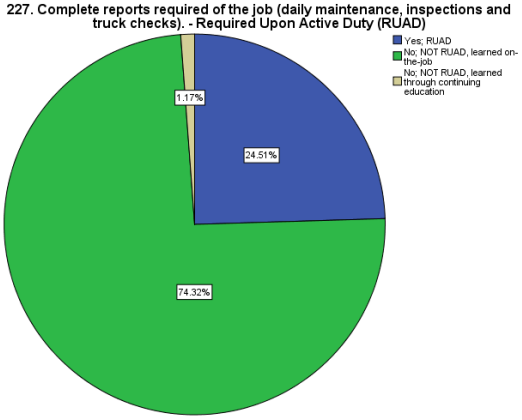
226. Write descriptions of situations in medical reports, including details of symptoms, actions taken, etc. - Required Upon Active Duty (RUAD)



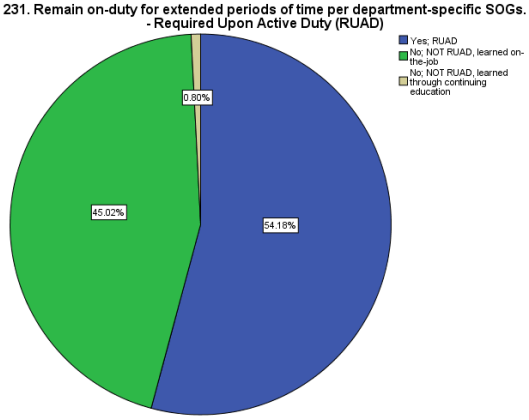
230. Maintain professional appearance and personal hygiene in accordance with regulations. - Required Upon Active Duty (RUAD)



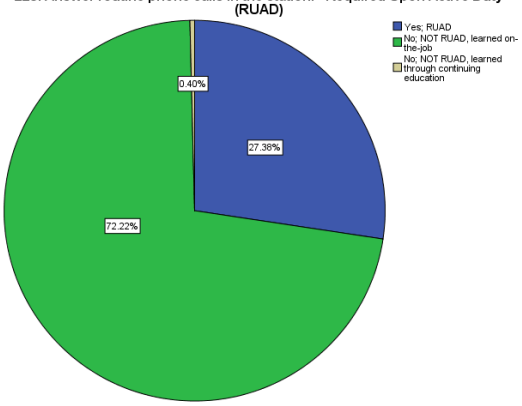
227. Complete reports required of the job (daily maintenance, inspections and truck checks). - Required Upon Active Duty (RUAD)



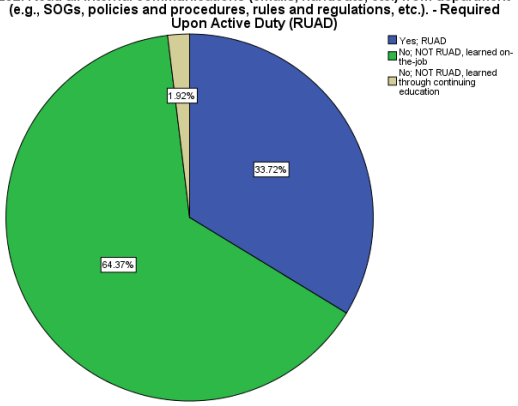
231. Remain on-duty for extended periods of time per department-specific SOGs. - Required Upon Active Duty (RUAD)



228. Answer routine phone calls in the station. - Required Upon Active Duty (RUAD)



232. Read all internal communications (emails, handouts, etc.) from department (e.g., SOGs, policies and procedures, rules and regulations, etc.). - Required Upon Active Duty (RUAD)



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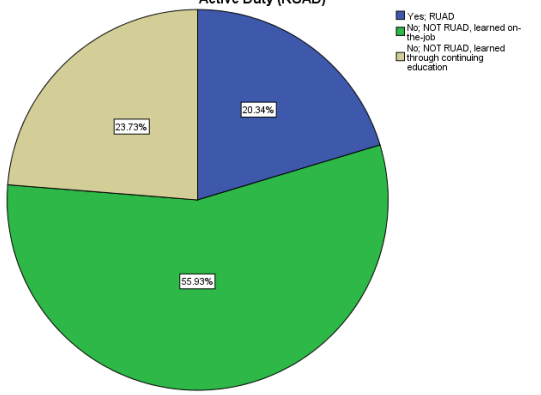
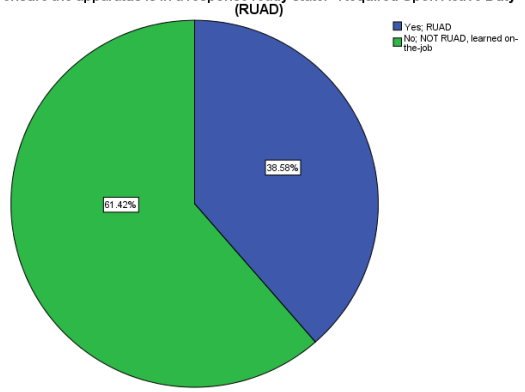
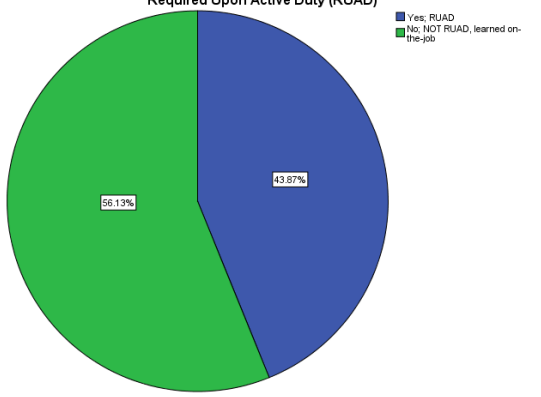
233. Document presentations and use prepared materials. - Required Upon Active Duty (RUAD)



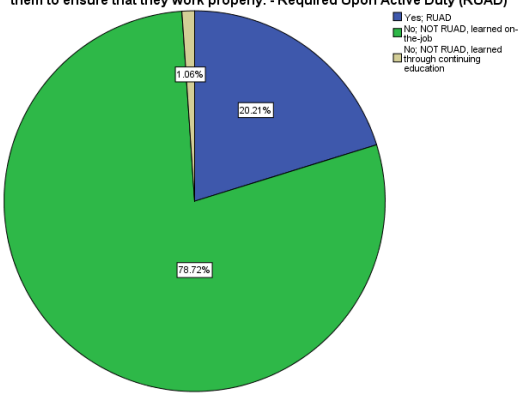
237. Coordinate with firefighters from off-going shift as to the actions needed to ensure the apparatus is in a response ready state. - Required Upon Active Duty (RUAD)



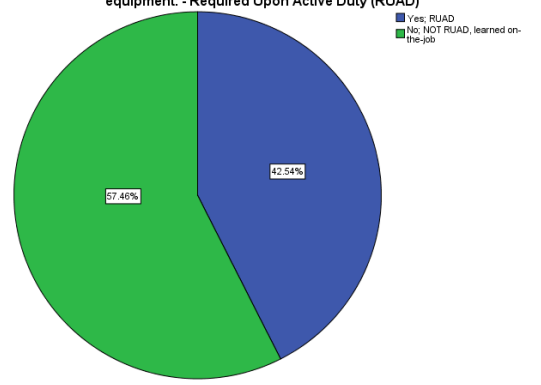
234. Clean and maintain fire stations and firefighting equipment and apparatus. - Required Upon Active Duty (RUAD)



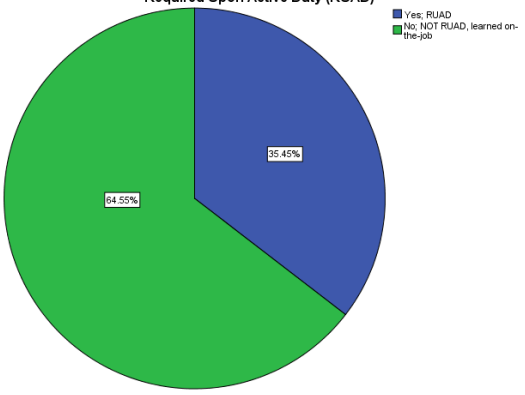
238. Checks bells and other signaling devices in the fire station by operating them to ensure that they work properly. - Required Upon Active Duty (RUAD)



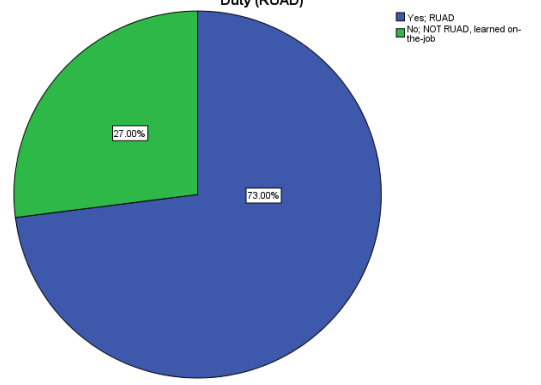
235. Ensure apparatus is in response-ready state, including decontaminating and disinfecting the unit and equipment, restocking of supplies and inspection of equipment. - Required Upon Active Duty (RUAD)



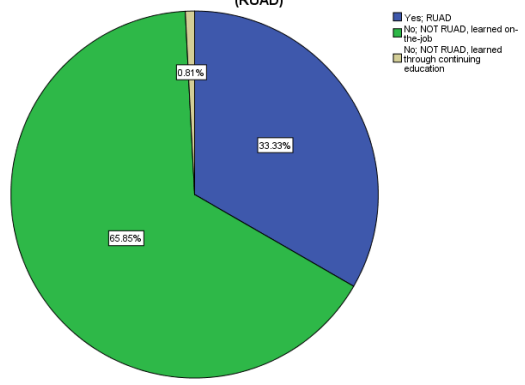
239. Report damaged and out of service equipment to company officer. - Required Upon Active Duty (RUAD)



236. Ensure proper function of SCBA by inspecting and performing daily tests at the start of each shift; service SCBA if malfunctioning. - Required Upon Active Duty (RUAD)



240. Perform maintenance and upkeep for equipment and apparatus as necessary to ensure a response-ready state. - Required Upon Active Duty (RUAD)



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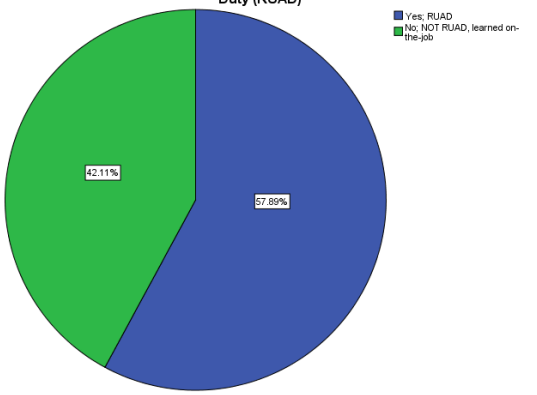
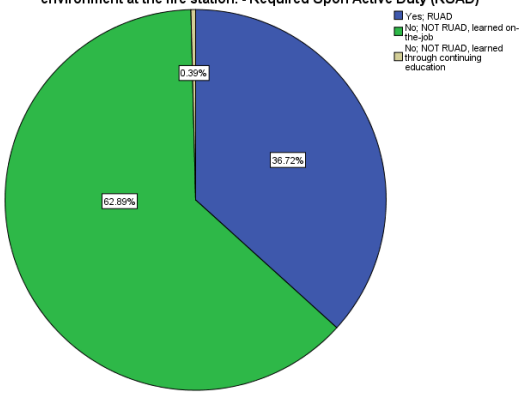
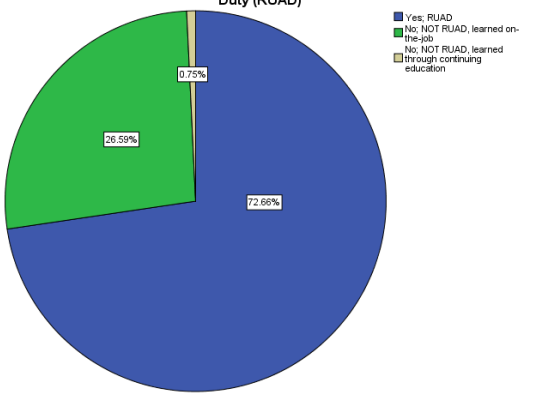
241. Wash used hoses and re-bed them on the truck. - Required Upon Active Duty (RUAD)



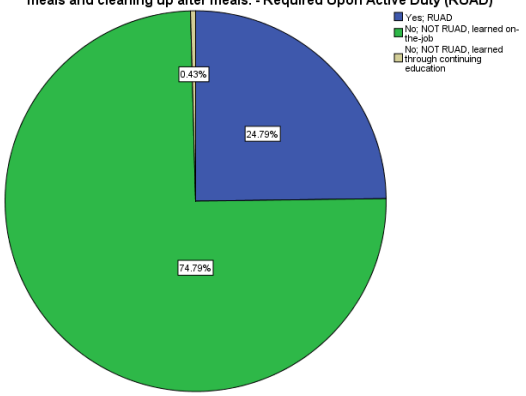
245. Perform daily chores to ensure a neat and clean working and living environment at the fire station. - Required Upon Active Duty (RUAD)



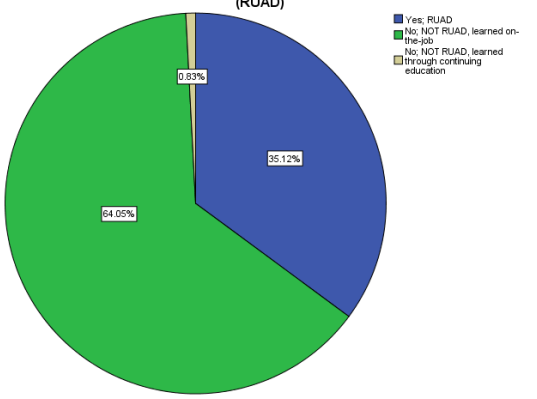
242. Maintain all personal protective equipment (PPE). - Required Upon Active Duty (RUAD)



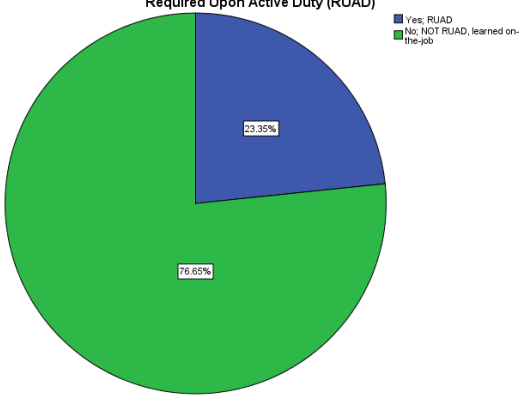
246. Perform and coordinate kitchen chores such as planning meals, cooking meals and cleaning up after meals. - Required Upon Active Duty (RUAD)



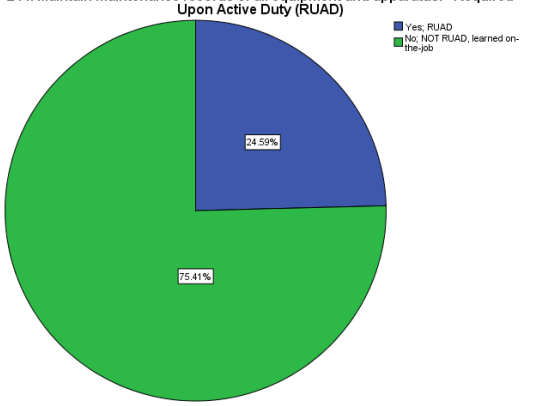
243. Maintain an inventory of tools and equipment. - Required Upon Active Duty (RUAD)



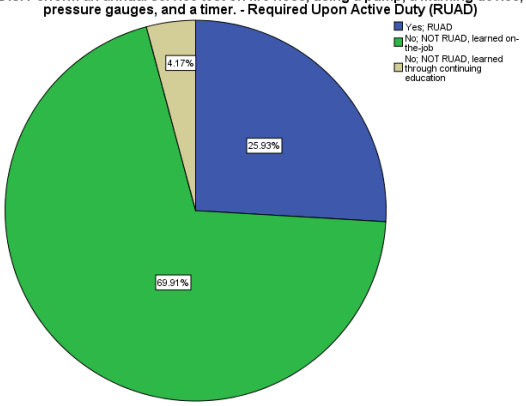
247. Maintain the exterior of fire station: lawns, walkways and driveways. - Required Upon Active Duty (RUAD)



244. Maintain maintenance records of all equipment and apparatus. - Required Upon Active Duty (RUAD)



248. Perform an annual service test on fire hose, using a pump, a marking device, pressure gauges, and a timer. - Required Upon Active Duty (RUAD)



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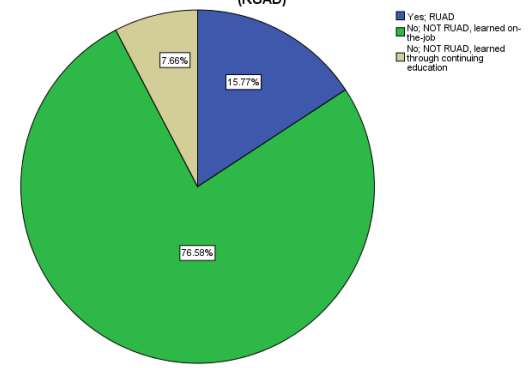
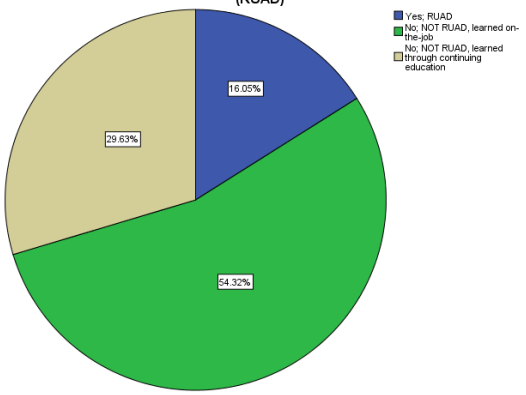
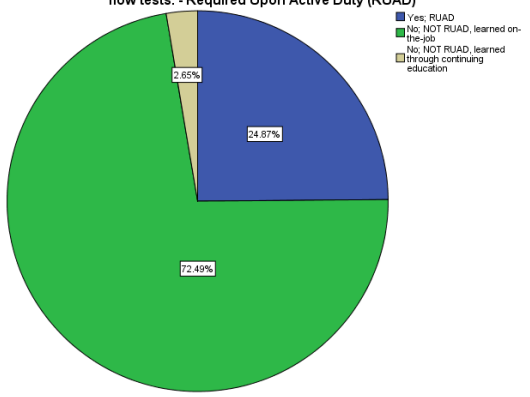
249. Engage in pre-planning operations such as documenting building layouts, building construction, fire suppression and other tactical information such as location of exits to assist in future operations. - Required Upon Active Duty (RUAD)



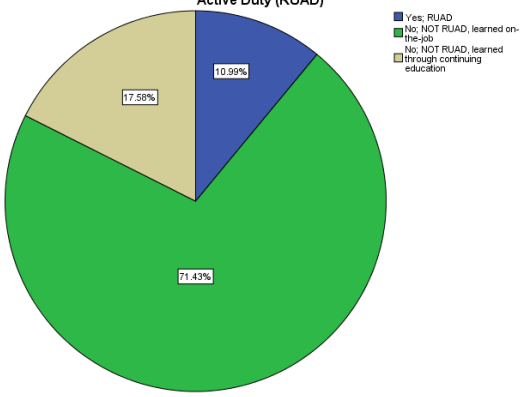
253. Complete smoke detector certifications. - Required Upon Active Duty (RUAD)



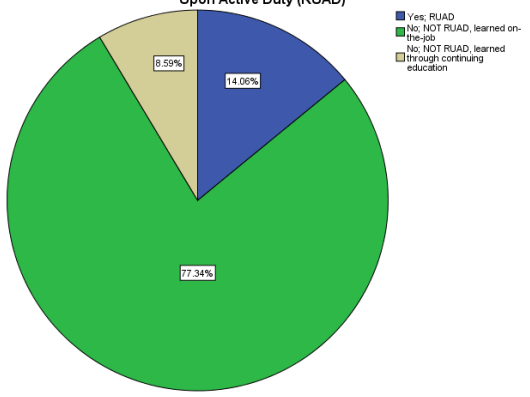
250. Inspect fire hydrant functioning in response zones and conduct hydrant flow tests. - Required Upon Active Duty (RUAD)



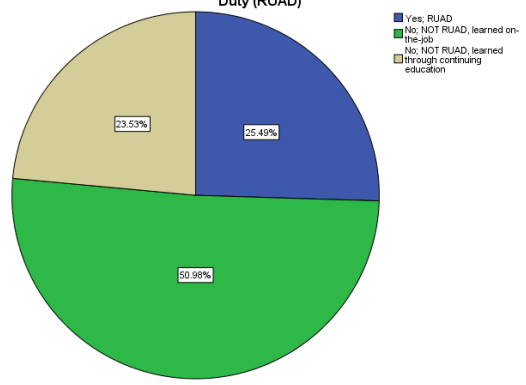
254. Identify illegal occupant dwellings or other occupancies. - Required Upon Active Duty (RUAD)



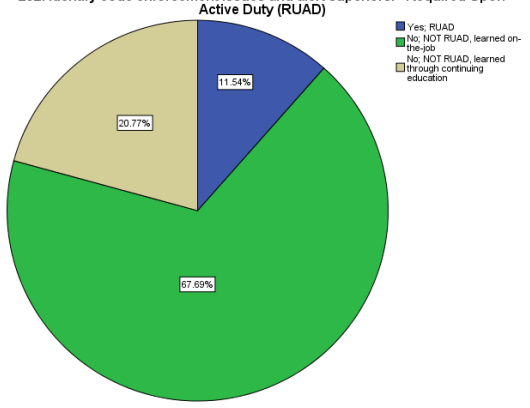
251. Inspect businesses and non-owner occupied private dwellings. - Required Upon Active Duty (RUAD)



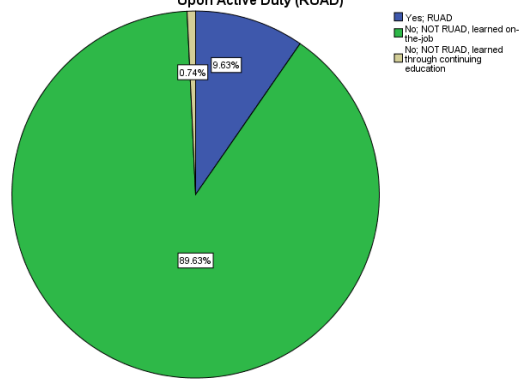
255. Use commonly recognized symbols when diagramming construction features, utilities, hazards, and fire protection systems. - Required Upon Active Duty (RUAD)



252. Identify code enforcement issues and alert superiors. - Required Upon Active Duty (RUAD)



256. Maintain a log of visitors to the fire station by recording their names, date, time and other relevant information so a written record is available. - Required Upon Active Duty (RUAD)



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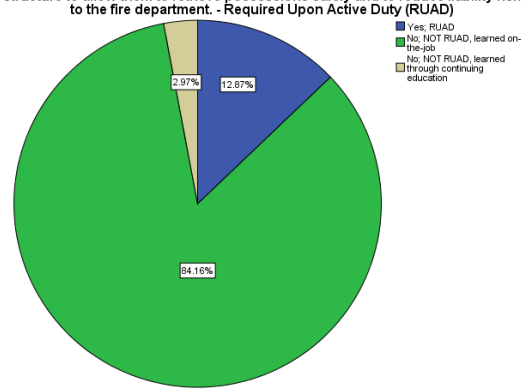
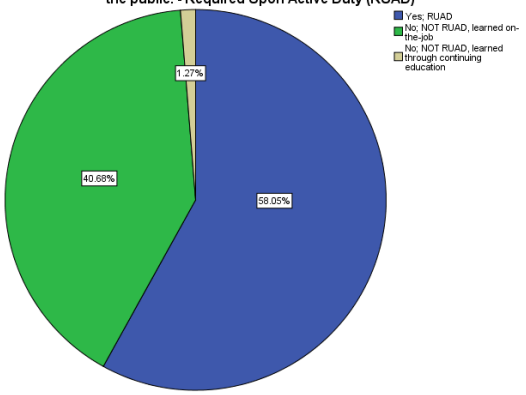
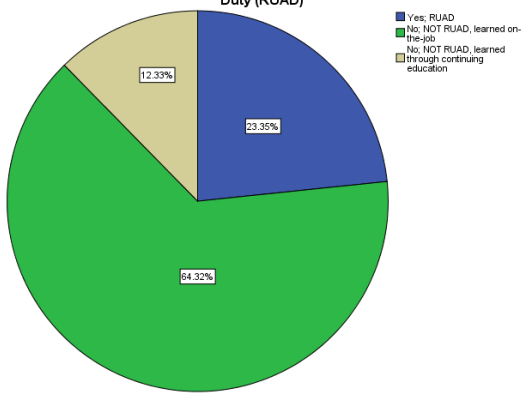
257. At superior's command, accompany owners/occupants into burned structure to allow them to retrieve possessions safely and to reduce liability risk to the fire department. - Required Upon Active Duty (RUAD)



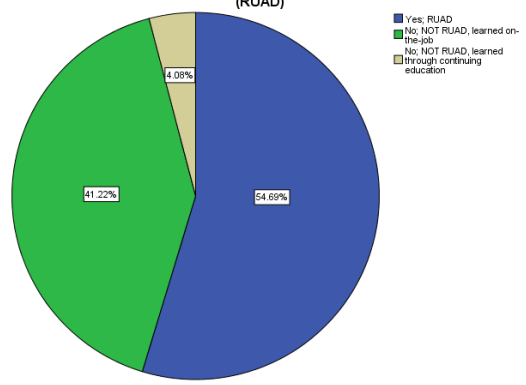
261. Maintain a service orientation or public servant mentality when dealing with the public. - Required Upon Active Duty (RUAD)



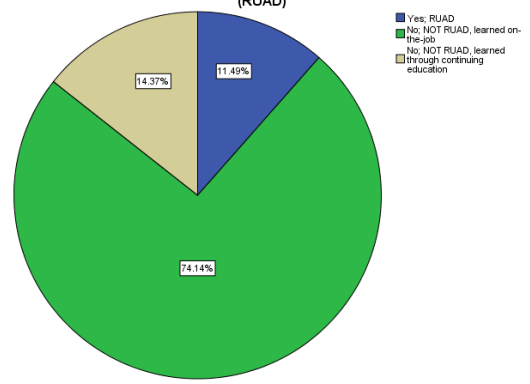
258. Inform and educate the public on fire prevention. - Required Upon Active Duty (RUAD)



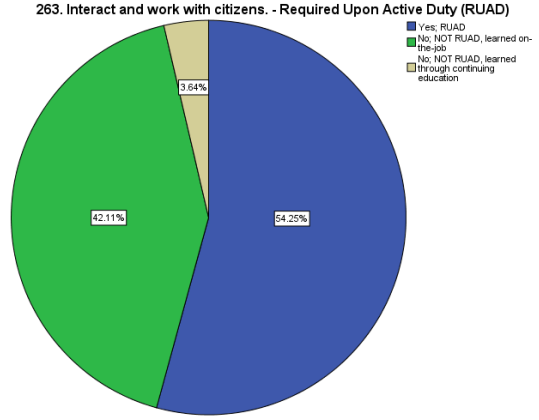
262. Use tact and diplomacy in dealing with the public under times of high stress or with disgruntled, agitated or hysterical persons. - Required Upon Active Duty (RUAD)



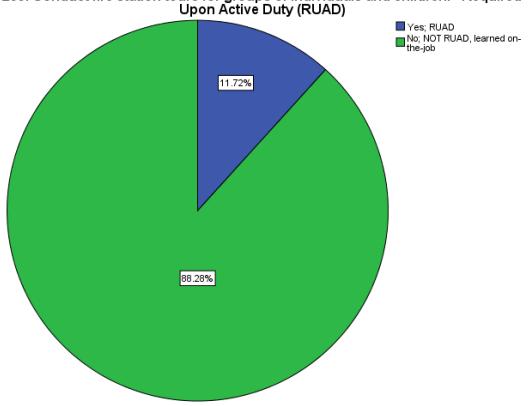
259. Perform community service and outreach programs such as fire alarm installations, child safety seat installations, etc. - Required Upon Active Duty (RUAD)



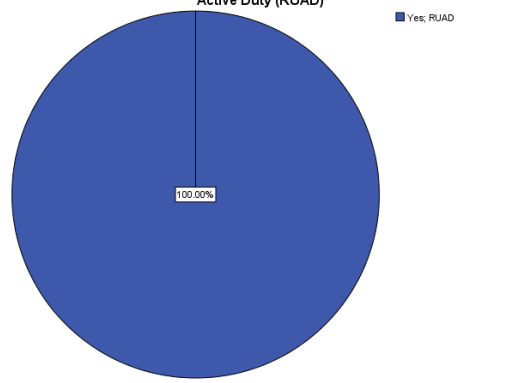
263. Interact and work with citizens. - Required Upon Active Duty (RUAD)



260. Conduct fire station tours for groups of individuals and children. - Required Upon Active Duty (RUAD)



264. Are you paying attention? Please fill in a 'YES' for Applicability, 'Major' for Importance, 'Occasionally' for Frequency, and 'YES' for RUAD. - Required Upon Active Duty (RUAD)



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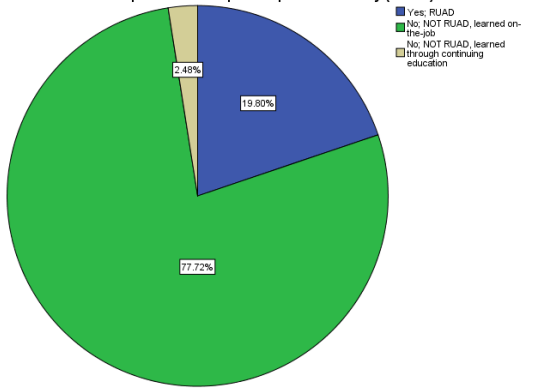
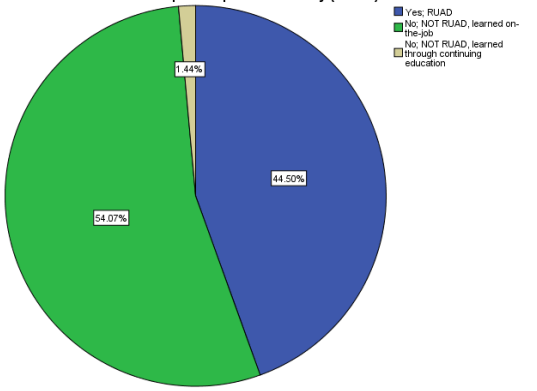
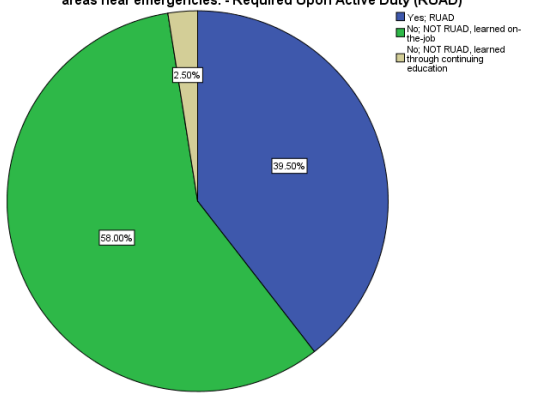
265. Attend community meetings, ceremonies and parades as representatives of the department. - Required Upon Active Duty (RUAD)



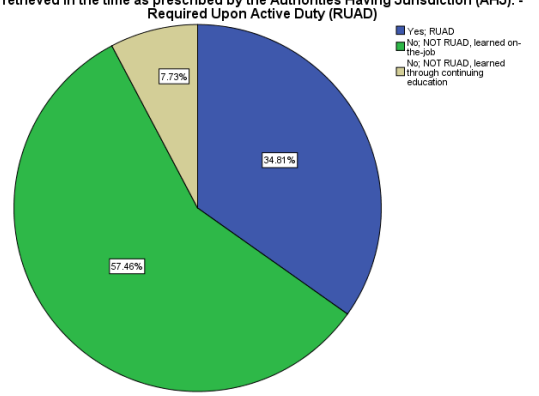
269. Communicate with the public to prevent them from crossing perimeter lines. - Required Upon Active Duty (RUAD)



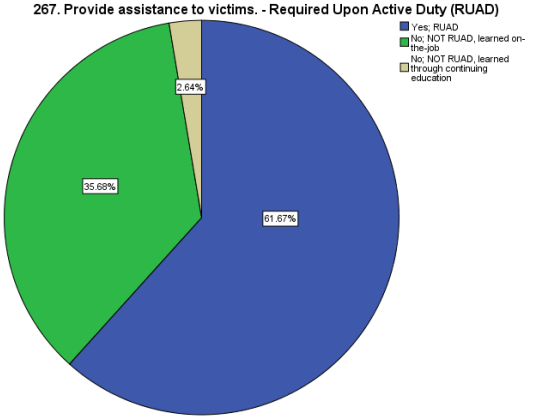
266. Establish perimeter lines to prevent unauthorized persons from entering areas near emergencies. - Required Upon Active Duty (RUAD)



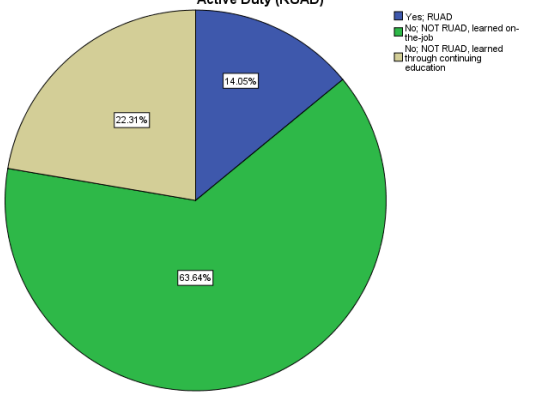
270. Assist rescue operation teams so that rescue items are recognized and retrieved in the time as prescribed by the Authorities Having Jurisdiction (AHJ). - Required Upon Active Duty (RUAD)



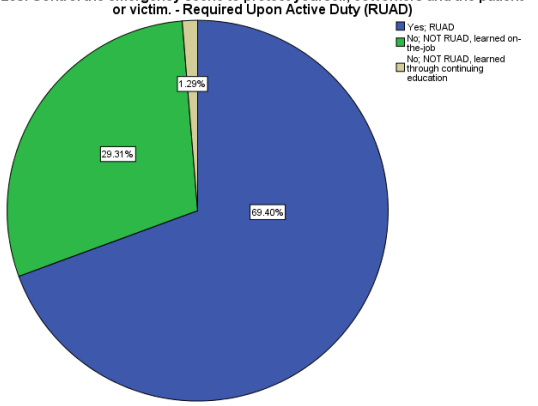
267. Provide assistance to victims. - Required Upon Active Duty (RUAD)



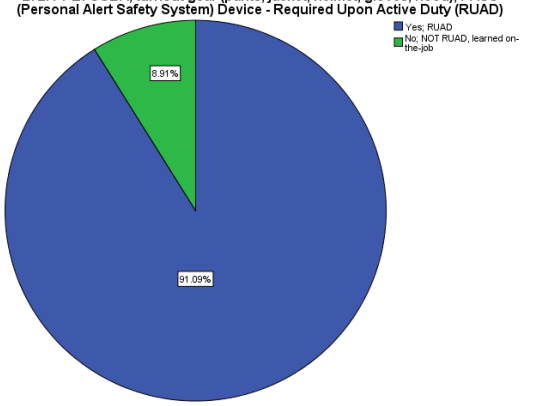
271. Support and conduct community risk reduction programs. - Required Upon Active Duty (RUAD)



268. Control the emergency scene to protect yourself, coworkers and the patient or victim. - Required Upon Active Duty (RUAD)



272. PPE: SCBA, turnout gear (pants, jacket, helmet, gloves, hood), PASS (Personal Alert Safety System) Device - Required Upon Active Duty (RUAD)



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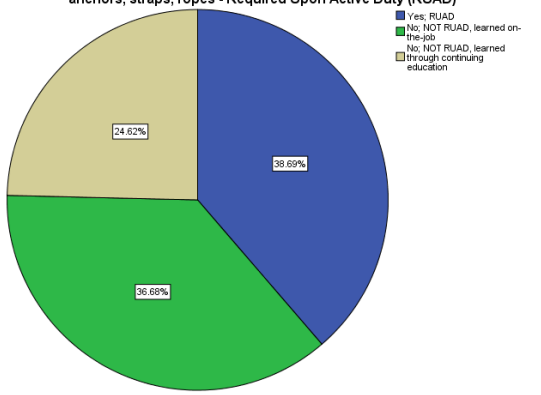
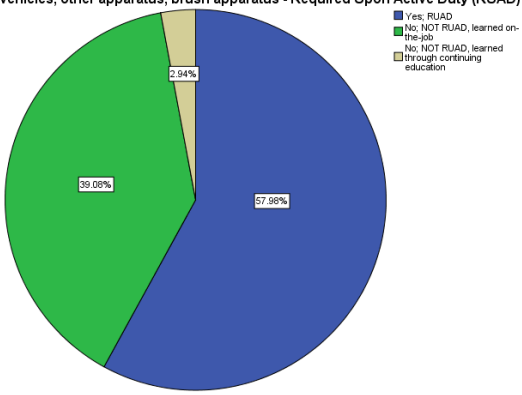
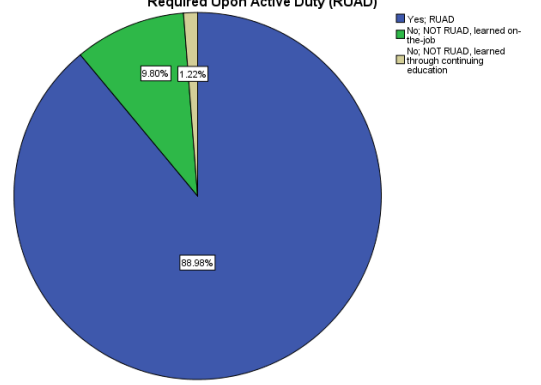
273. Blocks or pulleys: Block and tackle equipment, pulleys, riggings, carabiners, anchors, straps, ropes - Required Upon Active Duty (RUAD)



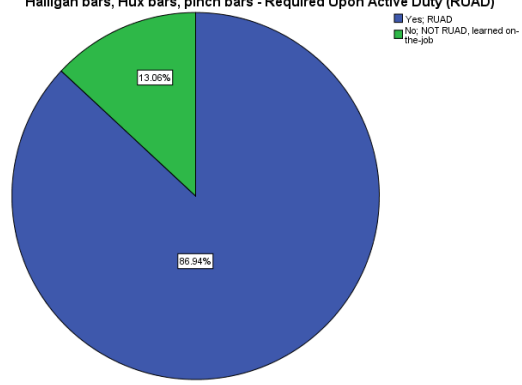
277. Fire or rescue trucks: Aerial trucks, ladder trucks, engine trucks, rescue vehicles, other apparatus, brush apparatus - Required Upon Active Duty (RUAD)



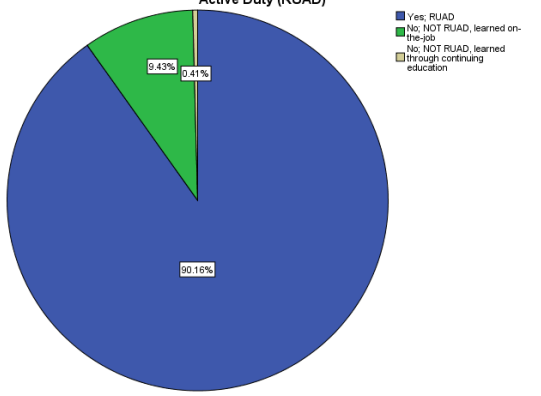
274. Fire extinguishers: Carbon dioxide CO2 fire extinguishers, dry chemical fire extinguishers, multipurpose fire extinguishers, water extinguisher, K-Type - Required Upon Active Duty (RUAD)



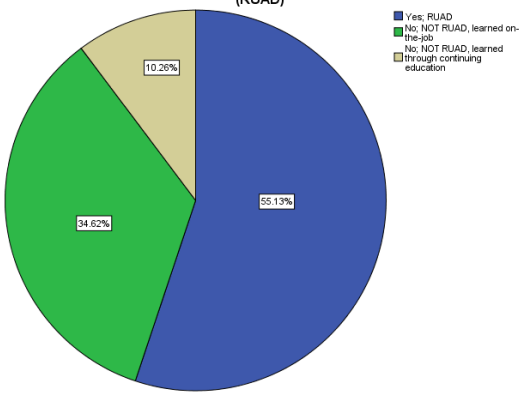
278. Fire hand tools: Fire axes, McLeod tools, pick head axes, Pulaski tools, pike pole, claw hammers, rubber mallet, non-sparking hammers, sledgehammers, Halligan bars, Hux bars, pinch bars - Required Upon Active Duty (RUAD)



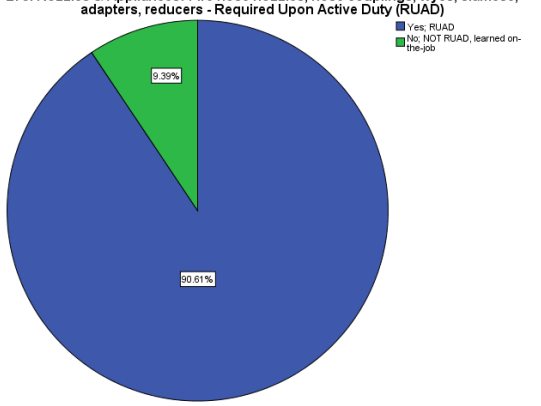
275. Fire hoses: Charged fire hoses, uncharged fire hoses - Required Upon Active Duty (RUAD)



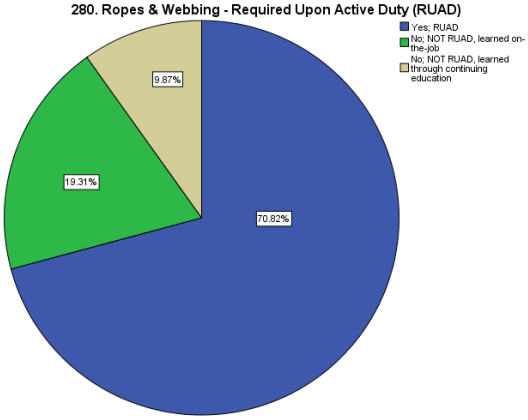
279. Stabilizing Tools: Struts, lift jackets, cribbing - Required Upon Active Duty (RUAD)



276. Nozzles & Appliances: Fire hose nozzles, hose couplings, wyes, siamese, adapters, reducers - Required Upon Active Duty (RUAD)



280. Ropes & Webbing - Required Upon Active Duty (RUAD)



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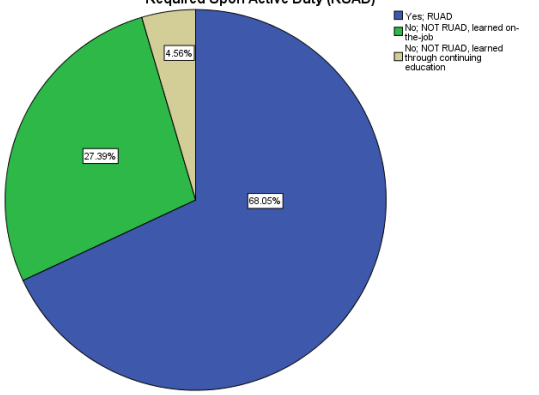
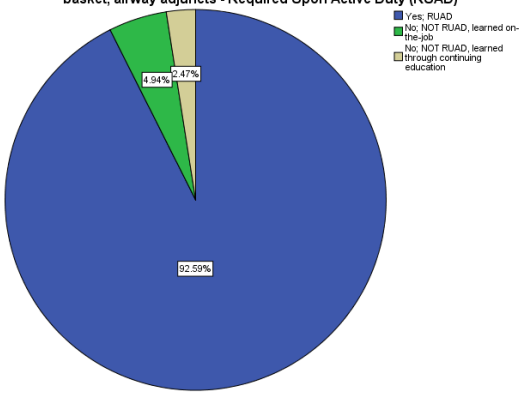
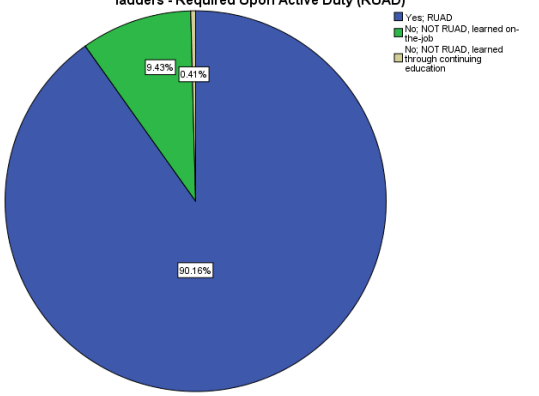
281. Hydraulic Rescue Tools: Spreaders, cutters, Jaws of Life, rams, air bags - Required Upon Active Duty (RUAD)



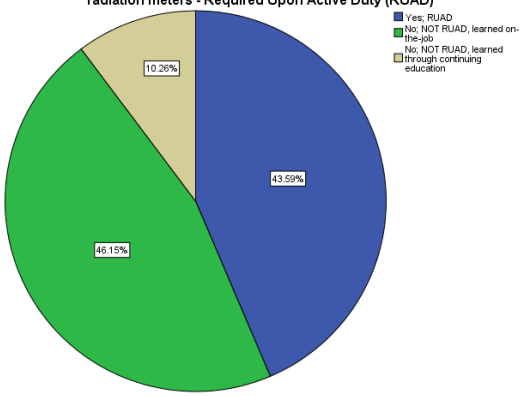
285. First Responder: Collars, backboard, dressings, AED, stethoscope, Stokes basket, airway adjuncts - Required Upon Active Duty (RUAD)



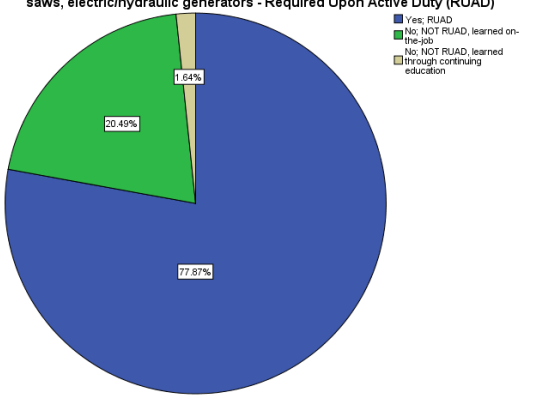
282. Ladders: Aluminum ladders, extension ladders, roof ladders, A-Frame ladders - Required Upon Active Duty (RUAD)



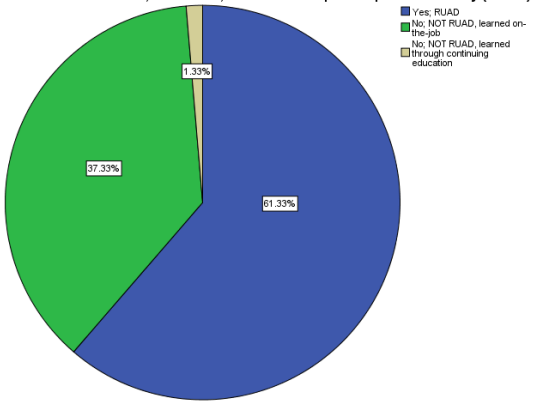
286. Meters: Thermal imaging camera (TIC), CO2 monitors, gas detectors, radiation meters - Required Upon Active Duty (RUAD)



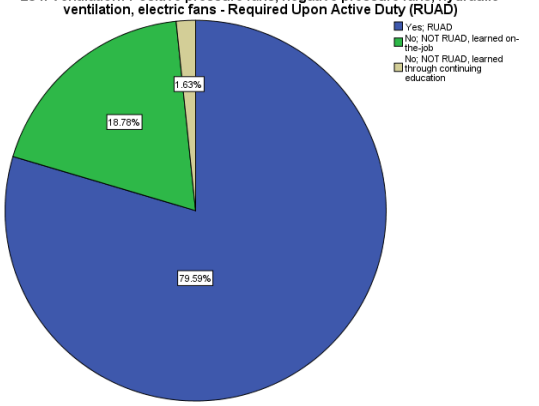
283. Power Equipment: Chain saws, circular saws, K-12 saws, reciprocating saws, electric/hydraulic generators - Required Upon Active Duty (RUAD)



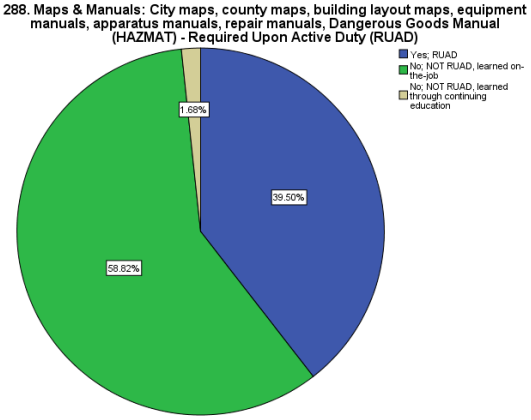
287. Saws: Hacksaws, handsaws, tree saws - Required Upon Active Duty (RUAD)



284. Ventilation: Positive pressure fans, negative pressure fans, hydraulic ventilation, electric fans - Required Upon Active Duty (RUAD)



288. Maps & Manuals: City maps, county maps, building layout maps, equipment manuals, apparatus manuals, repair manuals, Dangerous Goods Manual (HAZMAT) - Required Upon Active Duty (RUAD)



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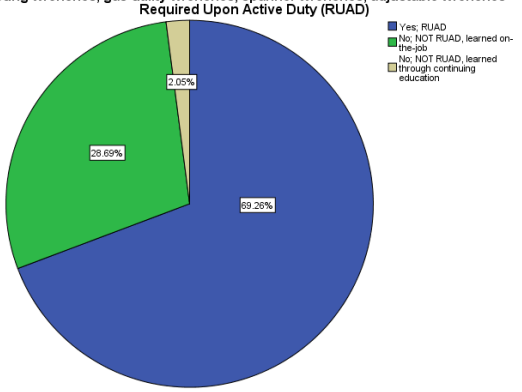
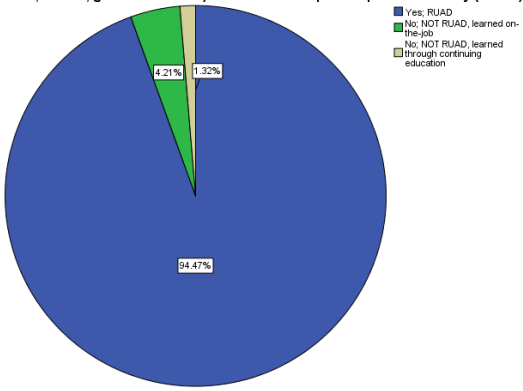
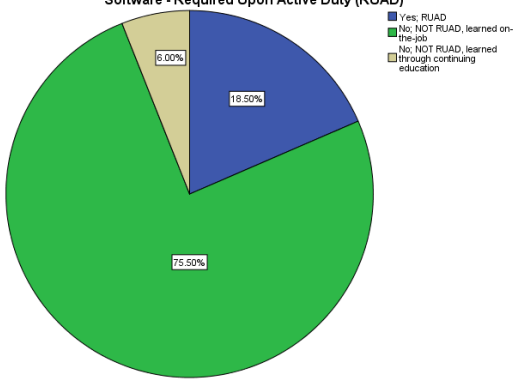
289. Specialty wrenches: Hydrant shutoff wrenches, lug wrenches, non-sparking bung wrenches, gas-utility wrenches, spanner wrenches, adjustable wrenches - Required Upon Active Duty (RUAD)



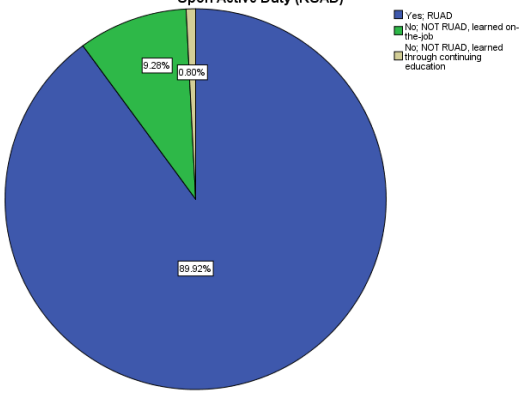
293. Perform all fireground tasks wearing full turnout gear (coat, bunker pants, boots, helmet, gloves and hood) and SCBA. - Required Upon Active Duty (RUAD)



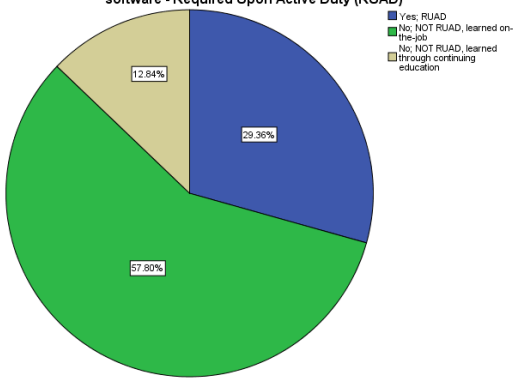
290. Database user interface and query software: Affiliated Computer Services (ACS), FIREHOUSE, Fire incident reporting systems, Microsoft Access, Scientific Software - Required Upon Active Duty (RUAD)



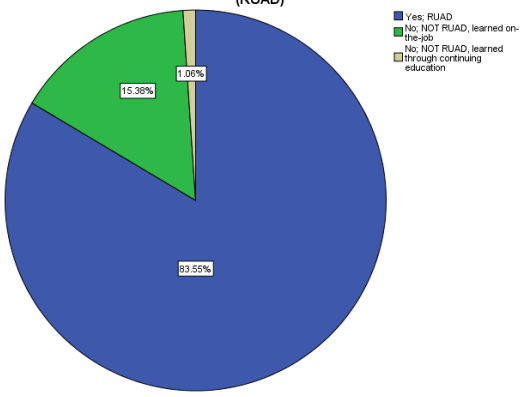
294. Perform physically demanding tasks for extended periods of time. - Required Upon Active Duty (RUAD)



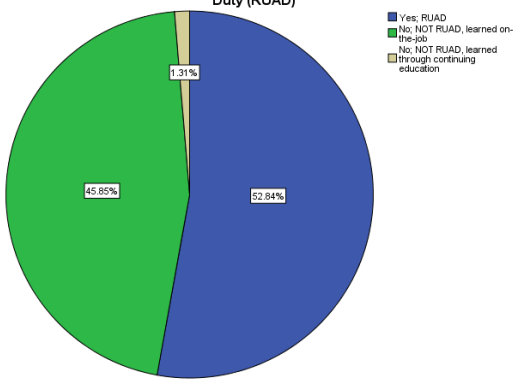
291. Computer software: E-mail software, internet browsing software, drafting software, spreadsheet software, word processing software, project management software - Required Upon Active Duty (RUAD)



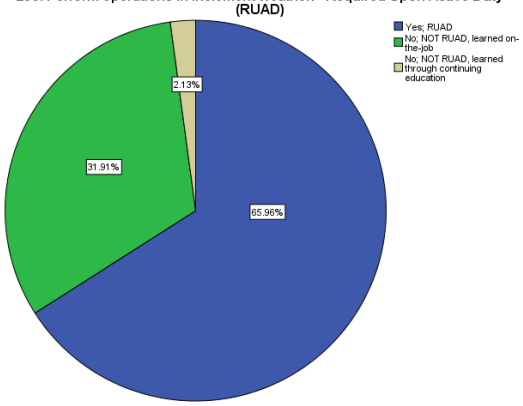
295. Perform in extreme heat and cold conditions. - Required Upon Active Duty (RUAD)



292. Lighting Equipment: Power supply and lighting equipment, cords and connectors, and ground-fault interpreter (GFI) devices. - Required Upon Active Duty (RUAD)



296. Perform operations in inclement weather. - Required Upon Active Duty (RUAD)



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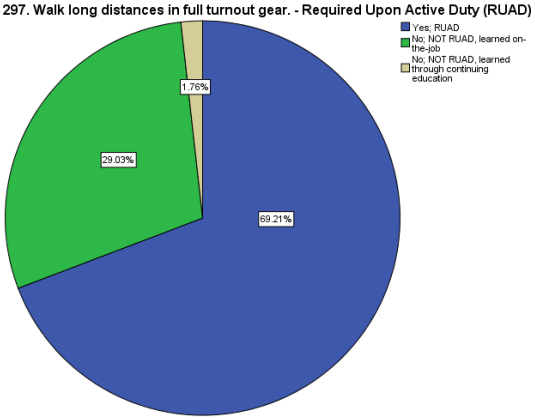
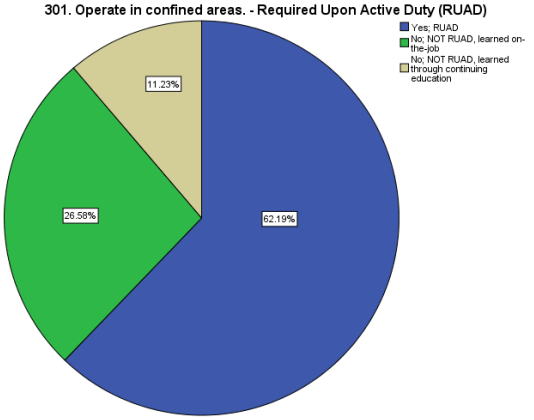
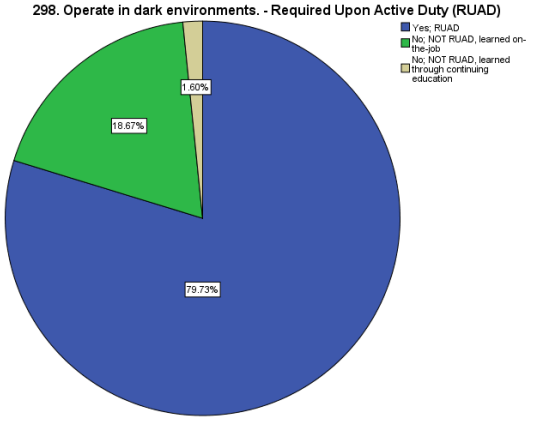
297. Walk long distances in full turnout gear. - Required Upon Active Duty (RUAD)



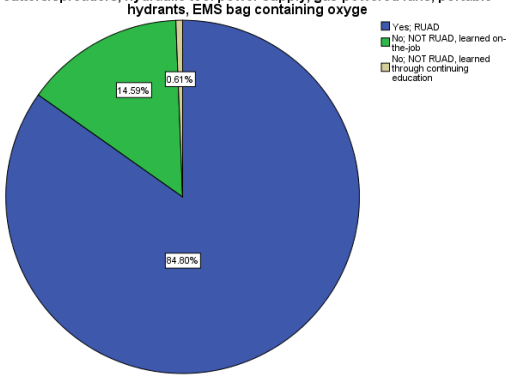
301. Operate in confined areas. - Required Upon Active Duty (RUAD)



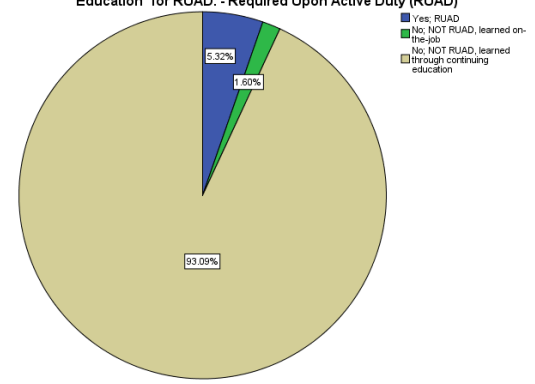
298. Operate in dark environments. - Required Upon Active Duty (RUAD)



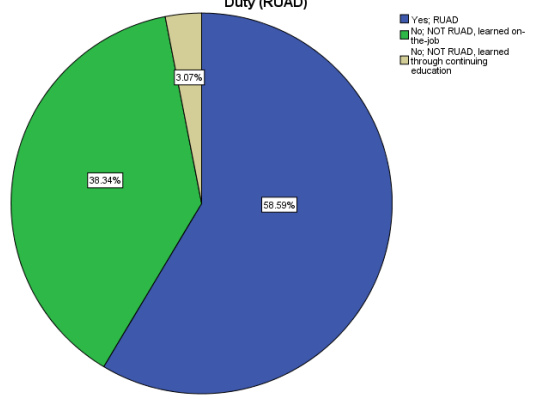
302. Lift and carry heavy equipment and tools (e.g., high-rise pack containing hoseline and tools, gas-powered circular saw, chain saw, hydraulic cutters/spreaders, hydraulic tool power supply, gas-powered fans, portable hydrants, EMS bag containing oxyge



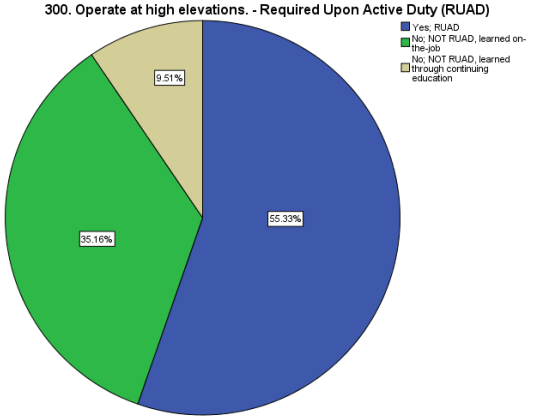
299. Are you paying attention? Please fill in a 'YES' for Applicability, 'Moderate' for Importance, 'Constantly' for Frequency, and 'NO-Learned through Continuing Education' for RUAD. - Required Upon Active Duty (RUAD)



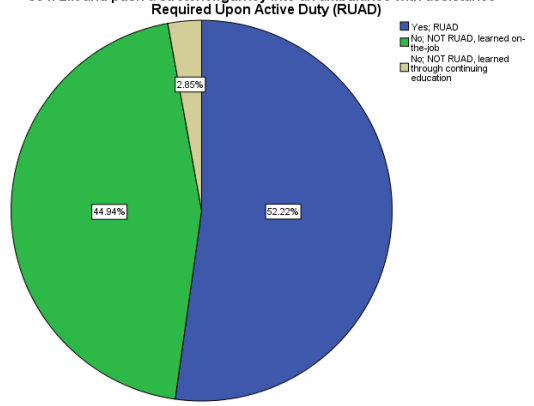
303. Lift and carry a stretcher/gurney with assistance - Required Upon Active Duty (RUAD)



300. Operate at high elevations. - Required Upon Active Duty (RUAD)



304. Lift and push a stretcher/gurney into an ambulance with assistance - Required Upon Active Duty (RUAD)



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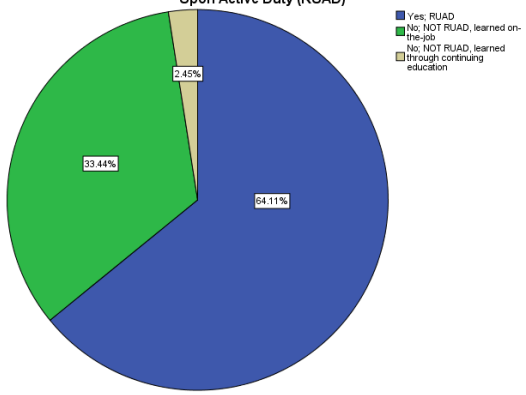
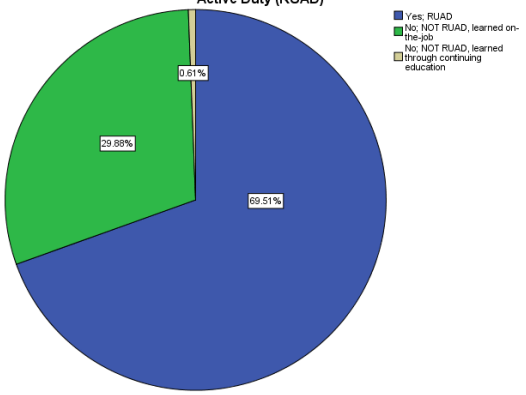
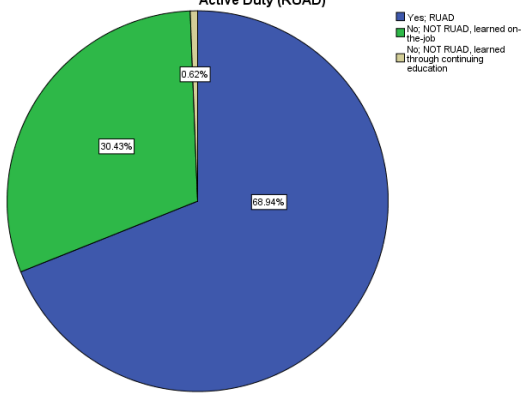
305. Lift and transfer victims from ground to stretcher with assistance - Required Upon Active Duty (RUAD)



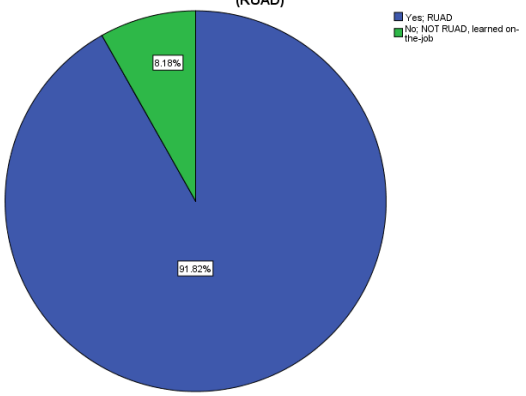
309. Remove heavy equipment from apparatus compartments - Required Upon Active Duty (RUAD)



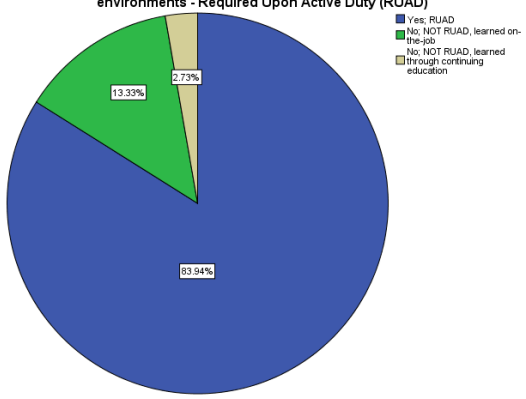
306. Carry heavy equipment and tools for extended distances - Required Upon Active Duty (RUAD)



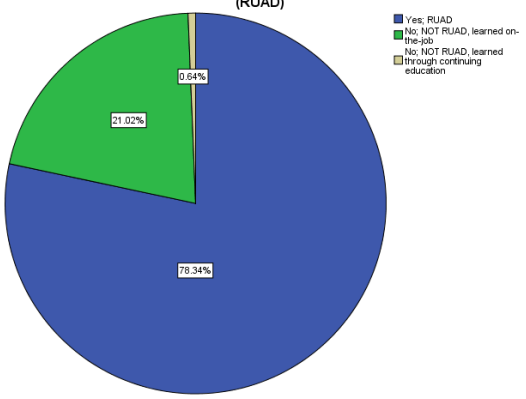
310. Individually drag charged 1 ¾ inch hoseline - Required Upon Active Duty (RUAD)



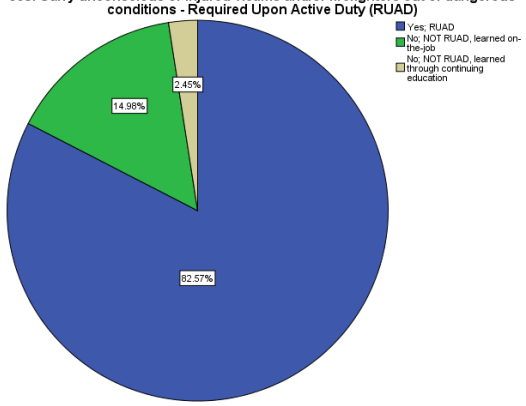
307. Drag unconscious human victims and/or firefighters out of dangerous environments - Required Upon Active Duty (RUAD)



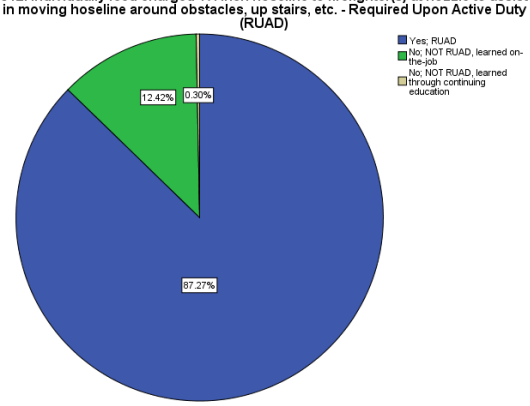
311. Individually drag charged 2 ½ inch hoseline - Required Upon Active Duty (RUAD)



308. Carry unconscious or injured victims and/or firefighters out of dangerous conditions - Required Upon Active Duty (RUAD)



312. Individually feed charged 1¾ inch hoseline to firefighter(s) at nozzle to assist in moving hoseline around obstacles, up stairs, etc. - Required Upon Active Duty (RUAD)



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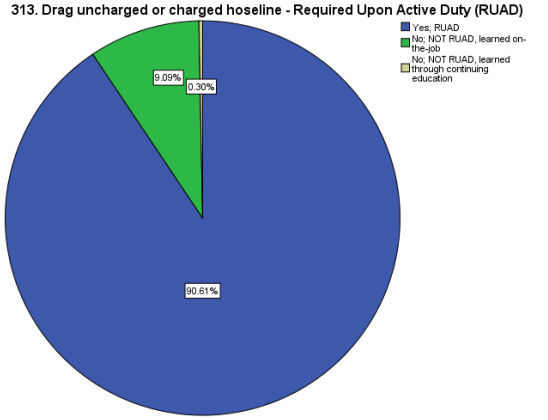
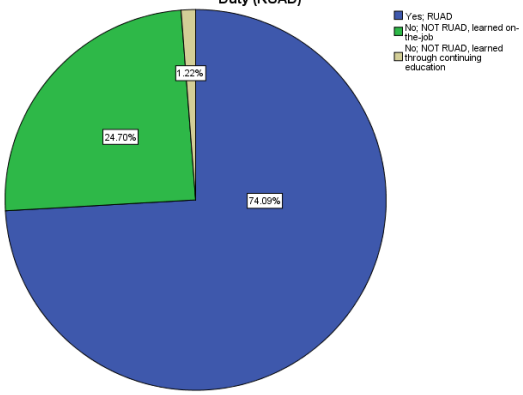
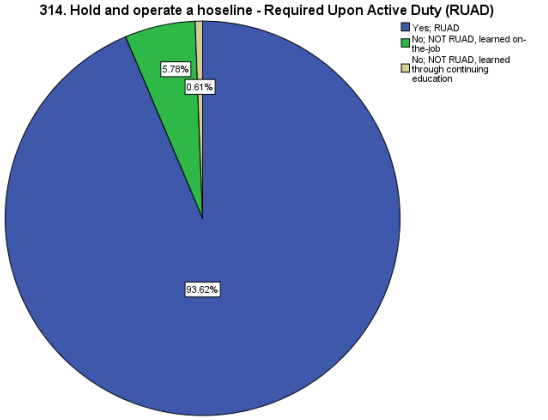
313. Drag uncharged or charged hoseline - Required Upon Active Duty (RUAD)



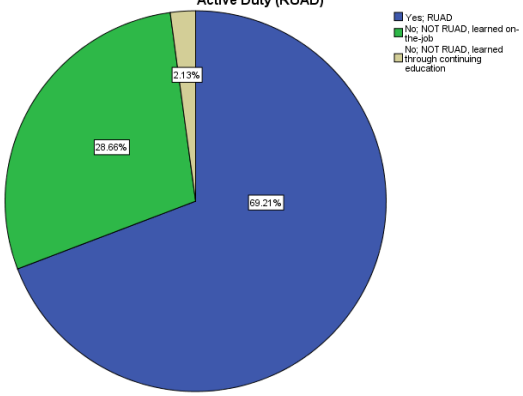
317. Penetrate and tear down ceiling using a pike pole - Required Upon Active Duty (RUAD)



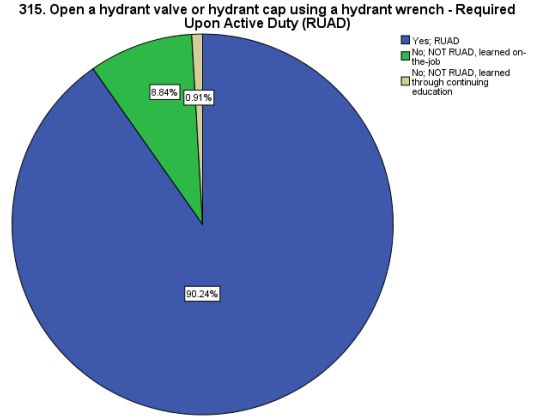
314. Hold and operate a hoseline - Required Upon Active Duty (RUAD)



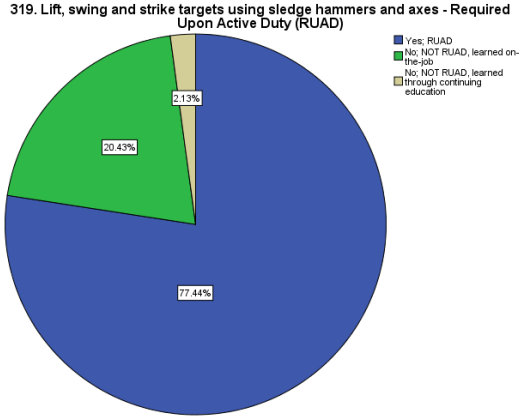
318. Hold and operate gas-powered saws and hydraulic tools - Required Upon Active Duty (RUAD)



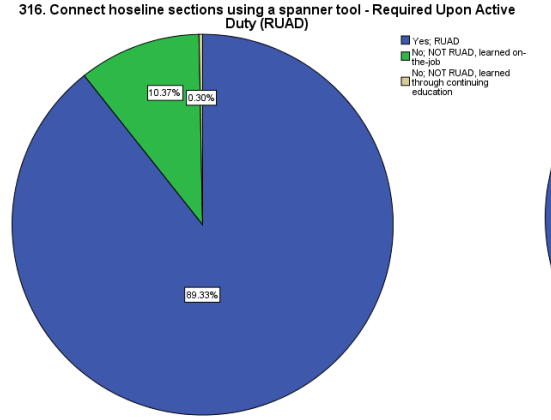
315. Open a hydrant valve or hydrant cap using a hydrant wrench - Required Upon Active Duty (RUAD)



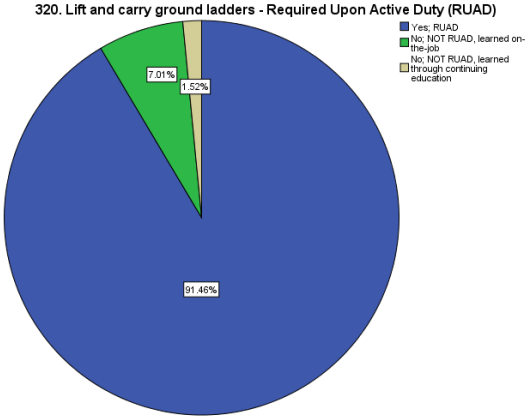
319. Lift, swing and strike targets using sledge hammers and axes - Required Upon Active Duty (RUAD)



316. Connect hoseline sections using a spanner tool - Required Upon Active Duty (RUAD)



320. Lift and carry ground ladders - Required Upon Active Duty (RUAD)



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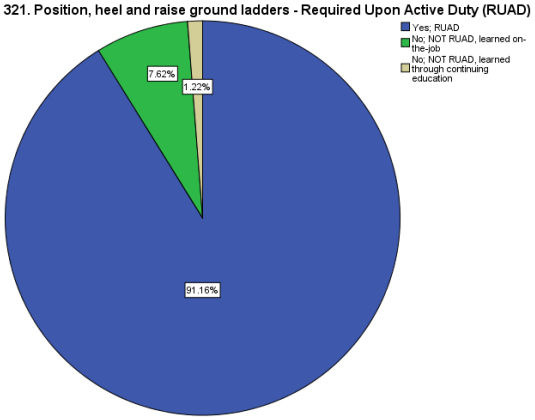
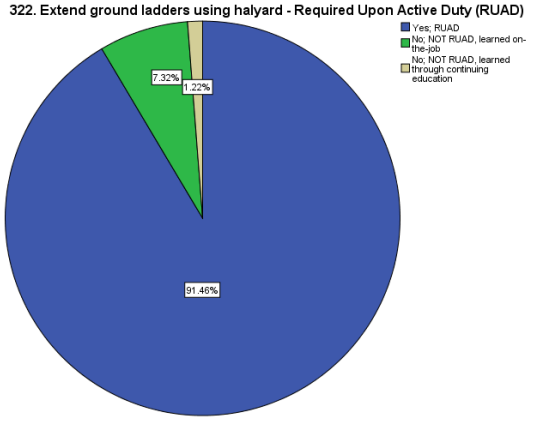
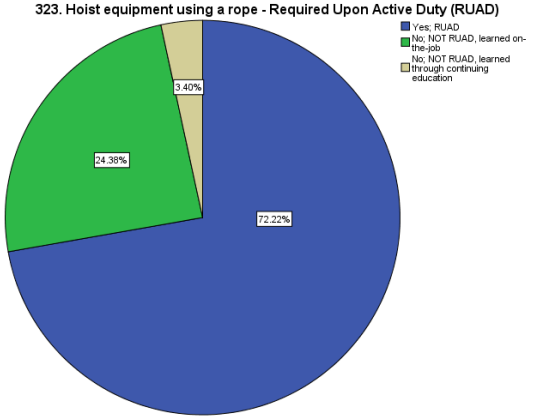
321. Position, heel and raise ground ladders - Required Upon Active Duty (RUAD)



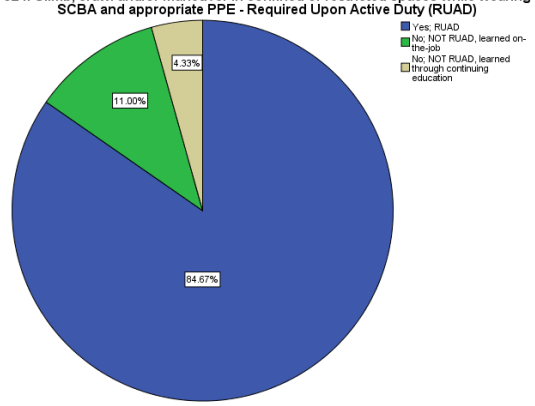
322. Extend ground ladders using halyard - Required Upon Active Duty (RUAD)



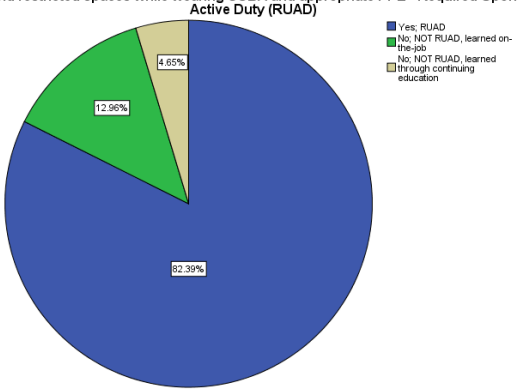
323. Hoist equipment using a rope - Required Upon Active Duty (RUAD)



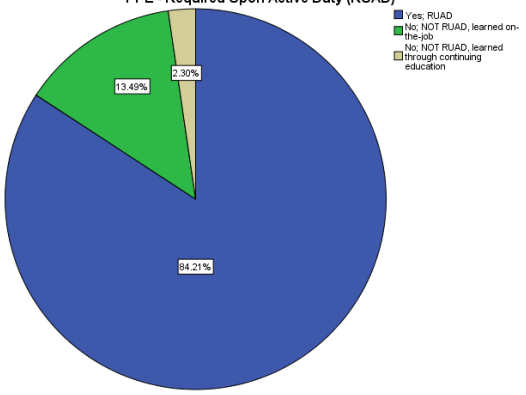
324. Climb, crawl and/or maneuver in confined or restricted spaces while wearing SCBA and appropriate PPE - Required Upon Active Duty (RUAD)



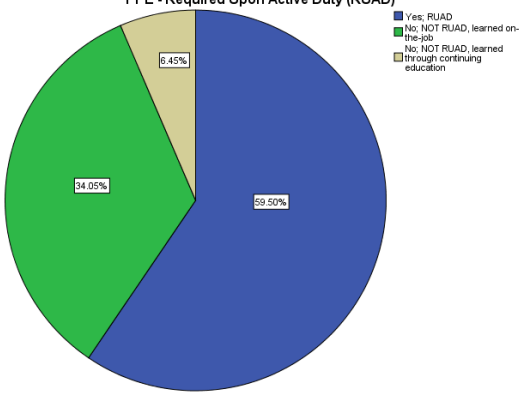
325. Crawl, duck-under, crawl-over and maneuver around obstacles in confined and restricted spaces while wearing SCBA and appropriate PPE - Required Upon Active Duty (RUAD)



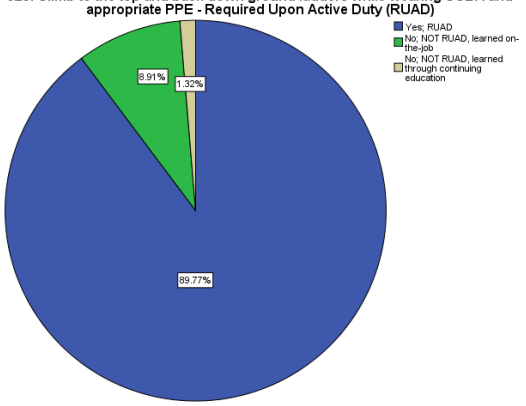
326. Climb through windows and openings while wearing SCBA and appropriate PPE - Required Upon Active Duty (RUAD)



327. Crawl along ceiling joists and rafters while wearing SCBA and appropriate PPE - Required Upon Active Duty (RUAD)



328. Climb to the top and back down ground ladders while wearing SCBA and appropriate PPE - Required Upon Active Duty (RUAD)



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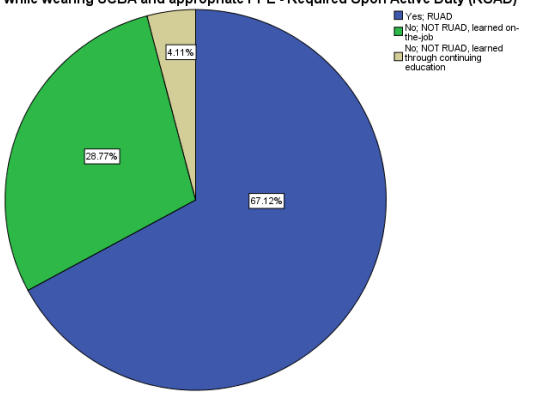
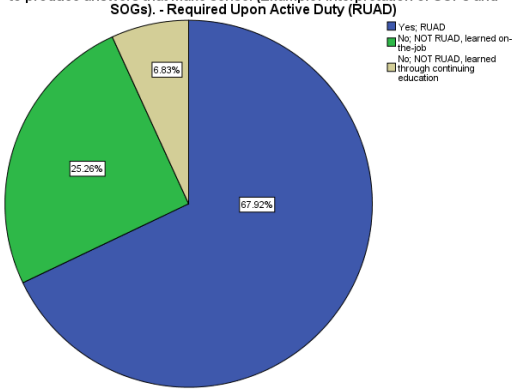
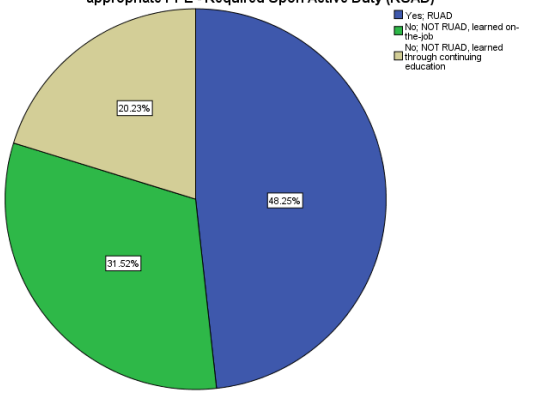
329. Climb to the top and back down aerial ladders/buckets/baskets/platforms while wearing SCBA and appropriate PPE - Required Upon Active Duty (RUAD)



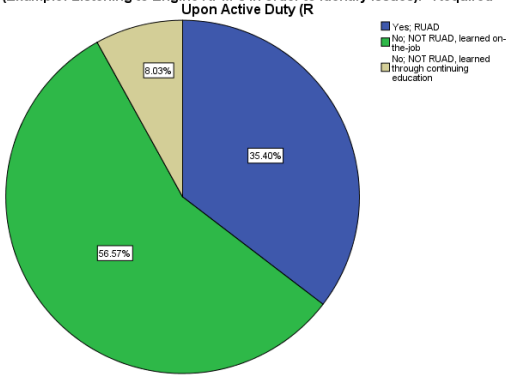
333. Deductive Reasoning: The ability to apply general rules to specific problems to produce answers that make sense. (Example: Interpretation of SOPs and SOGs). - Required Upon Active Duty (RUAD)



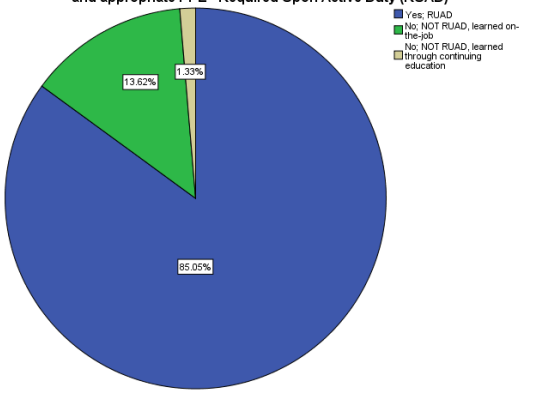
330. Rappel down from the top of structures while wearing SCBA and appropriate PPE - Required Upon Active Duty (RUAD)



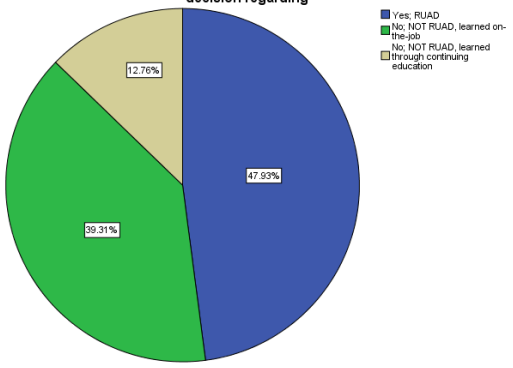
334. Flexibility of Closure: The ability to identify or detect a known pattern (a figure, object, word or sound) that is hidden in other distracting material. (Example: Listening to Engine RPM's in order to identify issues). - Required Upon Active Duty (R



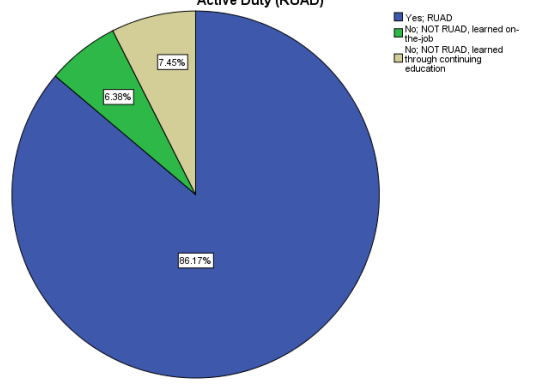
331. Climb stairs while wearing PPE and carrying equipment while wearing SCBA and appropriate PPE - Required Upon Active Duty (RUAD)



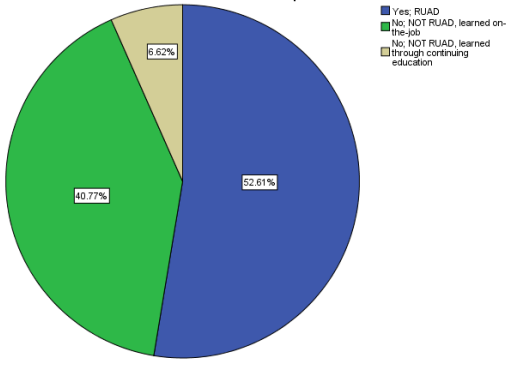
335. Inductive Reasoning: The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events). (Example: Reading the various clues of smoke/heat to reach a decision regarding



332. Basic Arithmetic: Ability to perform mathematical operations, such as counting, addition, subtraction, multiplication and division. - Required Upon Active Duty (RUAD)



336. Information Ordering: The ability to arrange things or actions in a certain order or pattern according to a specific rule or set of rules (e.g., patterns of numbers, letters, words, pictures, mathematical operations). (Example: Using SOPs to follow p



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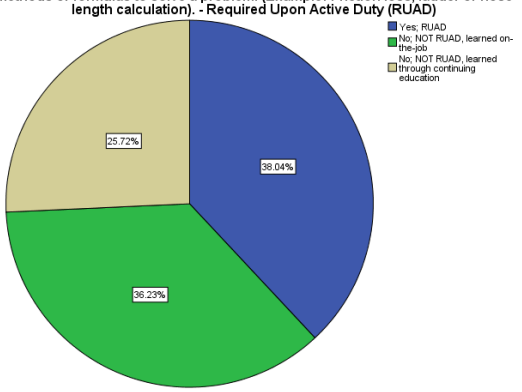
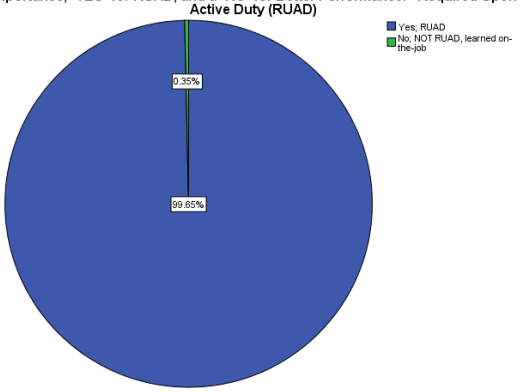
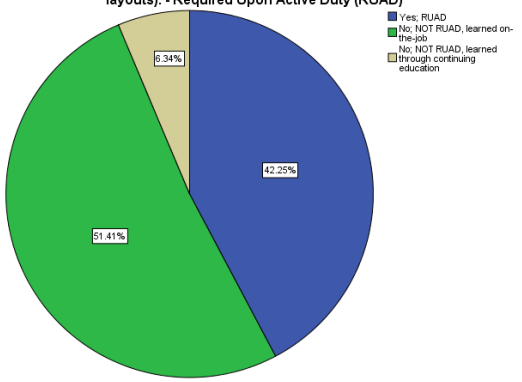
337. Mathematical Reasoning: The ability to choose the right mathematical methods or formulas to solve a problem. (Example: Friction loss, ladder or hose length calculation). - Required Upon Active Duty (RUAD)



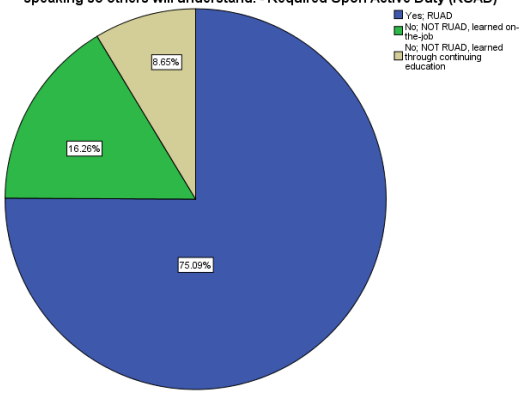
341. Are you paying attention? Please fill in a 'YES' for Applicability, 'Critical' for Importance, 'YES' for RUAD, and a 'NO' for Better Performance. - Required Upon Active Duty (RUAD)



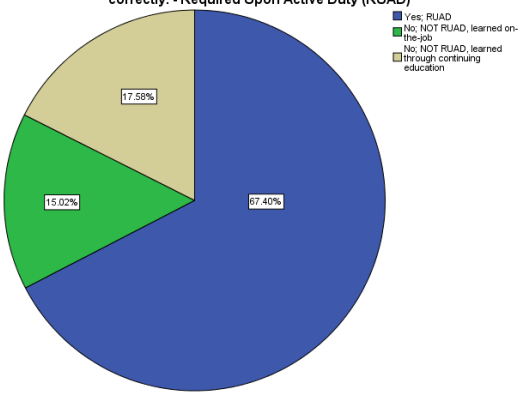
338. Memorization: The ability to remember information such as words, numbers, pictures, and procedures. (Example: Hydrant locations, previous building layouts). - Required Upon Active Duty (RUAD)



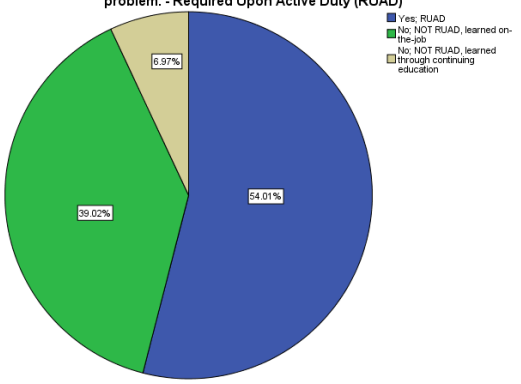
342. Oral Expression: The ability to communicate information and ideas in speaking so others will understand. - Required Upon Active Duty (RUAD)



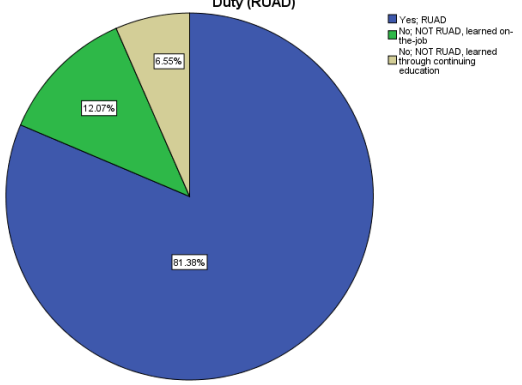
339. Number Facility: The ability to add, subtract, multiply or divide quickly and correctly. - Required Upon Active Duty (RUAD)



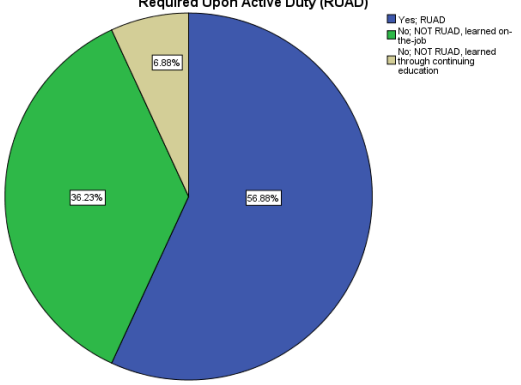
343. Problem Sensitivity: The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem. - Required Upon Active Duty (RUAD)



340. Oral Comprehension: The ability to listen to and understand information and ideas presented through spoken words and sentences. - Required Upon Active Duty (RUAD)



344. Selective Attention: The ability to concentrate on a task over a period of time without being distracted. (Example: Being the only pump operator on-duty). - Required Upon Active Duty (RUAD)



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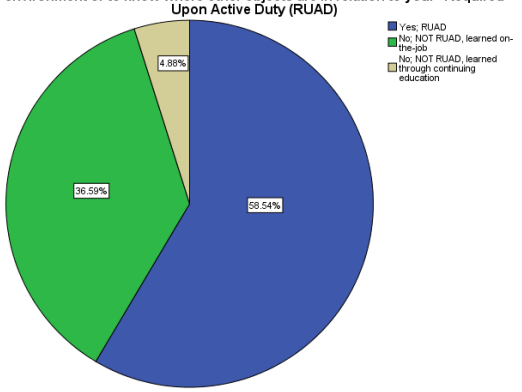
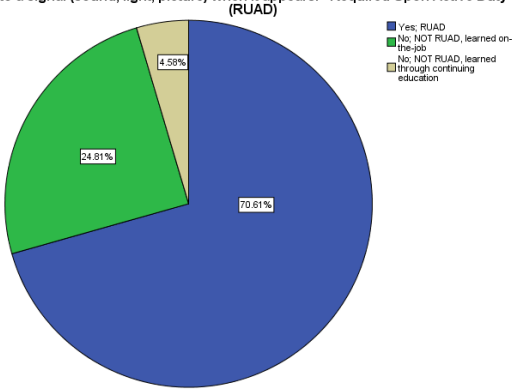
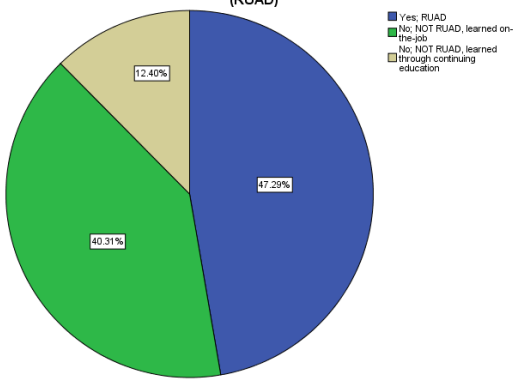
345. Spatial Orientation: The ability to know your location in relation to the environment or to know where other objects are in relation to you. - Required Upon Active Duty (RUAD)



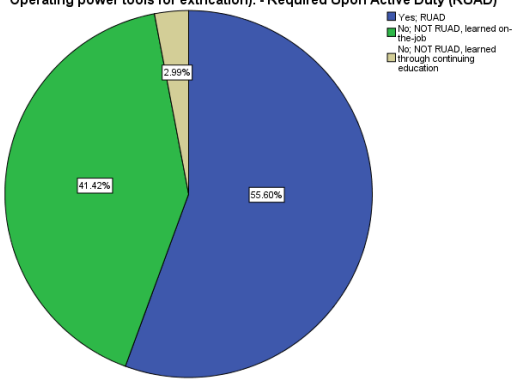
349. Reaction Time: The ability to quickly respond (with the hand, finger or foot) to a signal (sound, light, picture) when it appears. - Required Upon Active Duty (RUAD)



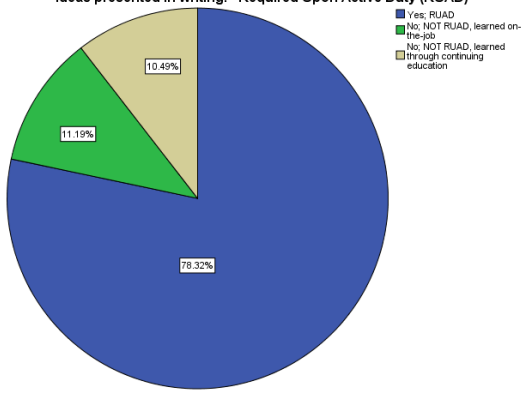
346. Visualization: The ability to imagine how something will look after it is moved around or when its parts are moved or rearranged. - Required Upon Active Duty (RUAD)



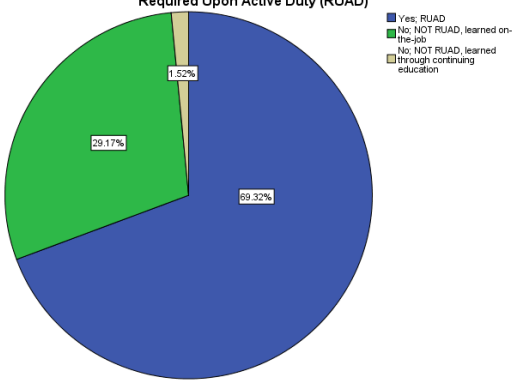
350. Arm-Hand Steadiness: The ability to keep your hand and arm steady while moving your arm or while holding your arm and hand in one position. (Example: Operating power tools for extrication). - Required Upon Active Duty (RUAD)



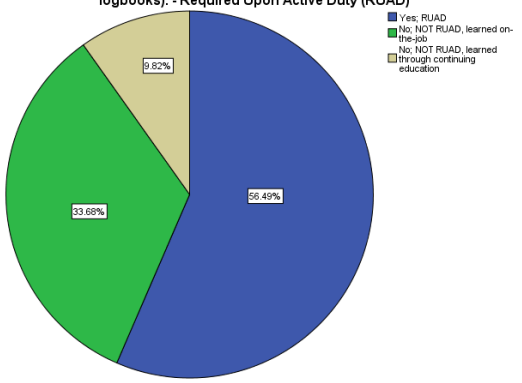
347. Written Comprehension: The ability to read and understand information and ideas presented in writing. - Required Upon Active Duty (RUAD)



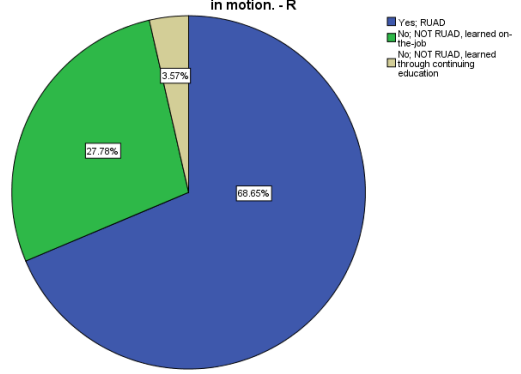
351. Manual Dexterity: The ability to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate or assemble objects. - Required Upon Active Duty (RUAD)



348. Written Expression: The ability to communicate information and ideas in writing so others will understand. (Example: Filling out maintenance records or logbooks). - Required Upon Active Duty (RUAD)



352. Multi-limb Coordination: The ability to coordinate two or more limbs (for example, two arms, two legs, or one leg and one arm) while sitting, standing or lying down. It does not involve performing the activities while the whole body is in motion. - R



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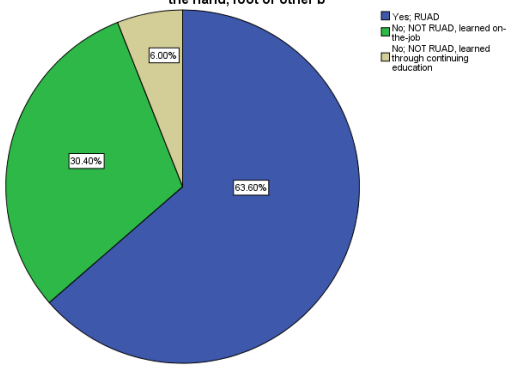
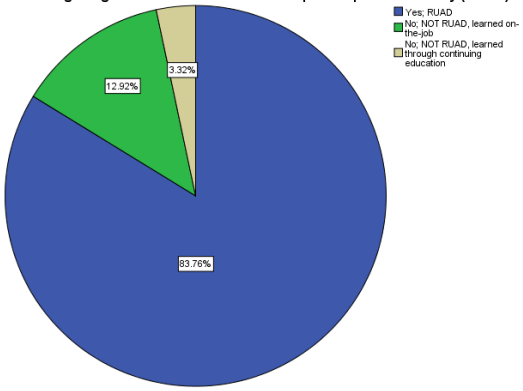
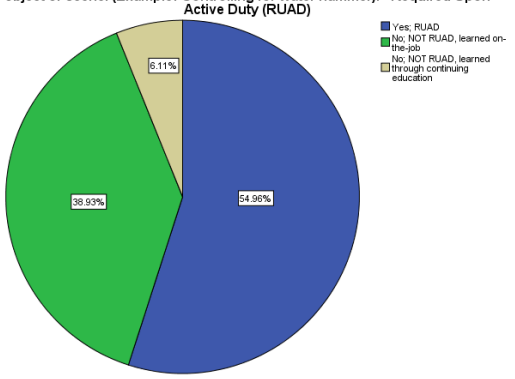
353. Response Orientation: The ability to choose quickly between two or more movements in response to two or more different signals (lights, sounds, pictures). It includes the speed with which the correct response is started with the hand, foot or other b



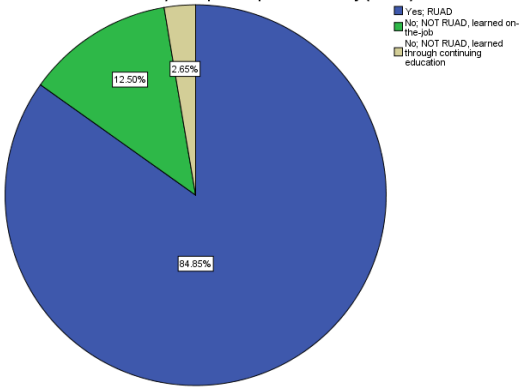
357. Stamina: The ability to exert yourself physically over long periods of time without getting winded or out of breath. - Required Upon Active Duty (RUAD)



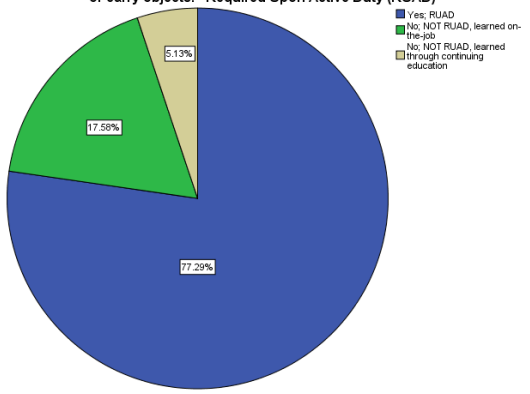
354. Rate Control: The ability to time your movements or the movement of a piece of equipment in anticipation of changes in the speed and/or direction of a moving object or scene. (Example: Controlling for water hammer). - Required Upon Active Duty (RUAD)



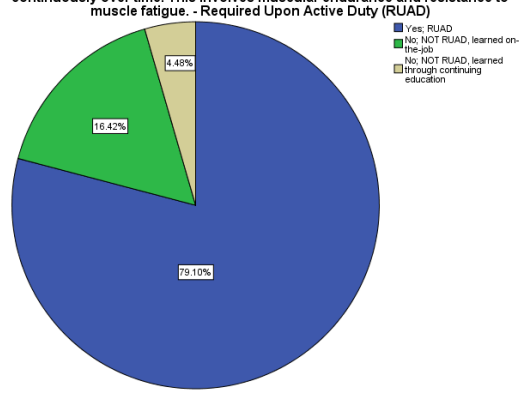
358. Near Vision: The ability to see details at close range (within a few feet of the observer). - Required Upon Active Duty (RUAD)



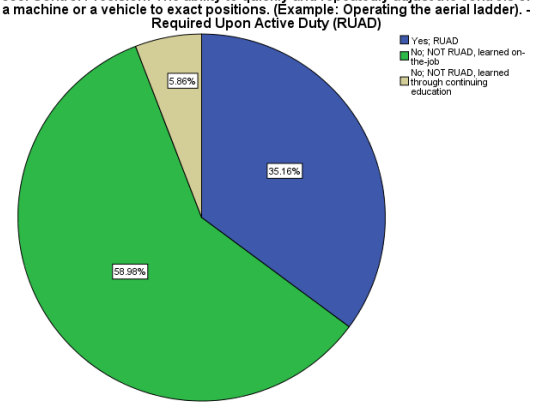
355. Static Strength: The ability to exert maximum muscle force to lift, push, pull or carry objects. - Required Upon Active Duty (RUAD)



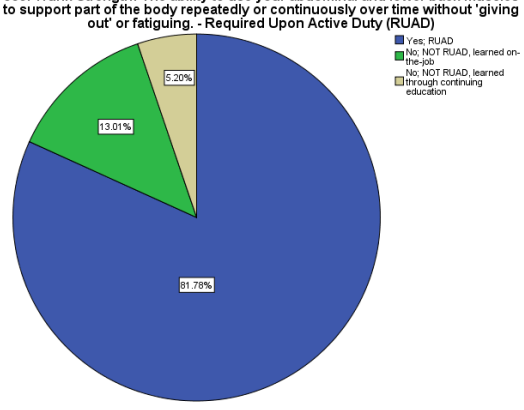
359. Dynamic Strength: The ability to exert muscle force repeatedly or continuously over time. This involves muscular endurance and resistance to muscle fatigue. - Required Upon Active Duty (RUAD)



356. Control Precision: The ability to quickly and repeatedly adjust the controls of a machine or a vehicle to exact positions. (Example: Operating the aerial ladder). - Required Upon Active Duty (RUAD)



360. Trunk Strength: The ability to use your abdominal and lower back muscles to support part of the body repeatedly or continuously over time without 'giving out' or fatiguing. - Required Upon Active Duty (RUAD)



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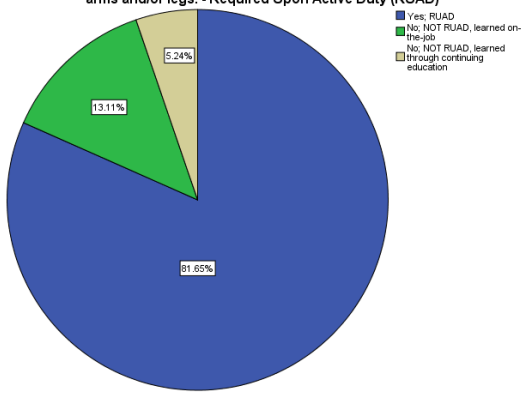
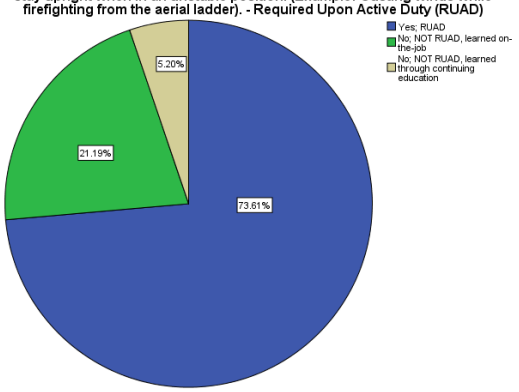
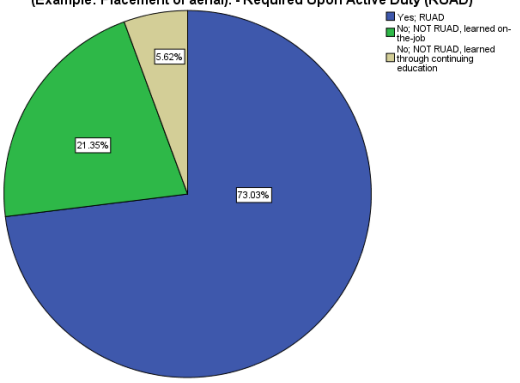
361. Extent Flexibility: The ability to bend, stretch, twist or reach with your body, arms and/or legs. - Required Upon Active Duty (RUAD)



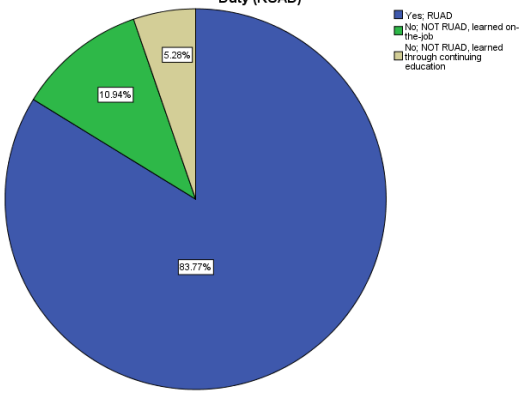
365. Gross Body Equilibrium: The ability to keep or regain your body balance or stay upright when in an unstable position. (Example: Gusting winds while firefighting from the aerial ladder). - Required Upon Active Duty (RUAD)



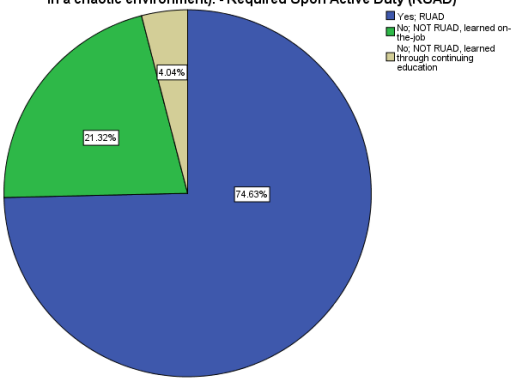
362. Depth Perception: The ability to judge which of several objects is closer or farther away from you, or to judge the distance between you and an object. (Example: Placement of aerial). - Required Upon Active Duty (RUAD)



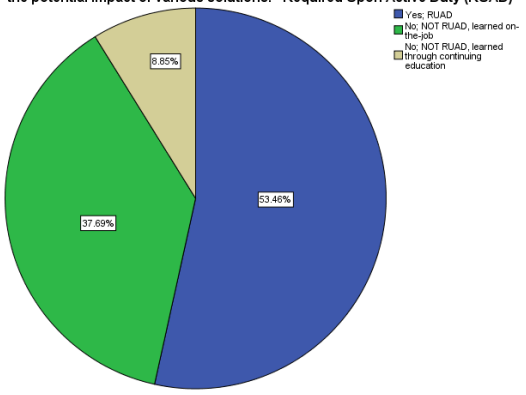
366. Far Vision: The ability to see details at a distance. - Required Upon Active Duty (RUAD)



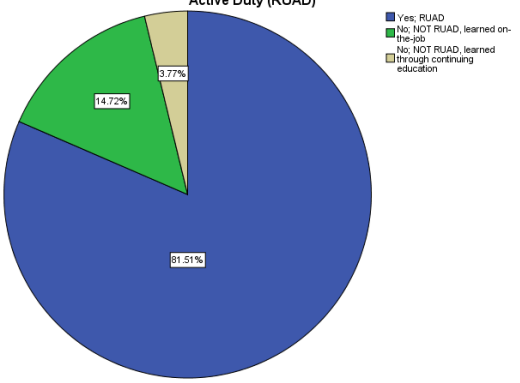
363. Auditory Attention: The ability to focus on a single source of sound in the presence of other distracting sounds. (Example: Focusing on your PASS device in a chaotic environment). - Required Upon Active Duty (RUAD)



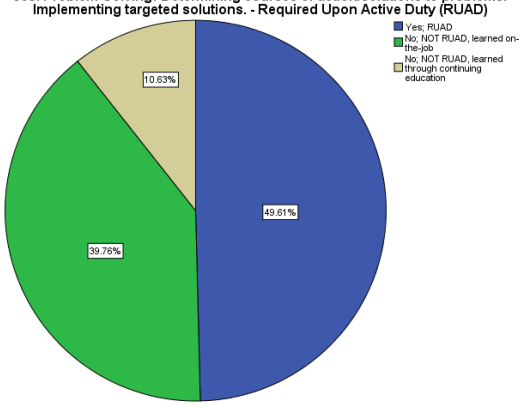
367. Problem Analysis: Quickly perceiving problem areas, identifying options and the potential impact of various solutions. - Required Upon Active Duty (RUAD)



364. Gross Body Coordination: The ability to coordinate the movement of your arms, legs and torso together when the whole body is in motion. - Required Upon Active Duty (RUAD)



368. Problem-Solving: Determining courses of action/solutions to problems. Implementing targeted solutions. - Required Upon Active Duty (RUAD)



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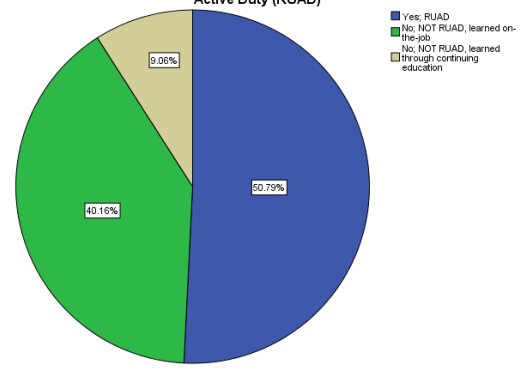
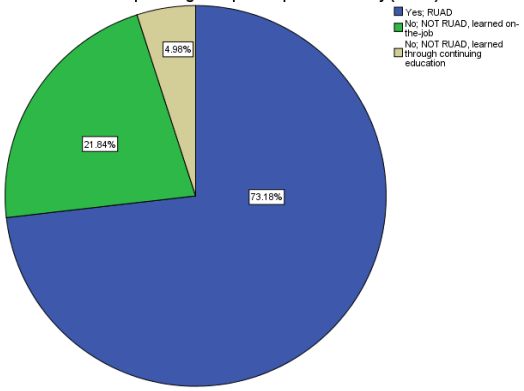
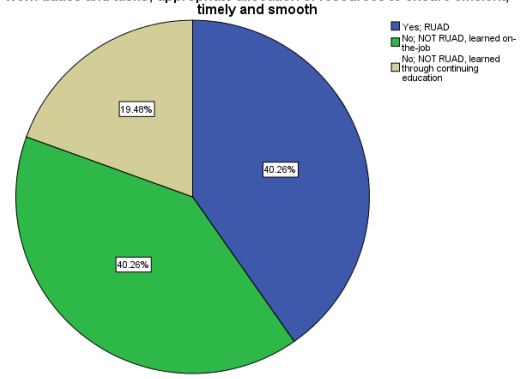
369. Decision-Making: Understanding when a decision must be made and to have the willingness to make a decision. Quickly and efficiently determining an appropriate course of action to target a particular situation. - Required Upon Active Duty (RUAD)



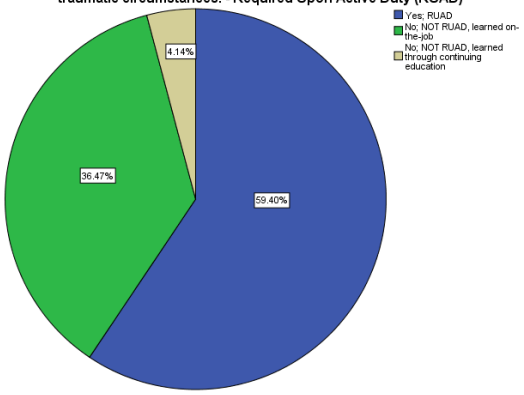
373. Self-Motivation: Working without supervision and accomplishing tasks without prodding. - Required Upon Active Duty (RUAD)



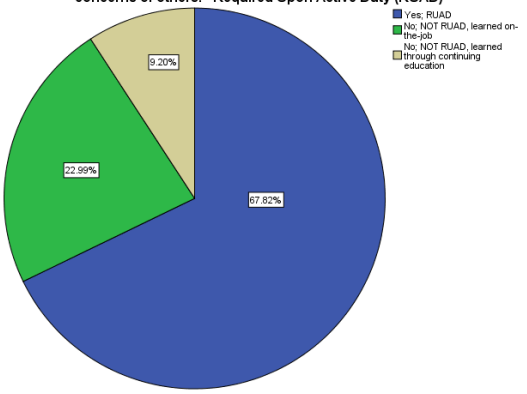
370. Planning and Organization: Skill in establishing a course of action for oneself and others to accomplish goals. Skill in properly planning assignments, work duties and tasks; appropriate allocation of resources to ensure efficient, timely and smooth



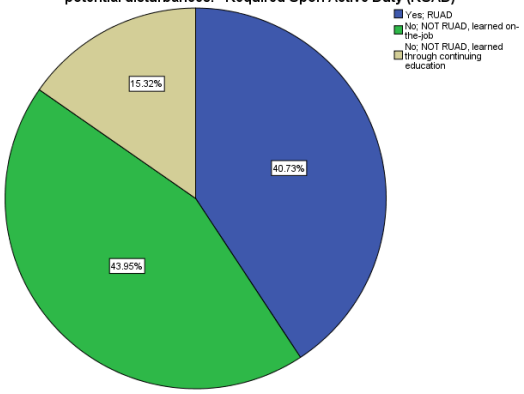
374. Composure: Working under stress and performing in unpleasant or traumatic circumstances. - Required Upon Active Duty (RUAD)



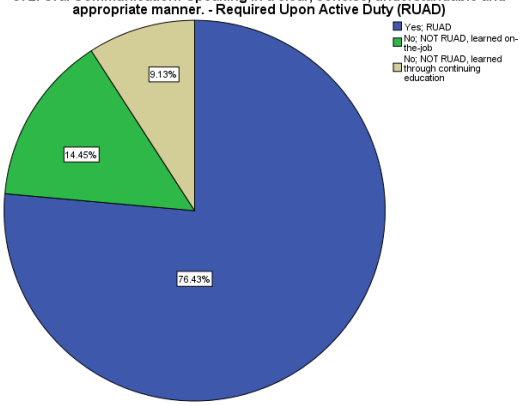
371. Interpersonal Skill: Listening to others and being considerate of the concerns of others. - Required Upon Active Duty (RUAD)



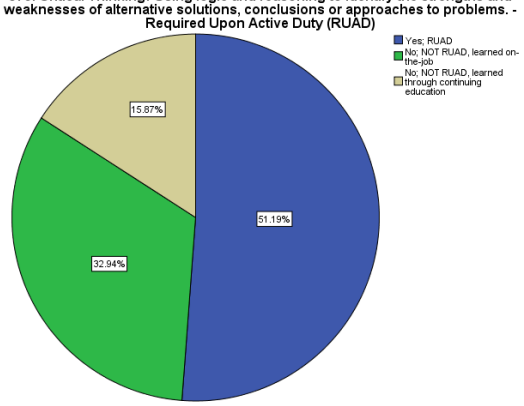
375. Conflict Resolution: Skill in de-escalating tense situations and quieting potential disturbances. - Required Upon Active Duty (RUAD)



372. Oral Communication: Speaking in a clear, concise, understandable and appropriate manner. - Required Upon Active Duty (RUAD)



376. Critical Thinking: Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems. - Required Upon Active Duty (RUAD)



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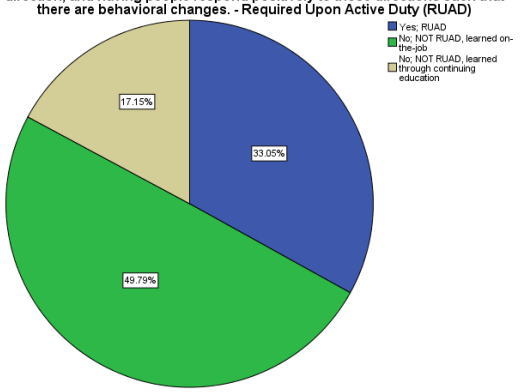
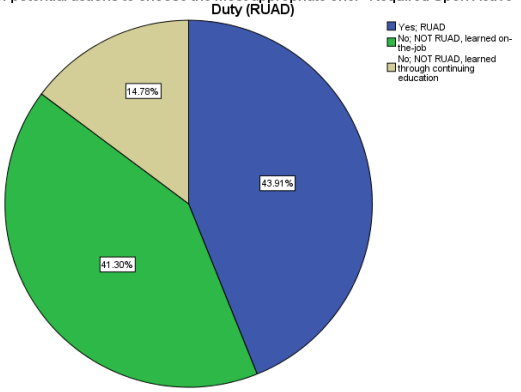
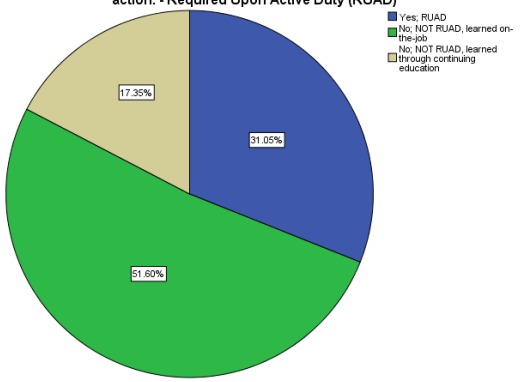
377. Leadership: Willingness to lead, take charge and offer opinions and direction, and having people respond positively to those directions such that there are behavioral changes. - Required Upon Active Duty (RUAD)



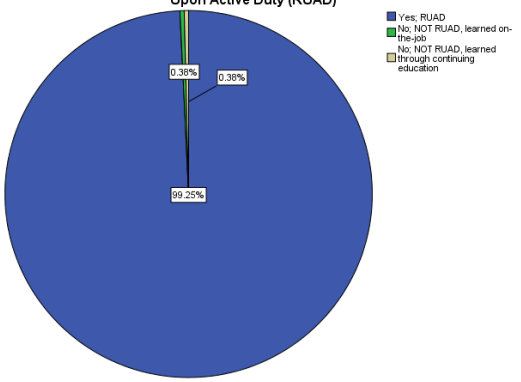
381. Judgment and Decision Making: Considering the relative costs and benefits of potential actions to choose the most appropriate one. - Required Upon Active Duty (RUAD)



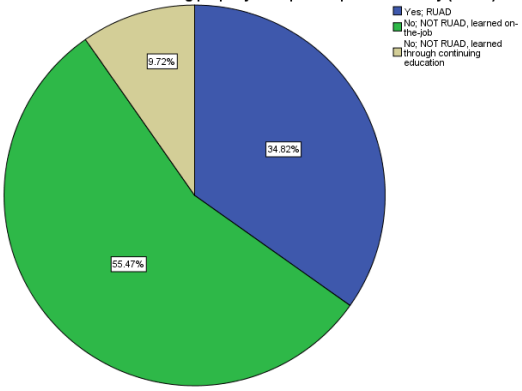
378. Monitoring: Monitoring/Assessing your performance or the performance of other individuals or organizations to make improvements or take corrective action. - Required Upon Active Duty (RUAD)



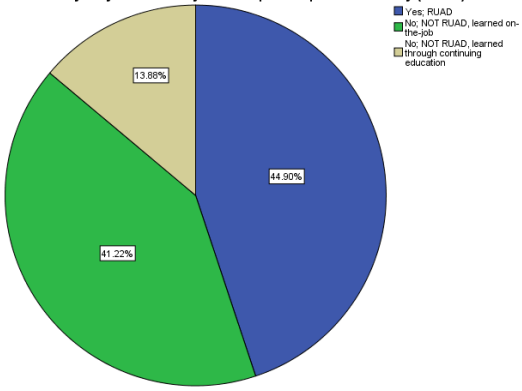
382. Are you paying attention? Please fill in a 'YES' for Applicability, 'Moderate' for Importance, 'YES' for RUAD, and a 'YES' for Better Performance. - Required Upon Active Duty (RUAD)



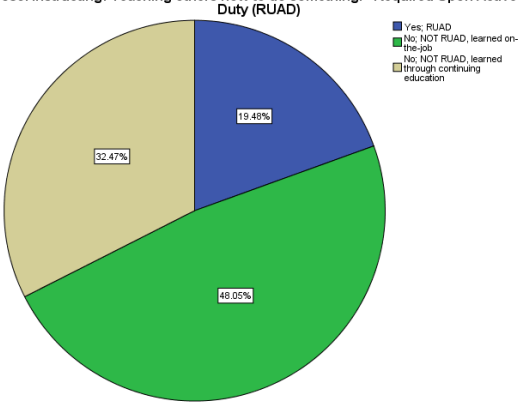
379. Operation and Control: Watching gauges, dials or other indicators to make sure a machine is working properly. - Required Upon Active Duty (RUAD)



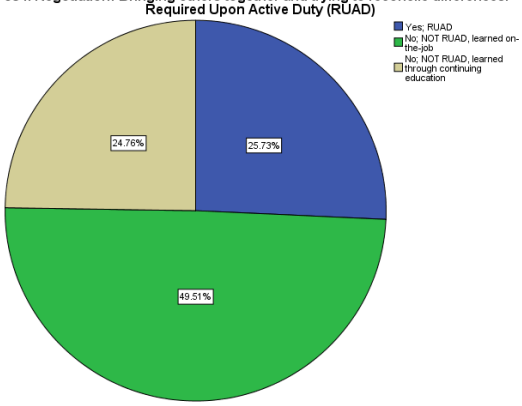
383. Social Perceptiveness: Being aware of others' reactions and understanding why they react as they do. - Required Upon Active Duty (RUAD)



380. Instructing: Teaching others how to do something. - Required Upon Active Duty (RUAD)



384. Negotiation: Bringing others together and trying to reconcile differences. - Required Upon Active Duty (RUAD)



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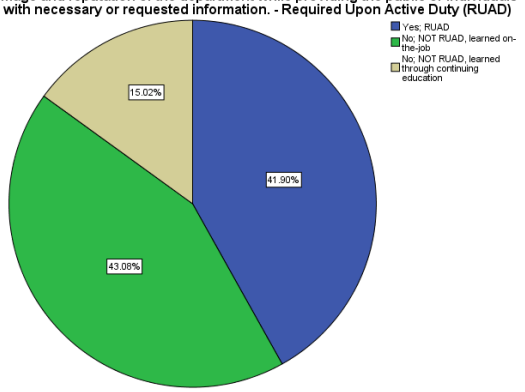
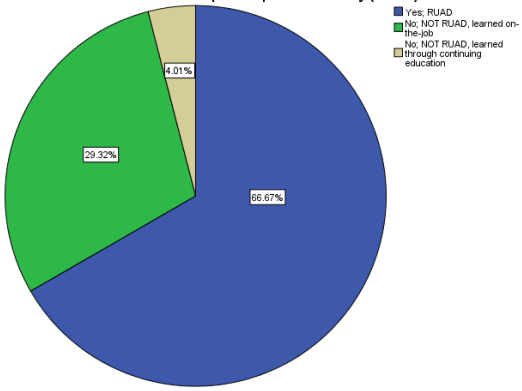
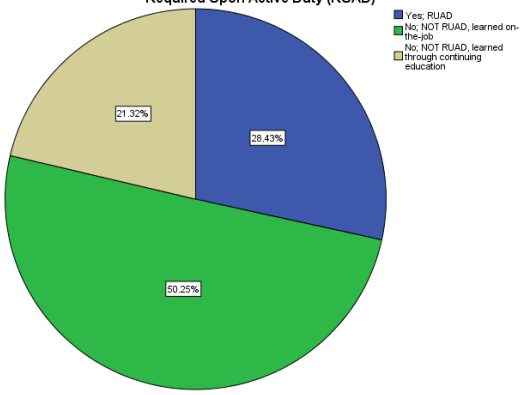
385. Public Relations Skill: Dealing with the public in such a way as to protect the image and reputation of the department while providing the public or individuals with necessary or requested information. - Required Upon Active Duty (RUAD)



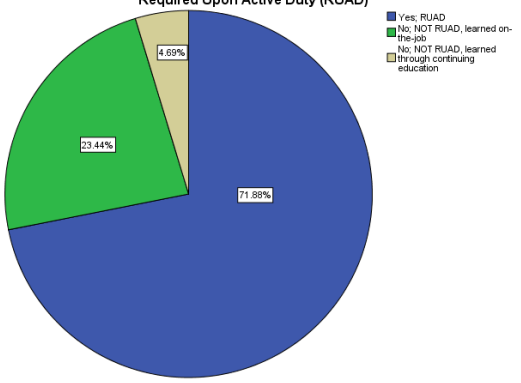
389. Attention to Detail: Being careful about detail and thorough in completing work tasks. - Required Upon Active Duty (RUAD)



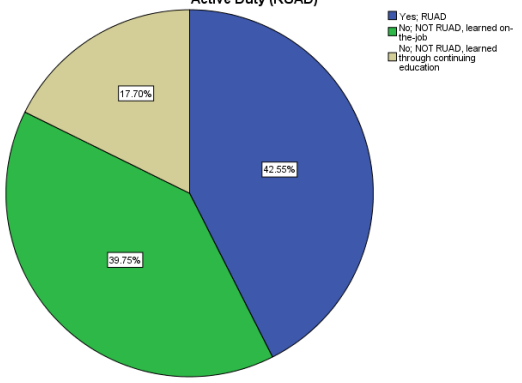
386. Persuasion: Persuading others to change their minds or behavior. - Required Upon Active Duty (RUAD)



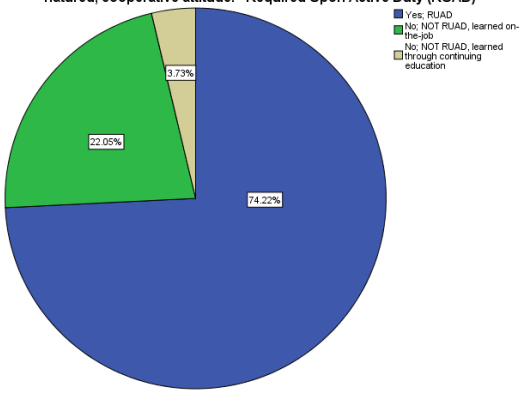
390. Concern for Others: Being sensitive to others' needs and feelings and being understanding and helpful on the job. Showing compassion for others. - Required Upon Active Duty (RUAD)



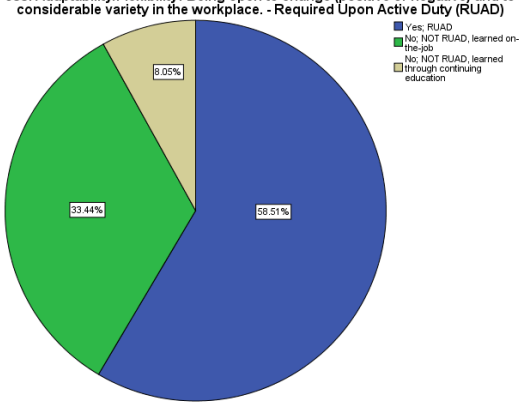
387. Achievement/Effort: Establishing and maintaining personally challenging achievement goals and exerting effort toward mastering tasks. - Required Upon Active Duty (RUAD)



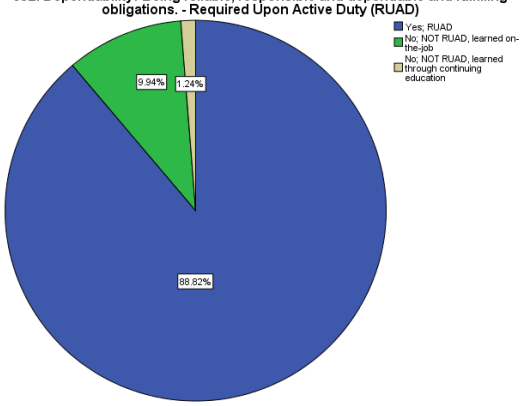
391. Cooperation: Being pleasant with others on the job and displaying a good-natured, cooperative attitude. - Required Upon Active Duty (RUAD)



388. Adaptability/Flexibility: Being open to change (positive or negative) and to considerable variety in the workplace. - Required Upon Active Duty (RUAD)



392. Dependability: Being reliable, responsible and dependable and fulfilling obligations. - Required Upon Active Duty (RUAD)



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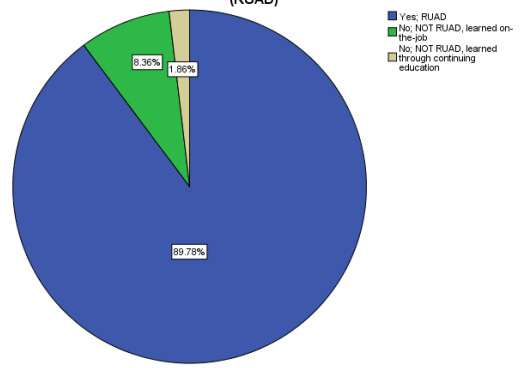
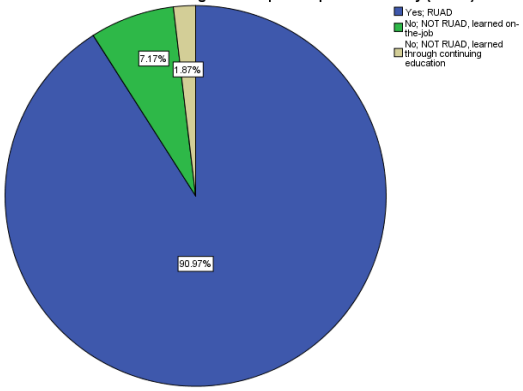
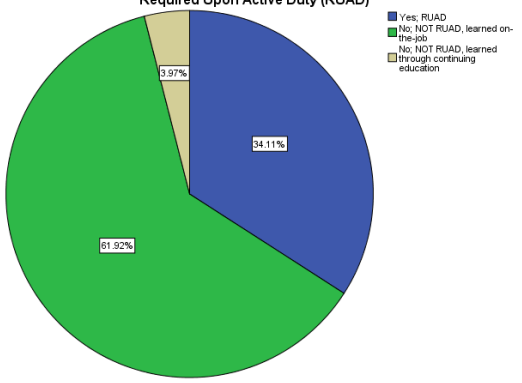
393. Ethics: Acting in an honest and fair manner. Willingness to accept responsibility for actions when things go wrong. Displaying a high degree of integrity and professionalism in action and word. - Required Upon Active Duty (RUAD)



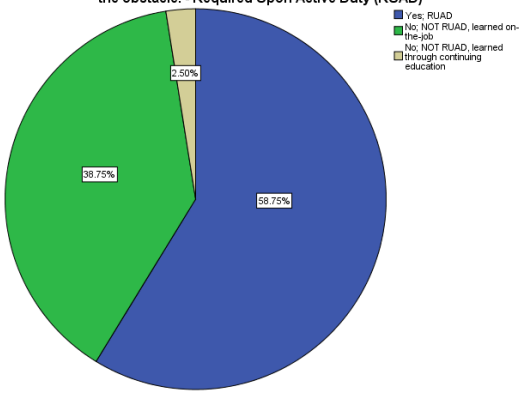
397. Integrity: Being honest and ethical, especially in situations where others could be taken advantage of. - Required Upon Active Duty (RUAD)



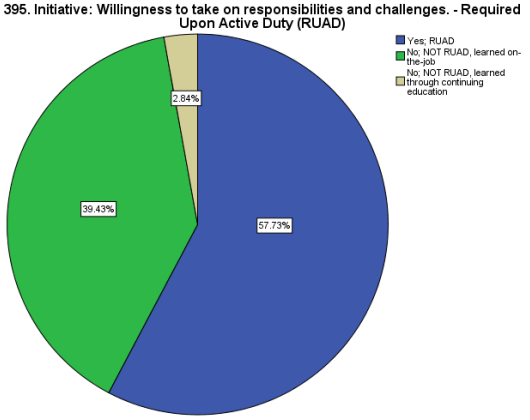
394. Independence: Developing one's own ways of doing things, guiding oneself with little or no supervision and depending on oneself to get things done. - Required Upon Active Duty (RUAD)



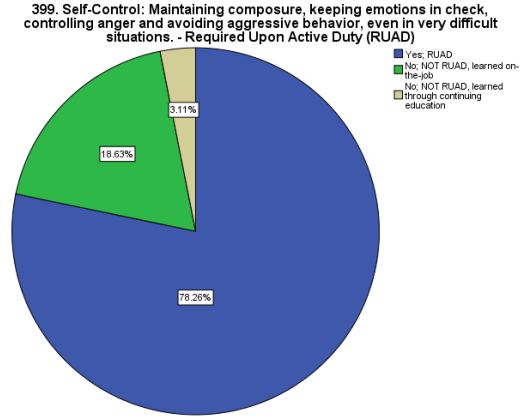
398. Persistence: In the face of obstacles, one continues to engage to overcome the obstacle. - Required Upon Active Duty (RUAD)



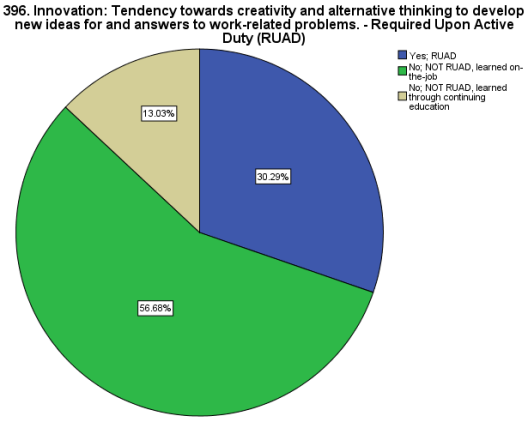
395. Initiative: Willingness to take on responsibilities and challenges. - Required Upon Active Duty (RUAD)



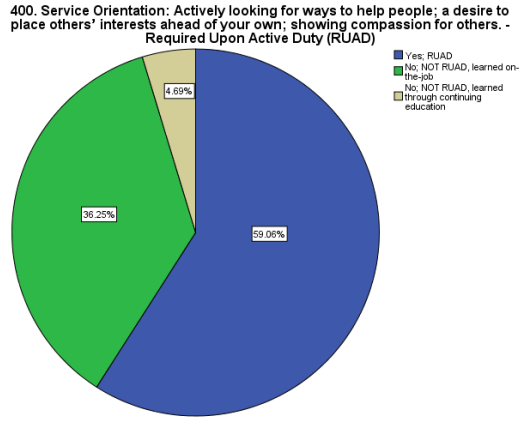
399. Self-Control: Maintaining composure, keeping emotions in check, controlling anger and avoiding aggressive behavior, even in very difficult situations. - Required Upon Active Duty (RUAD)



396. Innovation: Tendency towards creativity and alternative thinking to develop new ideas for and answers to work-related problems. - Required Upon Active Duty (RUAD)



400. Service Orientation: Actively looking for ways to help people; a desire to place others' interests ahead of your own; showing compassion for others. - Required Upon Active Duty (RUAD)



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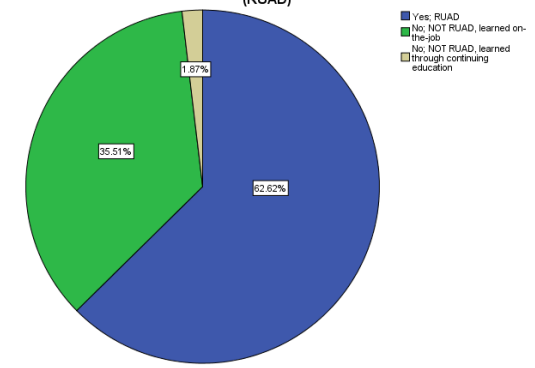
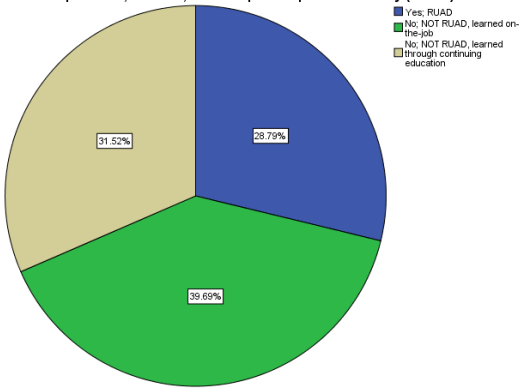
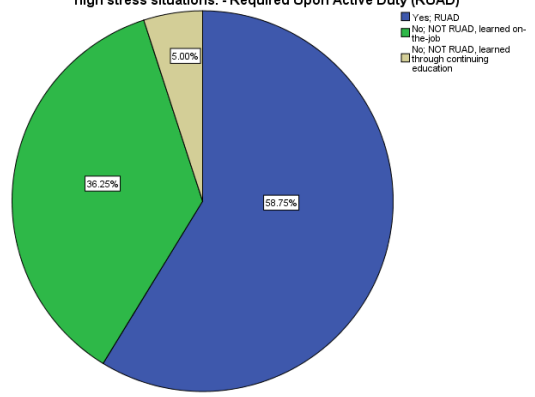
401. Social/Teamwork Orientation: Preferring to work with others rather than alone, and being personally connected with others on the job. The ability to work with others (teamwork) to achieve a mutual end. - Required Upon Active Duty (RUAD)



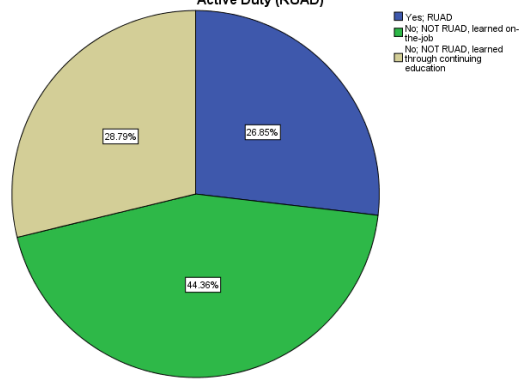
405. Knowledge of basic science terms and concepts, e.g., force, gravity, pressure, vacuum, etc. - Required Upon Active Duty (RUAD)



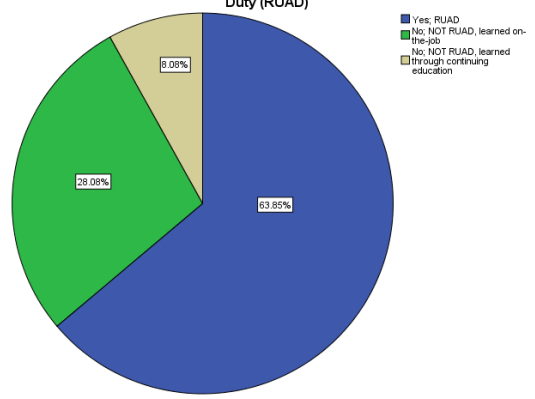
402. Stress Tolerance: Accepting criticism and dealing calmly and effectively with high stress situations. - Required Upon Active Duty (RUAD)



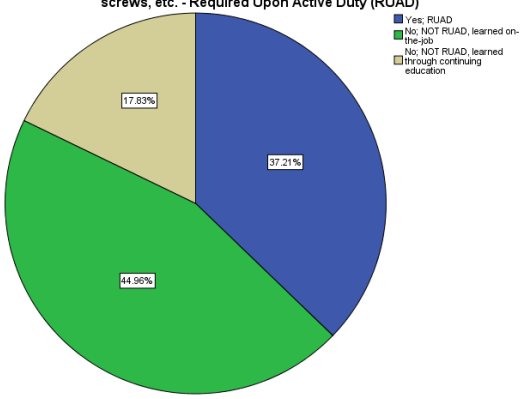
406. Knowledge of ratios and terms, expressing ratios and the practical use of ratios, e.g., pounds per square inch, gallons per minute, etc. - Required Upon Active Duty (RUAD)



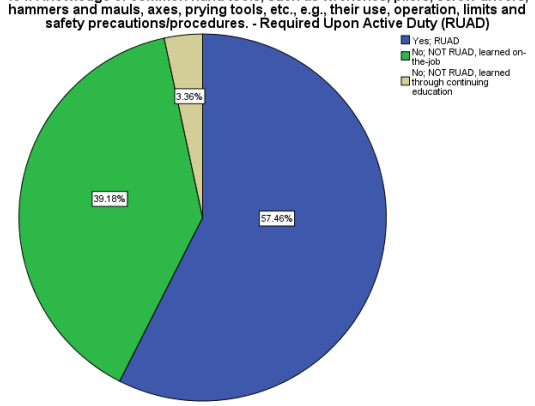
403. Knowledge of motor vehicle rules and regulations. - Required Upon Active Duty (RUAD)



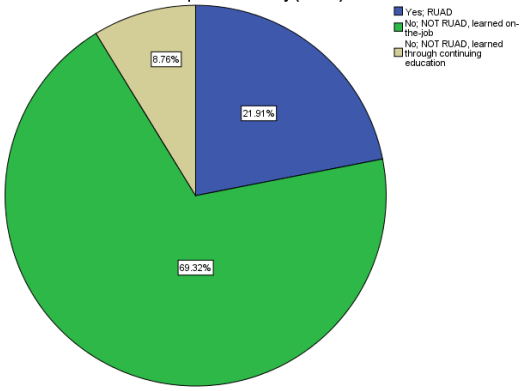
407. Knowledge of basic mechanical principles, e.g., leverage, gears, pulleys, screws, etc. - Required Upon Active Duty (RUAD)



404. Knowledge of common hand tools, such as wrenches, pliers, screw drivers, hammers and mauls, axes, prying tools, etc., e.g., their use, operation, limits and safety precautions/procedures. - Required Upon Active Duty (RUAD)



408. Knowledge of typical occupancy activity at a given time of day - Required Upon Active Duty (RUAD)



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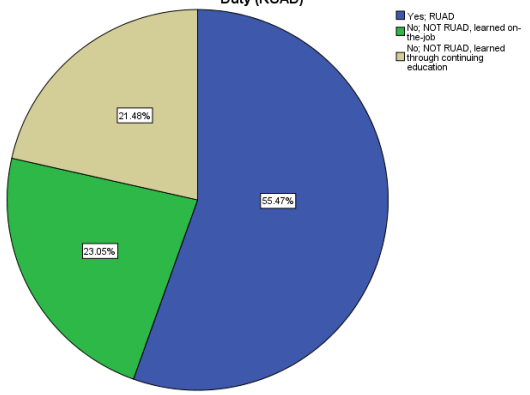
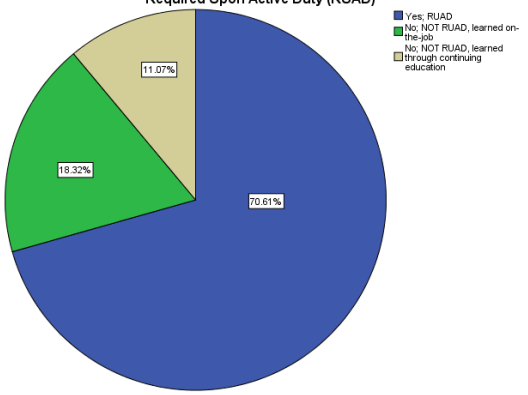
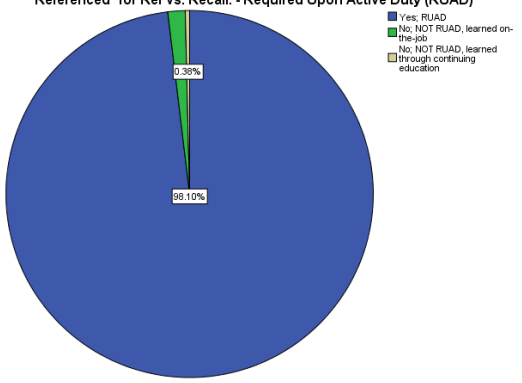
409. Knowledge of the science behind fire propagation - Required Upon Active Duty (RUAD)



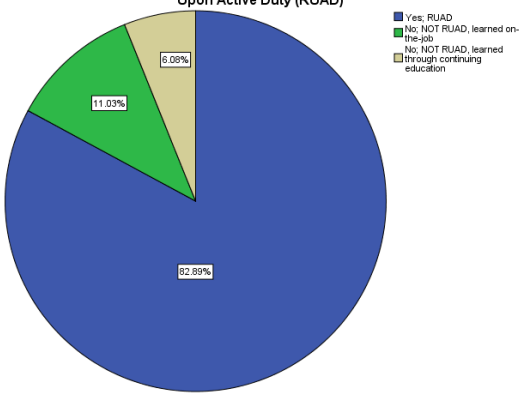
413. Knowledge of common products of combustion and their toxic effects - Required Upon Active Duty (RUAD)



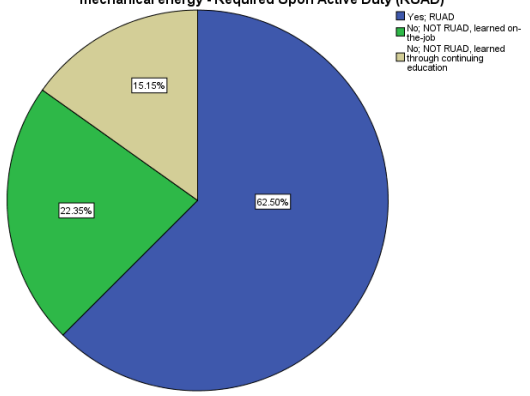
410. Are you paying attention? Please fill in a 'YES' for Applicability, 'Major' for importance, 'YES' for RUAD, a 'NO' for Better Performance, and 'Seldom Referenced' for Ref vs. Recall. - Required Upon Active Duty (RUAD)



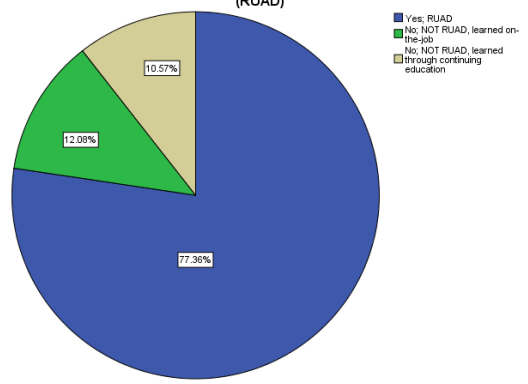
414. Knowledge of classification of fires: class A, B, C, D, and K fires - Required Upon Active Duty (RUAD)



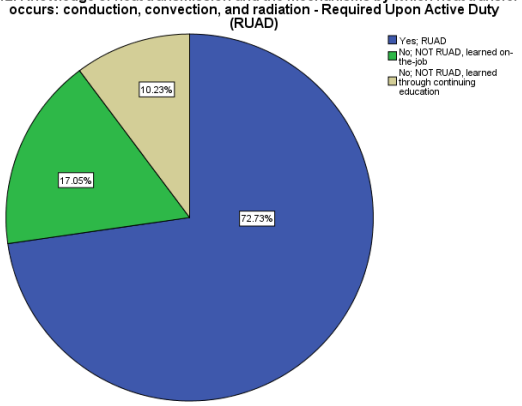
411. Knowledge of common heat energy sources: chemical, electrical, and mechanical energy - Required Upon Active Duty (RUAD)



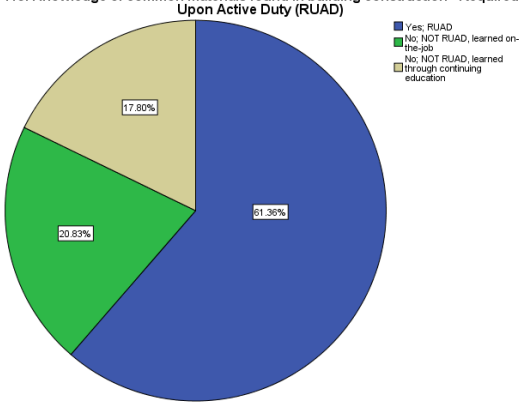
415. Knowledge of Fire Control Theory: temperature reduction, fuel removal, oxygen exclusion, and chemical flame inhibition - Required Upon Active Duty (RUAD)



412. Knowledge of heat transmission and the mechanisms by which heat transfer occurs: conduction, convection, and radiation - Required Upon Active Duty (RUAD)



416. Knowledge of common materials found in building construction - Required Upon Active Duty (RUAD)



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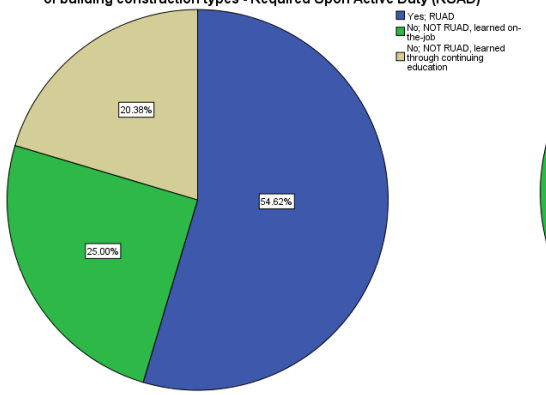
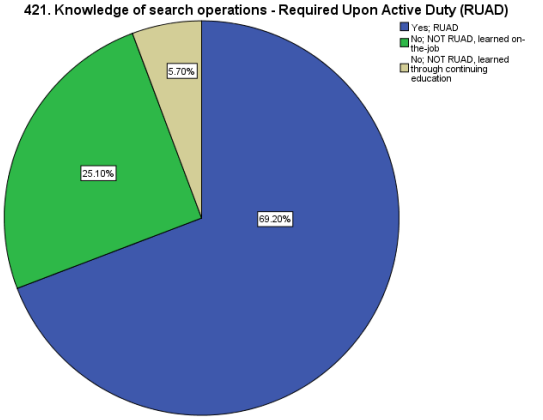
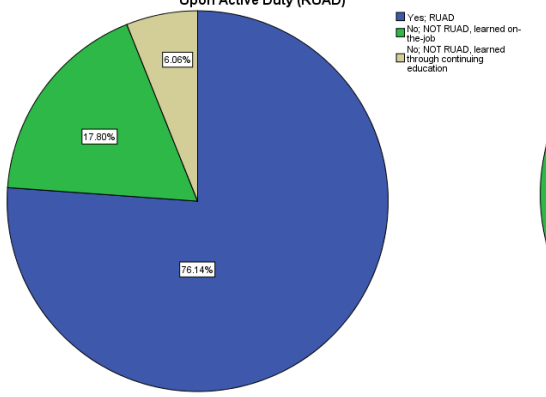
417. Knowledge of the strengths and weaknesses associated with different types of building construction types - Required Upon Active Duty (RUAD)



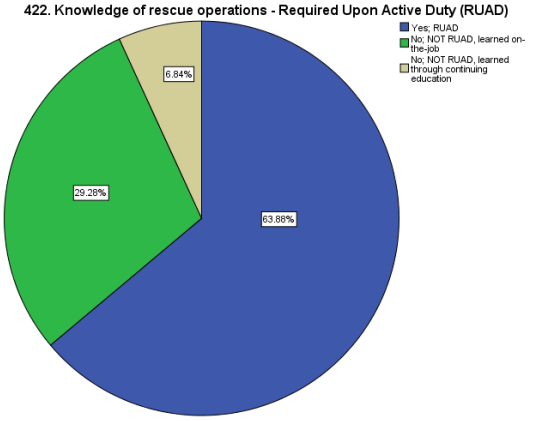
421. Knowledge of search operations - Required Upon Active Duty (RUAD)



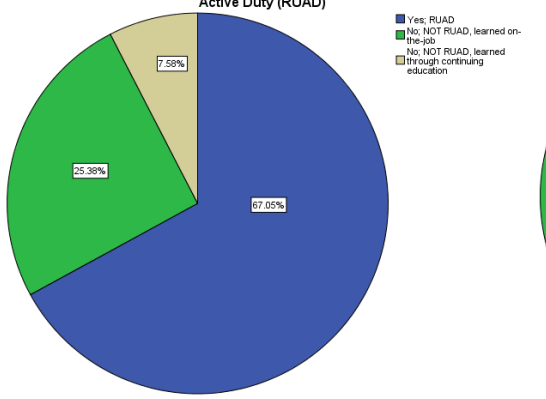
418. Knowledge of types of extinguishers and their common uses - Required Upon Active Duty (RUAD)



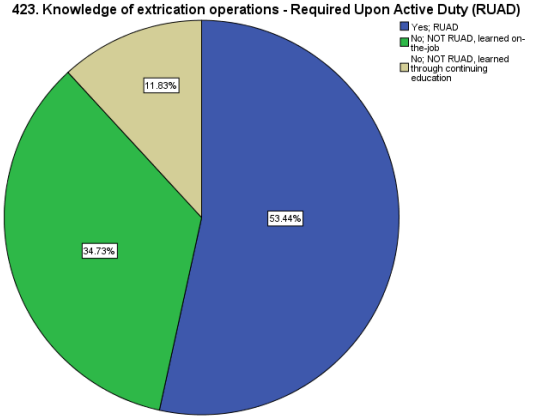
422. Knowledge of rescue operations - Required Upon Active Duty (RUAD)



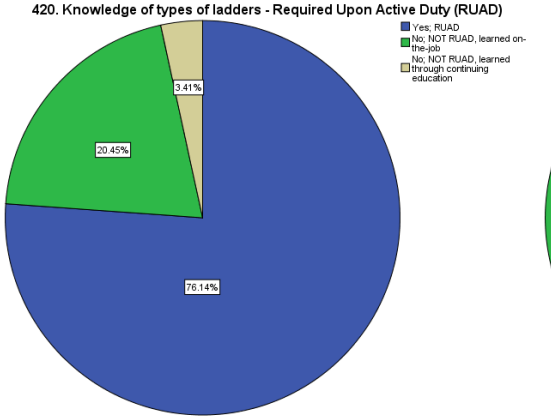
419. Knowledge of types of knots, ropes, and webbing materials - Required Upon Active Duty (RUAD)



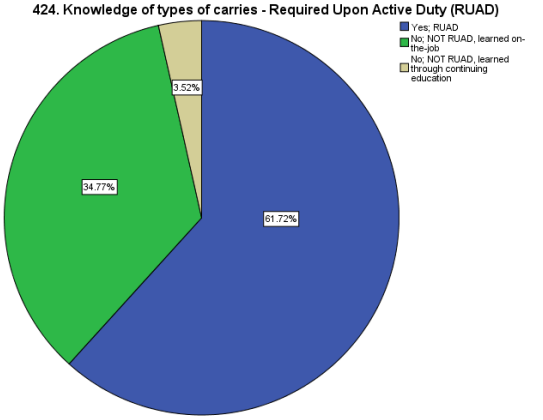
423. Knowledge of extrication operations - Required Upon Active Duty (RUAD)



420. Knowledge of types of ladders - Required Upon Active Duty (RUAD)



424. Knowledge of types of carries - Required Upon Active Duty (RUAD)



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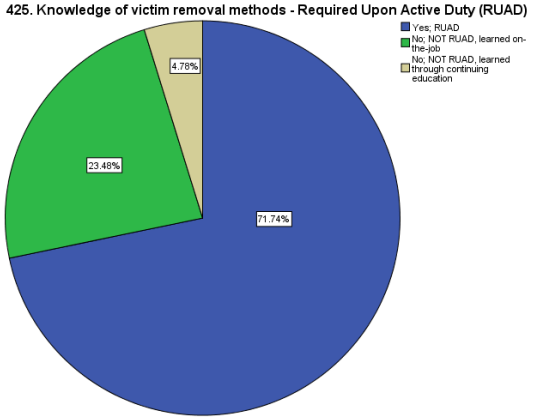
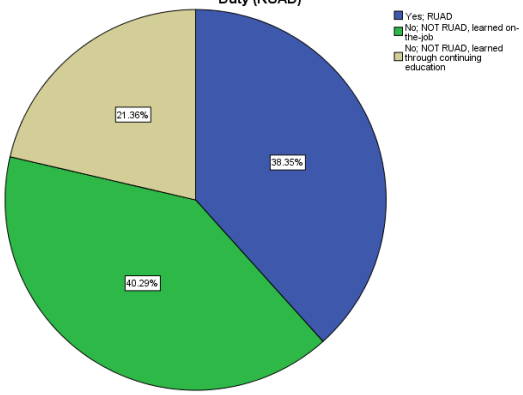
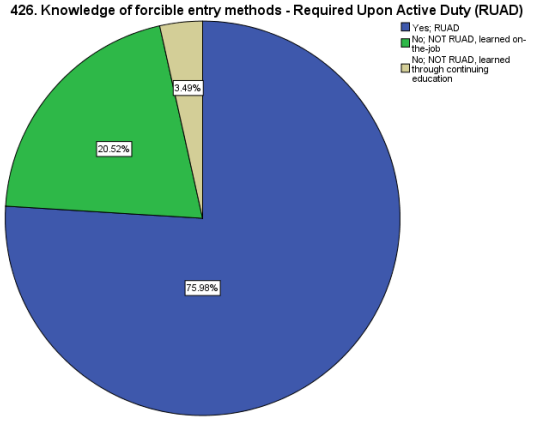
425. Knowledge of victim removal methods - Required Upon Active Duty (RUAD)



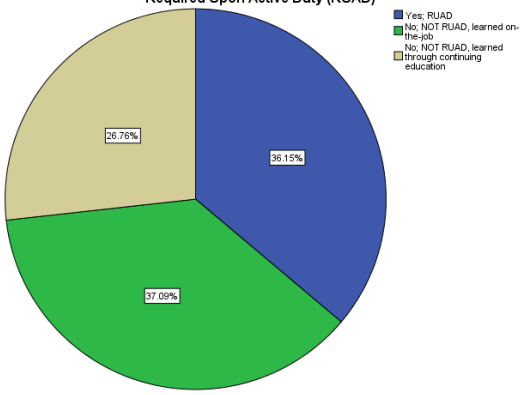
429. Knowledge of methods of moving water in a system - Required Upon Active Duty (RUAD)



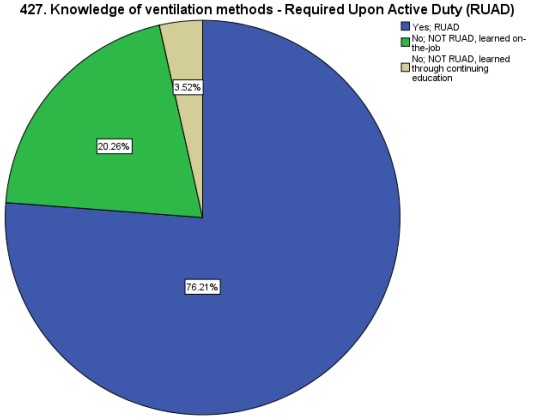
426. Knowledge of forcible entry methods - Required Upon Active Duty (RUAD)



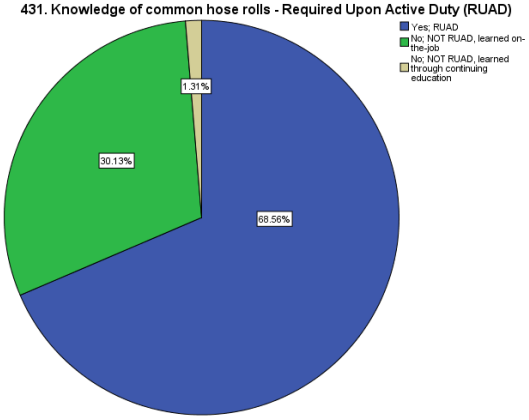
430. Knowledge of static pressure, flow pressure, and residual pressure - Required Upon Active Duty (RUAD)



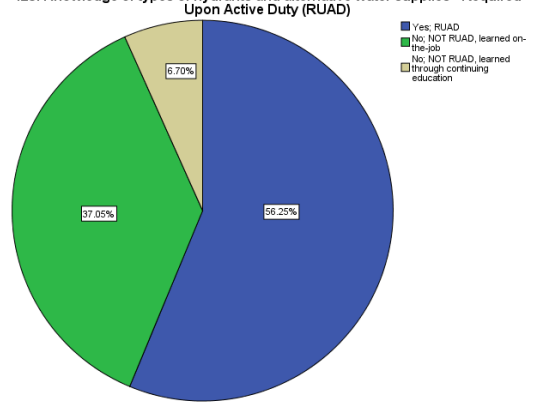
427. Knowledge of ventilation methods - Required Upon Active Duty (RUAD)



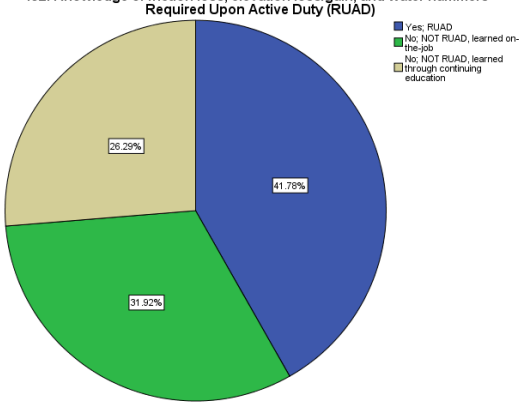
431. Knowledge of common hose rolls - Required Upon Active Duty (RUAD)



428. Knowledge of types of hydrants and alternative water supplies - Required Upon Active Duty (RUAD)



432. Knowledge of friction loss, elevation loss/gain, and water hammers - Required Upon Active Duty (RUAD)



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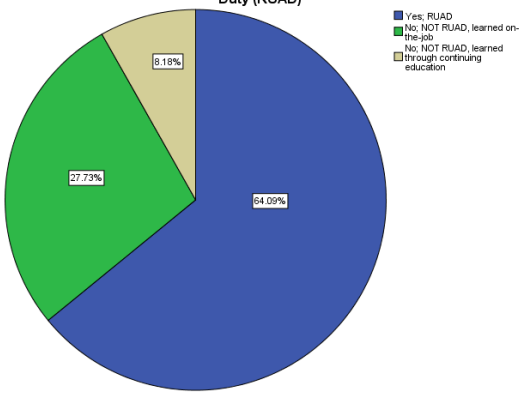
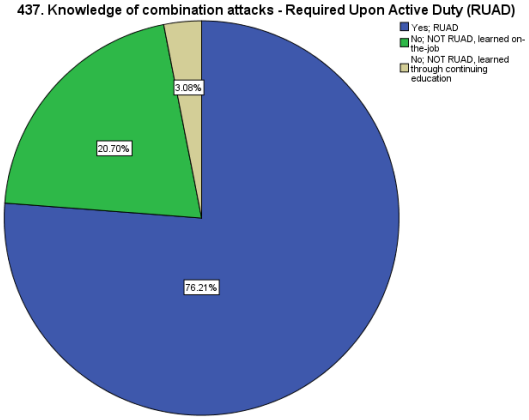
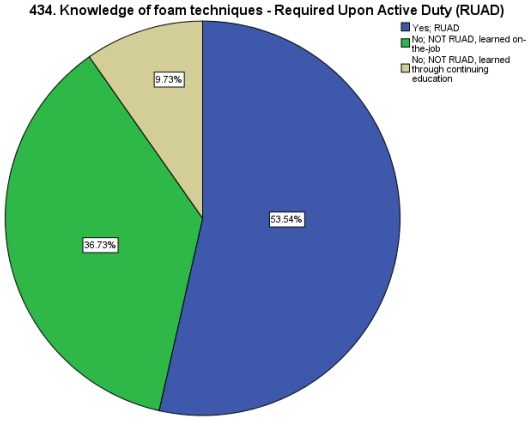
433. Knowledge of size classifications of fire streams - Required Upon Active Duty (RUAD)



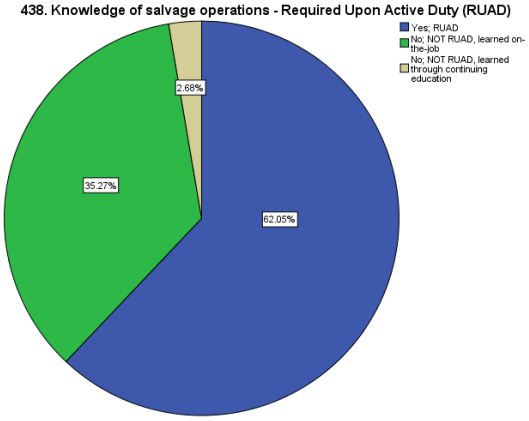
437. Knowledge of combination attacks - Required Upon Active Duty (RUAD)



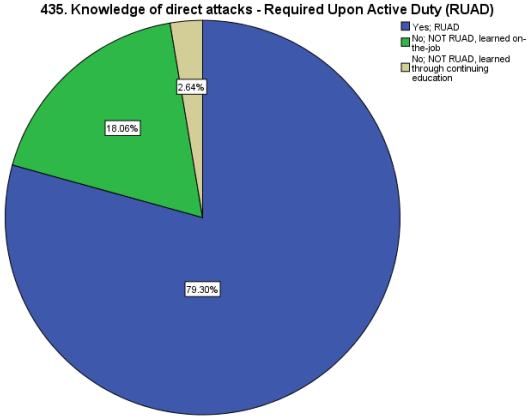
434. Knowledge of foam techniques - Required Upon Active Duty (RUAD)



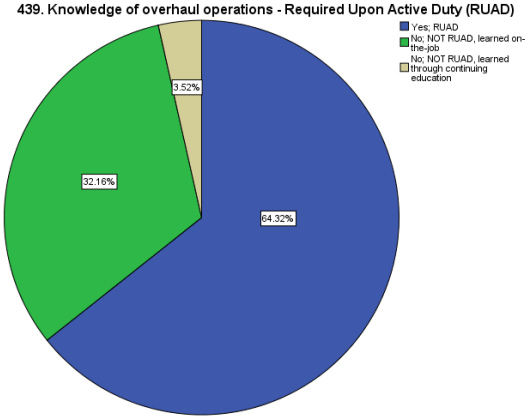
438. Knowledge of salvage operations - Required Upon Active Duty (RUAD)



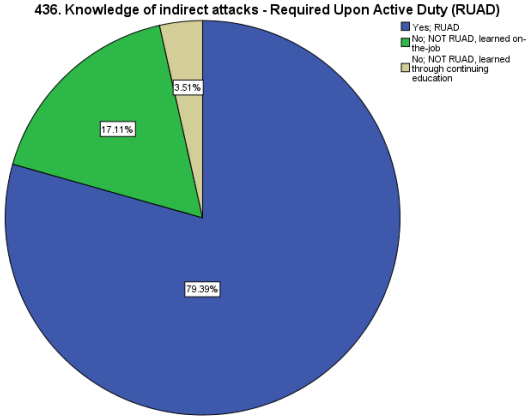
435. Knowledge of direct attacks - Required Upon Active Duty (RUAD)



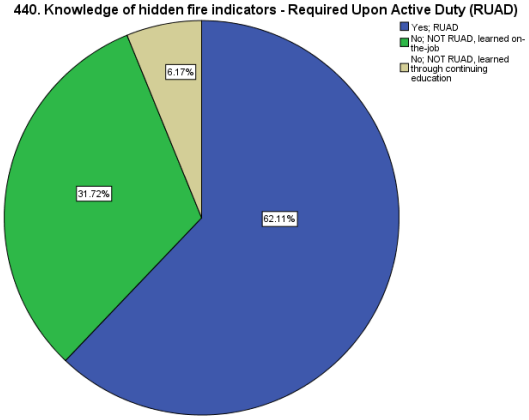
439. Knowledge of overhaul operations - Required Upon Active Duty (RUAD)



436. Knowledge of indirect attacks - Required Upon Active Duty (RUAD)



440. Knowledge of hidden fire indicators - Required Upon Active Duty (RUAD)



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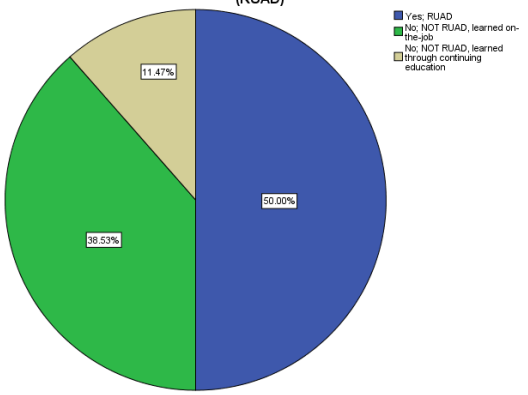
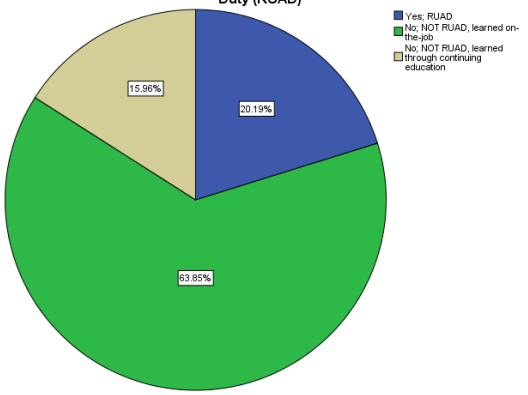
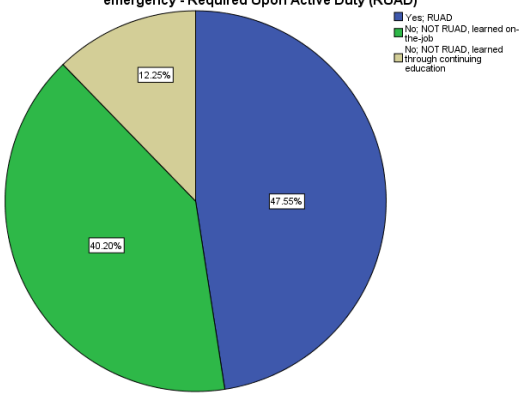
441. Knowledge of evidence protection methods - Required Upon Active Duty (RUAD)



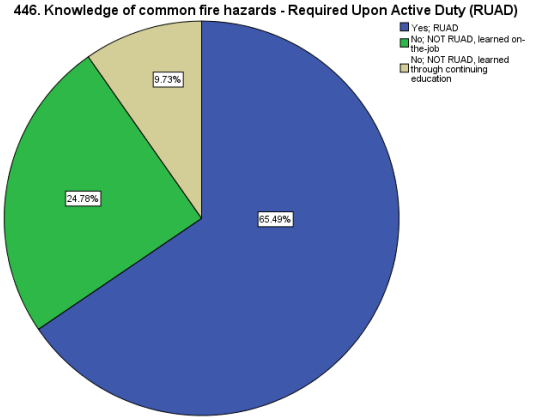
445. Knowledge of preincident surveys and inspections - Required Upon Active Duty (RUAD)



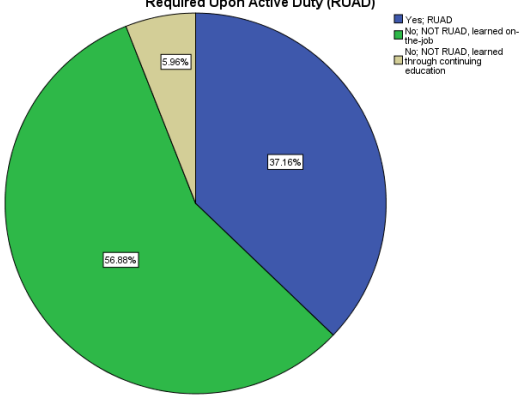
442. Knowledge of procedures the public should use to report a fire or other emergency - Required Upon Active Duty (RUAD)



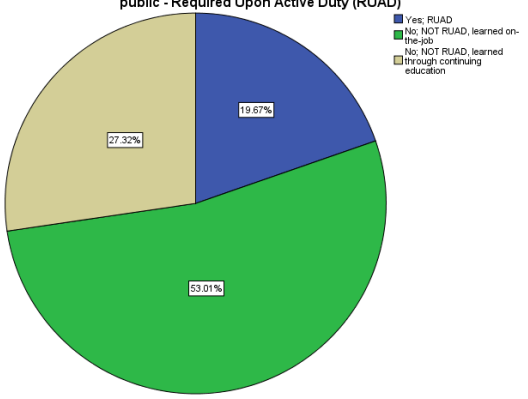
446. Knowledge of common fire hazards - Required Upon Active Duty (RUAD)



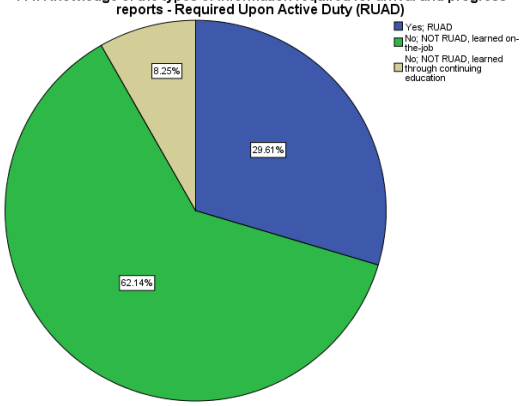
443. Knowledge of necessary skills for fire department communications - Required Upon Active Duty (RUAD)



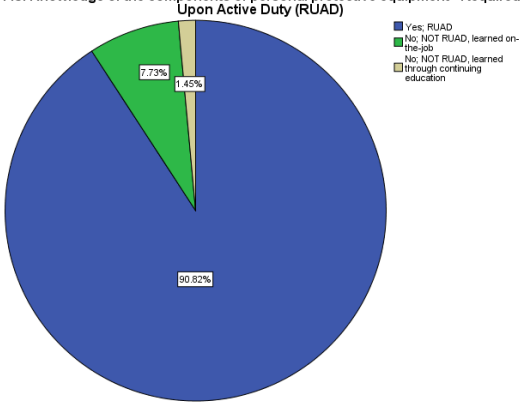
447. Knowledge of the steps in presenting fire and life safety information to the public - Required Upon Active Duty (RUAD)



444. Knowledge of the types of information required for arrival and progress reports - Required Upon Active Duty (RUAD)



448. Knowledge of the components of personal protective equipment - Required Upon Active Duty (RUAD)



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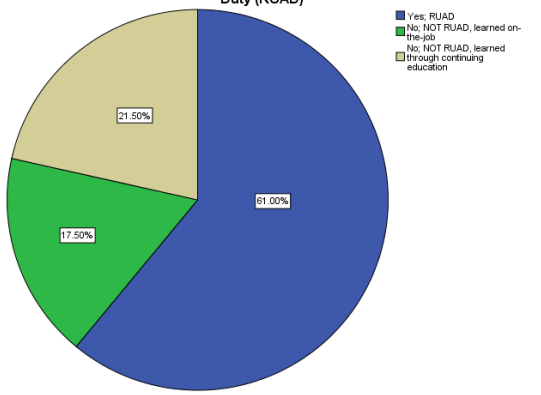
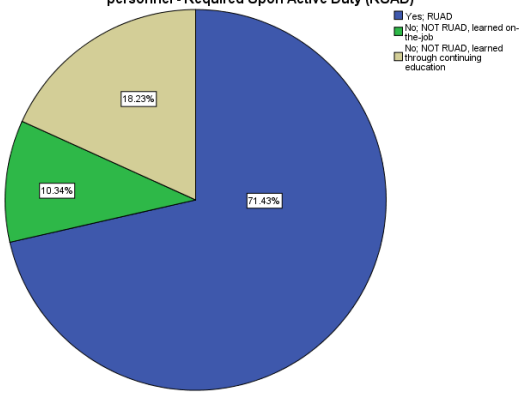
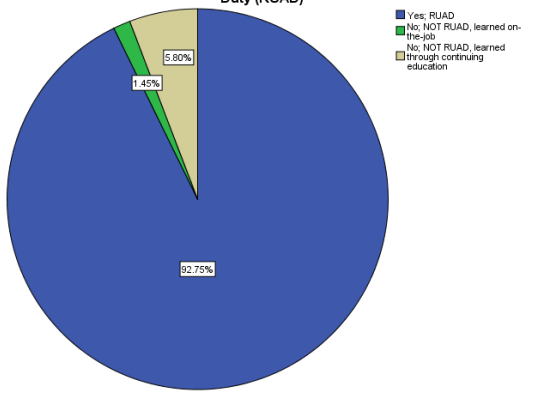
449. Knowledge of the physiological aspects of stress - Required Upon Active Duty (RUAD)



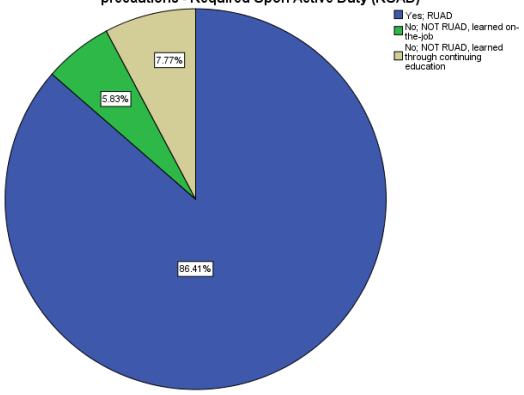
453. Knowledge of methods to managing shock of victims and/or other fire personnel - Required Upon Active Duty (RUAD)



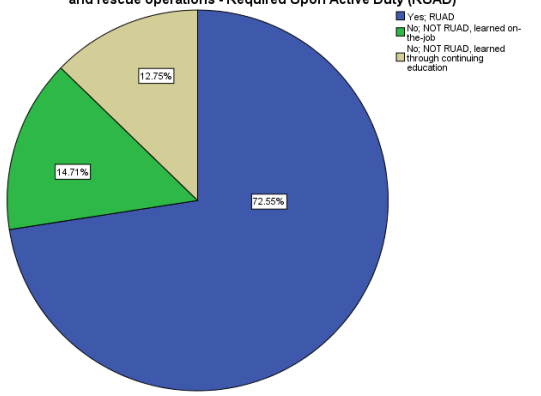
450. Knowledge of cardiopulmonary resuscitation (CPR) - Required Upon Active Duty (RUAD)



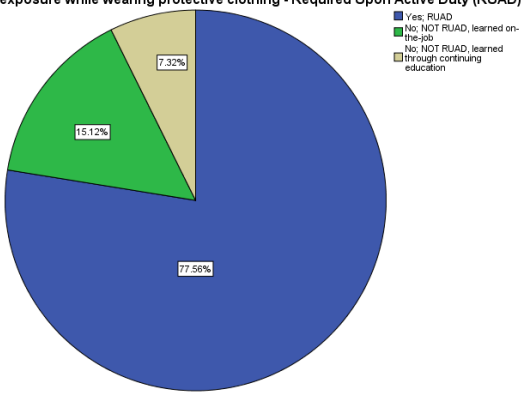
454. Knowledge of Body Substance Isolation (BSI) or infection control precautions - Required Upon Active Duty (RUAD)



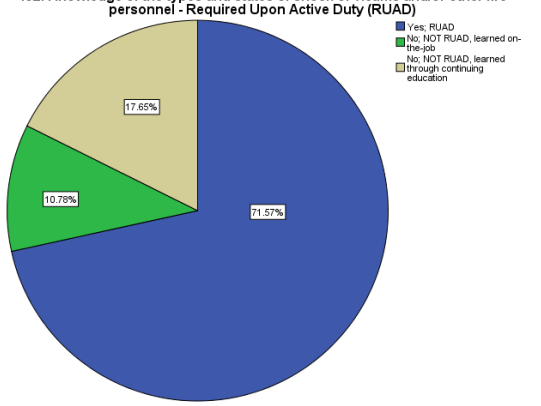
451. Knowledge of scene safety considerations as hazardous materials incidents and rescue operations - Required Upon Active Duty (RUAD)



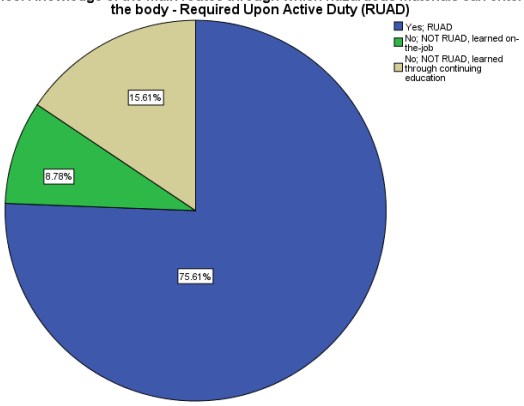
455. Knowledge of methods to prevent and/or reduce the effects of heat exposure while wearing protective clothing - Required Upon Active Duty (RUAD)



452. Knowledge of the types and states of shock of victims and/or other fire personnel - Required Upon Active Duty (RUAD)



456. Knowledge of the main routes through which hazardous materials can enter the body - Required Upon Active Duty (RUAD)



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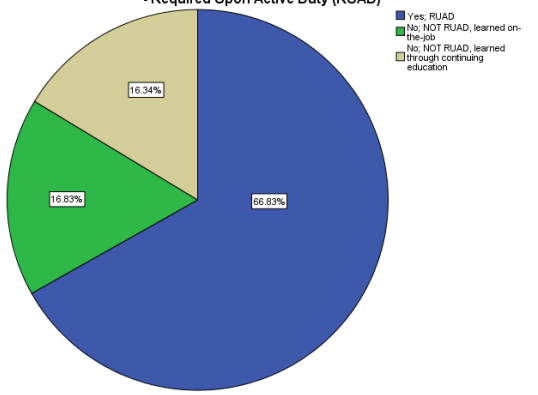
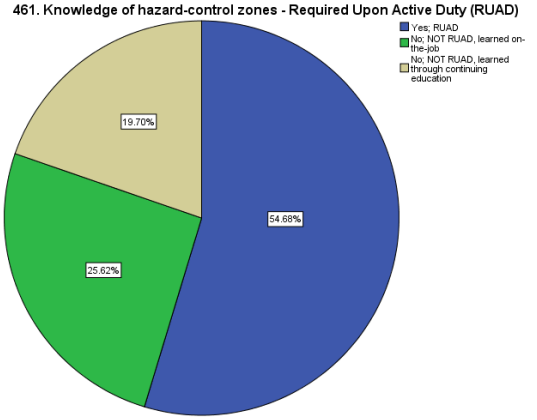
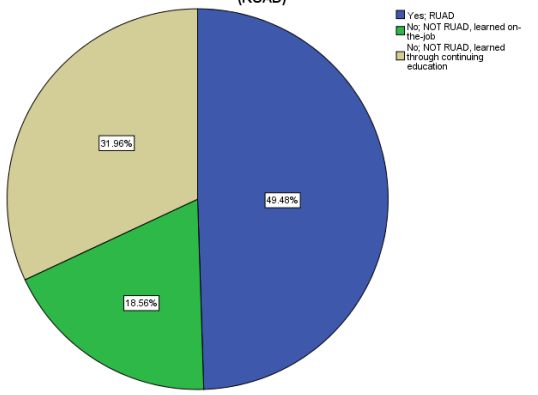
457. Knowledge of the clues which indicate the presence of hazardous materials - Required Upon Active Duty (RUAD)



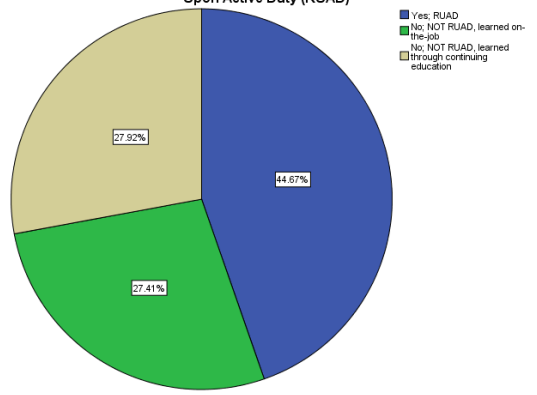
461. Knowledge of hazard-control zones - Required Upon Active Duty (RUAD)



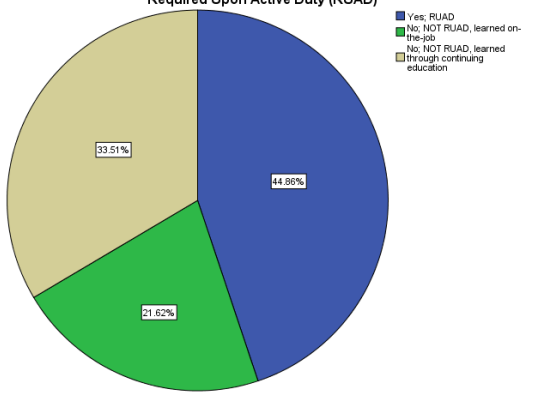
458. Knowledge of chemical attack indicators - Required Upon Active Duty (RUAD)



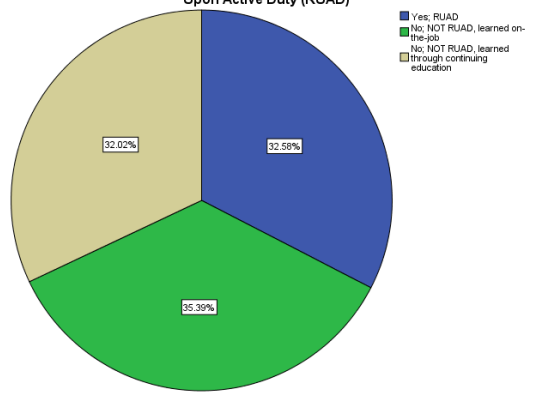
462. Knowledge of defensive confinement and spill control actions - Required Upon Active Duty (RUAD)



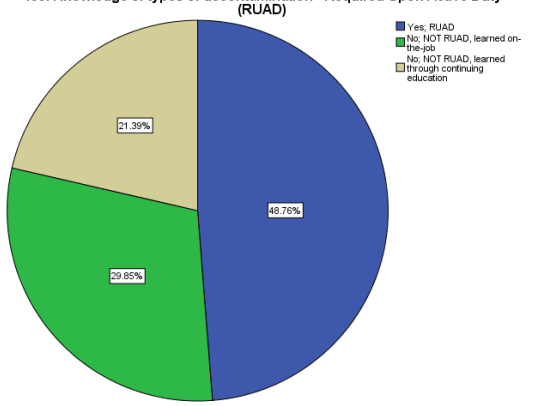
459. Knowledge of incident priorities at all HAZMAT and terrorist incidents - Required Upon Active Duty (RUAD)



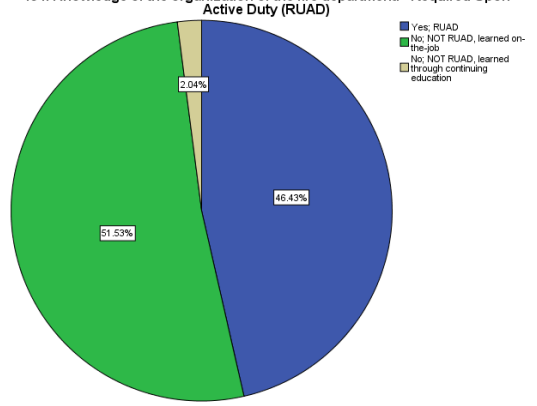
463. Knowledge of factors to address during large-scale evacuations - Required Upon Active Duty (RUAD)



460. Knowledge of types of decontamination - Required Upon Active Duty (RUAD)



464. Knowledge of the organization of the fire department. - Required Upon Active Duty (RUAD)



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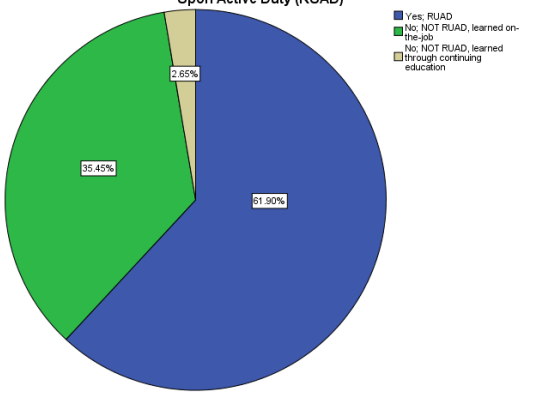
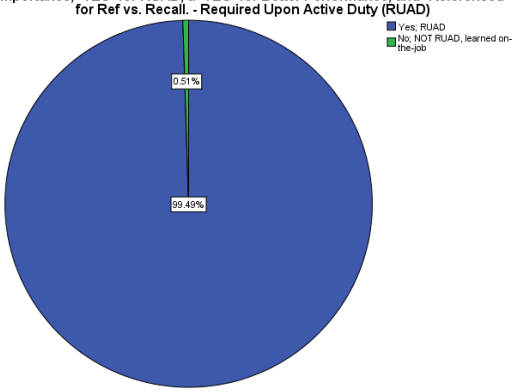
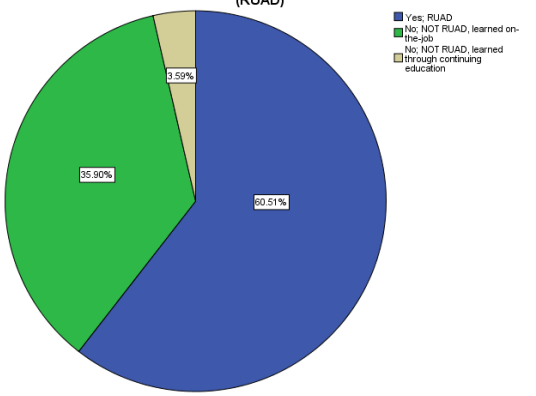
465. Knowledge of the role of the Fire Fighter I in the organization. - Required Upon Active Duty (RUAD)



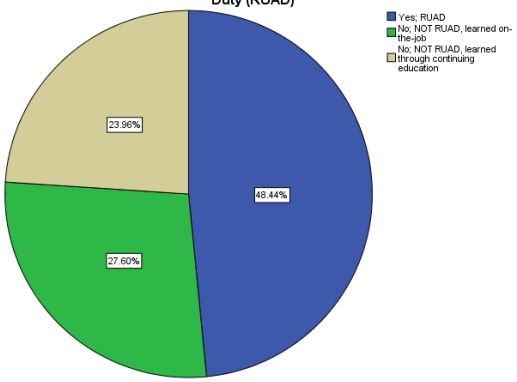
469. Are you paying attention? Please fill in a 'YES' for Applicability, 'Modest' for importance, 'YES' for RUAD, a 'YES' for Better Performance, and 'Referenced' for Ref vs. Recall. - Required Upon Active Duty (RUAD)



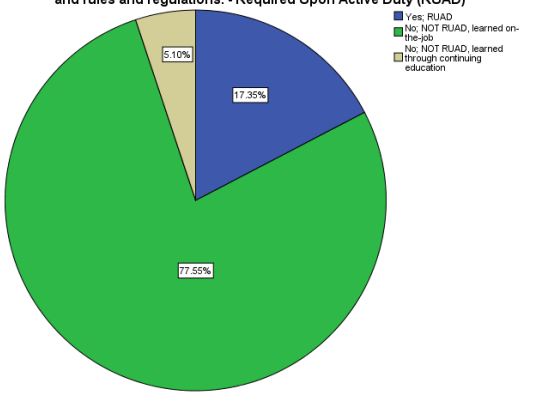
466. Knowledge of the mission of fire service. - Required Upon Active Duty (RUAD)



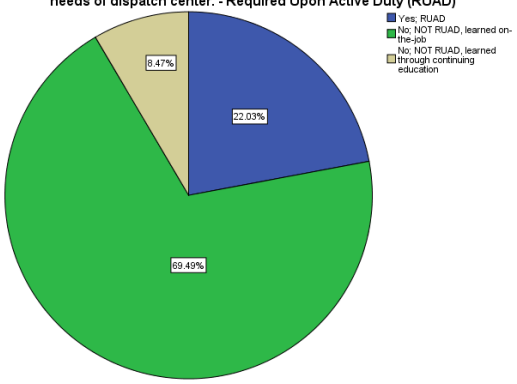
470. Knowledge of the critical aspects of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program. - Required Upon Active Duty (RUAD)



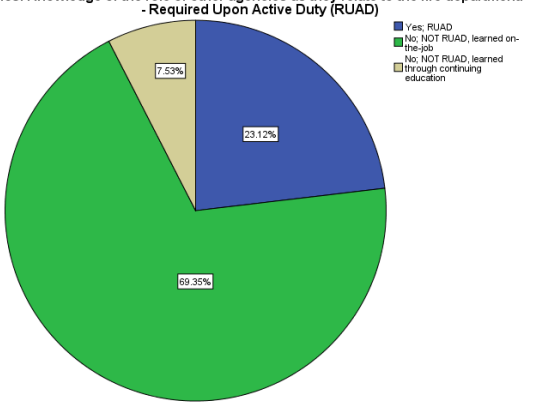
467. Knowledge of the fire department's standard operating procedures (SOPs) and rules and regulations. - Required Upon Active Duty (RUAD)



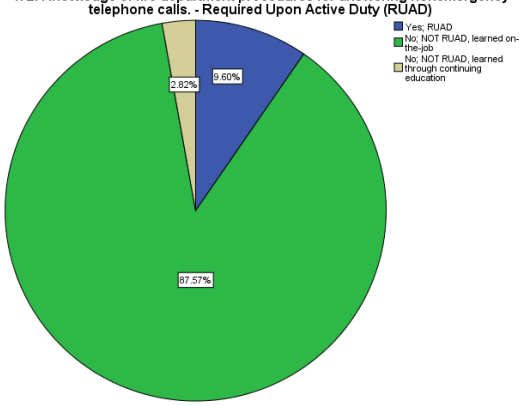
471. Knowledge of procedures for reporting an emergency; departmental SOPs for taking and receiving alarms, radio codes, or procedures; and information needs of dispatch center. - Required Upon Active Duty (RUAD)



468. Knowledge of the role of other agencies as they relate to the fire department. - Required Upon Active Duty (RUAD)



472. Knowledge of fire department procedures for answering nonemergency telephone calls. - Required Upon Active Duty (RUAD)



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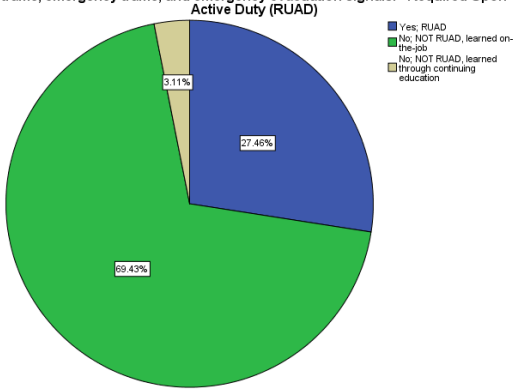
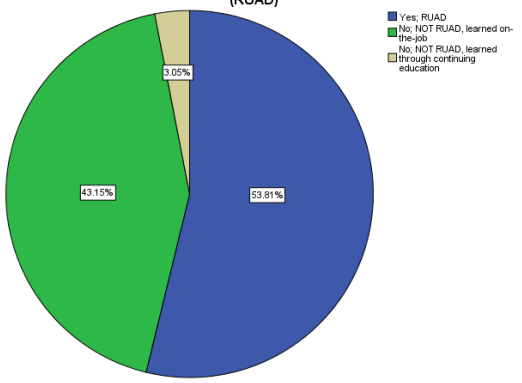
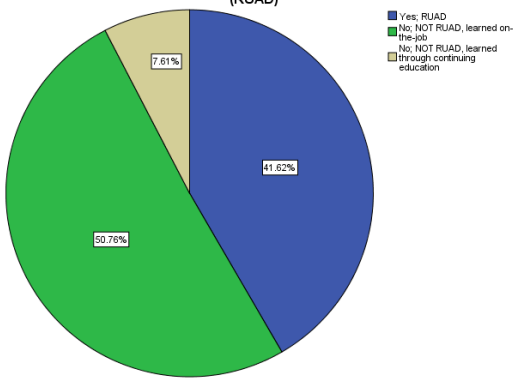
473. Knowledge of departmental radio procedures and etiquette for routine traffic, emergency traffic, and emergency evacuation signals. - Required Upon Active Duty (RUAD)



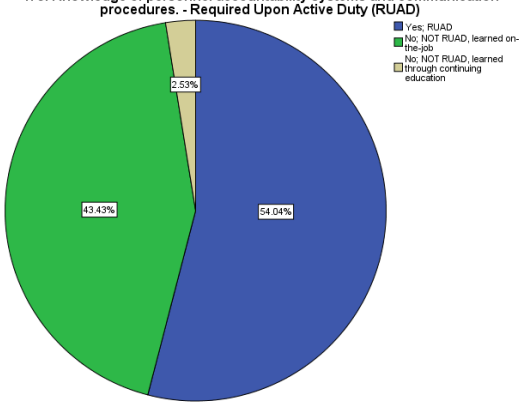
474. Knowledge of personnel accountability systems, emergency communication procedures, and emergency evacuation methods. - Required Upon Active Duty (RUAD)



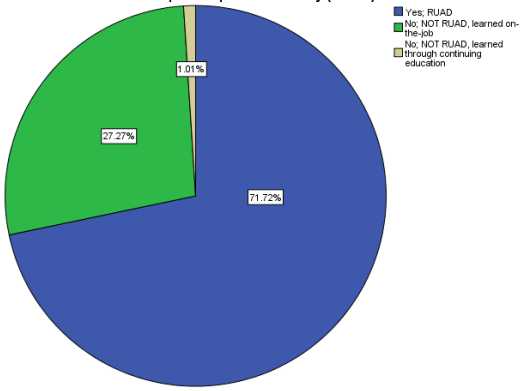
475. Knowledge of basic construction of typical doors, windows, and walls within the department's community or service area. - Required Upon Active Duty (RUAD)



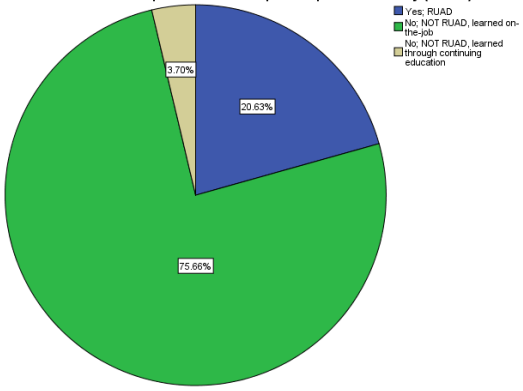
476. Knowledge of personnel accountability systems and communication procedures. - Required Upon Active Duty (RUAD)



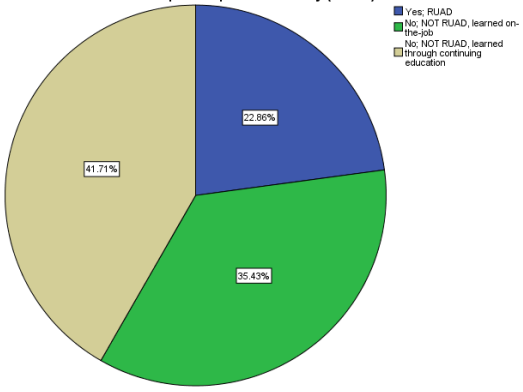
477. Principles of fire streams as they relate to fighting automobile fires. - Required Upon Active Duty (RUAD)



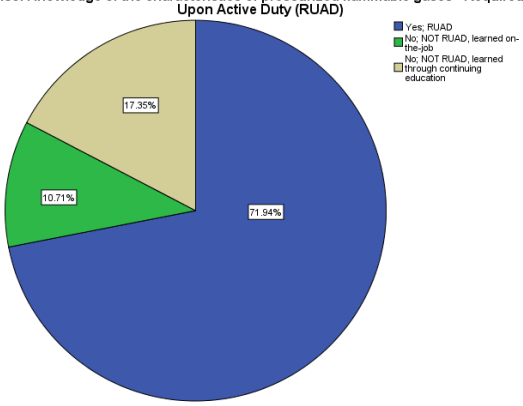
478. Knowledge of SOPs for alarm assignments and fire department radio communication procedures. - Required Upon Active Duty (RUAD)



479. Knowledge of the methods to assess the origin and cause of fires. - Required Upon Active Duty (RUAD)



480. Knowledge of the characteristics of pressurized flammable gases - Required Upon Active Duty (RUAD)



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Appendix J: Comparison of Essential Tasks

Item#	Task	Origin	NFPA Code	Essential Career?	Essential Volunteer?
2	Be in a response-ready status to respond to alarms at all hours of the day and night.	**IOS**		Y	Y
9	Conduct a mental size-up of the emergency scene.	**IOS**		Y	Y
10	Check the wind direction in relation to the fire or HAZ-MAT scene.	**IOS**		Y	Y
12	Assess the color, location and movement of smoke.	**IOS**		Y	Y
27	Interact with victims or causalities who have sustained severe or life-ending injuries.	**IOS**		Y	Y
28	Interact with victims who have witnessed the loss or injury of companions.	**IOS**		Y	Y
31	Drag or carry a victim(s) out of a building wearing appropriate PPE.	**IOS**		Y	Y
33	Drag or carry victim(s) up or down stairs wearing appropriate PPE.	**IOS**		Y	Y
36	Cut vehicle power during extrication.	**IOS**		Y	Y
40	Gather information (e.g., bystanders, neighbors, family members) about probable victim locations and/or building floor plans.	**IOS**		Y	Y
52	Administer first aid to injured persons.	**IOS**		Y	Y
53	Assess a patient's condition (e.g. alertness level, orientation, breathing, circulation).	**IOS**		Y	Y
54	Gather information from patient or family member regarding medical history.	**IOS**		Y	Y
55	Control bleeding and bandage wounds.	**IOS**		Y	Y
56	Perform cardiopulmonary resuscitation.	**IOS**		Y	Y
57	Operate Defibrillator (AED).	**IOS**		Y	Y
58	Use airway adjuncts.	**IOS**		Y	Y
59	Immobilize painful, swollen, or deformed extremities.	**IOS**		Y	Y
60	Appropriately control patients who are hysterical, mentally disturbed, or in an altered state of consciousness that require medical attention.	**IOS**		Y	Y
61	Administer appropriate oxygen flow to patients.	**IOS**		Y	Y
63	Prepare and transfer a patient to an ambulance.	**IOS**		Y	Y
64	Lift a patient into a bed/onto a stretcher; carry patient through tight quarters and down flights of stairs using a stair chair or Reeve stretcher; carry patient to ambulance.	**IOS**		Y	Y
66	Properly utilize emergency equipment and supplies.	**IOS**		Y	Y
67	Know street layouts, addresses, intersections and alternative routes in response area.	**IOS**		Y	Y
71	Check gauges for pressures and proper water flow.	**IOS**		Y	Y
72	Calculate and/or estimate friction loss rates or other pertinent values.	**IOS**		Y	Y
74	Monitor apparatus during operations.	**IOS**		Y	Y
77	Charge lines at officer's command by opening discharge valves to support fire operations.	**IOS**		Y	Y
86	Raise a 24-foot extension ladder and extend the fly section of that ladder.	**IOS**		Y	Y
88	With assistance, carry extension ladders (24-foot, 35-foot) from truck to incident scene.	**IOS**		Y	Y
108	Remove kinks in charged supply line by lifting and/or turning hose so that water flow is not obstructed.	**IOS**		Y	Y
110	Connect multiple small lines (example: 50-foot) and extend them to reach	**IOS**		Y	Y

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Item#	Task	Origin	NFPA Code	Essential Career?	Essential Volunteer?
	fire when required.				
112	Feed charged hose line of a diameter between 1¾ to 2½ inches to attacking firefighter units.	**IOS**		Y	Y
113	Re-bed hose line back onto the proper apparatus (e.g., engine or truck).	**IOS**		Y	Y
118	While assisted, hold a charged 2½ inch hose and open the nozzle.	**IOS**		Y	Y
128	Fight fires for prolonged periods of time in extreme temperatures.	**IOS**		Y	Y
129	Use other senses to find the source of a fire when you cannot see.	**IOS**		Y	Y
130	Carry equipment up stairs while wearing PPE gear and SCBA.	**IOS**		Y	Y
161	Conduct a size-up of HAZ-MAT scene.	**IOS**		Y	Y
162	Respond to the release or potential release of hazardous material according to outlined protocols.	**IOS**		Y	Y
163	Identify HAZ-MAT by use of signage and HAZ-MAT reference materials.	**IOS**		Y	Y
183	Check for fire extension or hotspots using thermal imaging camera.	**IOS**		Y	Y
191	Monitor the air for harmful toxins.	**IOS**		Y	Y
202	Exchange information with law enforcement officials.	**IOS**		Y	Y
204	Monitor emergency scene and request assistance from other agencies as needed.	**IOS**		Y	Y
207	Assist medical staff as needed until released by medical staff.	**IOS**		Y	Y
208	Participate in fire drills and demonstrations of firefighting techniques.	**IOS**		Y	Y
209	Participate in ongoing training drills to develop and maintain proficiency (e.g., HAZ-MAT, search and rescue operations, SCBA and air management, automobile extrication, rapid intervention team (RIT) training, etc.).	**IOS**		Y	Y
210	Participate in training drills with new firefighters, assisting in their training through coaching and mentoring.	**IOS**		Y	Y
211	Train in equipment operations such as apparatus driving, hydraulics and pump operation and aerial ladder operation.	**IOS**		Y	Y
212	Participate in demonstrations, Officer classes, company level training or educational reviews (e.g., signs and symptoms of heat stroke, winter fireground operations, review of response zone building construction and floor plans, review of response zone street maps).	**IOS**		Y	Y
214	Participate in courses, seminars and conferences, and study fire science literature to learn firefighting techniques.	**IOS**		Y	Y
215	Complete required training courses such as hazardous materials and automobile extrication.	**IOS**		Y	Y
216	Read, comprehend and retain information from training materials (e.g., text books and manuals).	**IOS**		Y	Y
218	Take and complete course work required to obtain medical certifications.	**IOS**		Y	Y
219	Maintain ongoing certification requirement through continuing education or training.	**IOS**		Y	Y
224	Document required information such as personal information of patients or citizens involved in emergency scene.	**IOS**		Y	Y
230	Maintain professional appearance and personal hygiene in accordance with regulations.	**IOS**		Y	Y
231	Remain on-duty for extended periods of time per department-specific SOGs.	**IOS**		Y	Y

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Item#	Task	Origin	NFPA Code	Essential Career?	Essential Volunteer?
236	Ensure proper function of SCBA by inspecting and performing daily tests at the start of each shift; service SCBA if malfunctioning.	**IOS**		Y	Y
243	Maintain an inventory of tools and equipment.	**IOS**		Y	Y
245	Perform daily chores to ensure a neat and clean working and living environment at the fire station.	**IOS**		Y	Y
261	Maintain a service orientation or public servant mentality when dealing with the public.	**IOS**		Y	Y
262	Use tact and diplomacy in dealing with the public under times of high stress or with disgruntled, agitated or hysterical persons.	**IOS**		Y	Y
263	Interact and work with citizens.	**IOS**		Y	Y
266	Establish perimeter lines to prevent unauthorized persons from entering areas near emergencies.	**IOS**		Y	Y
267	Provide assistance to victims.	**IOS**		Y	Y
268	Control the emergency scene to protect yourself, coworkers and the patient or victim.	**IOS**		Y	Y
269	Communicate with the public to prevent them from crossing perimeter lines.	**IOS**		Y	Y
273	Blocks or pulleys: Block and tackle equipment, pulleys, riggings, carabiners, anchors, straps, ropes	**IOS**		Y	Y
274	Fire extinguishers: Carbon dioxide CO2 fire extinguishers, dry chemical fire extinguishers, multipurpose fire extinguishers, water extinguisher, K-Type	**IOS**		Y	Y
275	Fire hoses: Charged fire hoses, uncharged fire hoses	**IOS**		Y	Y
276	Nozzles & Appliances: Fire hose nozzles, hose couplings, wyes, siamese, adapters, reducers	**IOS**		Y	Y
277	Fire or rescue trucks: Aerial trucks, ladder trucks, engine trucks, rescue vehicles, other apparatus, brush apparatus	**IOS**		Y	Y
280	Ropes & Webbing	**IOS**		Y	Y
281	Hydraulic Rescue Tools: Spreaders, cutters, Jaws of Life, rams, air bags	**IOS**		Y	Y
282	Ladders: Aluminum ladders, extension ladders, roof ladders, A-Frame ladders	**IOS**		Y	Y
284	Ventilation: Positive pressure fans, negative pressure fans, hydraulic ventilation, electric fans	**IOS**		Y	Y
285	First Responder: Collars, backboard, dressings, AED, stethoscope, Stokes basket, airway adjuncts	**IOS**		Y	Y
286	Meters: Thermal imaging camera (TIC), CO2 monitors, gas detectors, radiation meters	**IOS**		Y	Y
287	Saws: Hacksaws, handsaws, tree saws	**IOS**		Y	Y
288	Maps & Manuals: City maps, county maps, building layout maps, equipment manuals, apparatus manuals, repair manuals, Dangerous Goods Manual (HAZMAT)	**IOS**		Y	Y
289	Specialty wrenches: Hydrant shutoff wrenches, lug wrenches, non-sparking bung wrenches, gas-utility wrenches, spanner wrenches, adjustable wrenches	**IOS**		Y	Y
294	Perform physically demanding tasks for extended periods of time	**IOS**		Y	Y
295	Perform in extreme heat and cold conditions	**IOS**		Y	Y
296	Perform operations in inclement weather	**IOS**		Y	Y

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Item#	Task	Origin	NFPA Code	Essential Career?	Essential Volunteer?
298	Operate in dark environments	**IOS**		Y	Y
301	Operate in confined areas	**IOS**		Y	Y
303	Lift and carry a stretcher/gurney with assistance	**IOS**		Y	Y
304	Lift and push a stretcher/gurney into an ambulance with assistance	**IOS**		Y	Y
305	Lift and transfer victims from ground to stretcher with assistance	**IOS**		Y	Y
306	Carry heavy equipment and tools for extended distances	**IOS**		Y	Y
307	Drag unconscious human victims and/or firefighters out of dangerous environments	**IOS**		Y	Y
308	Carry unconscious or injured victims and/or firefighters out of dangerous conditions	**IOS**		Y	Y
309	Remove heavy equipment from apparatus compartments	**IOS**		Y	Y
310	Individually drag charged 1 ¾ inch hoseline	**IOS**		Y	Y
311	Individually drag charged 2 ½ inch hoseline	**IOS**		Y	Y
312	Individually feed charged 1¾ inch hoseline to firefighter(s) at nozzle to assist in moving hoseline around obstacles, up stairs, etc.	**IOS**		Y	Y
313	Drag uncharged or charged hoseline	**IOS**		Y	Y
315	Open a hydrant valve or hydrant cap using a hydrant wrench	**IOS**		Y	Y
316	Connect hoseline sections using a spanner tool	**IOS**		Y	Y
317	Penetrate and tear down ceiling using a pike pole	**IOS**		Y	Y
320	Lift and carry ground ladders	**IOS**		Y	Y
321	Position, heel and raise ground ladders	**IOS**		Y	Y
322	Extend ground ladders using halyard	**IOS**		Y	Y
325	Crawl, duck-under, crawl-over and maneuver around obstacles in confined and restricted spaces while wearing SCBA and appropriate PPE	**IOS**		Y	Y
326	Climb through windows and openings while wearing SCBA and appropriate PPE	**IOS**		Y	Y
327	Crawl along ceiling joists and rafters while wearing SCBA and appropriate PPE	**IOS**		Y	Y
328	Climb to the top and back down ground ladders while wearing SCBA and appropriate PPE	**IOS**		Y	Y
329	Climb to the top and back down aerial ladders/buckets/baskets/platforms while wearing SCBA and appropriate PPE	**IOS**		Y	Y
331	Climb stairs while wearing PPE and carrying equipment while wearing SCBA and appropriate PPE	**IOS**		Y	Y
25	Assist at a water rescue (e.g., swollen rivers, frozen lakes).	**IOS**		Y	N
65	Monitor and provide needed care when transporting a patient to a medical facility.	**IOS**		Y	N
80	Operate the ladder pipe as per apparatus specifications.	**IOS**		Y	N
87	With assistance, raise a 35-foot extension ladder and extend the fly section of that ladder.	**IOS**		Y	N
90	Lower ground ladders and stow them onto the truck.	**IOS**		Y	N
106	Carry a high-rise pack up multiple flights of stairs while wearing PPE so that attack line can be set up.	**IOS**		Y	N
111	Carry a 50-foot section of rolled hose unassisted while in appropriate PPE.	**IOS**		Y	N
131	Climb obstacles while wearing PPE and SCBA.	**IOS**		Y	N

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Item#	Task	Origin	NFPA Code	Essential Career?	Essential Volunteer?
133	Operate a thermal imaging camera (TIC).	**IOS**		Y	N
203	Coordinate tasks and responsibilities with law enforcement officials (e.g., traffic control, crowd control).	**IOS**		Y	N
205	Clearly and accurately communicate patient information, assessment and treatment via radio on route to a medical facility.	**IOS**		Y	N
206	Clearly and accurately communicate patient information and care to medical staff.	**IOS**		Y	N
217	Successfully complete and pass written exams that test coursework learning and training objectives.	**IOS**		Y	N
226	Write descriptions of situations in medical reports, including details of symptoms, actions taken, etc.	**IOS**		Y	N
229	Report for duty on time.	**IOS**		Y	N
237	Coordinate with firefighters from off-going shift as to the actions needed to ensure the apparatus is in a response ready state.	**IOS**		Y	N
238	Checks bells and other signaling devices in the fire station by operating them to ensure that they work properly.	**IOS**		Y	N
246	Perform and coordinate kitchen chores such as planning meals, cooking meals and cleaning up after meals.	**IOS**		Y	N
247	Maintain the exterior of fire station: lawns, walkways and driveways.	**IOS**		Y	N
250	Inspect fire hydrant functioning in response zones and conduct hydrant flow tests.	**IOS**		Y	N
290	Database user interface and query software: Affiliated Computer Services (ACS), FIREHOUSE, Fire incident reporting systems, Microsoft Access, Scientific Software	**IOS**		Y	N
257	At superior's command, accompany owners/occupants into burned structure to allow them to retrieve possessions safely and to reduce liability risk to the fire department.	**IOS**		N	Y
265	Attend community meetings, ceremonies and parades as representatives of the department.	**IOS**		N	Y
43	Operate and/or man firefighting watercraft/boats for civilian rescue.	**IOS**		N	N
79	Utilize watercraft to supply water for fighting fires.	**IOS**		N	N
85	For aerial ladders: position truck, place chocks and set-up truck jacks.	**IOS**		N	N
89	Climb an aerial ladder to a height up to 100 feet while wearing PPE equipment.	**IOS**		N	N
109	Carry, assemble and operate deluge set (ground monitor).	**IOS**		N	N
115	Calculate the height of a building in feet from its floors.	**IOS**		N	N
166	Conduct a decontamination setup.	**IOS**		N	N
167	Utilize watercraft to trace source of oil slicks.	**IOS**		N	N
185	Coordinate inspections with other firefighters, supervisors and other firefighter companies.	**IOS**		N	N
192	Remove water via water chutes or other devices.	**IOS**		N	N
253	Complete smoke detector certifications.	**IOS**		N	N
254	Identify illegal occupant dwellings or other occupancies.	**IOS**		N	N
256	Maintain a log of visitors to the fire station by recording their names, date, time and other relevant information so a written record is available.	**IOS**		N	N

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Item#	Task	Origin	NFPA Code	Essential Career?	Essential Volunteer?
259	Perform community service and outreach programs such as fire alarm installations, child safety seat installations, etc.	IOS		N	N
297	Walk long distances in full turnout gear	IOS		N	N
300	Operate at high elevations	IOS		N	N
330	Rappel down from the top of structures while wearing SCBA and appropriate PPE	IOS		N	N
271	Support and conduct community risk reduction programs.	IOS		N	N
Item#	**Task**	**Origin**	**NFPA Code**	**Essential Career?**	**Essential Volunteer?**
1	Accurately take incoming calls or information from the dispatcher regarding alarms (e.g., fire alarms, requests for emergency medical services).	Match	5.2.1*	Y	Y
3	Respond to a vast range of emergencies including fire alarms, automobile accidents, medical emergencies, hazardous materials, or other incidents.	Match	5.3.3*1	Y	Y
4	Put on situation-appropriate personal protective equipment (PPE) (example: full turnout gear, HAZ-MAT Equipment, Universal Protections [Body Substance Isolation Gear]).	Match	5.3.3*2	Y	Y
5	Put on and wear self-contained breathing apparatus (SCBA).	Match	5.3.1*	Y	Y
6	Carry equipment when needed (RIT Pack, High-Rise Pack, Medical Bag).	Match	5.3.13.2	Y	Y
8	Assess fires and situations and report conditions to superiors to receive instructions, using two-way radios.	Match	5.2.3	Y	Y
11	Assess the potential effects of weather on emergency response.	Match	5.3.3*(A)2	Y	Y
13	Assess fire conditions to ensure proper fire suppression agent is used.	Match	6.3.2*(A)	Y	Y
14	Determine the safest evacuation route and primary and secondary means of egress.	Match	6.3.3*3	Y	Y
15	Safely shut off utility services to buildings in emergency situations (e.g., electrical and gas valves).	Match	5.3.18	Y	Y
16	Communicate with the dispatcher, other fire vehicles and commanding officers by radio and request any necessary assistance.	Match	6.2.2*1	Y	Y
17	Advise the commanding officer of fire conditions, hazards and exposures at the scene.	Match	6.3.2*7	Y	Y
18	Communicate with the superior during a live fire.	Match	6.2.2*2	Y	Y
19	Collaborate with other firefighters, supervisors and other firefighter companies to conduct firefighting and rescue operations.	Match	6.3.2*4	Y	Y
24	Rescue victims from burning buildings and accident sites.	Match	5.3.9*1a	Y	Y
29	Safely remove persons from entrapments.	Match	5.3.9*5	Y	Y
30	Safely lift, hoist or drag victim(s), taking care to minimize further injuries.	Match	6.4.1*3	Y	Y
32	Carry victim(s) via ladders wearing appropriate PPE.	Match	5.3.9*(A)1b	Y	Y
34	Evacuate persons from a fire area.	Match	5.2.4*(A)	Y	Y
35	Extricate persons from automobiles.	Match	6.4.1*1	Y	Y
37	Strategically position apparatus to protect incident scene from oncoming traffic.	Match	5.3.3*3	Y	Y
38	Bring and use the necessary tools to extricate or free trapped persons.	Match	6.4.1*2	Y	Y
39	Systematically search burning buildings to locate fire victims.	Match	5.3.9*4	Y	Y
41	Enter unfamiliar, smoke-filled buildings and rooms while wearing PPE and SCBA equipment.	Match	5.3.9*2	Y	Y

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Item#	Task	Origin	NFPA Code	Essential Career?	Essential Volunteer?
42	Systematically search for trapped persons.	**Match**	5.3.9*1b	Y	Y
44	Assess risk/benefit of rescue and relay to company officer.	**Match**	6.4.2*(A)2	Y	Y
45	Tie knots to a hose line, ladder, or other object as necessary during a large area search.	**Match**	5.3.20	Y	Y
68	Know the location of hydrants and mains in a response area.	**Match**	6.5.3*(A)1	Y	Y
69	Efficiently and safely drive firefighting emergency equipment to and from a scene.	**Match**	5.3.2*	Y	Y
70	Operate pumps connected to hoses.	**Match**	5.3.15*1	Y	Y
73	Maintain constant water supply through proper management of pumping apparatus.	**Match**	5.3.15*2	Y	Y
78	Control pumper output by regulating engine RPMs, pressure relief valve and output gate valves so that pressure or flow is correct for the given operation.	**Match**	5.3.10*(A)1	Y	Y
81	Position and climb ladders to gain access to upper levels of buildings or to rescue individuals from burning structures.	**Match**	5.3.6*3	Y	Y
82	Determine the size and type of ladders required.	**Match**	5.3.6*1	Y	Y
83	Identify proper ladder locations to allow access to upper levels of buildings or to ensure proper evacuation of fire personnel.	**Match**	5.3.9*3	Y	Y
84	Be aware of electrical lines when setting up ladders.	**Match**	5.3.6*2	Y	Y
91	Create openings in buildings for ventilation or entrance using axes, chisels, crowbars, power saws or core cutters.	**Match**	5.3.12*1	Y	Y
92	Remove equipment from truck and start power tools.	**Match**	5.3.12(B)1a	Y	Y
93	Use equipment (e.g., swing axe or sledge hammer) to make forcible entries.	**Match**	5.3.4*	Y	Y
94	Determine the stability of supporting surfaces such as roofs and fire escapes.	**Match**	5.3.12*2	Y	Y
95	Cut openings in roof with a fire axe or power saw (e.g., K-12 saw) for ventilation or examination.	**Match**	5.3.12(B)3	Y	Y
96	Remove ceiling materials, such as plaster and lath, sheet rock, ceiling tiles and insulation by poking from above with pike pole or axe so that smoke and hot gases can escape.	**Match**	5.3.12*3	Y	Y
98	Remove and transport equipment (e.g., electrical extension cords, ventilation fans) from the truck as needed.	**Match**	5.3.12(B)1b	Y	Y
101	Establish an appropriate water supply, lay hose lines and connect them to water supplies.	**Match**	5.3.15*(A)	Y	Y
102	Coordinate firefighting and rescue operations with other firefighters, supervisors and other firefighter companies.	**Match**	5.3.19*	Y	Y
103	Pull the supply line from an engine to a hydrant.	**Match**	5.3.15*(B)1	Y	Y
104	Wrap a hose around functioning hydrant, unscrew the hydrant cap, screw the hose connection to the hydrant and turn on the hydrant (i.e., catch the plug).	**Match**	5.3.15*(B)5	Y	Y
105	Make and unmake coupling connections.	**Match**	5.3.10*(B)8	Y	Y
107	Advance and fully extend a pre-connected, charged or uncharged hose of a diameter between 1¾ to 2½ inches.	**Match**	5.3.7*(B)5	Y	Y
114	Select the proper hose size based upon fire scene and method of attack.	**Match**	5.3.10*(A)8	Y	Y

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Item#	Task	Origin	NFPA Code	Essential Career?	Essential Volunteer?
116	Determine the correct spray pattern based upon fire scene (e.g., solid stream, hollow cone, full cone, fog stream, etc.).	Match	5.3.10*(B)3	Y	Y
117	Hold a charged 1¾ inch hose and open the nozzle.	Match	5.3.10*(B)2	Y	Y
122	Continue to monitor fire suppression and adjust suppression tactics to extinguish fire and prevent the extension of the fire.	Match	6.3.2*5	Y	Y
123	Move toward the source of a fire using knowledge of types of fires, construction design, building materials and physical layout of properties.	Match	5.3.12(A)	Y	Y
124	Enter smoky buildings and rooms with a hose in hand while wearing SCBA.	Match	5.3.10*1	Y	Y
125	Seek the source of a fire and extinguish.	Match	5.3.13.6	Y	Y
126	Select the correct tool or equipment for various firefighting maneuvers.	Match	5.3.8*(A)2	Y	Y
127	Fight fires in smoky buildings when visibility is poor or nonexistent.	Match	5.3.5*(B)	Y	Y
132	Identify and respond to hazards at the scene.	Match	5.3.10*6	Y	Y
164	Apply a foam blanket or other suppressants.	Match	6.3.1*3	Y	Y
176	Place a smoke ejector in strategic locations throughout the fire scene to aid in proper ventilation and smoke removal.	Match	5.3.11.2	Y	Y
182	Perform overhaul and salvage operations.	Match	5.3.13.1	Y	Y
184	Inspect fire sites after flames have been extinguished to ensure that there is no further danger.	Match	5.3.8*(B)	Y	Y
186	Check for smoldering fire inside walls and ceiling by means of fire tools and equipment (e.g., fire axe, ceiling hook).	Match	5.3.10*4	Y	Y
188	Search for missing persons not accounted for.	Match	5.3.9*(A)4	Y	Y
189	Preserve evidence at fire scene.	Match	6.3.4*	Y	Y
190	Secure the fire scene.	Match	5.3.13(A)5	Y	Y
201	Collaborate with other agencies and individuals to respond to accidents and/or disasters.	Match	5.1.1.3	Y	Y
213	Participate in physical training activities to maintain a high level of physical fitness.	Match	5.1.1.5	Y	Y
227	Complete reports required of the job (daily maintenance, inspections and truck checks).	Match	6.2.1(B)1	Y	Y
232	Read all internal communications (emails, handouts, etc.) from department (e.g., SOGs, policies and procedures, rules and regulations, etc.).	Match	5.1.1.1	Y	Y
234	Clean and maintain fire stations and firefighting equipment and apparatus.	Match	5.5.1(A)	Y	Y
235	Ensure apparatus is in response-ready state, including decontaminating and disinfecting the unit and equipment, restocking of supplies and inspection of equipment.	Match	6.5.4*3a	Y	Y
239	Report damaged and out of service equipment to company officer.	Match	6.5.4*3b	Y	Y
240	Perform maintenance and upkeep for equipment and apparatus as necessary to ensure a response-ready state.	Match	6.5.4*1	Y	Y
241	Wash used hoses and re-bed them on the truck.	Match	5.5.2	Y	Y
242	Maintain all personal protective equipment (PPEs).	Match	5.5.1	Y	Y
258	Inform and educate the public on fire prevention.	Match	6.5.2*	Y	Y
272	PPE: SCBA, turnout gear (pants, jacket, helmet, gloves, hood), PASS (Personal Alert Safety System) Device	Match	5.3.2*(B)	Y	Y
278	Fire hand tools: Fire axes, McLeod tools, pick head axes, Pulaski tools, pike pole, claw hammers, rubber mallet, non-sparking hammers,	Match	6.4.1*(A)3a	Y	Y

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Item#	Task	Origin	NFPA Code	Essential Career?	Essential Volunteer?
	sledgehammers, Halligan bars, Hux bars, pinch bars				
279	Stabilizing Tools: Struts, lift jackets, cribbing	**Match**	6.4.1*(B)2	Y	Y
283	Power Equipment: Chain saws, circular saws, K-12 saws, reciprocating saws, electric/hydraulic generators	**Match**	6.4.1*(A)3b	Y	Y
293	Perform all fireground tasks wearing full turnout gear (coat, bunker pants, boots, helmet, gloves and hood) and SCBA	**Match**	5.1.2	Y	Y
302	Lift and carry heavy equipment and tools (e.g., high-rise pack containing hoseline and tools, gas-powered circular saw, chain saw, hydraulic cutters/spreaders, hydraulic tool power supply, gas-powered fans, portable hydrants, EMS bag containing oxygen bottle)	**Match**	5.3.4*(B)1a	Y	Y
314	Hold and operate a hoseline	**Match**	5.3.13(B)1	Y	Y
318	Hold and operate gas-powered saws and hydraulic tools	**Match**	5.3.4*(B)1b	Y	Y
319	Lift, swing and strike targets using sledge hammers and axes	**Match**	5.3.4*(B)2	Y	Y
324	Climb, crawl and/or maneuver in confined or restricted spaces while wearing SCBA and appropriate PPE	**Match**	5.3.9*(B)*1	Y	Y
99	Properly knot and tie rope to hoist equipment weighing up to 50 pounds to upper levels.	**Match**	5.3.20(A)	Y	N
134	Operate a fire extinguisher by carrying it to objective, aiming and discharging at seat of fire or spill.	**Match**	5.3.16*	Y	N
175	Protect property from water and smoke using waterproof salvage covers and/or smoke ejectors (i.e., powered fans).	**Match**	5.3.14(A)1	Y	N
225	Summarize incidents that occurred at an emergency scene, detailing tactics, equipment and procedures used through written narratives.	**Match**	6.2.1	Y	N
228	Answer routine phone calls in the station.	**Match**	5.2.2	Y	N
249	Engage in pre-planning operations such as documenting building layouts, building construction, fire suppression and other tactical information such as location of exits to assist in future operations.	**Match**	6.5.3*	Y	N
291	Computer software: E-mail software, internet browsing software, drafting software, spreadsheet software, word processing software, project management software	**Match**	6.2.1(B)2	Y	N
76	Conduct drafting operations.	**Match**	5.3.15*(B)2	N	Y
121	Operate a charged hose line from confined spaces and direct spray at fire.	**Match**	5.3.10*(B)4b	N	Y
244	Maintain maintenance records of all equipment and apparatus.	**Match**	6.5.4*2	N	Y
323	Hoist equipment using a rope	**Match**	5.3.12(B)2	N	Y
75	Calculate foam amounts.	**Match**	6.3.1*2	N	N
119	Operate a charged hose line from elevated positions and direct spray at fire.	**Match**	5.3.10*(B)7	N	N
120	While on a ladder, operate and direct spray at fire.	**Match**	5.3.10*(B)4a	N	N
165	Provide onsite crowd control in a HAZ-MAT situation.	**Match**	6.4.2*(B)	N	N
177	Gather furniture into an appropriate location and protect it with salvage covers.	**Match**	5.3.14(B)1	N	N
178	Place salvage covers over lower floors to prevent unnecessary damage.	**Match**	5.3.13(B)4	N	N
179	Salvage property by removing broken glass, removing water and ventilating	**Match**	5.3.14	N	N

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Item#	Task	Origin	NFPA Code	Essential Career?	Essential Volunteer?
	buildings to remove smoke.				
180	After a fire is extinguished, drain or pump out water and clean up remaining water on the floors.	Match	5.3.14(B)3	N	N
181	Remove burned and charred waste and other debris, if hazardous.	Match	5.3.14(B)5	N	N
251	Inspect businesses and non-owner occupied private dwellings.	Match	6.5.1*1	N	N
252	Identify code enforcement issues and alert superiors.	Match	6.5.1*2	N	N
260	Conduct fire station tours for groups of individuals and children.	Match	6.5.2*(A)	N	N
Item#	**Task**	**Origin**	**NFPA Code**	**Essential Career?**	**Essential Volunteer?**
7	Perform tasks only in established, protected work areas.	NFPA	5.3.3*4	Y	Y
20	Illuminate the emergency scene.	NFPA	5.3.17	Y	Y
21	Recognize potential hazards on emergency scenes regarding vehicle traffic.	NFPA	5.3.3*(A)1	Y	Y
22	Discriminate between routine and emergency traffic.	NFPA	5.2.3(B)	Y	Y
23	Use personnel accountability systems to locate team members and communicate loss of air supply.	NFPA	5.3.5*(A)	Y	Y
46	Maintain team integrity and firefighter safety.	NFPA	5.3.9*6	Y	Y
47	Rescue a firefighter with functioning respiratory protection.	NFPA	5.3.9*(B)*3	Y	Y
48	Rescue a firefighter whose respiratory protection is not functioning.	NFPA	5.3.9*(B)*4	Y	Y
49	Recognize and manage psychological effects resulting from operating in obscured conditions.	NFPA	5.3.9*(A)2	Y	Y
50	Ensure respiratory protection is not compromised.	NFPA	5.3.9*(A)6	Y	Y
51	Choose and apply appropriate techniques for opening or removing trunks, engine compartments, vehicle roofs, doors, windshields, windows, steering wheels or columns, and dashboards.	NFPA	6.4.1*(B)3	Y	Y
100	Retreat from the area as a team when ventilation is accomplished.	NFPA	5.3.12*4	Y	Y
135	Attack a passenger vehicle fire.	NFPA	5.3.7*1	Y	Y
136	Communicate attack techniques to the attack teams	NFPA	6.3.2*3	Y	Y
137	Communicate and manage search, rescue, and ventilation requirements.	NFPA	6.3.2*6	Y	Y
138	Control a flammable gas cylinder fire.	NFPA	6.3.3*1	Y	Y
139	Identify the contents of cylinder.	NFPA	6.3.3*2	Y	Y
140	Close cylinder valves.	NFPA	6.3.3*4	Y	Y
141	Eliminate leaking gas and then extinguish fire.	NFPA	6.3.3*5	Y	Y
142	Evaluate the cylinder integrity and ensure cylinder has cooled.	NFPA	6.3.3*6	Y	Y
143	Face the cylinder during approach and retreat.	NFPA	6.3.3*7	Y	Y
144	Maintain correct body posture during attack operations.	NFPA	5.3.10*5	Y	Y
148	Prevent water hammers when shutting down nozzles.	NFPA	5.3.10*(B)1	Y	Y
150	Anticipate the injuries which could result from common types of accidents.	NFPA	5.3.10*(A)7	Y	Y
151	Prevent exposure to products of combustion.	NFPA	5.3.10*(A)5	Y	Y
152	Follow precautions when advancing hose lines to a fire.	NFPA	5.3.10*(A)2	Y	Y
153	Assess proper application of fire stream.	NFPA	5.3.10*(A)3	Y	Y
154	Use appropriate water application methods for exposure protection and fire extinguishment.	NFPA	5.3.8*(A)4	Y	Y
157	Recognize hazards associated with an automobile fire.	NFPA	5.3.7*(A)5	Y	Y
159	Ensure complete extinguishment of stacked and piled materials.	NFPA	5.3.8*(A)3	Y	Y

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Item#	Task	Origin	NFPA Code	Essential Career?	Essential Volunteer?
160	Recognize dangers of exposure to toxins or hazardous materials associated with storage building and container fires.	**NFPA**	5.3.8*(A)5	Y	Y
168	Exit a hazardous area as a team.	**NFPA**	5.3.5*	Y	Y
169	Extinguish an ignitable liquid fire.	**NFPA**	6.3.1*1	Y	Y
170	Identify and control leaking flammable liquids, such that protection from flash fire is maintained	**NFPA**	5.3.7*2	Y	Y
171	Take corrective measures to rectify poor foam generation.	**NFPA**	6.3.1*(A)1	Y	Y
199	Recognize and communicate dangers associated with overhaul.	**NFPA**	5.3.13(A)4	Y	Y
223	Participate in life safety initiatives in support of the fire department mission and to reduce firefighter line-of-duty injuries and fatalities.	**NFPA**	5.1.1.2	Y	Y
248	Perform an annual service test on fire hose, using a pump, a marking device, pressure gauges, and a timer.	**NFPA**	6.5.5	Y	Y
270	Assist rescue operation teams so that rescue items are recognized and retrieved in the time as prescribed by the Authorities Having Jurisdiction (AHJ).	**NFPA**	6.4.2*	Y	Y
292	Lighting Equipment: Power supply and lighting equipment, cords and connectors, and ground-fault interpreter (GFI) devices.	**NFPA**	5.3.17(B)	Y	Y
145	Extinguish fires in exterior Class A materials, given fires in stacked or piled and small unattached structures or storage containers.	**NFPA**	5.3.8*	Y	N
155	Identify automobile fuel types and assess and control fuel leaks.	**NFPA**	5.3.10*(A)6	Y	N
156	Choose attack and control techniques for grade level and above and below grade level fires.	**NFPA**	6.3.2*2	Y	N
158	Apply appropriate attack lines and water streams for stacked, piled materials and outdoor fires.	**NFPA**	5.3.8*(A)1	Y	N
172	Use the appropriate concentrates on hydrocarbon and polar solvent fuels.	**NFPA**	6.3.1*(A)2	Y	N
174	Use fog nozzles or foam nozzles depending on situation.	**NFPA**	6.3.1*(A)4	Y	N
195	Remove flooring, ceiling, and wall components to expose void spaces without compromising structural integrity.	**NFPA**	5.3.13.3	Y	N
197	Perform horizontal ventilation on a structure, so that the ventilation openings are free of obstructions.	**NFPA**	5.3.11.1	Y	N
198	Recognize points of strength and weakness in auto body construction.	**NFPA**	6.4.1*(A)2	Y	N
200	Designate work zones for safe operation at emergency scenes.	**NFPA**	5.3.3*(A)4	N	Y
222	Read, comprehend and retain information of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program	**NFPA**	5.1.1.6	N	Y
146	Deploy portable water tanks as well as the equipment necessary to transfer water between and draft from them.	**NFPA**	5.3.15*(B)3	N	N
149	Replace burst hose sections.	**NFPA**	5.3.10*(B)6	N	N
173	Reduce or avoid hazards associated with firefighting foams.	**NFPA**	6.3.1*(A)3	N	N
193	Overhaul all vehicle compartments.	**NFPA**	5.3.7*3	N	N
194	Stop the flow of water from building sprinkler with sprinkler wedges or stoppers.	**NFPA**	5.3.14(B)6	N	N
196	Roll and fold salvage covers for reuse.	**NFPA**	5.3.14(B)2	N	N
220	Read and comprehend aspects of the fire department's member assistance program	**NFPA**	5.1.1.4	N	N
233	Document presentations and use prepared materials.	**NFPA**	6.5.2*(B)	N	N

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Item#	Task	Origin	NFPA Code	Essential Career?	Essential Volunteer?
255	Use commonly recognized symbols when diagramming construction features, utilities, hazards, and fire protection systems.	**NFPA**	6.5.3*(A)3	N	N

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Appendix K: Comparison of Essential KSAOs

Item #	KSAO	Origin	NFPA Code	Essential Career?	Essential Volunteer?
332	Basic Arithmetic: Ability to perform mathematical operations, such as counting, addition, subtraction, multiplication and division.	**IOS**		Y	Y
333	Deductive Reasoning: The ability to apply general rules to specific problems to produce answers that make sense. (Example: Interpretation of SOPs and SOGs).	**IOS**		Y	Y
334	Flexibility of Closure: The ability to identify or detect a known pattern (a figure, object, word or sound) that is hidden in other distracting material. (Example: Listening to Engine RPM's in order to identify issues).	**IOS**		Y	Y
335	Inductive Reasoning: The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events). (Example: Reading the various clues of smoke/heat to reach a decision regarding the extent of fire).	**IOS**		Y	Y
336	Information Ordering: The ability to arrange things or actions in a certain order or pattern according to a specific rule or set of rules (e.g., patterns of numbers, letters, words, pictures, mathematical operations). (Example: Using SOPs to follow procedures for hoseline operation).	**IOS**		Y	Y
337	Mathematical Reasoning: The ability to choose the right mathematical methods or formulas to solve a problem. (Example: Friction loss, ladder or hose length calculation).	**IOS**		Y	Y
338	Memorization: The ability to remember information such as words, numbers, pictures, and procedures. (Example: Hydrant locations, previous building layouts).	**IOS**		Y	Y
339	Number Facility: The ability to add, subtract, multiply or divide quickly and correctly.	**IOS**		Y	Y
340	Oral Comprehension: The ability to listen to and understand information and ideas presented through spoken words and sentences.	**IOS**		Y	Y
342	Oral Expression: The ability to communicate information and ideas in speaking so others will understand.	**IOS**		Y	Y
343	Problem Sensitivity: The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.	**IOS**		Y	Y
344	Selective Attention: The ability to concentrate on a task over a period of time without being distracted. (Example: Being the only pump operator on-duty).	**IOS**		Y	Y
345	Spatial Orientation: The ability to know your location in relation to the environment or to know where other objects are in relation to you.	**IOS**		Y	Y
346	Visualization: The ability to imagine how something will look after it is moved around or when its parts are moved or rearranged.	**IOS**		Y	Y
347	Written Comprehension: The ability to read and understand information and ideas presented in writing.	**IOS**		Y	Y
348	Written Expression: The ability to communicate information and ideas in writing so others will understand. (Example: Filling out maintenance records or logbooks).	**IOS**		Y	Y
349	Reaction Time: The ability to quickly respond (with the hand, finger or foot) to a signal (sound, light, picture) when it appears.	**IOS**		Y	Y
350	Arm-Hand Steadiness: The ability to keep your hand and arm steady while moving your arm or while holding your arm and hand in one position. (Example: Operating power tools for extrication).	**IOS**		Y	Y

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351	Manual Dexterity: The ability to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate or assemble objects.	**IOS**		Y	Y
352	Multi-limb Coordination: The ability to coordinate two or more limbs (for example, two arms, two legs, or one leg and one arm) while sitting, standing or lying down. It does not involve performing the activities while the whole body is in motion.	**IOS**		Y	Y
353	Response Orientation: The ability to choose quickly between two or more movements in response to two or more different signals (lights, sounds, pictures). It includes the speed with which the correct response is started with the hand, foot or other body part.	**IOS**		Y	Y
354	Rate Control: The ability to time your movements or the movement of a piece of equipment in anticipation of changes in the speed and/or direction of a moving object or scene. (Example: Controlling for water hammer).	**IOS**		Y	Y
355	Static Strength: The ability to exert maximum muscle force to lift, push, pull or carry objects.	**IOS**		Y	Y
356	Control Precision: The ability to quickly and repeatedly adjust the controls of a machine or a vehicle to exact positions. (Example: Operating the aerial ladder).	**IOS**		Y	Y
357	Stamina: The ability to exert yourself physically over long periods of time without getting winded or out of breath.	**IOS**		Y	Y
358	Near Vision: The ability to see details at close range (within a few feet of the observer).	**IOS**		Y	Y
359	Dynamic Strength: The ability to exert muscle force repeatedly or continuously over time. This involves muscular endurance and resistance to muscle fatigue.	**IOS**		Y	Y
360	Trunk Strength: The ability to use your abdominal and lower back muscles to support part of the body repeatedly or continuously over time without 'giving out' or fatiguing.	**IOS**		Y	Y
361	Extent Flexibility: The ability to bend, stretch, twist or reach with your body, arms and/or legs.	**IOS**		Y	Y
362	Depth Perception: The ability to judge which of several objects is closer or farther away from you, or to judge the distance between you and an object. (Example: Placement of aerial).	**IOS**		Y	Y
363	Auditory Attention: The ability to focus on a single source of sound in the presence of other distracting sounds. (Example: Focusing on your PASS device in a chaotic environment).	**IOS**		Y	Y
364	Gross Body Coordination: The ability to coordinate the movement of your arms, legs and torso together when the whole body is in motion.	**IOS**		Y	Y
365	Gross Body Equilibrium: The ability to keep or regain your body balance or stay upright when in an unstable position. (Example: Gusting winds while firefighting from the aerial ladder).	**IOS**		Y	Y
366	Far Vision: The ability to see details at a distance.	**IOS**		Y	Y
367	Problem Analysis: Quickly perceiving problem areas, identifying options and the potential impact of various solutions.	**IOS**		Y	Y
368	Problem-Solving: Determining courses of action/solutions to problems. Implementing targeted solutions.	**IOS**		Y	Y
369	Decision-Making: Understanding when a decision must be made and to have the willingness to make a decision. Quickly and efficiently determining an appropriate course of action to target a particular situation.	**IOS**		Y	Y
370	Planning and Organization: Skill in establishing a course of action for oneself and others to accomplish goals. Skill in properly planning assignments, work duties and tasks; appropriate allocation of resources to ensure efficient, timely	**IOS**		Y	Y

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	and smooth department operations.				
371	Interpersonal Skill: Listening to others and being considerate of the concerns of others.	**IOS**		Y	Y
372	Oral Communication: Speaking in a clear, concise, understandable and appropriate manner.	**IOS**		Y	Y
373	Self-Motivation: Working without supervision and accomplishing tasks without prodding.	**IOS**		Y	Y
374	Composure: Working under stress and performing in unpleasant or traumatic circumstances.	**IOS**		Y	Y
375	Conflict Resolution: Skill in de-escalating tense situations and quieting potential disturbances.	**IOS**		Y	Y
376	Critical Thinking: Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.	**IOS**		Y	Y
377	Leadership: Willingness to lead, take charge and offer opinions and direction, and having people respond positively to those directions such that there are behavioral changes.	**IOS**		Y	Y
378	Monitoring: Monitoring/Assessing your performance or the performance of other individuals or organizations to make improvements or take corrective action.	**IOS**		Y	Y
379	Operation and Control: Watching gauges, dials or other indicators to make sure a machine is working properly.	**IOS**		Y	Y
380	Instructing: Teaching others how to do something.	**IOS**		Y	Y
381	Judgment and Decision Making: Considering the relative costs and benefits of potential actions to choose the most appropriate one.	**IOS**		Y	Y
383	Social Perceptiveness: Being aware of others' reactions and understanding why they react as they do.	**IOS**		Y	Y
385	Public Relations Skill: Dealing with the public in such a way as to protect the image and reputation of the department while providing the public or individuals with necessary or requested information.	**IOS**		Y	Y
387	Achievement/Effort: Establishing and maintaining personally challenging achievement goals and exerting effort toward mastering tasks.	**IOS**		Y	Y
388	Adaptability/Flexibility: Being open to change (positive or negative) and to considerable variety in the workplace.	**IOS**		Y	Y
389	Attention to Detail: Being careful about detail and thorough in completing work tasks.	**IOS**		Y	Y
390	Concern for Others: Being sensitive to others' needs and feelings and being understanding and helpful on the job. Showing compassion for others.	**IOS**		Y	Y
391	Cooperation: Being pleasant with others on the job and displaying a good-natured, cooperative attitude.	**IOS**		Y	Y
392	Dependability: Being reliable, responsible and dependable and fulfilling obligations.	**IOS**		Y	Y
393	Ethics. Acting in an honest and fair manner. Willingness to accept responsibility for actions when things go wrong. Displaying a high degree of integrity and professionalism in action and word.	**IOS**		Y	Y
394	Independence: Developing one's own ways of doing things, guiding oneself with little or no supervision and depending on oneself to get things done.	**IOS**		Y	Y
395	Initiative: Willingness to take on responsibilities and challenges.	**IOS**		Y	Y
396	Innovation: Tendency towards creativity and alternative thinking to develop new ideas for and answers to work-related problems.	**IOS**		Y	Y
397	Integrity: Being honest and ethical, especially in situations where others could	**IOS**		Y	Y

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	be taken advantage of.				
398	Persistence: In the face of obstacles, one continues to engage to overcome the obstacle.	**IOS**		Y	Y
399	Self-Control: Maintaining composure, keeping emotions in check, controlling anger and avoiding aggressive behavior, even in very difficult situations.	**IOS**		Y	Y
400	Service Orientation: Actively looking for ways to help people; a desire to place others' interests ahead of your own; showing compassion for others.	**IOS**		Y	Y
401	Social/Teamwork Orientation: Preferring to work with others rather than alone, and being personally connected with others on the job. The ability to work with others (teamwork) to achieve a mutual end.	**IOS**		Y	Y
402	Stress Tolerance: Accepting criticism and dealing calmly and effectively with high stress situations.	**IOS**		Y	Y
403	Knowledge of motor vehicle rules and regulations.	**IOS**		Y	Y
404	Knowledge of common hand tools, such as wrenches, pliers, screw drivers, hammers and mauls, axes, prying tools, etc., e.g., their use, operation, limits and safety precautions/procedures.	**IOS**		Y	Y
406	Knowledge of ratios and terms, expressing ratios and the practical use of ratios, e.g., pounds per square inch, gallons per minute, etc.	**IOS**		Y	Y
407	Knowledge of basic mechanical principles, e.g., leverage, gears, pulleys, screws, etc.	**IOS**		Y	Y
408	Knowledge of typical occupancy activity at a given time of day.	**IOS**		Y	Y
384	Negotiation: Bringing others together and trying to reconcile differences.	**IOS**		N	Y
405	Knowledge of basic science terms and concepts, e.g., force, gravity, pressure, vacuum, etc.	**IOS**		N	Y
386	Persuasion: Persuading others to change their minds or behavior.	**IOS**		N	N
Item #	**KSAO**	**Origin**	**NFPA Code**	**Essential Career?**	**Essential Volunteer?**
464	Knowledge of the organization of the fire department.	**NFPA**	**5.1.1*1**	Y	Y
465	Knowledge of the role of the Fire Fighter I in the organization.	**NFPA**	**5.1.1*2**	Y	Y
466	Knowledge of the mission of fire service.	**NFPA**	**5.1.1*3**	Y	Y
467	Knowledge of the fire department's standard operating procedures (SOPs) and rules and regulations.	**NFPA**	**5.1.1*4**	Y	Y
470	Knowledge of the critical aspects of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program.	**NFPA**	**5.1.1*6**	Y	Y
471	Knowledge of procedures for reporting an emergency; departmental SOPs for taking and receiving alarms, radio codes, or procedures; and information needs of dispatch center.	**NFPA**	**5.2.1(A)**	Y	Y
473	Knowledge of departmental radio procedures and etiquette for routine traffic, emergency traffic, and emergency evacuation signals.	**NFPA**	**5.2.3(A)**	Y	Y
474	Knowledge of personnel accountability systems, emergency communication procedures, and emergency evacuation methods.	**NFPA**	**5.2.4(A)**	Y	Y
475	Knowledge of basic construction of typical doors, windows, and walls within the department's community or service area.	**NFPA**	**5.3.4(A)**	Y	Y
476	Knowledge of personnel accountability systems and communication procedures.	**NFPA**	**5.3.5(A)**	Y	Y
477	Principles of fire streams as they relate to fighting automobile fires.	**NFPA**	**5.3.7(A)1**	Y	Y
478	Knowledge of SOPs for alarm assignments and fire department radio communication procedures.	**NFPA**	**6.2.2(A)**	Y	Y
480	Knowledge of the characteristics of pressurized flammable gases.	**NFPA**	**6.3.3(A)**	Y	Y
468	Knowledge of the role of other agencies as they relate to the fire department.	**NFPA**	**5.1.1*5**	N	Y

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472	Knowledge of fire department procedures for answering nonemergency telephone calls.	**NFPA**	**5.2.2(A)**	N	Y
479	Knowledge of the methods to assess the origin and cause of fires.	**NFPA**	**6.3.4(A)**	N	Y
Item #	**KSAO**	**Origin**	**NFPA Code**	**Essential Career?**	**Essential Volunteer?**
409	Knowledge of the science behind fire propagation.	**TEXT**		Y	Y
411	Knowledge of common heat energy sources: chemical, electrical, and mechanical energy.	**TEXT**		Y	Y
412	Knowledge of heat transmission and the mechanisms by which heat transfer occurs: conduction, convection, and radiation.	**TEXT**		Y	Y
413	Knowledge of common products of combustion and their toxic effects.	**TEXT**		Y	Y
414	Knowledge of classification of fires: class A, B, C, D, and K fires.	**TEXT**		Y	Y
415	Knowledge of Fire Control Theory: temperature reduction, fuel removal, oxygen exclusion, and chemical flame inhibition.	**TEXT**		Y	Y
416	Knowledge of common materials found in building construction.	**TEXT**		Y	Y
417	Knowledge of the strengths and weaknesses associated with different types of building construction types.	**TEXT**		Y	Y
418	Knowledge of types of extinguishers and their common uses.	**TEXT**		Y	Y
419	Knowledge of types of knots, ropes, and webbing materials.	**TEXT**		Y	Y
420	Knowledge of types of ladders.	**TEXT**		Y	Y
421	Knowledge of search operations.	**TEXT**		Y	Y
422	Knowledge of rescue operations.	**TEXT**		Y	Y
423	Knowledge of extrication operations.	**TEXT**		Y	Y
424	Knowledge of types of carries.	**TEXT**		Y	Y
425	Knowledge of victim removal methods.	**TEXT**		Y	Y
426	Knowledge of forcible entry methods.	**TEXT**		Y	Y
427	Knowledge of ventilation methods.	**TEXT**		Y	Y
428	Knowledge of types of hydrants and alternative water supplies.	**TEXT**		Y	Y
429	Knowledge of methods of moving water in a system.	**TEXT**		Y	Y
432	Knowledge of friction loss, elevation loss/gain, and water hammers.	**TEXT**		Y	Y
433	Knowledge of size classifications of fire streams.	**TEXT**		Y	Y
434	Knowledge of foam techniques.	**TEXT**		Y	Y
435	Knowledge of direct attacks.	**TEXT**		Y	Y
436	Knowledge of indirect attacks.	**TEXT**		Y	Y
437	Knowledge of combination attacks.	**TEXT**		Y	Y
438	Knowledge of salvage operations.	**TEXT**		Y	Y
439	Knowledge of overhaul operations.	**TEXT**		Y	Y
440	Knowledge of hidden fire indicators.	**TEXT**		Y	Y
441	Knowledge of evidence protection methods.	**TEXT**		Y	Y
442	Knowledge of procedures the public should use to report a fire or other emergency.	**TEXT**		Y	Y
443	Knowledge of necessary skills for fire department communications.	**TEXT**		Y	Y
444	Knowledge of the types of information required for arrival and progress reports.	**TEXT**		Y	Y
446	Knowledge of common fire hazards.	**TEXT**		Y	Y
448	Knowledge of the components of personal protective equipment.	**TEXT**		Y	Y
449	Knowledge of the physiological aspects of stress.	**TEXT**		Y	Y
450	Knowledge of cardiopulmonary resuscitation (CPR).	**TEXT**		Y	Y
451	Knowledge of scene safety considerations as hazardous materials incidents and	**TEXT**		Y	Y

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	rescue operations.				
452	Knowledge of the types and states of shock of victims and/or other fire personnel.	**TEXT**		Y	Y
453	Knowledge of methods to managing shock of victims and/or other fire personnel.	**TEXT**		Y	Y
454	Knowledge of Body Substance Isolation (BSI) or infection control precautions.	**TEXT**		Y	Y
455	Knowledge of methods to prevent and/or reduce the effects of heat exposure while wearing protective clothing.	**TEXT**		Y	Y
456	Knowledge of the main routes through which hazardous materials can enter the body.	**TEXT**		Y	Y
457	Knowledge of the clues which indicate the presence of hazardous materials.	**TEXT**		Y	Y
458	Knowledge of chemical attack indicators.	**TEXT**		Y	Y
459	Knowledge of incident priorities at all HAZMAT and terrorist incidents.	**TEXT**		Y	Y
460	Knowledge of types of decontamination.	**TEXT**		Y	Y
461	Knowledge of hazard-control zones.	**TEXT**		Y	Y
462	Knowledge of defensive confinement and spill control actions.	**TEXT**		Y	Y
463	Knowledge of factors to address during large-scale evacuations.	**TEXT**		Y	Y
430	Knowledge of static pressure, flow pressure, and residual pressure.	**TEXT**		N	Y
431	Knowledge of common hose rolls.	**TEXT**		N	Y
445	Knowledge of preincident surveys and inspections.	**TEXT**		N	Y
447	Knowledge of the steps in presenting fire and life safety information to the public.	**TEXT**		N	N

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Appendix L: Helpful Qualification KSAO Categorization

Item #	KSAO	Item Origin	Career Qualification?	Volunteer Qualification?
332	**Basic Arithmetic**: Ability to perform mathematical operations, such as counting, addition, subtraction, multiplication and division.	**IOS**	Y	Y
340	**Oral Comprehension:** The ability to listen to and understand information and ideas presented through spoken words and sentences.	**IOS**	Y	Y
347	**Written Comprehension:** The ability to read and understand information and ideas presented in writing.	**IOS**	Y	Y
349	**Reaction Time:** The ability to quickly respond (with the hand, finger or foot) to a signal (sound, light, picture) when it appears.	**IOS**	Y	Y
351	**Manual Dexterity:** The ability to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate or assemble objects.	**IOS**	Y	Y
352	**Multi-limb Coordination:** The ability to coordinate two or more limbs (for example, two arms, two legs, or one leg and one arm) while sitting, standing or lying down. It does not involve performing the activities while the whole body is in motion.	**IOS**	Y	Y
353	**Response Orientation:** The ability to choose quickly between two or more movements in response to two or more different signals (lights, sounds, pictures). It includes the speed with which the correct response is started with the hand, foot or other body part.	**IOS**	Y	Y
354	**Rate Control:** The ability to time your movements or the movement of a piece of equipment in anticipation of changes in the speed and/or direction of a moving object or scene. (Example: Controlling for water hammer).	**IOS**	Y	Y
355	**Static Strength:** The ability to exert maximum muscle force to lift, push, pull or carry objects.	**IOS**	Y	Y
357	**Stamina:** The ability to exert yourself physically over long periods of time without getting winded or out of breath.	**IOS**	Y	Y
358	**Near Vision:** The ability to see details at close range (within a few feet of the observer).	**IOS**	Y	Y
359	**Dynamic Strength:** The ability to exert muscle force repeatedly or continuously over time. This involves muscular endurance and resistance to muscle fatigue.	**IOS**	Y	Y
360	**Trunk Strength:** The ability to use your abdominal and lower back muscles to support part of the body repeatedly or continuously over time without 'giving out' or fatiguing.	**IOS**	Y	Y
361	**Extent Flexibility:** The ability to bend, stretch, twist or reach with your body, arms and/or legs.	**IOS**	Y	Y
362	**Depth Perception:** The ability to judge which of several objects is closer or farther away from you, or to judge the distance between you and an object. (Example: Placement of aerial).	**IOS**	Y	Y
363	**Auditory Attention:** The ability to focus on a single source of sound in the presence of other distracting sounds. (Example: Focusing on your PASS device in a chaotic environment).	**IOS**	Y	Y
364	**Gross Body Coordination:** The ability to coordinate the movement of your arms, legs and torso together when the whole body is in motion.	**IOS**	Y	Y
365	**Gross Body Equilibrium:** The ability to keep or regain your body balance or stay upright when in an unstable position. (Example: Gusting winds while firefighting from the aerial ladder).	**IOS**	Y	Y

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Item #	KSAO	Item Origin	Career Qualification?	Volunteer Qualification?
366	**Far Vision:** The ability to see details at a distance.	**IOS**	Y	Y
372	**Oral Communication**: Speaking in a clear, concise, understandable and appropriate manner.	**IOS**	Y	Y
373	**Self-Motivation**: Working without supervision and accomplishing tasks without prodding.	**IOS**	Y	Y
389	**Attention to Detail:** Being careful about detail and thorough in completing work tasks.	**IOS**	Y	Y
390	**Concern for Others:** Being sensitive to others' needs and feelings and being understanding and helpful on the job. Showing compassion for others.	**IOS**	Y	Y
391	**Cooperation:** Being pleasant with others on the job and displaying a good-natured, cooperative attitude.	**IOS**	Y	Y
392	**Dependability:** Being reliable, responsible and dependable and fulfilling obligations.	**IOS**	Y	Y
393	**Ethics.** Acting in an honest and fair manner. Willingness to accept responsibility for actions when things go wrong. Displaying a high degree of integrity and professionalism in action and word**.**	**IOS**	Y	Y
395	**Initiative:** Willingness to take on responsibilities and challenges.	**IOS**	Y	Y
397	**Integrity:** Being honest and ethical, especially in situations where others could be taken advantage of.	**IOS**	Y	Y
399	**Self-Control:** Maintaining composure, keeping emotions in check, controlling anger and avoiding aggressive behavior, even in very difficult situations.	**IOS**	Y	Y
400	**Service Orientation:** Actively looking for ways to help people; a desire to place others' interests ahead of your own; showing compassion for others.	**IOS**	Y	Y
401	**Social/Teamwork Orientation:** Preferring to work with others rather than alone, and being personally connected with others on the job. The ability to work with others (teamwork) to achieve a mutual end.	**IOS**	Y	Y
402	**Stress Tolerance:** Accepting criticism and dealing calmly and effectively with high stress situations.	**IOS**	Y	Y
403	Knowledge of motor vehicle rules and regulations.	**IOS**	Y	Y
409	Knowledge of the science behind fire propagation	**TEXT**	Y	Y
411	Knowledge of common heat energy sources: chemical, electrical, and mechanical energy	**TEXT**	Y	Y
412	Knowledge of heat transmission and the mechanisms by which heat transfer occurs: conduction, convection, and radiation	**TEXT**	Y	Y
413	Knowledge of common products of combustion and their toxic effects	**TEXT**	Y	Y
414	Knowledge of classification of fires: class A, B, C, D, and K fires	**TEXT**	Y	Y
415	Knowledge of Fire Control Theory: temperature reduction, fuel removal, oxygen exclusion, and chemical flame inhibition	**TEXT**	Y	Y
416	Knowledge of common materials found in building construction	**TEXT**	Y	Y
417	Knowledge of the strengths and weaknesses associated with different types of building construction types	**TEXT**	Y	Y
418	Knowledge of types of extinguishers and their common uses	**TEXT**	Y	Y
419	Knowledge of types of knots, ropes, and webbing materials	**TEXT**	Y	Y
420	Knowledge of types of ladders	**TEXT**	Y	Y
421	Knowledge of search operations	**TEXT**	Y	Y
422	Knowledge of rescue operations	**TEXT**	Y	Y
423	Knowledge of extrication operations	**TEXT**	Y	Y

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Item #	KSAO	Item Origin	Career Qualification?	Volunteer Qualification?
424	Knowledge of types of carries	**TEXT**	Y	Y
425	Knowledge of victim removal methods	**TEXT**	Y	Y
426	Knowledge of forcible entry methods	**TEXT**	Y	Y
427	Knowledge of ventilation methods	**TEXT**	Y	Y
428	Knowledge of types of hydrants and alternative water supplies	**TEXT**	Y	Y
431	Knowledge of common hose rolls	**TEXT**	Y	Y
433	Knowledge of size classifications of fire streams	**TEXT**	Y	Y
435	Knowledge of direct attacks	**TEXT**	Y	Y
436	Knowledge of indirect attacks	**TEXT**	Y	Y
437	Knowledge of combination attacks	**TEXT**	Y	Y
438	Knowledge of salvage operations	**TEXT**	Y	Y
439	Knowledge of overhaul operations	**TEXT**	Y	Y
440	Knowledge of hidden fire indicators	**TEXT**	Y	Y
446	Knowledge of common fire hazards	**TEXT**	Y	Y
448	Knowledge of the components of personal protective equipment	**TEXT**	Y	Y
449	Knowledge of the physiological aspects of stress	**TEXT**	Y	Y
450	Knowledge of cardiopulmonary resuscitation (CPR)	**TEXT**	Y	Y
451	Knowledge of scene safety considerations as hazardous materials incidents and rescue operations	**TEXT**	Y	Y
452	Knowledge of the types and states of shock of victims and/or other fire personnel	**TEXT**	Y	Y
453	Knowledge of methods to managing shock of victims and/or other fire personnel	**TEXT**	Y	Y
454	Knowledge of Body Substance Isolation (BSI) or infection control precautions	**TEXT**	Y	Y
455	Knowledge of methods to prevent and/or reduce the effects of heat exposure while wearing protective clothing	**TEXT**	Y	Y
456	Knowledge of the main routes through which hazardous materials can enter the body	**TEXT**	Y	Y
457	Knowledge of the clues which indicate the presence of hazardous materials	**TEXT**	Y	Y
461	Knowledge of hazard-control zones	**TEXT**	Y	Y
465	Knowledge of the role of the Fire Fighter I in the organization	**NFPA**	Y	Y
466	Knowledge of the mission of fire service	**NFPA**	Y	Y
474	Knowledge of personnel accountability systems, emergency communication procedures, and emergency evacuation methods.	**NFPA**	Y	Y
476	Knowledge of personnel accountability systems and communication procedures	**NFPA**	Y	Y
477	Principles of fire streams as they relate to fighting automobile fires	**NFPA**	Y	Y
480	Knowledge of the characteristics of pressurized flammable gases	**NFPA**	Y	Y
429	Knowledge of methods of moving water in a system	**TEXT**	N	Y
432	Knowledge of friction loss, elevation loss/gain, and water hammers	**TEXT**	N	Y
441	Knowledge of evidence protection methods	**TEXT**	N	Y
442	Knowledge of procedures the public should use to report a fire or other emergency	**TEXT**	N	Y
443	Knowledge of necessary skills for fire department communications	**TEXT**	N	Y
459	Knowledge of incident priorities at all HAZMAT and terrorist incidents	**TEXT**	N	Y
460	Knowledge of types of decontamination	**TEXT**	N	Y
462	Knowledge of defensive confinement and spill control actions	**TEXT**	N	Y

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Item #	KSAO	Item Origin	Career Qualification?	Volunteer Qualification?
463	Knowledge of factors to address during large-scale evacuations	**TEXT**	N	Y
464	Knowledge of the organization of the fire department	**NFPA**	N	Y
470	Knowledge of the critical aspects of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program.	**NFPA**	N	Y
471	Knowledge of procedures for reporting an emergency; departmental SOPs for taking and receiving alarms, radio codes, or procedures; and information needs of dispatch center.	**NFPA**	N	Y
333	**Deductive Reasoning:** The ability to apply general rules to specific problems to produce answers that make sense. (Example: Interpretation of SOPs and SOGs).	**IOS**	Y	N
336	**Information Ordering:** The ability to arrange things or actions in a certain order or pattern according to a specific rule or set of rules (e.g., patterns of numbers, letters, words, pictures, mathematical operations). (Example: Using SOPs to follow procedures for hoseline operation).	**IOS**	Y	N
339	**Number Facility:** The ability to add, subtract, multiply or divide quickly and correctly.	**IOS**	Y	N
342	**Oral Expression:** The ability to communicate information and ideas in speaking so others will understand.	**IOS**	Y	N
343	**Problem Sensitivity:** The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.	**IOS**	Y	N
344	**Selective Attention:** The ability to concentrate on a task over a period of time without being distracted. (Example: Being the only pump operator on-duty).	**IOS**	Y	N
345	**Spatial Orientation:** The ability to know your location in relation to the environment or to know where other objects are in relation to you.	**IOS**	Y	N
348	**Written Expression:** The ability to communicate information and ideas in writing so others will understand. (Example: Filling out maintenance records or logbooks).	**IOS**	Y	N
350	**Arm-Hand Steadiness:** The ability to keep your hand and arm steady while moving your arm or while holding your arm and hand in one position. (Example: Operating power tools for extrication).	**IOS**	Y	N
367	**Problem Analysis:** Quickly perceiving problem areas, identifying options and the potential impact of various solutions.	**IOS**	Y	N
368	**Problem-Solving:** Determining courses of action/solutions to problems. Implementing targeted solutions.	**IOS**	Y	N
369	**Decision-Making**: Understanding when a decision must be made and to have the willingness to make a decision. Quickly and efficiently determining an appropriate course of action to target a particular situation.	**IOS**	Y	N
371	**Interpersonal Skill**: Listening to others and being considerate of the concerns of others.	**IOS**	Y	N
374	**Composure**: Working under stress and performing in unpleasant or traumatic circumstances.	**IOS**	Y	N
376	**Critical Thinking:** Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.	**IOS**	Y	N
388	**Adaptability/Flexibility:** Being open to change (positive or negative) and to considerable variety in the workplace.	**IOS**	Y	N
398	**Persistence:** In the face of obstacles, one continues to engage to overcome the obstacle.	**IOS**	Y	N

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Item #	KSAO	Item Origin	Career Qualification?	Volunteer Qualification?
404	Knowledge of common hand tools, such as wrenches, pliers, screw drivers, hammers and mauls, axes, prying tools, etc., e.g., their use, operation, limits and safety precautions/procedures.	**IOS**	Y	N
434	Knowledge of foam techniques	**TEXT**	Y	N
334	**Flexibility of Closure:** The ability to identify or detect a known pattern (a figure, object, word or sound) that is hidden in other distracting material. (Example: Listening to Engine RPM's in order to identify issues).	**IOS**	N	N
335	**Inductive Reasoning:** The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events). (Example: Reading the various clues of smoke/heat to reach a decision regarding the extent of fire).	**IOS**	N	N
337	**Mathematical Reasoning:** The ability to choose the right mathematical methods or formulas to solve a problem. (Example: Friction loss, ladder or hose length calculation).	**IOS**	N	N
338	**Memorization:** The ability to remember information such as words, numbers, pictures, and procedures. (Example: Hydrant locations, previous building layouts).	**IOS**	N	N
346	**Visualization:** The ability to imagine how something will look after it is moved around or when its parts are moved or rearranged.	**IOS**	N	N
356	**Control Precision:** The ability to quickly and repeatedly adjust the controls of a machine or a vehicle to exact positions. (Example: Operating the aerial ladder).	**IOS**	N	N
370	**Planning and Organization**: Skill in establishing a course of action for oneself and others to accomplish goals. Skill in properly planning assignments, work duties and tasks; appropriate allocation of resources to ensure efficient, timely and smooth department operations.	**IOS**	N	N
375	**Conflict Resolution**: Skill in de-escalating tense situations and quieting potential disturbances.	**IOS**	N	N
377	**Leadership:** Willingness to lead, take charge and offer opinions and direction, and having people respond positively to those directions such that there are behavioral changes.	**IOS**	N	N
378	**Monitoring:** Monitoring/Assessing your performance or the performance of other individuals or organizations to make improvements or take corrective action.	**IOS**	N	N
379	**Operation and Control:** Watching gauges, dials or other indicators to make sure a machine is working properly.	**IOS**	N	N
380	**Instructing:** Teaching others how to do something.	**IOS**	N	N
381	**Judgment and Decision Making:** Considering the relative costs and benefits of potential actions to choose the most appropriate one.	**IOS**	N	N
383	**Social Perceptiveness:** Being aware of others' reactions and understanding why they react as they do.	**IOS**	N	N
384	**Negotiation:** Bringing others together and trying to reconcile differences.	**IOS**	N	N
385	**Public Relations Skill:** Dealing with the public in such a way as to protect the image and reputation of the department while providing the public or individuals with necessary or requested information.	**IOS**	N	N
386	**Persuasion:** Persuading others to change their minds or behavior.	**IOS**	N	N
387	**Achievement/Effort:** Establishing and maintaining personally challenging achievement goals and exerting effort toward mastering tasks.	**IOS**	N	N

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Item #	KSAO	Item Origin	Career Qualification?	Volunteer Qualification?
394	**Independence:** Developing one's own ways of doing things, guiding oneself with little or no supervision and depending on oneself to get things done.	**IOS**	N	N
396	**Innovation:** Tendency towards creativity and alternative thinking to develop new ideas for and answers to work-related problems.	**IOS**	N	N
405	Knowledge of basic science terms and concepts, e.g., force, gravity, pressure, vacuum, etc.	**IOS**	N	N
406	Knowledge of ratios and terms, expressing ratios and the practical use of ratios, e.g., pounds per square inch, gallons per minute, etc.	**IOS**	N	N
407	Knowledge of basic mechanical principles, e.g., leverage, gears, pulleys, screws, etc.	**IOS**	N	N
408	Knowledge of typical occupancy activity at a given time of day	**IOS**	N	N
430	Knowledge of static pressure, flow pressure, and residual pressure	**TEXT**	N	N
444	Knowledge of the types of information required for arrival and progress reports	**TEXT**	N	N
445	Knowledge of preincident surveys and inspections	**TEXT**	N	N
447	Knowledge of the steps in presenting fire and life safety information to the public	**TEXT**	N	N
458	Knowledge of chemical attack indicators	**TEXT**	N	N
467	Knowledge of the fire department's standard operating procedures (SOPs) and rules and regulations	**NFPA**	N	N
468	Knowledge of the role of other agencies as they relate to the fire department	**NFPA**	N	N
472	Knowledge of fire department procedures for answering nonemergency telephone calls.	**NFPA**	N	N
473	Knowledge of departmental radio procedures and etiquette for routine traffic, emergency traffic, and emergency evacuation signals.	**NFPA**	N	N
475	Knowledge of basic construction of typical doors, windows, and walls within the department's community or service area	**NFPA**	N	N
478	Knowledge of SOPs for alarm assignments and fire department radio communication procedures.	**NFPA**	N	N
479	Knowledge of the methods to assess the origin and cause of fires.	**NFPA**	N	N

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Appendix M: Complete Rank-ordered RUAD Tasks/KSAOs for Career Firefighter

Rank	Item#	Task	Origin	NFPA Code	% Essential	RUAD
1	272	**PPE:** SCBA, turnout gear (pants, jacket, helmet, gloves, hood), PASS (Personal Alert Safety System) Device	Match	5.3.2*(B)	100.00%	91.36%
2	229	Report for duty on time.	IOS		100.00%	88.07%
3	236	Ensure proper function of SCBA by inspecting and performing daily tests at the start of each shift; service SCBA if malfunctioning.	IOS		100.00%	73.44%
4	5	Put on and wear self-contained breathing apparatus (SCBA).	Match	5.3.1*	99.82%	95.73%
5	314	Hold and operate a hoseline	Match	5.3.13(B)1	99.65%	95.42%
6	4	Put on situation-appropriate personal protective equipment (PPE) (example: full turnout gear, HAZ-MAT Equipment, Universal Protections [Body Substance Isolation Gear]).	Match	5.3.3*2	99.63%	88.95%
7	242	Maintain all personal protective equipment (PPEs).	Match	5.5.1	99.58%	74.48%
8	285	**First Responder:** Collars, backboard, dressings, AED, stethoscope, Stokes basket, airway adjuncts	IOS		99.54%	93.12%
9	56	Perform cardiopulmonary resuscitation.	IOS		99.53%	93.63%
10	3	Respond to a vast range of emergencies including fire alarms, automobile accidents, medical emergencies, hazardous materials, or other incidents.	Match	5.3.3*1	99.45%	72.56%
11	293	Perform all fireground tasks wearing full turnout gear (coat, bunker pants, boots, helmet, gloves and hood) and SCBA	Match	5.1.2	99.38%	96.36%
12	42	Systematically search for trapped persons.	Match	5.3.9*1b	99.32%	85.35%
13	55	Control bleeding and bandage wounds.	IOS		99.29%	92.43%
14	230	Maintain professional appearance and personal hygiene in accordance with regulations.	IOS		99.17%	86.42%
15	275	**Fire hoses:** Charged fire hoses, uncharged fire hoses	IOS		99.07%	91.71%
16	53	Assess a patient's condition (e.g. alertness level, orientation, breathing, circulation).	IOS		99.06%	91.96%
17	52	Administer first aid to injured persons.	IOS		99.06%	91.53%
18	124	Enter smoky buildings and rooms with a hose in hand while wearing SCBA.	Match	5.3.10*1	98.94%	95.05%
19	50	Ensure respiratory protection is not compromised.	NFPA	5.3.9*(A)6	98.86%	86.67%
20	101	Establish an appropriate water supply, lay hose lines and connect them to water supplies.	Match	5.3.15*(A)	98.75%	87.69%
21	2	Be in a response-ready status to respond to alarms at all hours of the day and night.	IOS		98.72%	76.65%
22	41	Enter unfamiliar, smoke-filled buildings and rooms while wearing PPE and SCBA equipment.	Match	5.3.9*2	98.64%	87.90%
23	268	Control the emergency scene to protect yourself, coworkers and the patient or victim.	IOS		98.55%	70.19%
24	21	Recognize potential hazards on emergency scenes regarding vehicle traffic.	NFPA	5.3.3*(A)1	98.32%	63.91%
25	278	**Fire hand tools:** Fire axes, McLeod tools, pick head axes, Pulaski tools, pike pole, claw hammers, rubber mallet, non-sparking hammers, sledgehammers, Halligan bars, Hux bars, pinch bars	Match	6.4.1*(A)3a	98.17%	89.91%
26	39	Systematically search burning buildings to locate fire victims.	Match	5.3.9*4	97.96%	84.25%
27	46	Maintain team integrity and firefighter safety.	NFPA	5.3.9*6	97.93%	79.81%
28	209	Participate in ongoing training drills to develop and maintain proficiency (e.g., HAZ-MAT, search and rescue operations, SCBA and air management, automobile extrication, rapid intervention team (RIT) training, etc.).	IOS		97.79%	52.73%
29	84	Be aware of electrical lines when setting up ladders.	Match	5.3.6*2	97.73%	86.40%
30	48	Rescue a firefighter whose respiratory protection is not functioning.	NFPA	5.3.9*(B)*4	97.72%	79.77%
31	276	**Nozzles & Appliances:** Fire hose nozzles, hose couplings, wyes, siamese, adapters, reducers	IOS		97.66%	92.20%
32	57	Operate Defibrillator (AED).	IOS		97.60%	88.92%

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Rank	Item#	Task	Origin	NFPA Code	% Essential	RUAD
33	6	Carry equipment when needed (RIT Pack, High-Rise Pack, Medical Bag).	Match	5.3.13.2	97.60%	69.39%
34	24	Rescue victims from burning buildings and accident sites.	Match	5.3.9*1a	97.52%	81.18%
35	66	Properly utilize emergency equipment and supplies.	IOS		97.39%	74.76%
36	35	Extricate persons from automobiles.	Match	6.4.1*1	97.27%	68.65%
37	282	**Ladders:** Aluminum ladders, extension ladders, roof ladders, A-Frame ladders	IOS		97.22%	92.63%
38	302	Lift and carry heavy equipment and tools (e.g., high-rise pack containing hoseline and tools, gas-powered circular saw, chain saw, hydraulic cutters/spreaders, hydraulic tool power supply, gas-powered fans, portable hydrants, EMS bag containing oxygen bottle)	Match	5.3.4*(B)1a	97.20%	85.96%
39	127	Fight fires in smoky buildings when visibility is poor or nonexistent.	Match	5.3.5*(B)	97.16%	89.79%
40	125	Seek the source of a fire and extinguish.	Match	5.3.13.6	97.15%	90.14%
41	213	Participate in physical training activities to maintain a high level of physical fitness.	Match	5.1.1.5	97.03%	71.22%
42	188	Search for missing persons not accounted for.	Match	5.3.9*(A)4	97.02%	86.38%
43	107	Advance and fully extend a pre-connected, charged or uncharged hose of a diameter between 1¾ to 2½ inches.	Match	5.3.7*(B)5	96.92%	94.51%
44	61	Administer appropriate oxygen flow to patients.	IOS		96.91%	86.63%
45	117	Hold a charged 1¾ inch hose and open the nozzle.	Match	5.3.10*(B)2	96.89%	95.38%
46	310	Individually drag charged 1 ¾ inch hoseline	IOS		96.85%	93.33%
47	313	Drag uncharged or charged hoseline	IOS		96.85%	92.28%
48	47	Rescue a firefighter with functioning respiratory protection.	NFPA	5.3.9*(B)*3	96.82%	82.61%
49	38	Bring and use the necessary tools to extricate or free trapped persons.	Match	6.4.1*2	96.80%	61.98%
50	277	**Fire or rescue trucks:** Aerial trucks, ladder trucks, engine trucks, rescue vehicles, other apparatus, brush apparatus	IOS		96.68%	58.29%
51	29	Safely remove persons from entrapments.	Match	5.3.9*5	96.62%	63.41%
52	14	Determine the safest evacuation route and primary and secondary means of egress.	Match	6.3.3*3	96.56%	60.46%
53	307	Drag unconscious human victims and/or firefighters out of dangerous environments	IOS		96.50%	85.61%
54	9	Conduct a mental size-up of the emergency scene.	IOS		96.44%	50.56%
55	58	Use airway adjuncts.	IOS		96.39%	88.86%
56	294	Perform physically demanding tasks for extended periods of time	IOS		96.34%	91.44%
57	295	Perform in extreme heat and cold conditions	IOS		96.34%	84.40%
58	206	Clearly and accurately communicate patient information and care to medical staff.	IOS		96.08%	55.43%
59	18	Communicate with the superior during a live fire.	Match	6.2.2*2	96.01%	56.08%
60	135	Attack a passenger vehicle fire.	NFPA	5.3.7*1	95.74%	87.28%
61	23	Use personnel accountability systems to locate team members and communicate loss of air supply.	NFPA	5.3.5*(A)	95.42%	63.78%
62	64	Lift a patient into a bed/onto a stretcher; carry patient through tight quarters and down flights of stairs using a stair chair or Reeve stretcher; carry patient to ambulance.	IOS		95.27%	71.02%
63	30	Safely lift, hoist or drag victim(s), taking care to minimize further injuries.	Match	6.4.1*3	95.25%	76.71%
64	312	Individually feed charged 1¾ inch hoseline to firefighter(s) at nozzle to assist in moving hoseline around obstacles, up stairs, etc.	IOS		95.10%	88.77%
65	103	Pull the supply line from an engine to a hydrant.	Match	5.3.15*(B)1	95.06%	89.67%
66	218	Take and complete course work required to obtain medical certifications.	IOS		95.06%	51.87%
67	305	Lift and transfer victims from ground to stretcher with assistance	IOS		95.05%	67.38%
68	19	Collaborate with other firefighters, supervisors and other firefighter companies to conduct firefighting and rescue operations.	Match	6.3.2*4	95.05%	52.11%

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Rank	Item#	Task	Origin	NFPA Code	% Essential	RUAD
69	54	Gather information from patient or family member regarding medical history.	IOS		94.80%	80.52%
70	308	Carry unconscious or injured victims and/or firefighters out of dangerous conditions	IOS		94.72%	84.45%
71	152	Follow precautions when advancing hose lines to a fire.	NFPA	5.3.10*(A)2	94.49%	90.16%
72	12	Assess the color, location and movement of smoke.	IOS		94.32%	47.24%
73	37	Strategically position apparatus to protect incident scene from oncoming traffic.	Match	5.3.3*3	94.26%	48.11%
74	104	Wrap a hose around functioning hydrant, unscrew the hydrant cap, screw the hose connection to the hydrant and turn on the hydrant (i.e., catch the plug).	Match	5.3.15*(B)5	94.15%	90.58%
75	31	Drag or carry a victim(s) out of a building wearing appropriate PPE.	IOS		94.12%	84.93%
76	262	Use tact and diplomacy in dealing with the public under times of high stress or with disgruntled, agitated or hysterical persons.	IOS		94.09%	57.01%
77	151	Prevent exposure to products of combustion.	NFPA	5.3.10*(A)5	94.07%	86.96%
78	267	Provide assistance to victims.	IOS		94.06%	62.07%
79	315	Open a hydrant valve or hydrant cap using a hydrant wrench	IOS		94.04%	92.96%
80	284	**Ventilation:** Positive pressure fans, negative pressure fans, hydraulic ventilation, electric fans	IOS		93.98%	81.11%
81	283	**Power Equipment:** Chain saws, circular saws, K-12 saws, reciprocating saws, electric/hydraulic generators	Match	6.4.1*(A)3b	93.98%	80.18%
82	63	Prepare and transfer a patient to an ambulance.	IOS		93.81%	70.57%
83	309	Remove heavy equipment from apparatus compartments	IOS		93.68%	71.02%
84	36	Cut vehicle power during extrication.	IOS		93.61%	65.21%
85	126	Select the correct tool or equipment for various firefighting maneuvers.	Match	5.3.8*(A)2	93.55%	77.30%
86	226	Write descriptions of situations in medical reports, including details of symptoms, actions taken, etc.	IOS		93.45%	54.35%
87	261	Maintain a service orientation or public servant mentality when dealing with the public.	IOS		93.40%	61.03%
88	263	Interact and work with citizens.	IOS		93.21%	56.31%
89	205	Clearly and accurately communicate patient information, assessment and treatment via radio on route to a medical facility.	IOS		93.15%	52.19%
90	59	Immobilize painful, swollen, or deformed extremities.	IOS		93.13%	89.52%
91	281	**Hydraulic Rescue Tools:** Spreaders, cutters, Jaws of Life, rams, air bags	IOS		93.06%	70.51%
92	298	Operate in dark environments	IOS		92.92%	80.00%
93	81	Position and climb ladders to gain access to upper levels of buildings or to rescue individuals from burning structures.	Match	5.3.6*3	92.75%	76.30%
94	92	Remove equipment from truck and start power tools.	Match	5.3.12(B)1a	92.73%	61.21%
95	274	**Fire extinguishers:** Carbon dioxide CO_2 fire extinguishers, dry chemical fire extinguishers, multipurpose fire extinguishers, water extinguisher, K-Type	IOS		92.66%	89.50%
96	123	Move toward the source of a fire using knowledge of types of fires, construction design, building materials and physical layout of properties.	Match	5.3.12(A)	92.59%	64.94%
97	304	Lift and push a stretcher/gurney into an ambulance with assistance	IOS		92.42%	54.35%
98	94	Determine the stability of supporting surfaces such as roofs and fire escapes.	Match	5.3.12*2	92.39%	72.63%
99	132	Identify and respond to hazards at the scene.	Match	5.3.10*6	92.39%	67.03%
100	13	Assess fire conditions to ensure proper fire suppression agent is used.	Match	6.3.2*(A)	92.29%	56.75%
101	157	Recognize hazards associated with an automobile fire.	NFPA	5.3.7*(A)5	92.13%	83.46%
102	186	Check for smoldering fire inside walls and ceiling by means of fire tools and equipment (e.g., fire axe, ceiling hook).	Match	5.3.10*4	92.05%	77.73%
103	105	Make and unmake coupling connections.	Match	5.3.10*(B)8	91.98%	93.29%

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Rank	Item#	Task	Origin	NFPA Code	% Essential	RUAD
104	**303**	Lift and carry a stretcher/gurney with assistance	**IOS**		91.90%	60.42%
105	**65**	Monitor and provide needed care when transporting a patient to a medical facility.	**IOS**		91.88%	74.86%
106	**153**	Assess proper application of fire stream.	**NFPA**	5.3.10*(A)3	91.74%	83.13%
107	**33**	Drag or carry victim(s) up or down stairs wearing appropriate PPE.	**IOS**		91.67%	80.88%
108	**160**	Recognize dangers of exposure to toxins or hazardous materials associated with storage building and container fires.	**NFPA**	5.3.8*(A)5	91.60%	77.20%
109	**15**	Safely shut off utility services to buildings in emergency situations (e.g., electrical and gas valves).	**Match**	5.3.18	90.82%	47.78%
110	**86**	Raise a 24-foot extension ladder and extend the fly section of that ladder.	**IOS**		90.48%	91.41%
111	**325**	Crawl, duck-under, crawl-over and maneuver around obstacles in confined and restricted spaces while wearing SCBA and appropriate PPE	**IOS**		90.46%	85.38%
112	**128**	Fight fires for prolonged periods of time in extreme temperatures.	**IOS**		90.32%	74.02%
113	**183**	Check for fire extension or hotspots using thermal imaging camera.	**IOS**		90.31%	55.07%
114	**51**	Choose and apply appropriate techniques for opening or removing trunks, engine compartments, vehicle roofs, doors, windshields, windows, steering wheels or columns, and dashboards.	**NFPA**	6.4.1*(B)3	90.19%	54.74%
115	**296**	Perform operations in inclement weather	**IOS**		89.91%	67.79%
116	**116**	Determine the correct spray pattern based upon fire scene (e.g., solid stream, hollow cone, full cone, fog stream, etc.).	**Match**	5.3.10*(B)3	89.87%	78.93%
117	**316**	Connect hoseline sections using a spanner tool	**IOS**		89.82%	90.49%
118	**191**	Monitor the air for harmful toxins.	**IOS**		89.69%	46.39%
119	**34**	Evacuate persons from a fire area.	**Match**	5.2.4*(A)	89.52%	69.43%
120	**154**	Use appropriate water application methods for exposure protection and fire extinguishment.	**NFPA**	5.3.8*(A)4	89.47%	82.19%
121	**318**	Hold and operate gas-powered saws and hydraulic tools	**Match**	5.3.4*(B)1b	89.47%	71.13%
122	**279**	**Stabilizing Tools:** Struts, lift jackets, cribbing	**Match**	6.4.1*(B)2	89.42%	57.42%
123	**129**	Use other senses to find the source of a fire when you cannot see.	**IOS**		89.29%	67.97%
124	**324**	Climb, crawl and/or maneuver in confined or restricted spaces while wearing SCBA and appropriate PPE	**Match**	5.3.9*(B)*1	89.27%	85.38%
125	**321**	Position, heel and raise ground ladders	**IOS**		89.12%	92.25%
126	**331**	Climb stairs while wearing PPE and carrying equipment while wearing SCBA and appropriate PPE	**IOS**		89.02%	87.31%
127	**102**	Coordinate firefighting and rescue operations with other firefighters, supervisors and other firefighter companies.	**Match**	5.3.19*	89.00%	59.39%
128	**93**	Use equipment (e.g., swing axe or sledge hammer) to make forcible entries.	**Match**	5.3.4*	88.97%	82.62%
129	**112**	Feed charged hose line of a diameter between 1¾ to 2½ inches to attacking firefighter units.	**IOS**		88.89%	88.40%
130	**83**	Identify proper ladder locations to allow access to upper levels of buildings or to ensure proper evacuation of fire personnel.	**Match**	5.3.9*3	88.54%	72.58%
131	**326**	Climb through windows and openings while wearing SCBA and appropriate PPE	**IOS**		88.30%	86.31%
132	**114**	Select the proper hose size based upon fire scene and method of attack.	**Match**	5.3.10*(A)8	88.28%	55.78%
133	**96**	Remove ceiling materials, such as plaster and lath, sheet rock, ceiling tiles and insulation by poking from above with pike pole or axe so that smoke and hot gases can escape.	**Match**	5.3.12*3	88.19%	77.78%
134	**320**	Lift and carry ground ladders	**IOS**		88.07%	92.61%
135	**168**	Exit a hazardous area as a team.	**NFPA**	5.3.5*	87.50%	70.56%
136	**122**	Continue to monitor fire suppression and adjust suppression tactics to extinguish fire and prevent the extension of the fire.	**Match**	6.3.2*5	87.45%	52.28%
137	**322**	Extend ground ladders using halyard	**IOS**		87.37%	92.96%

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Rank	Item#	Task	Origin	NFPA Code	% Essential	RUAD
138	**199**	Recognize and communicate dangers associated with overhaul.	**NFPA**	5.3.13(A)4	87.12%	76.82%
139	**231**	Remain on-duty for extended periods of time per department-specific SOGs.	**IOS**		87.07%	55.36%
140	**108**	Remove kinks in charged supply line by lifting and/or turning hose so that water flow is not obstructed.	**IOS**		87.04%	87.20%
141	**49**	Recognize and manage psychological effects resulting from operating in obscured conditions.	**NFPA**	5.3.9*(A)2	86.95%	59.20%
142	**130**	Carry equipment up stairs while wearing PPE gear and SCBA.	**IOS**		86.93%	89.79%
143	**7**	Perform tasks only in established, protected work areas.	**NFPA**	5.3.3*4	86.93%	50.80%
144	**27**	Interact with victims or causalities who have sustained severe or life-ending injuries.	**IOS**		86.90%	47.21%
145	**91**	Create openings in buildings for ventilation or entrance using axes, chisels, crowbars, power saws or core cutters.	**Match**	5.3.12*1	86.87%	75.13%
146	**144**	Maintain correct body posture during attack operations.	**NFPA**	5.3.10*5	86.80%	89.24%
147	**280**	**Ropes & Webbing**	**IOS**		86.67%	71.90%
148	**184**	Inspect fire sites after flames have been extinguished to ensure that there is no further danger.	**Match**	5.3.8*(B)	86.67%	58.02%
149	**82**	Determine the size and type of ladders required.	**Match**	5.3.6*1	86.56%	80.31%
150	**137**	Communicate and manage search, rescue, and ventilation requirements.	**NFPA**	6.3.2*6	85.65%	54.29%
151	**328**	Climb to the top and back down ground ladders while wearing SCBA and appropriate PPE	**IOS**		85.50%	91.98%
152	**10**	Check the wind direction in relation to the fire or HAZ-MAT scene.	**IOS**		85.49%	48.82%
153	**60**	Appropriately control patients who are hysterical, mentally disturbed, or in an altered state of consciousness that require medical attention.	**IOS**		85.47%	64.60%
154	**118**	While assisted, hold a charged 2½ inch hose and open the nozzle.	**IOS**		85.05%	91.05%
155	**197**	Perform horizontal ventilation on a structure, so that the ventilation openings are free of obstructions.	**NFPA**	5.3.11.1	84.81%	85.71%
156	**292**	**Lighting Equipment:** Power supply and lighting equipment, cords and connectors, and ground-fault interpreter (GFI) devices.	**NFPA**	5.3.17(B)	84.24%	54.41%
157	**100**	Retreat from the area as a team when ventilation is accomplished.	**NFPA**	5.3.12*4	84.10%	69.25%
158	**208**	Participate in fire drills and demonstrations of firefighting techniques.	**IOS**		83.90%	51.66%
159	**317**	Penetrate and tear down ceiling using a pike pole	**IOS**		83.86%	75.70%
160	**113**	Re-bed hose line back onto the proper apparatus (e.g., engine or truck).	**IOS**		83.59%	74.69%
161	**289**	**Specialty wrenches:** Hydrant shutoff wrenches, lug wrenches, non-sparking bung wrenches, gas-utility wrenches, spanner wrenches, adjustable wrenches	**IOS**		83.26%	70.83%
162	**176**	Place a smoke ejector in strategic locations throughout the fire scene to aid in proper ventilation and smoke removal.	**Match**	5.3.11.2	82.93%	77.63%
163	**182**	Perform overhaul and salvage operations.	**Match**	5.3.13.1	82.92%	77.73%
164	**40**	Gather information (e.g., bystanders, neighbors, family members) about probable victim locations and/or building floor plans.	**IOS**		82.65%	49.74%
165	**136**	Communicate attack techniques to the attack teams	**NFPA**	6.3.2*3	82.46%	48.11%
166	**32**	Carry victim(s) via ladders wearing appropriate PPE.	**Match**	5.3.9*(A)1b	82.23%	80.46%
167	**195**	Remove flooring, ceiling, and wall components to expose void spaces without compromising structural integrity.	**NFPA**	5.3.13.3	82.20%	73.19%
168	**189**	Preserve evidence at fire scene.	**Match**	6.3.4*	82.20%	69.79%
169	**216**	Read, comprehend and retain information from training materials (e.g., text books and manuals).	**IOS**		82.16%	41.54%
170	**200**	Designate work zones for safe operation at emergency scenes.	**NFPA**	5.3.3*(A)4	81.99%	61.11%
171	**145**	Extinguish fires in exterior Class A materials, given fires in stacked or piled and small unattached structures or storage containers.	**NFPA**	5.3.8*	81.75%	89.29%
172	**163**	Identify HAZ-MAT by use of signage and HAZ-MAT reference materials.	**IOS**		81.67%	75.73%

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Rank	Item#	Task	Origin	NFPA Code	% Essential	RUAD
173	95	Cut openings in roof with a fire axe or power saw (e.g., K-12 saw) for ventilation or examination.	Match	5.3.12(B)3	81.47%	76.28%
174	106	Carry a high-rise pack up multiple flights of stairs while wearing PPE so that attack line can be set up.	IOS		81.37%	82.82%
175	319	Lift, swing and strike targets using sledge hammers and axes	Match	5.3.4*(B)2	80.70%	80.63%
176	150	Anticipate the injuries which could result from common types of accidents.	NFPA	5.3.10*(A)7	80.59%	71.55%
177	241	Wash used hoses and re-bed them on the truck.	Match	5.5.2	80.33%	59.41%
178	159	Ensure complete extinguishment of stacked and piled materials.	NFPA	5.3.8*(A)3	79.17%	69.01%
179	88	With assistance, carry extension ladders (24-foot, 35-foot) from truck to incident scene.	IOS		79.04%	89.09%
180	169	Extinguish an ignitable liquid fire.	NFPA	6.3.1*1	78.84%	84.94%
181	158	Apply appropriate attack lines and water streams for stacked, piled materials and outdoor fires.	NFPA	5.3.8*(A)1	78.66%	71.01%
182	162	Respond to the release or potential release of hazardous material according to outlined protocols.	IOS		78.60%	50.87%
183	217	Successfully complete and pass written exams that test coursework learning and training objectives.	IOS		78.52%	42.08%
184	143	Face the cylinder during approach and retreat.	NFPA	6.3.3*7	78.19%	82.64%
185	161	Conduct a size-up of HAZ-MAT scene.	IOS		78.06%	54.08%
186	306	Carry heavy equipment and tools for extended distances	IOS		77.86%	70.86%
187	45	Tie knots to a hose line, ladder, or other object as necessary during a large area search.	Match	5.3.20	77.78%	74.53%
188	134	Operate a fire extinguisher by carrying it to objective, aiming and discharging at seat of fire or spill.	Match	5.3.16*	77.30%	90.81%
189	190	Secure the fire scene.	Match	5.3.13(A)5	77.23%	57.43%
190	98	Remove and transport equipment (e.g., electrical extension cords, ventilation fans) from the truck as needed.	Match	5.3.12(B)1b	77.22%	52.67%
191	139	Identify the contents of cylinder.	NFPA	6.3.3*2	77.05%	67.21%
192	156	Choose attack and control techniques for grade level and above and below grade level fires.	NFPA	6.3.2*2	77.03%	64.11%
193	131	Climb obstacles while wearing PPE and SCBA.	IOS		76.79%	81.49%
194	87	With assistance, raise a 35-foot extension ladder and extend the fly section of that ladder.	IOS		76.19%	84.05%
195	148	Prevent water hammers when shutting down nozzles.	NFPA	5.3.10*(B)1	76.10%	90.87%
196	311	Individually drag charged 2 ½ inch hoseline	IOS		76.00%	79.78%
197	198	Recognize points of strength and weakness in auto body construction.	NFPA	6.4.1*(A)2	75.78%	57.21%
198	110	Connect multiple small lines (example: 50-foot) and extend them to reach fire when required.	IOS		75.62%	82.01%
199	138	Control a flammable gas cylinder fire.	NFPA	6.3.3*1	75.39%	79.61%
200	170	Identify and control leaking flammable liquids, such that protection from flash fire is maintained	NFPA	5.3.7*2	75.34%	69.23%
201	301	Operate in confined areas	IOS		75.31%	62.26%
202	141	Eliminate leaking gas and then extinguish fire.	NFPA	6.3.3*5	75.11%	73.00%
203	164	Apply a foam blanket or other suppressants.	Match	6.3.1*3	74.29%	76.95%
204	90	Lower ground ladders and stow them onto the truck.	IOS		74.12%	82.99%
205	142	Evaluate the cylinder integrity and ensure cylinder has cooled.	NFPA	6.3.3*6	73.08%	64.59%
206	172	Use the appropriate concentrates on hydrocarbon and polar solvent fuels.	NFPA	6.3.1*(A)2	72.41%	55.00%
207	155	Identify automobile fuel types and assess and control fuel leaks.	NFPA	5.3.10*(A)6	72.05%	53.28%
208	175	Protect property from water and smoke using waterproof salvage covers and/or smoke ejectors (i.e., powered fans).	Match	5.3.14(A)1	71.43%	80.59%

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Rank	Item#	Task	Origin	NFPA Code	% Essential	RUAD
209	99	Properly knot and tie rope to hoist equipment weighing up to 50 pounds to upper levels.	Match	5.3.20(A)	70.81%	82.91%
210	111	Carry a 50-foot section of rolled hose unassisted while in appropriate PPE.	IOS		70.31%	87.65%
211	329	Climb to the top and back down aerial ladders/buckets/baskets/platforms while wearing SCBA and appropriate PPE	IOS		70.04%	69.02%
212	287	**Saws:** Hacksaws, handsaws, tree saws	IOS		69.35%	64.50%
213	327	Crawl along ceiling joists and rafters while wearing SCBA and appropriate PPE	IOS		68.42%	61.63%
214	140	Close cylinder valves.	NFPA	6.3.3*4	68.18%	74.07%
215	171	Take corrective measures to rectify poor foam generation.	NFPA	6.3.1*(A)1	66.98%	49.05%
216	174	Use fog nozzles or foam nozzles depending on situation.	NFPA	6.3.1*(A)4	66.81%	65.09%
217	89	Climb an aerial ladder to a height up to 100 feet while wearing PPE equipment.	IOS		65.84%	66.48%
218	121	Operate a charged hose line from confined spaces and direct spray at fire.	Match	5.3.10*(B)4b	65.81%	70.33%
219	166	Conduct a decontamination setup.	IOS		64.62%	40.00%
220	119	Operate a charged hose line from elevated positions and direct spray at fire.	Match	5.3.10*(B)7	64.24%	72.64%
221	194	Stop the flow of water from building sprinkler with sprinkler wedges or stoppers.	NFPA	5.3.14(B)6	62.71%	71.06%
222	193	Overhaul all vehicle compartments.	NFPA	5.3.7*3	62.67%	60.71%
223	165	Provide onsite crowd control in a HAZ-MAT situation.	Match	6.4.2*(B)	62.36%	46.33%
224	300	Operate at high elevations	IOS		60.86%	56.95%
225	179	Salvage property by removing broken glass, removing water and ventilating buildings to remove smoke.	Match	5.3.14	60.70%	64.76%
226	115	Calculate the height of a building in feet from its floors.	IOS		60.56%	57.09%
227	120	While on a ladder, operate and direct spray at fire.	Match	5.3.10*(B)4a	59.79%	78.37%
228	297	Walk long distances in full turnout gear	IOS		59.40%	71.53%
229	173	Reduce or avoid hazards associated with firefighting foams.	NFPA	6.3.1*(A)3	59.38%	54.50%
230	109	Carry, assemble and operate deluge set (ground monitor).	IOS		59.32%	65.12%
231	222	Read, comprehend and retain information of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program	NFPA	5.1.1.6	57.20%	38.43%
232	323	Hoist equipment using a rope	Match	5.3.12(B)2	56.74%	73.93%
233	149	Replace burst hose sections.	NFPA	5.3.10*(B)6	56.52%	86.22%
234	177	Gather furniture into an appropriate location and protect it with salvage covers.	Match	5.3.14(B)1	52.19%	66.96%
235	330	Rappel down from the top of structures while wearing SCBA and appropriate PPE	IOS		47.58%	50.67%
236	178	Place salvage covers over lower floors to prevent unnecessary damage.	Match	5.3.13(B)4	47.14%	64.60%
237	181	Remove burned and charred waste and other debris, if hazardous.	Match	5.3.14(B)5	45.96%	50.25%
238	196	Roll and fold salvage covers for reuse.	NFPA	5.3.14(B)2	40.25%	69.36%
239	192	Remove water via water chutes or other devices.	IOS		32.68%	62.75%

Rank	Item #	KSAO	Origin	Import.	RUAD
1	450	Knowledge of cardiopulmonary resuscitation (CPR)	TEXT	4.73	94.22%
2	448	Knowledge of the components of personal protective equipment	TEXT	4.71	90.75%
3	454	Knowledge of Body Substance Isolation (BSI) or infection control precautions	TEXT	4.60	86.63%
4	397	**Integrity:** Being honest and ethical, especially in situations where others could be taken advantage of.	IOS	4.57	90.04%
5	393	**Ethics.** Acting in an honest and fair manner. Willingness to accept responsibility for actions when things go wrong. Displaying a high degree of integrity and professionalism in action and word**.**	IOS	4.56	90.11%
6	392	**Dependability:** Being reliable, responsible and dependable and fulfilling obligations.	IOS	4.55	88.24%
7	474	Knowledge of personnel accountability systems, emergency communication procedures, and	NFPA	4.43	52.73%

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Rank	Item #	KSAO	Origin	Import.	RUAD
		emergency evacuation methods.			
8	421	Knowledge of search operations	TEXT	4.41	70.59%
9	422	Knowledge of rescue operations	TEXT	4.39	65.16%
10	374	**Composure**: Working under stress and performing in unpleasant or traumatic circumstances.	IOS	4.39	61.64%
11	357	**Stamina:** The ability to exert yourself physically over long periods of time without getting winded or out of breath.	IOS	4.30	87.61%
12	399	**Self-Control:** Maintaining composure, keeping emotions in check, controlling anger and avoiding aggressive behavior, even in very difficult situations.	IOS	4.28	77.57%
13	455	Knowledge of methods to prevent and/or reduce the effects of heat exposure while wearing protective clothing	TEXT	4.28	76.61%
14	451	Knowledge of scene safety considerations as hazardous materials incidents and rescue operations	TEXT	4.28	72.51%
15	402	**Stress Tolerance:** Accepting criticism and dealing calmly and effectively with high stress situations.	IOS	4.27	57.04%
16	340	**Oral Comprehension:** The ability to listen to and understand information and ideas presented through spoken words and sentences.	IOS	4.26	83.73%
17	476	Knowledge of personnel accountability systems and communication procedures	NFPA	4.26	52.41%
18	457	Knowledge of the clues which indicate the presence of hazardous materials	TEXT	4.22	66.07%
19	456	Knowledge of the main routes through which hazardous materials can enter the body	TEXT	4.20	75.44%
20	435	Knowledge of direct attacks	TEXT	4.15	80.42%
21	342	**Oral Expression:** The ability to communicate information and ideas in speaking so others will understand.	IOS	4.15	78.80%
22	427	Knowledge of ventilation methods	TEXT	4.15	77.78%
23	333	**Deductive Reasoning:** The ability to apply general rules to specific problems to produce answers that make sense. (Example: Interpretation of SOPs and SOGs).	IOS	4.14	71.26%
24	389	**Attention to Detail:** Being careful about detail and thorough in completing work tasks.	IOS	4.14	66.79%
25	426	Knowledge of forcible entry methods	TEXT	4.13	77.49%
26	343	**Problem Sensitivity:** The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.	IOS	4.13	55.02%
27	415	Knowledge of Fire Control Theory: temperature reduction, fuel removal, oxygen exclusion, and chemical flame inhibition	TEXT	4.12	77.13%
28	401	**Social/Teamwork Orientation:** Preferring to work with others rather than alone, and being personally connected with others on the job. The ability to work with others (teamwork) to achieve a mutual end.	IOS	4.12	60.52%
29	413	Knowledge of common products of combustion and their toxic effects	TEXT	4.11	69.09%
30	423	Knowledge of extrication operations	TEXT	4.10	52.73%
31	436	Knowledge of indirect attacks	TEXT	4.09	81.05%
32	453	Knowledge of methods to managing shock of victims and/or other fire personnel	TEXT	4.08	71.60%
33	372	**Oral Communication**: Speaking in a clear, concise, understandable and appropriate manner.	IOS	4.07	77.92%
34	452	Knowledge of the types and states of shock of victims and/or other fire personnel	TEXT	4.05	71.18%
35	440	Knowledge of hidden fire indicators	TEXT	4.05	62.96%
36	437	Knowledge of combination attacks	TEXT	4.04	77.25%
37	373	**Self-Motivation**: Working without supervision and accomplishing tasks without prodding.	IOS	4.04	75.11%
38	425	Knowledge of victim removal methods	TEXT	4.04	71.35%
39	403	Knowledge of motor vehicle rules and regulations.	IOS	4.02	61.75%
40	371	**Interpersonal Skill**: Listening to others and being considerate of the concerns of others.	IOS	4.01	70.43%
41	417	Knowledge of the strengths and weaknesses associated with different types of building construction types	TEXT	4.00	53.21%
42	363	**Auditory Attention:** The ability to focus on a single source of sound in the presence of other distracting sounds. (Example: Focusing on your PASS device in a chaotic environment).	IOS	3.98	74.79%
43	360	**Trunk Strength:** The ability to use your abdominal and lower back muscles to support part of the body repeatedly or continuously over time without 'giving out' or fatiguing.	IOS	3.97	82.98%
44	345	**Spatial Orientation:** The ability to know your location in relation to the environment or to know where other objects are in relation to you.	IOS	3.97	59.68%
45	344	**Selective Attention:** The ability to concentrate on a task over a period of time without being distracted. (Example: Being the only pump operator on-duty).	IOS	3.96	58.82%

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Rank	Item #	KSAO	Origin	Import.	RUAD
46	335	**Inductive Reasoning:** The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events). (Example: Reading the various clues of smoke/heat to reach a decision regarding the extent of fire).	**IOS**	3.96	48.81%
47	391	**Cooperation:** Being pleasant with others on the job and displaying a good-natured, cooperative attitude.	**IOS**	3.95	74.63%
48	359	**Dynamic Strength:** The ability to exert muscle force repeatedly or continuously over time. This involves muscular endurance and resistance to muscle fatigue.	**IOS**	3.94	80.69%
49	369	**Decision-Making**: Understanding when a decision must be made and to have the willingness to make a decision. Quickly and efficiently determining an appropriate course of action to target a particular situation.	**IOS**	3.94	52.04%
50	414	Knowledge of classification of fires: class A, B, C, D, and K fires	**TEXT**	3.93	83.78%
51	404	Knowledge of common hand tools, such as wrenches, pliers, screw drivers, hammers and mauls, axes, prying tools, etc., e.g., their use, operation, limits and safety precautions/procedures.	**IOS**	3.92	57.78%
52	398	**Persistence:** In the face of obstacles, one continues to engage to overcome the obstacle.	**IOS**	3.90	60.00%
53	388	**Adaptability/Flexibility:** Being open to change (positive or negative) and to considerable variety in the workplace.	**IOS**	3.89	60.81%
54	347	**Written Comprehension:** The ability to read and understand information and ideas presented in writing.	**IOS**	3.88	80.00%
55	409	Knowledge of the science behind fire propagation	**TEXT**	3.86	53.74%
56	480	Knowledge of the characteristics of pressurized flammable gases	**NFPA**	3.84	72.56%
57	416	Knowledge of common materials found in building construction	**TEXT**	3.84	61.43%
58	420	Knowledge of types of ladders	**TEXT**	3.83	76.58%
59	418	Knowledge of types of extinguishers and their common uses	**TEXT**	3.83	76.13%
60	477	Principles of fire streams as they relate to fighting automobile fires	**NFPA**	3.83	72.46%
61	446	Knowledge of common fire hazards	**TEXT**	3.83	65.96%
62	449	Knowledge of the physiological aspects of stress	**TEXT**	3.82	59.52%
63	376	**Critical Thinking:** Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.	**IOS**	3.81	52.73%
64	365	**Gross Body Equilibrium:** The ability to keep or regain your body balance or stay upright when in an unstable position. (Example: Gusting winds while firefighting from the aerial ladder).	**IOS**	3.80	74.25%
65	367	**Problem Analysis:** Quickly perceiving problem areas, identifying options and the potential impact of various solutions.	**IOS**	3.79	54.19%
66	458	Knowledge of chemical attack indicators	**TEXT**	3.79	49.09%
67	390	**Concern for Others:** Being sensitive to others' needs and feelings and being understanding and helpful on the job. Showing compassion for others.	**IOS**	3.78	71.85%
68	361	**Extent Flexibility:** The ability to bend, stretch, twist or reach with your body, arms and/or legs.	**IOS**	3.77	82.68%
69	465	Knowledge of the role of the Fire Fighter I in the organization	**NFPA**	3.75	61.39%
70	368	**Problem-Solving:** Determining courses of action/solutions to problems. Implementing targeted solutions.	**IOS**	3.74	50.45%
71	332	**Basic Arithmetic**: Ability to perform mathematical operations, such as counting, addition, subtraction, multiplication and division.	**IOS**	3.73	88.26%
72	355	**Static Strength:** The ability to exert maximum muscle force to lift, push, pull or carry objects.	**IOS**	3.73	79.15%
73	362	**Depth Perception:** The ability to judge which of several objects is closer or farther away from you, or to judge the distance between you and an object. (Example: Placement of aerial).	**IOS**	3.72	73.59%
74	395	**Initiative:** Willingness to take on responsibilities and challenges.	**IOS**	3.72	57.68%
75	459	Knowledge of incident priorities at all HAZMAT and terrorist incidents	**TEXT**	3.71	43.23%
76	358	**Near Vision:** The ability to see details at close range (within a few feet of the observer).	**IOS**	3.70	86.46%
77	364	**Gross Body Coordination:** The ability to coordinate the movement of your arms, legs and torso together when the whole body is in motion.	**IOS**	3.70	81.30%
78	336	**Information Ordering:** The ability to arrange things or actions in a certain order or pattern according to a specific rule or set of rules (e.g., patterns of numbers, letters, words, pictures, mathematical operations). (Example: Using SOPs to follow procedures for hoseline operation).	**IOS**	3.70	54.22%
79	349	**Reaction Time:** The ability to quickly respond (with the hand, finger or foot) to a signal (sound, light, picture) when it appears.	**IOS**	3.69	70.48%

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Rank	Item #	KSAO	Origin	Import.	RUAD
80	461	Knowledge of hazard-control zones	TEXT	3.68	53.80%
81	412	Knowledge of heat transmission and the mechanisms by which heat transfer occurs: conduction, convection, and radiation	TEXT	3.66	71.62%
82	348	**Written Expression:** The ability to communicate information and ideas in writing so others will understand. (Example: Filling out maintenance records or logbooks).	IOS	3.66	58.87%
83	400	**Service Orientation:** Actively looking for ways to help people; a desire to place others' interests ahead of your own; showing compassion for others.	IOS	3.65	58.15%
84	351	**Manual Dexterity:** The ability to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate or assemble objects.	IOS	3.64	69.00%
85	460	Knowledge of types of decontamination	TEXT	3.64	47.62%
86	428	Knowledge of types of hydrants and alternative water supplies	TEXT	3.62	54.84%
87	381	**Judgment and Decision Making:** Considering the relative costs and benefits of potential actions to choose the most appropriate one.	IOS	3.62	43.56%
88	387	**Achievement/Effort:** Establishing and maintaining personally challenging achievement goals and exerting effort toward mastering tasks.	IOS	3.58	41.91%
89	337	**Mathematical Reasoning:** The ability to choose the right mathematical methods or formulas to solve a problem. (Example: Friction loss, ladder or hose length calculation).	IOS	3.53	37.92%
90	439	Knowledge of overhaul operations	TEXT	3.51	66.14%
91	466	Knowledge of the mission of fire service	NFPA	3.51	58.90%
92	350	**Arm-Hand Steadiness:** The ability to keep your hand and arm steady while moving your arm or while holding your arm and hand in one position. (Example: Operating power tools for extrication).	IOS	3.50	57.33%
93	419	Knowledge of types of knots, ropes, and webbing materials	TEXT	3.47	68.02%
94	354	**Rate Control:** The ability to time your movements or the movement of a piece of equipment in anticipation of changes in the speed and/or direction of a moving object or scene. (Example: Controlling for water hammer).	IOS	3.47	55.11%
95	366	**Far Vision:** The ability to see details at a distance.	IOS	3.46	85.46%
96	441	Knowledge of evidence protection methods	TEXT	3.46	49.72%
97	339	**Number Facility:** The ability to add, subtract, multiply or divide quickly and correctly.	IOS	3.43	71.01%
98	462	Knowledge of defensive confinement and spill control actions	TEXT	3.43	42.77%
99	352	**Multi-limb Coordination:** The ability to coordinate two or more limbs (for example, two arms, two legs, or one leg and one arm) while sitting, standing or lying down. It does not involve performing the activities while the whole body is in motion.	IOS	3.42	68.33%
100	411	Knowledge of common heat energy sources: chemical, electrical, and mechanical energy	TEXT	3.40	61.99%
101	353	**Response Orientation:** The ability to choose quickly between two or more movements in response to two or more different signals (lights, sounds, pictures). It includes the speed with which the correct response is started with the hand, foot or other body part.	IOS	3.38	62.67%
102	434	Knowledge of foam techniques	TEXT	3.35	54.79%
103	433	Knowledge of size classifications of fire streams	TEXT	3.34	63.93%
104	424	Knowledge of types of carries	TEXT	3.33	60.83%
105	383	**Social Perceptiveness:** Being aware of others' reactions and understanding why they react as they do.	IOS	3.29	45.58%
106	438	Knowledge of salvage operations	TEXT	3.22	64.17%
107	346	**Visualization:** The ability to imagine how something will look after it is moved around or when its parts are moved or rearranged.	IOS	3.22	46.90%
108	432	Knowledge of friction loss, elevation loss/gain, and water hammers	TEXT	3.19	40.57%
109	470	Knowledge of the critical aspects of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program.	NFPA	3.09	45.34%
110	442	Knowledge of procedures the public should use to report a fire or other emergency	TEXT	3.02	46.43%
111	431	Knowledge of common hose rolls	TEXT	2.97	68.59%

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Appendix N: Complete Rank-ordered RUAD Tasks/KSAOs for Volunteer Firefighter

Rank	Item#	Task	Origin	NFPA Code	% Essential	RUAD
1	272	**PPE:** SCBA, turnout gear (pants, jacket, helmet, gloves, hood), PASS (Personal Alert Safety System) Device	Match	5.3.2*(B)	100.00%	91.67%
2	310	Individually drag charged 1 ¾ inch hoseline	IOS		100.00%	79.49%
3	236	Ensure proper function of SCBA by inspecting and performing daily tests at the start of each shift; service SCBA if malfunctioning.	IOS		100.00%	66.67%
4	277	**Fire or rescue trucks:** Aerial trucks, ladder trucks, engine trucks, rescue vehicles, other apparatus, brush apparatus	IOS		100.00%	58.33%
5	267	Provide assistance to victims.	IOS		100.00%	55.00%
6	242	Maintain all personal protective equipment (PPEs).	Match	5.5.1	100.00%	54.17%
7	5	Put on and wear self-contained breathing apparatus (SCBA).	Match	5.3.1*	98.70%	83.12%
8	4	Put on situation-appropriate personal protective equipment (PPE) (example: full turnout gear, HAZ-MAT Equipment, Universal Protections [Body Substance Isolation Gear]).	Match	5.3.3*2	98.70%	75.32%
9	3	Respond to a vast range of emergencies including fire alarms, automobile accidents, medical emergencies, hazardous materials, or other incidents.	Match	5.3.3*1	98.70%	72.73%
10	46	Maintain team integrity and firefighter safety.	NFPA	5.3.9*6	98.36%	68.85%
11	48	Rescue a firefighter whose respiratory protection is not functioning.	NFPA	5.3.9*(B)*4	98.31%	76.27%
12	314	Hold and operate a hoseline	Match	5.3.13(B)1	97.37%	79.49%
13	2	Be in a response-ready status to respond to alarms at all hours of the day and night.	IOS		97.33%	74.67%
14	125	Seek the source of a fire and extinguish.	Match	5.3.13.6	97.06%	76.47%
15	325	Crawl, duck-under, crawl-over and maneuver around obstacles in confined and restricted spaces while wearing SCBA and appropriate PPE	IOS		96.97%	68.57%
16	24	Rescue victims from burning buildings and accident sites.	Match	5.3.9*1a	96.77%	74.19%
17	39	Systematically search burning buildings to locate fire victims.	Match	5.3.9*4	96.55%	82.76%
18	56	Perform cardiopulmonary resuscitation.	IOS		96.23%	83.02%
19	84	Be aware of electrical lines when setting up ladders.	Match	5.3.6*2	96.23%	72.22%
20	73	Maintain constant water supply through proper management of pumping apparatus.	Match	5.3.15*2	96.23%	43.40%
21	161	Conduct a size-up of HAZ-MAT scene.	IOS		96.00%	68.00%
22	21	Recognize potential hazards on emergency scenes regarding vehicle traffic.	NFPA	5.3.3*(A)1	96.00%	61.33%
23	275	**Fire hoses:** Charged fire hoses, uncharged fire hoses	IOS		95.65%	79.17%
24	276	**Nozzles & Appliances:** Fire hose nozzles, hose couplings, wyes, siamese, adapters, reducers	IOS		95.65%	79.17%
25	278	**Fire hand tools:** Fire axes, McLeod tools, pick head axes, Pulaski tools, pike pole, claw hammers, rubber mallet, non-sparking hammers, sledgehammers, Halligan bars, Hux bars, pinch bars	Match	6.4.1*(A)3a	95.65%	62.50%
26	268	Control the emergency scene to protect yourself, coworkers and the patient or victim.	IOS		95.24%	63.64%
27	279	**Stabilizing Tools:** Struts, lift jackets, cribbing	Match	6.4.1*(B)2	95.24%	40.91%
28	294	Perform physically demanding tasks for extended periods of time	IOS		95.12%	80.49%
29	41	Enter unfamiliar, smoke-filled buildings and rooms while wearing PPE and SCBA equipment.	Match	5.3.9*2	95.00%	83.05%
30	47	Rescue a firefighter with functioning respiratory protection.	NFPA	5.3.9*(B)*3	94.92%	76.27%
31	18	Communicate with the superior during a live fire.	Match	6.2.2*2	94.74%	59.21%
32	8	Assess fires and situations and report conditions to superiors to receive instructions, using two-way radios.	Match	5.2.3	94.59%	56.76%

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Rank	Item#	Task	Origin	NFPA Code	% Essential	RUAD
33	9	Conduct a mental size-up of the emergency scene.	IOS		94.59%	55.41%
34	17	Advise the commanding officer of fire conditions, hazards and exposures at the scene.	Match	6.3.2*7	94.52%	56.16%
35	23	Use personnel accountability systems to locate team members and communicate loss of air supply.	NFPA	5.3.5*(A)	94.44%	75.00%
36	53	Assess a patient's condition (e.g. alertness level, orientation, breathing, circulation).	IOS		94.34%	77.36%
37	69	Efficiently and safely drive firefighting emergency equipment to and from a scene.	Match	5.3.2*	94.34%	49.09%
38	101	Establish an appropriate water supply, lay hose lines and connect them to water supplies.	Match	5.3.15*(A)	94.12%	82.86%
39	117	Hold a charged 1¾ inch hose and open the nozzle.	Match	5.3.10*(B)2	93.94%	82.35%
40	35	Extricate persons from automobiles.	Match	6.4.1*1	93.33%	65.00%
41	36	Cut vehicle power during extrication.	IOS		93.33%	65.00%
42	16	Communicate with the dispatcher, other fire vehicles and commanding officers by radio and request any necessary assistance.	Match	6.2.2*1	93.24%	50.00%
43	31	Drag or carry a victim(s) out of a building wearing appropriate PPE.	IOS		93.22%	77.97%
44	38	Bring and use the necessary tools to extricate or free trapped persons.	Match	6.4.1*2	93.22%	62.71%
45	14	Determine the safest evacuation route and primary and secondary means of egress.	Match	6.3.3*3	93.15%	63.01%
46	153	Assess proper application of fire stream.	NFPA	5.3.10*(A)3	93.10%	72.41%
47	160	Recognize dangers of exposure to toxins or hazardous materials associated with storage building and container fires.	NFPA	5.3.8*(A)5	93.10%	70.37%
48	163	Identify HAZ-MAT by use of signage and HAZ-MAT reference materials.	IOS		92.86%	82.14%
49	298	Operate in dark environments	IOS		92.50%	75.61%
50	77	Charge lines at officer's command by opening discharge valves to support fire operations.	IOS		92.45%	48.15%
51	63	Prepare and transfer a patient to an ambulance.	IOS		92.31%	54.72%
52	313	Drag uncharged or charged hoseline	IOS		92.11%	76.92%
53	312	Individually feed charged 1¾ inch hoseline to firefighter(s) at nozzle to assist in moving hoseline around obstacles, up stairs, etc.	IOS		92.11%	74.36%
54	170	Identify and control leaking flammable liquids, such that protection from flash fire is maintained	NFPA	5.3.7*2	92.00%	68.00%
55	6	Carry equipment when needed (RIT Pack, High-Rise Pack, Medical Bag).	Match	5.3.13.2	92.00%	57.33%
56	208	Participate in fire drills and demonstrations of firefighting techniques.	IOS		92.00%	51.85%
57	320	Lift and carry ground ladders	IOS		91.89%	81.58%
58	321	Position, heel and raise ground ladders	IOS		91.89%	81.58%
59	302	Lift and carry heavy equipment and tools (e.g., high-rise pack containing hoseline and tools, gas-powered circular saw, chain saw, hydraulic cutters/spreaders, hydraulic tool power supply, gas-powered fans, portable hydrants, EMS bag containing oxygen bottle)	Match	5.3.4*(B)1a	91.89%	73.68%
60	317	Penetrate and tear down ceiling using a pike pole	IOS		91.89%	65.79%
61	186	Check for smoldering fire inside walls and ceiling by means of fire tools and equipment (e.g., fire axe, ceiling hook).	Match	5.3.10*4	91.67%	70.83%
62	229	Report for duty on time.	IOS		91.67%	69.23%
63	30	Safely lift, hoist or drag victim(s), taking care to minimize further injuries.	Match	6.4.1*3	91.53%	71.19%
64	1	Accurately take incoming calls or information from the dispatcher regarding alarms (e.g., fire alarms, requests for emergency medical services).	Match	5.2.1*	91.43%	48.57%
65	37	Strategically position apparatus to protect incident scene from oncoming traffic.	Match	5.3.3*3	91.38%	60.34%
66	284	**Ventilation:** Positive pressure fans, negative pressure fans, hydraulic	IOS		91.30%	66.67%

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Rank	Item#	Task	Origin	NFPA Code	% Essential	RUAD
		ventilation, electric fans				
67	289	**Specialty wrenches:** Hydrant shutoff wrenches, lug wrenches, non-sparking bung wrenches, gas-utility wrenches, spanner wrenches, adjustable wrenches	IOS		91.30%	58.33%
68	135	Attack a passenger vehicle fire.	NFPA	5.3.7*1	91.18%	88.24%
69	127	Fight fires in smoky buildings when visibility is poor or nonexistent.	Match	5.3.5*(B)	91.18%	82.35%
70	132	Identify and respond to hazards at the scene.	Match	5.3.10*6	91.18%	61.76%
71	274	**Fire extinguishers:** Carbon dioxide CO_2 fire extinguishers, dry chemical fire extinguishers, multipurpose fire extinguishers, water extinguisher, K-Type	IOS		90.91%	86.96%
72	324	Climb, crawl and/or maneuver in confined or restricted spaces while wearing SCBA and appropriate PPE	Match	5.3.9*(B)*1	90.91%	79.41%
73	326	Climb through windows and openings while wearing SCBA and appropriate PPE	IOS		90.91%	74.29%
74	331	Climb stairs while wearing PPE and carrying equipment while wearing SCBA and appropriate PPE	IOS		90.91%	65.71%
75	19	Collaborate with other firefighters, supervisors and other firefighter companies to conduct firefighting and rescue operations.	Match	6.3.2*4	90.79%	48.68%
76	57	Operate Defibrillator (AED).	IOS		90.57%	83.02%
77	285	**First Responder:** Collars, backboard, dressings, AED, stethoscope, Stokes basket, airway adjuncts	IOS		90.48%	90.48%
78	13	Assess fire conditions to ensure proper fire suppression agent is used.	Match	6.3.2*(A)	90.41%	55.41%
79	293	Perform all fireground tasks wearing full turnout gear (coat, bunker pants, boots, helmet, gloves and hood) and SCBA	Match	5.1.2	90.24%	82.93%
80	94	Determine the stability of supporting surfaces such as roofs and fire escapes.	Match	5.3.12*2	90.20%	71.15%
81	295	Perform in extreme heat and cold conditions	IOS		90.00%	80.49%
82	50	Ensure respiratory protection is not compromised.	NFPA	5.3.9*(A)6	90.00%	76.67%
83	29	Safely remove persons from entrapments.	Match	5.3.9*5	90.00%	65.00%
84	218	Take and complete course work required to obtain medical certifications.	IOS		90.00%	61.90%
85	42	Systematically search for trapped persons.	Match	5.3.9*1b	89.83%	79.31%
86	307	Drag unconscious human victims and/or firefighters out of dangerous environments	IOS		89.47%	71.79%
87	308	Carry unconscious or injured victims and/or firefighters out of dangerous conditions	IOS		89.47%	69.23%
88	81	Position and climb ladders to gain access to upper levels of buildings or to rescue individuals from burning structures.	Match	5.3.6*3	89.36%	72.92%
89	143	Face the cylinder during approach and retreat.	NFPA	6.3.3*7	89.29%	75.00%
90	318	Hold and operate gas-powered saws and hydraulic tools	Match	5.3.4*(B)1b	89.19%	57.89%
91	70	Operate pumps connected to hoses.	Match	5.3.15*1	88.68%	47.27%
92	55	Control bleeding and bandage wounds.	IOS		88.46%	75.00%
93	66	Properly utilize emergency equipment and supplies.	IOS		88.46%	64.15%
94	124	Enter smoky buildings and rooms with a hose in hand while wearing SCBA.	Match	5.3.10*1	88.24%	88.24%
95	27	Interact with victims or causalities who have sustained severe or life-ending injuries.	IOS		88.14%	48.33%
96	64	Lift a patient into a bed/onto a stretcher; carry patient through tight quarters and down flights of stairs using a stair chair or Reeve stretcher; carry patient to ambulance.	IOS		88.00%	58.00%
97	209	Participate in ongoing training drills to develop and maintain proficiency (e.g., HAZ-MAT, search and rescue operations, SCBA and air management, automobile extrication, rapid intervention team (RIT) training, etc.).	IOS		88.00%	40.74%
98	15	Safely shut off utility services to buildings in emergency situations (e.g., electrical and gas valves).	Match	5.3.18	87.67%	55.56%

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Rank	Item#	Task	Origin	NFPA Code	% Essential	RUAD
99	188	Search for missing persons not accounted for.	Match	5.3.9*(A)4	87.50%	70.83%
100	184	Inspect fire sites after flames have been extinguished to ensure that there is no further danger.	Match	5.3.8*(B)	87.50%	54.17%
101	32	Carry victim(s) via ladders wearing appropriate PPE.	Match	5.3.9*(A)1b	87.04%	80.00%
102	52	Administer first aid to injured persons.	IOS		87.04%	75.93%
103	282	**Ladders:** Aluminum ladders, extension ladders, roof ladders, A-Frame ladders	IOS		86.96%	70.83%
104	283	**Power Equipment:** Chain saws, circular saws, K-12 saws, reciprocating saws, electric/hydraulic generators	Match	6.4.1*(A)3b	86.96%	58.33%
105	301	Operate in confined areas	IOS		86.84%	58.97%
106	12	Assess the color, location and movement of smoke.	IOS		86.67%	53.33%
107	122	Continue to monitor fire suppression and adjust suppression tactics to extinguish fire and prevent the extension of the fire.	Match	6.3.2*5	86.67%	50.00%
108	316	Connect hoseline sections using a spanner tool	IOS		86.49%	81.58%
109	322	Extend ground ladders using halyard	IOS		86.49%	78.95%
110	51	Choose and apply appropriate techniques for opening or removing trunks, engine compartments, vehicle roofs, doors, windshields, windows, steering wheels or columns, and dashboards.	NFPA	6.4.1*(B)3	86.44%	47.46%
111	200	Designate work zones for safe operation at emergency scenes.	NFPA	5.3.3*(A)4	85.71%	61.90%
112	83	Identify proper ladder locations to allow access to upper levels of buildings or to ensure proper evacuation of fire personnel.	Match	5.3.9*3	85.42%	69.39%
113	168	Exit a hazardous area as a team.	NFPA	5.3.5*	85.19%	66.67%
114	281	**Hydraulic Rescue Tools:** Spreaders, cutters, Jaws of Life, rams, air bags	IOS		85.00%	42.86%
115	10	Check the wind direction in relation to the fire or HAZ-MAT scene.	IOS		84.93%	64.38%
116	112	Feed charged hose line of a diameter between 1¾ to 2½ inches to attacking firefighter units.	IOS		84.85%	69.70%
117	108	Remove kinks in charged supply line by lifting and/or turning hose so that water flow is not obstructed.	IOS		84.85%	54.55%
118	61	Administer appropriate oxygen flow to patients.	IOS		84.62%	73.08%
119	95	Cut openings in roof with a fire axe or power saw (e.g., K-12 saw) for ventilation or examination.	Match	5.3.12(B)3	84.31%	59.62%
120	44	Assess risk/benefit of rescue and relay to company officer.	Match	6.4.2*(A)2	84.31%	52.94%
121	230	Maintain professional appearance and personal hygiene in accordance with regulations.	IOS		84.21%	55.00%
122	34	Evacuate persons from a fire area.	Match	5.2.4*(A)	83.93%	64.29%
123	315	Open a hydrant valve or hydrant cap using a hydrant wrench	IOS		83.78%	73.68%
124	305	Lift and transfer victims from ground to stretcher with assistance	IOS		83.78%	44.74%
125	157	Recognize hazards associated with an automobile fire.	NFPA	5.3.7*(A)5	83.33%	65.52%
126	150	Anticipate the injuries which could result from common types of accidents.	NFPA	5.3.10*(A)7	83.33%	58.33%
127	148	Prevent water hammers when shutting down nozzles.	NFPA	5.3.10*(B)1	82.76%	86.21%
128	152	Follow precautions when advancing hose lines to a fire.	NFPA	5.3.10*(A)2	82.76%	79.31%
129	138	Control a flammable gas cylinder fire.	NFPA	6.3.3*1	82.76%	75.86%
130	137	Communicate and manage search, rescue, and ventilation requirements.	NFPA	6.3.2*6	82.76%	51.72%
131	216	Read, comprehend and retain information from training materials (e.g., text books and manuals).	IOS		82.61%	52.00%
132	296	Perform operations in inclement weather	IOS		82.50%	56.10%
133	105	Make and unmake coupling connections.	Match	5.3.10*(B)8	82.35%	82.35%
134	107	Advance and fully extend a pre-connected, charged or uncharged hose of a diameter between 1¾ to 2½ inches.	Match	5.3.7*(B)5	82.35%	73.53%
135	118	While assisted, hold a charged 2½ inch hose and open the nozzle.	IOS		82.35%	68.57%

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Rank	Item#	Task	Origin	NFPA Code	% Essential	RUAD
136	116	Determine the correct spray pattern based upon fire scene (e.g., solid stream, hollow cone, full cone, fog stream, etc.).	Match	5.3.10*(B)3	82.35%	60.00%
137	273	**Blocks or pulleys:** Block and tackle equipment, pulleys, riggings, carabiners, anchors, straps, ropes	IOS		82.35%	41.18%
138	151	Prevent exposure to products of combustion.	NFPA	5.3.10*(A)5	82.14%	85.19%
139	54	Gather information from patient or family member regarding medical history.	IOS		82.00%	66.00%
140	33	Drag or carry victim(s) up or down stairs wearing appropriate PPE.	IOS		81.82%	72.73%
141	103	Pull the supply line from an engine to a hydrant.	Match	5.3.15*(B)1	81.82%	65.71%
142	190	Secure the fire scene.	Match	5.3.13(A)5	81.82%	63.64%
143	123	Move toward the source of a fire using knowledge of types of fires, construction design, building materials and physical layout of properties.	Match	5.3.12(A)	81.82%	51.52%
144	226	Write descriptions of situations in medical reports, including details of symptoms, actions taken, etc.	IOS		81.82%	45.45%
145	82	Determine the size and type of ladders required.	Match	5.3.6*1	81.63%	64.00%
146	309	Remove heavy equipment from apparatus compartments	IOS		81.58%	58.97%
147	162	Respond to the release or potential release of hazardous material according to outlined protocols.	IOS		81.48%	62.96%
148	49	Recognize and manage psychological effects resulting from operating in obscured conditions.	NFPA	5.3.9*(A)2	81.48%	57.41%
149	96	Remove ceiling materials, such as plaster and lath, sheet rock, ceiling tiles and insulation by poking from above with pike pole or axe so that smoke and hot gases can escape.	Match	5.3.12*3	81.13%	59.26%
150	319	Lift, swing and strike targets using sledge hammers and axes	Match	5.3.4*(B)2	81.08%	60.53%
151	191	Monitor the air for harmful toxins.	IOS		80.95%	66.67%
152	303	Lift and carry a stretcher/gurney with assistance	IOS		80.56%	45.95%
153	59	Immobilize painful, swollen, or deformed extremities.	IOS		80.39%	74.51%
154	139	Identify the contents of cylinder.	NFPA	6.3.3*2	80.00%	76.67%
155	100	Retreat from the area as a team when ventilation is accomplished.	NFPA	5.3.12*4	80.00%	62.00%
156	104	Wrap a hose around functioning hydrant, unscrew the hydrant cap, screw the hose connection to the hydrant and turn on the hydrant (i.e., catch the plug).	Match	5.3.15*(B)5	79.41%	76.47%
157	126	Select the correct tool or equipment for various firefighting maneuvers.	Match	5.3.8*(A)2	79.41%	70.59%
158	65	Monitor and provide needed care when transporting a patient to a medical facility.	IOS		79.41%	62.86%
159	110	Connect multiple small lines (example: 50-foot) and extend them to reach fire when required.	IOS		79.41%	61.76%
160	144	Maintain correct body posture during attack operations.	NFPA	5.3.10*5	79.31%	79.31%
161	154	Use appropriate water application methods for exposure protection and fire extinguishment.	NFPA	5.3.8*(A)4	79.31%	65.52%
162	329	Climb to the top and back down aerial ladders/buckets/baskets/platforms while wearing SCBA and appropriate PPE	IOS		79.31%	54.84%
163	182	Perform overhaul and salvage operations.	Match	5.3.13.1	79.17%	62.50%
164	280	**Ropes & Webbing**	IOS		78.95%	65.00%
165	91	Create openings in buildings for ventilation or entrance using axes, chisels, crowbars, power saws or core cutters.	Match	5.3.12*1	78.85%	66.04%
166	328	Climb to the top and back down ground ladders while wearing SCBA and appropriate PPE	IOS		78.79%	71.43%
167	311	Individually drag charged 2 ½ inch hoseline	IOS		78.38%	68.42%
168	199	Recognize and communicate dangers associated with overhaul.	NFPA	5.3.13(A)4	78.26%	65.22%
169	92	Remove equipment from truck and start power tools.	Match	5.3.12(B)1a	77.78%	49.09%
170	222	Read, comprehend and retain information of NFPA 1500, Standard on Fire	NFPA	5.1.1.6	77.27%	52.17%

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Rank	Item#	Task	Origin	NFPA Code	% Essential	RUAD
		Department Occupational Safety and Health Program				
171	**129**	Use other senses to find the source of a fire when you cannot see.	**IOS**		76.47%	58.82%
172	**183**	Check for fire extension or hotspots using thermal imaging camera.	**IOS**		76.19%	66.67%
173	**58**	Use airway adjuncts.	**IOS**		76.09%	69.57%
174	**223**	Participate in life safety initiatives in support of the fire department mission and to reduce firefighter line-of-duty injuries and fatalities.	**NFPA**	5.1.1.2	76.00%	51.85%
175	**140**	Close cylinder valves.	**NFPA**	6.3.3*4	75.86%	65.52%
176	**136**	Communicate attack techniques to the attack teams	**NFPA**	6.3.2*3	75.86%	44.83%
177	**306**	Carry heavy equipment and tools for extended distances	**IOS**		75.68%	57.89%
178	**72**	Calculate and/or estimate friction loss rates or other pertinent values.	**IOS**		75.51%	40.82%
179	**176**	Place a smoke ejector in strategic locations throughout the fire scene to aid in proper ventilation and smoke removal.	**Match**	5.3.11.2	75.00%	70.83%
180	**128**	Fight fires for prolonged periods of time in extreme temperatures.	**IOS**		75.00%	53.13%
181	**327**	Crawl along ceiling joists and rafters while wearing SCBA and appropriate PPE	**IOS**		75.00%	50.00%
182	**11**	Assess the potential effects of weather on emergency response.	**Match**	5.3.3*(A)2	75.00%	48.61%
183	**206**	Clearly and accurately communicate patient information and care to medical staff.	**IOS**		75.00%	47.06%
184	**7**	Perform tasks only in established, protected work areas.	**NFPA**	5.3.3*4	74.19%	45.90%
185	**169**	Extinguish an ignitable liquid fire.	**NFPA**	6.3.1*1	74.07%	81.48%
186	**189**	Preserve evidence at fire scene.	**Match**	6.3.4*	73.91%	82.61%
187	**86**	Raise a 24-foot extension ladder and extend the fly section of that ladder.	**IOS**		73.47%	72.00%
188	**130**	Carry equipment up stairs while wearing PPE gear and SCBA.	**IOS**		72.73%	60.61%
189	**40**	Gather information (e.g., bystanders, neighbors, family members) about probable victim locations and/or building floor plans.	**IOS**		72.73%	52.73%
190	**60**	Appropriately control patients who are hysterical, mentally disturbed, or in an altered state of consciousness that require medical attention.	**IOS**		72.34%	56.25%
191	**121**	Operate a charged hose line from confined spaces and direct spray at fire.	**Match**	5.3.10*(B)4b	71.88%	62.50%
192	**45**	Tie knots to a hose line, ladder, or other object as necessary during a large area search.	**Match**	5.3.20	71.43%	71.43%
193	**141**	Eliminate leaking gas and then extinguish fire.	**NFPA**	6.3.3*5	71.43%	60.71%
194	**164**	Apply a foam blanket or other suppressants.	**Match**	6.3.1*3	71.43%	53.57%
195	**205**	Clearly and accurately communicate patient information, assessment and treatment via radio on route to a medical facility.	**IOS**		71.43%	50.00%
196	**142**	Evaluate the cylinder integrity and ensure cylinder has cooled.	**NFPA**	6.3.3*6	70.83%	58.33%
197	**323**	Hoist equipment using a rope	**Match**	5.3.12(B)2	70.27%	60.53%
198	**159**	Ensure complete extinguishment of stacked and piled materials.	**NFPA**	5.3.8*(A)3	70.00%	55.17%
199	**88**	With assistance, carry extension ladders (24-foot, 35-foot) from truck to incident scene.	**IOS**		68.09%	70.83%
200	**87**	With assistance, raise a 35-foot extension ladder and extend the fly section of that ladder.	**IOS**		67.65%	71.43%
201	**93**	Use equipment (e.g., swing axe or sledge hammer) to make forcible entries.	**Match**	5.3.4*	67.31%	62.26%
202	**171**	Take corrective measures to rectify poor foam generation.	**NFPA**	6.3.1*(A)1	66.67%	45.83%
203	**131**	Climb obstacles while wearing PPE and SCBA.	**IOS**		65.63%	50.00%
204	**145**	Extinguish fires in exterior Class A materials, given fires in stacked or piled and small unattached structures or storage containers.	**NFPA**	5.3.8*	65.52%	82.76%
205	**25**	Assist at a water rescue (e.g., swollen rivers, frozen lakes).	**IOS**		64.91%	40.35%
206	**300**	Operate at high elevations	**IOS**		64.86%	47.37%
207	**134**	Operate a fire extinguisher by carrying it to objective, aiming and discharging at seat of fire or spill.	**Match**	5.3.16*	64.71%	72.73%

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Rank	Item#	Task	Origin	NFPA Code	% Essential	RUAD
208	119	Operate a charged hose line from elevated positions and direct spray at fire.	Match	5.3.10*(B)7	64.52%	50.00%
209	156	Choose attack and control techniques for grade level and above and below grade level fires.	NFPA	6.3.2*2	64.29%	60.71%
210	158	Apply appropriate attack lines and water streams for stacked, piled materials and outdoor fires.	NFPA	5.3.8*(A)1	63.33%	68.97%
211	197	Perform horizontal ventilation on a structure, so that the ventilation openings are free of obstructions.	NFPA	5.3.11.1	62.50%	79.17%
212	120	While on a ladder, operate and direct spray at fire.	Match	5.3.10*(B)4a	62.50%	63.64%
213	175	Protect property from water and smoke using waterproof salvage covers and/or smoke ejectors (i.e., powered fans).	Match	5.3.14(A)1	62.50%	62.50%
214	75	Calculate foam amounts.	Match	6.3.1*2	62.50%	43.75%
215	90	Lower ground ladders and stow them onto the truck.	IOS		60.00%	66.67%
216	297	Walk long distances in full turnout gear	IOS		59.46%	57.89%
217	217	Successfully complete and pass written exams that test coursework learning and training objectives.	IOS		59.09%	50.00%
218	166	Conduct a decontamination setup.	IOS		57.69%	57.69%
219	195	Remove flooring, ceiling, and wall components to expose void spaces without compromising structural integrity.	NFPA	5.3.13.3	57.14%	80.95%
220	198	Recognize points of strength and weakness in auto body construction.	NFPA	6.4.1*(A)2	57.14%	61.90%
221	89	Climb an aerial ladder to a height up to 100 feet while wearing PPE equipment.	IOS		56.25%	50.00%
222	99	Properly knot and tie rope to hoist equipment weighing up to 50 pounds to upper levels.	Match	5.3.20(A)	55.10%	68.00%
223	193	Overhaul all vehicle compartments.	NFPA	5.3.7*3	55.00%	50.00%
224	149	Replace burst hose sections.	NFPA	5.3.10*(B)6	51.72%	58.62%
225	174	Use fog nozzles or foam nozzles depending on situation.	NFPA	6.3.1*(A)4	50.00%	57.69%
226	172	Use the appropriate concentrates on hydrocarbon and polar solvent fuels.	NFPA	6.3.1*(A)2	50.00%	45.00%
227	177	Gather furniture into an appropriate location and protect it with salvage covers.	Match	5.3.14(B)1	39.13%	56.52%
228	115	Calculate the height of a building in feet from its floors.	IOS		36.67%	50.00%
229	194	Stop the flow of water from building sprinkler with sprinkler wedges or stoppers.	NFPA	5.3.14(B)6	36.36%	63.64%
230	178	Place salvage covers over lower floors to prevent unnecessary damage.	Match	5.3.13(B)4	28.57%	47.62%
231	173	Reduce or avoid hazards associated with firefighting foams.	NFPA	6.3.1*(A)3	28.00%	56.00%

Rank	Item #	KSAO	Origin	Import.	RUAD
1	448	Knowledge of the components of personal protective equipment	TEXT	4.77	96.00%
2	397	**Integrity:** Being honest and ethical, especially in situations where others could be taken advantage of.	IOS	4.76	94.44%
3	450	Knowledge of cardiopulmonary resuscitation (CPR)	TEXT	4.62	88.00%
4	393	**Ethics.** Acting in an honest and fair manner. Willingness to accept responsibility for actions when things go wrong. Displaying a high degree of integrity and professionalism in action and word**.**	IOS	4.62	86.11%
5	392	**Dependability:** Being reliable, responsible and dependable and fulfilling obligations.	IOS	4.57	94.44%
6	399	**Self-Control:** Maintaining composure, keeping emotions in check, controlling anger and avoiding aggressive behavior, even in very difficult situations.	IOS	4.57	83.33%
7	454	Knowledge of Body Substance Isolation (BSI) or infection control precautions	TEXT	4.54	88.00%
8	402	**Stress Tolerance:** Accepting criticism and dealing calmly and effectively with high stress situations.	IOS	4.54	75.00%
9	455	Knowledge of methods to prevent and/or reduce the effects of heat exposure while wearing protective clothing	TEXT	4.50	80.00%
10	340	**Oral Comprehension:** The ability to listen to and understand information and ideas presented through spoken words and sentences.	IOS	4.36	63.64%

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Rank	Item #	KSAO	Origin	Import.	RUAD
11	452	Knowledge of the types and states of shock of victims and/or other fire personnel	TEXT	4.35	76.00%
12	374	**Composure**: Working under stress and performing in unpleasant or traumatic circumstances.	IOS	4.33	43.33%
13	401	**Social/Teamwork Orientation:** Preferring to work with others rather than alone, and being personally connected with others on the job. The ability to work with others (teamwork) to achieve a mutual end.	IOS	4.32	75.00%
14	453	Knowledge of methods to managing shock of victims and/or other fire personnel	TEXT	4.31	72.00%
15	372	**Oral Communication**: Speaking in a clear, concise, understandable and appropriate manner.	IOS	4.29	60.71%
16	421	Knowledge of search operations	TEXT	4.29	60.00%
17	451	Knowledge of scene safety considerations as hazardous materials incidents and rescue operations	TEXT	4.28	79.17%
18	422	Knowledge of rescue operations	TEXT	4.26	63.33%
19	423	Knowledge of extrication operations	TEXT	4.26	60.00%
20	369	**Decision-Making**: Understanding when a decision must be made and to have the willingness to make a decision. Quickly and efficiently determining an appropriate course of action to target a particular situation.	IOS	4.24	41.38%
21	456	Knowledge of the main routes through which hazardous materials can enter the body	TEXT	4.23	76.00%
22	403	Knowledge of motor vehicle rules and regulations.	IOS	4.23	66.67%
23	342	**Oral Expression:** The ability to communicate information and ideas in speaking so others will understand.	IOS	4.21	50.00%
24	389	**Attention to Detail:** Being careful about detail and thorough in completing work tasks.	IOS	4.19	61.11%
25	477	Principles of fire streams as they relate to fighting automobile fires	NFPA	4.16	73.91%
26	476	Knowledge of personnel accountability systems and communication procedures	NFPA	4.16	70.83%
27	474	Knowledge of personnel accountability systems, emergency communication procedures, and emergency evacuation methods.	NFPA	4.16	66.67%
28	379	**Operation and Control:** Watching gauges, dials or other indicators to make sure a machine is working properly.	IOS	4.16	44.00%
29	457	Knowledge of the clues which indicate the presence of hazardous materials	TEXT	4.15	72.00%
30	417	Knowledge of the strengths and weaknesses associated with different types of building construction types	TEXT	4.13	66.67%
31	415	Knowledge of Fire Control Theory: temperature reduction, fuel removal, oxygen exclusion, and chemical flame inhibition	TEXT	4.10	80.00%
32	404	Knowledge of common hand tools, such as wrenches, pliers, screw drivers, hammers and mauls, axes, prying tools, etc., e.g., their use, operation, limits and safety precautions/procedures.	IOS	4.10	46.67%
33	471	Knowledge of procedures for reporting an emergency; departmental SOPs for taking and receiving alarms, radio codes, or procedures; and information needs of dispatch center.	NFPA	4.09	66.67%
34	449	Knowledge of the physiological aspects of stress	TEXT	4.08	69.57%
35	465	Knowledge of the role of the Fire Fighter I in the organization	NFPA	4.08	66.67%
36	443	Knowledge of necessary skills for fire department communications	TEXT	4.07	60.00%
37	357	**Stamina:** The ability to exert yourself physically over long periods of time without getting winded or out of breath.	IOS	4.06	59.38%
38	391	**Cooperation:** Being pleasant with others on the job and displaying a good-natured, cooperative attitude.	IOS	4.05	69.44%
39	466	Knowledge of the mission of fire service	NFPA	4.04	75.00%
40	413	Knowledge of common products of combustion and their toxic effects	TEXT	4.03	80.00%
41	412	Knowledge of heat transmission and the mechanisms by which heat transfer occurs: conduction, convection, and radiation	TEXT	4.03	76.67%
42	420	Knowledge of types of ladders	TEXT	4.03	73.33%
43	480	Knowledge of the characteristics of pressurized flammable gases	NFPA	4.00	79.17%
44	363	**Auditory Attention:** The ability to focus on a single source of sound in the presence of other distracting sounds. (Example: Focusing on your PASS device in a chaotic environment).	IOS	4.00	72.73%
45	381	**Judgment and Decision Making:** Considering the relative costs and benefits of potential actions to choose the most appropriate one.	IOS	4.00	50.00%
46	333	**Deductive Reasoning:** The ability to apply general rules to specific problems to produce answers that make sense. (Example: Interpretation of SOPs and SOGs).	IOS	4.00	45.45%
47	458	Knowledge of chemical attack indicators	TEXT	4.00	45.00%
48	414	Knowledge of classification of fires: class A, B, C, D, and K fires	TEXT	3.97	75.86%
49	390	**Concern for Others:** Being sensitive to others' needs and feelings and being understanding and helpful on the job. Showing compassion for others.	IOS	3.97	72.22%
50	416	Knowledge of common materials found in building construction	TEXT	3.97	63.33%

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Rank	Item #	KSAO	Origin	Import.	RUAD
51	435	Knowledge of direct attacks	TEXT	3.96	80.77%
52	461	Knowledge of hazard-control zones	TEXT	3.96	73.91%
53	426	Knowledge of forcible entry methods	TEXT	3.96	69.23%
54	368	**Problem-Solving:** Determining courses of action/solutions to problems. Implementing targeted solutions.	IOS	3.96	46.15%
55	343	**Problem Sensitivity:** The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.	IOS	3.94	42.42%
56	425	Knowledge of victim removal methods	TEXT	3.93	73.08%
57	349	**Reaction Time:** The ability to quickly respond (with the hand, finger or foot) to a signal (sound, light, picture) when it appears.	IOS	3.93	70.00%
58	440	Knowledge of hidden fire indicators	TEXT	3.93	65.38%
59	459	Knowledge of incident priorities at all HAZMAT and terrorist incidents	TEXT	3.91	54.55%
60	345	**Spatial Orientation:** The ability to know your location in relation to the environment or to know where other objects are in relation to you.	IOS	3.91	50.00%
61	409	Knowledge of the science behind fire propagation	TEXT	3.90	68.97%
62	367	**Problem Analysis:** Quickly perceiving problem areas, identifying options and the potential impact of various solutions.	IOS	3.90	48.28%
63	436	Knowledge of indirect attacks	TEXT	3.89	76.92%
64	398	**Persistence:** In the face of obstacles, one continues to engage to overcome the obstacle.	IOS	3.89	50.00%
65	371	**Interpersonal Skill**: Listening to others and being considerate of the concerns of others.	IOS	3.89	48.15%
66	427	Knowledge of ventilation methods	TEXT	3.86	69.23%
67	418	Knowledge of types of extinguishers and their common uses	TEXT	3.84	73.33%
68	362	**Depth Perception:** The ability to judge which of several objects is closer or farther away from you, or to judge the distance between you and an object. (Example: Placement of aerial).	IOS	3.84	67.74%
69	395	**Initiative:** Willingness to take on responsibilities and challenges.	IOS	3.84	61.11%
70	360	**Trunk Strength:** The ability to use your abdominal and lower back muscles to support part of the body repeatedly or continuously over time without 'giving out' or fatiguing.	IOS	3.83	70.00%
71	376	**Critical Thinking:** Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.	IOS	3.82	39.29%
72	446	Knowledge of common fire hazards	TEXT	3.79	57.69%
73	344	**Selective Attention:** The ability to concentrate on a task over a period of time without being distracted. (Example: Being the only pump operator on-duty).	IOS	3.79	45.45%
74	400	**Service Orientation:** Actively looking for ways to help people; a desire to place others' interests ahead of your own; showing compassion for others.	IOS	3.76	66.67%
75	355	**Static Strength:** The ability to exert maximum muscle force to lift, push, pull or carry objects.	IOS	3.76	63.64%
76	437	Knowledge of combination attacks	TEXT	3.75	76.92%
77	428	Knowledge of types of hydrants and alternative water supplies	TEXT	3.75	69.23%
78	347	**Written Comprehension:** The ability to read and understand information and ideas presented in writing.	IOS	3.75	62.50%
79	462	Knowledge of defensive confinement and spill control actions	TEXT	3.75	60.87%
80	385	**Public Relations Skill:** Dealing with the public in such a way as to protect the image and reputation of the department while providing the public or individuals with necessary or requested information.	IOS	3.75	35.71%
81	359	**Dynamic Strength:** The ability to exert muscle force repeatedly or continuously over time. This involves muscular endurance and resistance to muscle fatigue.	IOS	3.73	70.00%
82	336	**Information Ordering:** The ability to arrange things or actions in a certain order or pattern according to a specific rule or set of rules (e.g., patterns of numbers, letters, words, pictures, mathematical operations). (Example: Using SOPs to follow procedures for hoseline operation).	IOS	3.73	42.42%
83	361	**Extent Flexibility:** The ability to bend, stretch, twist or reach with your body, arms and/or legs.	IOS	3.71	74.19%
84	365	**Gross Body Equilibrium:** The ability to keep or regain your body balance or stay upright when in an unstable position. (Example: Gusting winds while firefighting from the aerial ladder).	IOS	3.71	70.97%
85	370	**Planning and Organization**: Skill in establishing a course of action for oneself and others to accomplish goals. Skill in properly planning assignments, work duties and tasks; appropriate allocation of resources to ensure efficient, timely and smooth department operations.	IOS	3.71	37.50%
86	335	**Inductive Reasoning:** The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events). (Example: Reading the various clues	IOS	3.70	42.42%

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Rank	Item #	KSAO	Origin	Import.	RUAD
		of smoke/heat to reach a decision regarding the extent of fire).			
87	460	Knowledge of types of decontamination	TEXT	3.68	58.33%
88	373	**Self-Motivation**: Working without supervision and accomplishing tasks without prodding.	IOS	3.68	57.14%
89	358	**Near Vision:** The ability to see details at close range (within a few feet of the observer).	IOS	3.67	76.67%
90	351	**Manual Dexterity:** The ability to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate or assemble objects.	IOS	3.67	70.00%
91	364	**Gross Body Coordination:** The ability to coordinate the movement of your arms, legs and torso together when the whole body is in motion.	IOS	3.65	80.65%
92	352	**Multi-limb Coordination:** The ability to coordinate two or more limbs (for example, two arms, two legs, or one leg and one arm) while sitting, standing or lying down. It does not involve performing the activities while the whole body is in motion.	IOS	3.65	73.08%
93	354	**Rate Control:** The ability to time your movements or the movement of a piece of equipment in anticipation of changes in the speed and/or direction of a moving object or scene. (Example: Controlling for water hammer).	IOS	3.63	53.13%
94	411	Knowledge of common heat energy sources: chemical, electrical, and mechanical energy	TEXT	3.58	63.33%
95	470	Knowledge of the critical aspects of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program.	NFPA	3.54	78.26%
96	353	**Response Orientation:** The ability to choose quickly between two or more movements in response to two or more different signals (lights, sounds, pictures). It includes the speed with which the correct response is started with the hand, foot or other body part.	IOS	3.54	75.00%
97	350	**Arm-Hand Steadiness:** The ability to keep your hand and arm steady while moving your arm or while holding your arm and hand in one position. (Example: Operating power tools for extrication).	IOS	3.52	48.39%
98	366	**Far Vision:** The ability to see details at a distance.	IOS	3.48	72.73%
99	419	Knowledge of types of knots, ropes, and webbing materials	TEXT	3.48	63.33%
100	424	Knowledge of types of carries	TEXT	3.47	65.52%
101	337	**Mathematical Reasoning:** The ability to choose the right mathematical methods or formulas to solve a problem. (Example: Friction loss, ladder or hose length calculation).	IOS	3.47	40.63%
102	405	Knowledge of basic science terms and concepts, e.g., force, gravity, pressure, vacuum, etc.	IOS	3.45	42.86%
103	387	**Achievement/Effort:** Establishing and maintaining personally challenging achievement goals and exerting effort toward mastering tasks.	IOS	3.44	41.67%
104	332	**Basic Arithmetic**: Ability to perform mathematical operations, such as counting, addition, subtraction, multiplication and division.	IOS	3.43	73.33%
105	441	Knowledge of evidence protection methods	TEXT	3.43	57.69%
106	432	Knowledge of friction loss, elevation loss/gain, and water hammers	TEXT	3.43	53.85%
107	407	Knowledge of basic mechanical principles, e.g., leverage, gears, pulleys, screws, etc.	IOS	3.43	44.83%
108	429	Knowledge of methods of moving water in a system	TEXT	3.42	54.55%
109	394	**Independence:** Developing one's own ways of doing things, guiding oneself with little or no supervision and depending on oneself to get things done.	IOS	3.40	41.38%
110	464	Knowledge of the organization of the fire department	NFPA	3.36	58.33%
111	463	Knowledge of factors to address during large-scale evacuations	TEXT	3.36	52.38%
112	434	Knowledge of foam techniques	TEXT	3.36	50.00%
113	433	Knowledge of size classifications of fire streams	TEXT	3.33	68.00%
114	339	**Number Facility:** The ability to add, subtract, multiply or divide quickly and correctly.	IOS	3.26	41.94%
115	442	Knowledge of procedures the public should use to report a fire or other emergency	TEXT	3.23	54.17%
116	479	Knowledge of the methods to assess the origin and cause of fires.	NFPA	3.23	47.62%
117	439	Knowledge of overhaul operations	TEXT	3.21	57.69%
118	431	Knowledge of common hose rolls	TEXT	3.18	65.38%
119	438	Knowledge of salvage operations	TEXT	3.11	53.85%

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Appendix O: Results of Significance Test Analysis of RUAD variable by Position

	CAREER				VOLUNTEER						
	RUAD		Not RUAD		RUAD		Not RUAD			*Chi-Square*	Standard Deviations
Item #	Observed	Expected	Observed	Expected	Observed	Expected	Observed	Expected	#		
1	222	223.18	254	252.82	34	32.82	36	37.18	RUAD1	**0.09**	0.303
2	417	415.69	127	128.31	56	57.31	19	17.69	RUAD2	**0.14**	0.380
3	394	394.11	149	148.89	56	55.89	21	21.11	RUAD3	**0.00**	0.031
4	483	473.81	60	69.19	58	67.19	19	9.81	RUAD4	**11.26**	**3.356**
5	516	507.50	23	31.50	64	72.50	13	4.50	RUAD5	**19.49**	**4.415**
6	374	366.06	165	172.94	43	50.94	32	24.06	RUAD6	**4.39**	2.095
7	222	219.38	215	217.62	28	30.62	33	30.38	RUAD7	**0.51**	0.717
8	216	225.75	302	292.25	42	32.25	32	41.75	RUAD8	**5.97**	2.444
9	269	272.15	263	259.85	41	37.85	33	36.15	RUAD9	**0.61**	0.781
10	248	257.93	260	250.07	47	37.07	26	35.93	RUAD10	**6.19**	2.487
11	188	194.98	313	306.02	35	28.02	37	43.98	RUAD11	**3.25**	1.804
12	248	252.00	277	273.00	40	36.00	35	39.00	RUAD12	**0.98**	0.988
13	286	285.13	218	218.87	41	41.87	33	32.13	RUAD13	**0.05**	0.217
14	315	316.63	206	204.37	46	44.37	27	28.63	RUAD14	**0.18**	0.418
15	248	252.91	271	266.09	40	35.09	32	36.91	RUAD15	**1.53**	1.236
16	196	203.17	308	300.83	37	29.83	37	44.17	RUAD16	**3.31**	1.820
17	236	242.26	273	266.74	41	34.74	32	38.26	RUAD17	**2.46**	1.568
18	295	297.08	231	228.92	45	42.92	31	33.08	RUAD18	**0.26**	0.514
19	272	269.73	250	252.27	37	39.27	39	36.73	RUAD19	**0.31**	0.558
20	168	173.65	339	333.35	31	25.35	43	48.65	RUAD20	**2.20**	1.483
21	340	338.31	192	193.69	46	47.69	29	27.31	RUAD21	**0.19**	0.434
22	187	187.50	287	286.50	27	26.50	40	40.50	RUAD22	**0.02**	0.133
23	331	338.10	188	180.90	54	46.90	18	25.10	RUAD23	**3.51**	1.873
24	358	354.20	83	86.80	46	49.80	16	12.20	RUAD24	**1.68**	1.295
25	124	128.42	270	265.58	23	18.58	34	38.42	RUAD25	**1.79**	1.337
27	203	203.59	227	226.41	29	28.41	31	31.59	RUAD27	**0.03**	0.163
28	143	145.28	277	274.72	22	19.72	35	37.28	RUAD28	**0.46**	0.677
29	279	279.84	161	160.16	39	38.16	21	21.84	RUAD29	**0.06**	0.240
30	336	333.13	102	104.87	42	44.87	17	14.13	RUAD30	**0.87**	0.934
31	372	368.38	66	69.62	46	49.62	13	9.38	RUAD31	**1.89**	1.374
32	350	349.78	85	85.22	44	44.22	11	10.78	RUAD32	**0.01**	0.081
33	351	347.02	83	86.98	40	43.98	15	11.02	RUAD33	**2.02**	1.422
34	302	299.45	133	135.55	36	38.55	20	17.45	RUAD34	**0.61**	0.782
35	300	298.07	137	138.93	39	40.93	21	19.07	RUAD35	**0.32**	0.569
36	283	282.89	151	151.11	39	39.11	21	20.89	RUAD36	**0.00**	0.032
37	191	197.19	206	199.81	35	28.81	23	29.19	RUAD37	**3.03**	1.741
38	269	269.38	165	164.62	37	36.62	22	22.38	RUAD38	**0.01**	0.108
39	369	368.24	69	69.76	48	48.76	10	9.24	RUAD39	**0.08**	0.291
40	193	194.44	195	193.56	29	27.56	26	27.44	RUAD40	**0.17**	0.414
41	385	382.48	53	55.52	49	51.52	10	7.48	RUAD41	**1.10**	1.051
42	373	369.91	64	67.09	46	49.09	12	8.91	RUAD42	**1.44**	1.200
43	59	62.97	247	243.03	12	8.03	27	30.97	RUAD43	**2.79**	1.671
44	165	169.33	216	211.67	27	22.67	24	28.33	RUAD44	**1.69**	1.300
45	319	317.46	109	110.54	40	41.54	16	14.46	RUAD45	**0.25**	0.499
46	344	338.14	87	92.86	42	47.86	19	13.14	RUAD46	**3.80**	1.949
47	361	357.71	76	79.29	45	48.29	14	10.71	RUAD47	**1.41**	1.186
48	347	345.18	88	89.82	45	46.82	14	12.18	RUAD48	**0.39**	0.623
49	238	237.14	164	164.86	31	31.86	23	22.14	RUAD49	**0.06**	0.252

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	CAREER				VOLUNTEER						
	RUAD		Not RUAD		RUAD		Not RUAD			*Chi-Square*	Standard Deviations
Item #	Observed	Expected	Observed	Expected	Observed	Expected	Observed	Expected	#		
50	377	371.73	58	63.27	46	51.27	14	8.73	RUAD50	4.24	2.060
51	231	227.23	191	194.77	28	31.77	31	27.23	RUAD51	1.10	1.051
52	389	381.52	36	43.48	41	48.48	13	5.52	RUAD52	12.70	3.564
53	389	382.12	34	40.88	41	47.88	12	5.12	RUAD53	11.51	3.392
54	339	332.51	82	88.49	33	39.49	17	10.51	RUAD54	5.68	2.383
55	391	382.93	32	40.07	39	47.07	13	4.93	RUAD55	16.41	4.051
56	397	392.00	27	32.00	44	49.00	9	4.00	RUAD56	7.61	2.758
57	369	366.23	46	48.77	44	46.77	9	6.23	RUAD57	1.58	1.255
58	367	359.01	46	53.99	32	39.99	14	6.01	RUAD58	13.56	3.683
59	376	369.17	44	50.83	38	44.83	13	6.17	RUAD59	9.64	3.104
60	261	257.42	143	146.58	27	30.58	21	17.42	RUAD60	1.30	1.138
61	363	356.73	56	62.27	38	44.27	14	7.73	RUAD61	6.72	2.592
63	295	287.54	123	130.46	29	36.46	24	16.54	RUAD63	5.51	2.347
64	299	293.18	122	127.82	29	34.82	21	15.18	RUAD64	3.58	1.893
65	268	264.17	90	93.83	22	25.83	13	9.17	RUAD65	2.38	1.541
66	314	309.01	106	110.99	34	38.99	19	14.01	RUAD66	2.73	1.651
67	55	57.90	331	328.10	11	8.10	43	45.90	RUAD67	1.39	1.180
68	51	51.64	314	313.36	8	7.36	44	44.64	RUAD68	0.07	0.273
69	141	145.95	223	218.05	27	22.05	28	32.95	RUAD69	2.13	1.460
70	104	111.81	234	226.19	26	18.19	29	36.81	RUAD70	5.82	2.412
71	89	95.47	243	236.53	22	15.53	32	38.47	RUAD71	4.40	2.098
72	70	77.95	247	239.05	20	12.05	29	36.95	RUAD72	8.03	2.834
73	78	86.76	245	236.24	23	14.24	30	38.76	RUAD73	8.59	2.930
74	83	85.48	235	232.52	17	14.52	37	39.48	RUAD74	0.68	0.825
75	73	81.57	242	233.43	21	12.43	27	35.57	RUAD75	9.19	3.031
76	91	94.33	234	230.67	19	15.67	35	38.33	RUAD76	1.16	1.077
77	112	118.39	214	207.61	26	19.61	28	34.39	RUAD77	3.81	1.952
78	81	85.05	236	231.95	18	13.95	34	38.05	RUAD78	1.87	1.367
79	36	39.86	158	154.14	9	5.14	16	19.86	RUAD79	4.13	2.032
80	70	74.55	220	215.45	12	7.45	17	21.55	RUAD80	4.10	2.026
81	293	291.56	91	92.44	35	36.44	13	11.56	RUAD81	0.27	0.517
82	310	302.78	76	83.22	32	39.22	18	10.78	RUAD82	6.96	2.639
83	278	276.61	105	106.39	34	35.39	15	13.61	RUAD83	0.22	0.470
84	343	336.26	54	60.74	39	45.74	15	8.26	RUAD84	7.37	2.715
85	73	76.22	211	207.78	11	7.78	18	21.22	RUAD85	2.00	1.415
86	362	353.38	34	42.62	36	44.62	14	5.38	RUAD86	17.42	4.174
87	311	306.96	59	63.04	25	29.04	10	5.96	RUAD87	3.61	1.899
88	351	343.19	43	50.81	34	41.81	14	6.19	RUAD88	12.69	3.562
89	240	235.16	121	125.84	16	20.84	16	11.16	RUAD89	3.52	1.875
90	327	319.63	67	74.37	34	41.37	17	9.63	RUAD90	7.86	2.804
91	296	291.75	98	102.25	35	39.25	18	13.75	RUAD91	2.01	1.417
92	243	237.15	154	159.85	27	32.85	28	22.15	RUAD92	2.95	1.717
93	328	318.48	69	78.52	33	42.52	20	10.48	RUAD93	12.21	3.494
94	276	275.32	104	104.68	37	37.68	15	14.32	RUAD94	0.05	0.224
95	299	291.35	93	100.65	31	38.65	21	13.35	RUAD95	6.68	2.584
96	308	299.20	88	96.80	32	40.80	22	13.20	RUAD96	8.82	2.970
98	207	198.26	186	194.74	18	26.74	35	26.26	RUAD98	6.54	2.557
99	325	318.39	67	73.61	34	40.61	16	9.39	RUAD99	6.46	2.542
100	268	264.79	119	122.21	31	34.21	19	15.79	RUAD100	1.08	1.038
101	285	283.47	40	41.53	29	30.53	6	4.47	RUAD101	0.66	0.814

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	CAREER				VOLUNTEER						
	RUAD		Not RUAD		RUAD		Not RUAD			*Chi-Square*	Standard Deviations
Item #	Observed	Expected	Observed	Expected	Observed	Expected	Observed	Expected	#		
102	174	167.05	119	125.95	13	19.95	22	15.05	**RUAD102**	**6.31**	2.512
103	295	287.42	34	41.58	23	30.58	12	4.42	**RUAD103**	**16.44**	**4.054**
104	298	293.65	31	35.35	26	30.35	8	3.65	**RUAD104**	**0.00**	0.000
105	306	302.63	22	25.37	28	31.37	6	2.63	**RUAD105**	**0.00**	0.000
106	270	260.80	56	65.20	14	23.20	15	5.80	**RUAD106**	**19.86**	**4.457**
107	310	303.54	18	24.46	25	31.46	9	2.54	**RUAD107**	**19.65**	**4.433**
108	286	276.21	42	51.79	18	27.79	15	5.21	**RUAD108**	**24.04**	**4.903**
109	211	202.04	113	121.96	11	19.96	21	12.04	**RUAD109**	**11.73**	**3.425**
110	269	262.76	59	65.24	21	27.24	13	6.76	**RUAD110**	**7.93**	2.815
111	284	268.79	40	55.21	13	28.21	21	5.79	**RUAD111**	**53.16**	**7.291**
112	282	276.41	37	42.59	23	28.59	10	4.41	**RUAD112**	**9.04**	3.007
113	242	233.75	82	90.25	17	25.25	18	9.75	**RUAD113**	**10.72**	3.275
114	164	160.45	130	133.55	15	18.55	19	15.45	**RUAD114**	**1.67**	1.293
115	165	163.07	124	125.93	15	16.93	15	13.07	**RUAD115**	**0.56**	0.746
116	251	245.03	67	72.97	21	26.97	14	8.03	**RUAD116**	**6.39**	2.528
117	310	305.99	15	19.01	28	32.01	6	1.99	**RUAD117**	**9.49**	3.081
118	295	287.90	29	36.10	24	31.10	11	3.90	**RUAD118**	**16.12**	**4.015**
119	231	224.42	87	93.58	16	22.58	16	9.42	**RUAD119**	**7.18**	2.679
120	221	216.65	61	65.35	21	25.35	12	7.65	**RUAD120**	**3.60**	1.898
121	192	189.76	81	83.24	20	22.24	12	9.76	**RUAD121**	**0.83**	0.910
122	126	125.39	115	115.61	15	15.61	15	14.39	**RUAD122**	**0.06**	0.236
123	176	172.05	95	98.95	17	20.95	16	12.05	**RUAD123**	**2.29**	1.513
124	269	266.93	14	16.07	30	32.07	4	1.93	**RUAD124**	**2.63**	1.623
125	256	251.85	28	32.15	26	30.15	8	3.85	**RUAD125**	**5.65**	2.377
126	218	215.96	64	66.04	24	26.04	10	7.96	**RUAD126**	**0.76**	0.874
127	255	252.74	29	31.26	28	30.26	6	3.74	**RUAD127**	**1.71**	1.309
128	208	202.00	73	79.00	17	23.00	15	9.00	**RUAD128**	**6.21**	2.491
129	191	188.23	90	92.77	20	22.77	14	11.23	**RUAD129**	**1.15**	1.071
130	255	246.37	29	37.63	20	28.63	13	4.37	**RUAD130**	**21.91**	**4.680**
131	229	219.95	52	61.05	16	25.05	16	6.95	**RUAD131**	**16.76**	**4.094**
132	185	183.41	91	92.59	21	22.59	13	11.41	**RUAD132**	**0.38**	0.613
133	133	131.73	143	144.27	14	15.27	18	16.73	**RUAD133**	**0.23**	0.476
134	257	251.66	26	31.34	24	29.34	9	3.66	**RUAD134**	**9.81**	3.133
135	247	247.29	36	35.71	30	29.71	4	4.29	**RUAD135**	**0.03**	0.159
136	102	101.16	110	110.84	13	13.84	16	15.16	**RUAD136**	**0.11**	0.332
137	114	113.35	96	96.65	15	15.65	14	13.35	**RUAD137**	**0.07**	0.259
138	203	202.02	52	52.98	22	22.98	7	6.02	**RUAD138**	**0.22**	0.471
139	164	166.53	80	77.47	23	20.47	7	9.53	**RUAD139**	**1.10**	1.050
140	180	177.78	63	65.22	19	21.22	10	7.78	**RUAD140**	**0.97**	0.983
141	173	169.92	64	67.08	17	20.08	11	7.92	**RUAD141**	**1.86**	1.364
142	135	133.65	74	75.35	14	15.35	10	8.65	**RUAD142**	**0.37**	0.605
143	200	198.08	42	43.92	21	22.92	7	5.08	**RUAD143**	**0.99**	0.994
144	224	221.42	27	29.58	23	25.58	6	3.42	**RUAD144**	**2.47**	1.571
145	225	223.30	27	28.70	24	25.70	5	3.30	**RUAD145**	**1.10**	1.048
146	98	96.89	126	127.11	11	12.11	17	15.89	**RUAD146**	**0.20**	0.450
148	229	227.79	23	24.21	25	26.21	4	2.79	**RUAD148**	**0.65**	0.807
149	219	211.82	35	42.18	17	24.18	12	4.82	**RUAD149**	**14.32**	**3.784**
150	171	168.12	68	70.88	14	16.88	10	7.12	**RUAD150**	**1.83**	1.351
151	220	219.57	33	33.43	23	23.43	4	3.57	**RUAD151**	**0.07**	0.258
152	229	226.18	25	27.82	23	25.82	6	3.18	**RUAD152**	**3.14**	1.772

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	CAREER				VOLUNTEER						
	RUAD		Not RUAD		RUAD		Not RUAD			*Chi-Square*	Standard Deviations
Item #	Observed	Expected	Observed	Expected	Observed	Expected	Observed	Expected	#		
153	202	199.22	41	43.78	21	23.78	8	5.22	**RUAD153**	**2.01**	1.419
154	203	198.67	44	48.33	19	23.33	10	5.67	**RUAD154**	**4.58**	2.141
155	122	120.34	107	108.66	12	13.66	14	12.34	**RUAD155**	**0.47**	0.689
156	134	133.16	75	75.84	17	17.84	11	10.16	**RUAD156**	**0.12**	0.351
157	212	207.33	42	46.67	19	23.67	10	5.33	**RUAD157**	**5.59**	2.364
158	169	168.47	69	69.53	20	20.53	9	8.47	**RUAD158**	**0.05**	0.228
159	167	163.42	75	78.58	16	19.58	13	9.42	**RUAD159**	**2.26**	1.504
160	193	191.34	57	58.66	19	20.66	8	6.34	**RUAD160**	**0.63**	0.796
161	106	109.09	90	86.91	17	13.91	8	11.09	**RUAD161**	**1.74**	1.319
162	117	119.92	113	110.08	17	14.08	10	12.92	**RUAD162**	**1.42**	1.190
163	181	182.61	58	56.39	23	21.39	5	6.61	**RUAD163**	**0.57**	0.756
164	187	181.13	56	61.87	15	20.87	13	7.13	**RUAD164**	**7.23**	2.690
165	82	81.01	95	95.99	10	10.99	14	13.01	**RUAD165**	**0.18**	0.430
166	84	88.09	126	121.91	15	10.91	11	15.09	**RUAD166**	**2.97**	1.724
167	21	21.86	81	80.14	3	2.14	7	7.86	**RUAD167**	**0.48**	0.692
168	163	162.06	68	68.94	18	18.94	9	8.06	**RUAD168**	**0.18**	0.419
169	203	202.16	36	36.84	22	22.84	5	4.16	**RUAD169**	**0.22**	0.471
170	153	152.72	68	68.28	17	17.28	8	7.72	**RUAD170**	**0.02**	0.126
171	103	102.31	107	107.69	11	11.69	13	12.31	**RUAD171**	**0.09**	0.298
172	110	108.18	90	91.82	9	10.82	11	9.18	**RUAD172**	**0.73**	0.856
173	121	121.34	101	100.66	14	13.66	11	11.34	**RUAD173**	**0.02**	0.142
174	151	149.27	81	82.73	15	16.73	11	9.27	**RUAD174**	**0.56**	0.746
175	191	187.06	46	49.94	15	18.94	9	5.06	**RUAD175**	**4.29**	2.071
176	177	175.52	51	52.48	17	18.48	7	5.52	**RUAD176**	**0.57**	0.753
177	152	149.82	75	77.18	13	15.18	10	7.82	**RUAD177**	**1.01**	1.007
178	146	142.74	80	83.26	10	13.26	11	7.74	**RUAD178**	**2.38**	1.543
179	147	142.56	80	84.44	10	14.44	13	8.56	**RUAD179**	**4.05**	2.012
180	76	74.94	97	98.06	5	6.06	9	7.94	**RUAD180**	**0.36**	0.597
181	99	97.59	98	99.41	8	9.41	11	9.59	**RUAD181**	**0.46**	0.678
182	185	181.68	53	56.32	15	18.32	9	5.68	**RUAD182**	**2.80**	1.673
183	125	127.23	102	99.77	14	11.77	7	9.23	**RUAD183**	**1.05**	1.025
184	123	122.17	89	89.83	13	13.83	11	10.17	**RUAD184**	**0.13**	0.362
185	52	51.34	93	93.66	5	5.66	11	10.34	**RUAD185**	**0.13**	0.366
186	185	183.50	53	54.50	17	18.50	7	5.50	**RUAD186**	**0.59**	0.766
188	203	199.61	32	35.39	17	20.39	7	3.61	**RUAD188**	**4.12**	2.029
189	164	166.69	71	68.31	19	16.31	4	6.69	**RUAD189**	**1.67**	1.292
190	116	117.23	86	84.77	14	12.77	8	9.23	**RUAD190**	**0.31**	0.561
191	90	93.84	104	100.16	14	10.16	7	10.84	**RUAD191**	**3.12**	1.766
192	128	124.41	76	79.59	8	11.59	11	7.41	**RUAD192**	**3.11**	1.764
193	136	134.03	88	89.97	10	11.97	10	8.03	**RUAD193**	**0.88**	0.936
194	167	165.51	68	69.49	14	15.49	8	6.51	**RUAD194**	**0.53**	0.730
195	172	173.50	63	61.50	17	15.50	4	5.50	**RUAD195**	**0.60**	0.775
196	163	157.88	72	77.12	11	16.12	13	7.88	**RUAD196**	**5.47**	2.338
197	204	202.57	34	35.43	19	20.43	5	3.57	**RUAD197**	**0.74**	0.859
198	127	127.90	95	94.10	13	12.10	8	8.90	**RUAD198**	**0.17**	0.416
199	179	176.57	54	56.43	15	17.43	8	5.57	**RUAD199**	**1.54**	1.240
200	99	99.15	63	62.85	13	12.85	8	8.15	**RUAD200**	**0.00**	0.070
201	69	70.65	181	179.35	9	7.35	17	18.65	**RUAD201**	**0.57**	0.756
202	64	63.61	195	195.39	6	6.39	20	19.61	**RUAD202**	**0.03**	0.184
203	53	51.70	181	182.30	4	5.30	20	18.70	**RUAD203**	**0.45**	0.673

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	CAREER				VOLUNTEER						
	RUAD		Not RUAD		RUAD		Not RUAD			*Chi-Square*	Standard Deviations
Item #	Observed	Expected	Observed	Expected	Observed	Expected	Observed	Expected	#		
204	61	64.89	167	163.11	11	7.11	14	17.89	**RUAD204**	**3.29**	1.814
205	131	130.67	120	120.33	8	8.33	8	7.67	**RUAD205**	**0.03**	0.170
206	143	141.67	115	116.33	8	9.33	9	7.67	**RUAD206**	**0.45**	0.672
207	98	98.18	147	146.82	9	8.82	13	13.18	**RUAD207**	**0.01**	0.083
208	140	140.05	131	130.95	14	13.95	13	13.05	**RUAD208**	**0.00**	0.019
209	145	142.05	130	132.95	11	13.95	16	13.05	**RUAD209**	**1.41**	1.189
210	71	69.98	198	199.02	6	7.02	21	19.98	**RUAD210**	**0.22**	0.471
211	54	57.19	212	208.81	9	5.81	18	21.19	**RUAD211**	**2.47**	1.571
212	53	55.45	207	204.55	8	5.55	18	20.45	**RUAD212**	**1.52**	1.233
213	193	188.04	78	82.96	11	15.96	12	7.04	**RUAD213**	**5.46**	2.337
214	49	46.76	216	218.24	2	4.24	22	19.76	**RUAD214**	**1.56**	1.250
215	83	84.49	185	183.51	10	8.51	17	18.49	**RUAD215**	**0.42**	0.647
216	113	115.39	159	156.61	13	10.61	12	14.39	**RUAD216**	**1.02**	1.012
217	109	110.74	150	148.26	12	10.26	12	13.74	**RUAD217**	**0.56**	0.750
218	139	140.96	129	127.04	13	11.04	8	9.96	**RUAD218**	**0.79**	0.887
219	76	74.18	196	197.82	5	6.82	20	18.18	**RUAD219**	**0.73**	0.853
220	32	31.45	215	215.55	2	2.55	18	17.45	**RUAD220**	**0.15**	0.381
222	98	100.90	157	154.10	12	9.10	11	13.90	**RUAD222**	**1.67**	1.291
223	96	99.90	171	167.10	14	10.10	13	16.90	**RUAD223**	**2.65**	1.627
224	107	105.28	128	129.72	5	6.72	10	8.28	**RUAD224**	**0.85**	0.921
225	63	64.86	139	137.14	7	5.14	9	10.86	**RUAD225**	**1.07**	1.036
226	125	124.07	105	105.93	5	5.93	6	5.07	**RUAD226**	**0.33**	0.578
227	60	57.14	175	177.86	2	4.86	18	15.14	**RUAD227**	**2.42**	1.554
228	66	63.76	170	172.24	1	3.24	11	8.76	**RUAD228**	**2.23**	1.494
229	214	211.68	29	31.32	9	11.32	4	1.68	**RUAD229**	**3.90**	1.974
230	210	204.19	33	38.81	11	16.81	9	3.19	**RUAD230**	**13.59**	**3.687**
231	129	125.90	104	107.10	5	8.10	10	6.90	**RUAD231**	**2.75**	1.660
232	81	79.92	156	157.08	6	7.08	15	13.92	**RUAD232**	**0.27**	0.521
233	33	33.34	130	129.66	3	2.66	10	10.34	**RUAD233**	**0.06**	0.244
234	109	105.53	133	136.47	7	10.47	17	13.53	**RUAD234**	**2.24**	1.496
235	108	103.64	132	136.36	6	10.36	18	13.64	**RUAD235**	**3.56**	1.886
236	177	175.86	64	65.14	12	13.14	6	4.86	**RUAD236**	**0.39**	0.625
237	95	91.01	142	145.99	1	4.99	12	8.01	**RUAD237**	**5.47**	2.338
238	37	35.17	137	138.83	1	2.83	13	11.17	**RUAD238**	**1.60**	1.266
239	88	85.45	152	154.55	6	8.55	18	15.45	**RUAD239**	**1.30**	1.138
240	75	72.40	144	146.60	5	7.60	18	15.40	**RUAD240**	**1.47**	1.213
241	142	137.74	97	101.26	9	13.26	14	9.74	**RUAD241**	**3.54**	1.880
242	178	173.57	61	65.43	13	17.43	11	6.57	**RUAD242**	**4.53**	2.127
243	79	75.71	139	142.29	4	7.29	17	13.71	**RUAD243**	**2.50**	1.580
244	42	39.62	121	123.38	2	4.38	16	13.62	**RUAD244**	**1.89**	1.376
245	91	86.18	146	150.82	1	5.82	15	10.18	**RUAD245**	**6.69**	2.587
246	57	55.75	166	167.25	1	2.25	8	6.75	**RUAD246**	**0.96**	0.981
247	46	43.15	136	138.85	0	2.85	12	9.15	**RUAD247**	**3.98**	1.994
248	49	50.35	146	144.65	6	4.65	12	13.35	**RUAD248**	**0.58**	0.761
249	32	32.76	173	172.24	3	2.24	11	11.76	**RUAD249**	**0.33**	0.575
250	45	44.22	130	130.78	2	2.78	9	8.22	**RUAD250**	**0.31**	0.558
251	18	17.14	102	102.86	0	0.86	6	5.14	**RUAD251**	**1.05**	1.025
252	14	13.95	106	106.05	1	1.05	8	7.95	**RUAD252**	**0.00**	0.050
253	13	12.19	62	62.81	0	0.81	5	4.19	**RUAD253**	**1.03**	1.017
254	10	9.56	76	76.44	0	0.44	4	3.56	**RUAD254**	**0.52**	0.723

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	CAREER				VOLUNTEER						
	RUAD		Not RUAD		RUAD		Not RUAD			*Chi-Square*	Standard Deviations
Item #	Observed	Expected	Observed	Expected	Observed	Expected	Observed	Expected	#		
255	38	37.19	106	106.81	1	1.81	6	5.19	**RUAD255**	**0.51**	0.714
256	12	12.32	115	114.68	1	0.68	6	6.32	**RUAD256**	**0.18**	0.421
257	24	23.66	158	158.34	2	2.34	16	15.66	**RUAD257**	**0.06**	0.250
258	50	47.34	153	155.66	2	4.66	18	15.34	**RUAD258**	**2.18**	1.476
259	17	17.45	141	140.55	2	1.55	12	12.45	**RUAD259**	**0.16**	0.403
260	27	25.39	194	195.61	0	1.61	14	12.39	**RUAD260**	**1.93**	1.390
261	130	124.33	83	88.67	6	11.67	14	8.33	**RUAD261**	**7.25**	2.692
262	126	122.37	95	98.63	8	11.63	13	9.37	**RUAD262**	**2.78**	1.667
263	125	120.59	97	101.41	7	11.41	14	9.59	**RUAD263**	**4.08**	2.020
265	36	34.91	143	144.10	3	4.10	18	16.91	**RUAD265**	**0.41**	0.637
266	71	69.82	104	105.18	8	9.18	15	13.82	**RUAD266**	**0.28**	0.533
267	126	124.71	77	78.29	11	12.29	9	7.71	**RUAD267**	**0.38**	0.620
268	146	144.70	62	63.30	14	15.30	8	6.70	**RUAD268**	**0.40**	0.636
269	84	83.61	103	103.39	9	9.39	12	11.61	**RUAD269**	**0.03**	0.180
270	57	57.40	107	106.60	6	5.60	10	10.40	**RUAD270**	**0.05**	0.220
271	17	15.74	95	96.26	0	1.26	9	7.74	**RUAD271**	**1.59**	1.261
272	201	201.07	19	18.93	22	21.93	2	2.07	**RUAD272**	**0.00**	0.050
273	70	70.32	109	108.68	7	6.68	10	10.32	**RUAD273**	**0.03**	0.167
274	196	195.47	23	23.53	20	20.53	3	2.47	**RUAD274**	**0.14**	0.374
275	199	196.29	18	20.71	19	21.71	5	2.29	**RUAD275**	**3.94**	1.984
276	201	198.18	17	19.82	19	21.82	5	2.18	**RUAD276**	**4.44**	2.108
277	123	123.01	88	87.99	14	13.99	10	10.01	**RUAD277**	**0.00**	0.004
278	196	190.07	22	27.93	15	20.93	9	3.07	**RUAD278**	**14.54**	**3.813**
279	120	116.71	89	92.29	9	12.29	13	9.71	**RUAD279**	**2.20**	1.483
280	151	149.74	59	60.26	13	14.26	7	5.74	**RUAD280**	**0.43**	0.652
281	153	147.71	64	69.29	9	14.29	12	6.71	**RUAD281**	**6.73**	2.595
282	201	196.29	16	20.71	17	21.71	7	2.29	**RUAD282**	**11.89**	**3.448**
283	174	169.28	43	47.72	14	18.72	10	5.28	**RUAD283**	**6.01**	2.452
284	176	172.88	41	44.12	16	19.12	8	4.88	**RUAD284**	**2.78**	1.668
285	203	202.49	15	15.51	19	19.51	2	1.49	**RUAD285**	**0.20**	0.450
286	95	93.04	119	120.96	5	6.96	11	9.04	**RUAD286**	**1.05**	1.023
287	129	123.08	71	76.92	7	12.92	14	8.08	**RUAD287**	**7.80**	2.793
288	85	82.87	129	131.13	6	8.13	15	12.87	**RUAD288**	**1.00**	1.001
289	153	150.30	63	65.70	14	16.70	10	7.30	**RUAD289**	**1.59**	1.263
290	34	32.87	151	152.13	1	2.13	11	9.87	**RUAD290**	**0.78**	0.882
291	57	56.81	140	140.19	5	5.19	13	12.81	**RUAD291**	**0.01**	0.104
292	111	106.99	93	97.01	7	11.01	14	9.99	**RUAD292**	**3.39**	1.842
293	318	313.10	12	16.90	34	38.90	7	2.10	**RUAD293**	**13.55**	**3.681**
294	299	295.01	28	31.99	33	36.99	8	4.01	**RUAD294**	**4.95**	2.225
295	276	274.57	51	52.43	33	34.43	8	6.57	**RUAD295**	**0.41**	0.644
296	221	216.74	105	109.26	23	27.26	18	13.74	**RUAD296**	**2.24**	1.495
297	211	206.41	84	88.59	22	26.59	16	11.41	**RUAD297**	**2.98**	1.725
298	260	258.40	65	66.60	31	32.60	10	8.40	**RUAD298**	**0.43**	0.656
300	172	168.76	130	133.24	18	21.24	20	16.76	**RUAD300**	**1.26**	1.122
301	198	196.86	120	121.14	23	24.14	16	14.86	**RUAD301**	**0.16**	0.399
302	245	240.88	40	44.12	28	32.12	10	5.88	**RUAD302**	**3.86**	1.966
303	171	166.26	112	116.74	17	21.74	20	15.26	**RUAD303**	**2.83**	1.682
304	150	144.66	126	131.34	13	18.34	22	16.66	**RUAD304**	**3.69**	1.920
305	190	182.42	92	99.58	17	24.58	21	13.42	**RUAD305**	**7.51**	2.741
306	197	192.66	81	85.34	22	26.34	16	11.66	**RUAD306**	**2.64**	1.626

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	CAREER				VOLUNTEER						
	RUAD		Not RUAD		RUAD		Not RUAD			*Chi-Square*	Standard Deviations
Item #	Observed	Expected	Observed	Expected	Observed	Expected	Observed	Expected	#		
307	244	239.26	41	45.74	28	32.74	11	6.26	**RUAD307**	**4.86**	2.205
308	239	233.78	44	49.22	27	32.22	12	6.78	**RUAD308**	**5.53**	2.351
309	201	196.87	82	86.13	23	27.13	16	11.87	**RUAD309**	**2.35**	1.533
310	266	261.25	19	23.75	31	35.75	8	3.25	**RUAD310**	**8.61**	2.934
311	217	213.21	55	58.79	26	29.79	12	8.21	**RUAD311**	**2.54**	1.593
312	253	248.06	32	36.94	29	33.94	10	5.06	**RUAD312**	**6.32**	2.513
313	263	257.73	22	27.27	30	35.27	9	3.73	**RUAD313**	**9.35**	3.058
314	271	265.54	13	18.46	31	36.46	8	2.54	**RUAD314**	**14.32**	**3.785**
315	264	257.54	20	26.46	28	34.46	10	3.54	**RUAD315**	**14.74**	**3.839**
316	257	254.01	27	29.99	31	33.99	7	4.01	**RUAD316**	**2.82**	1.679
317	215	211.68	69	72.32	25	28.32	13	9.68	**RUAD317**	**1.74**	1.317
318	202	197.57	82	86.43	22	26.43	16	11.57	**RUAD318**	**2.77**	1.665
319	229	222.26	55	61.74	23	29.74	15	8.26	**RUAD319**	**7.96**	2.822
320	263	259.30	21	24.70	31	34.70	7	3.30	**RUAD320**	**5.13**	2.266
321	262	258.42	22	25.58	31	34.58	7	3.42	**RUAD321**	**4.66**	2.159
322	264	259.30	20	24.70	30	34.70	8	3.30	**RUAD322**	**8.29**	2.879
323	207	202.52	73	77.48	23	27.48	15	10.52	**RUAD323**	**3.00**	1.733
324	222	220.20	38	39.80	27	28.80	7	5.20	**RUAD324**	**0.83**	0.910
325	222	216.81	38	43.19	24	29.19	11	5.81	**RUAD325**	**6.30**	2.509
326	227	223.29	36	39.71	26	29.71	9	5.29	**RUAD326**	**3.48**	1.867
327	151	147.89	94	97.11	15	18.11	15	11.89	**RUAD327**	**1.51**	1.229
328	241	234.65	21	27.35	25	31.35	10	3.65	**RUAD328**	**13.96**	**3.736**
329	176	172.08	79	82.92	17	20.92	14	10.08	**RUAD329**	**2.53**	1.592
330	114	109.39	111	115.61	9	13.61	19	14.39	**RUAD330**	**3.42**	1.849
331	227	220.34	33	39.66	23	29.66	12	5.34	**RUAD331**	**11.13**	**3.336**
332	218	214.01	29	32.99	22	25.99	8	4.01	**RUAD332**	**5.15**	2.269
333	181	173.46	73	80.54	15	22.54	18	10.46	**RUAD333**	**8.98**	2.997
334	85	83.74	153	154.26	10	11.26	22	20.74	**RUAD334**	**0.25**	0.496
335	123	121.14	129	130.86	14	15.86	19	17.14	**RUAD335**	**0.48**	0.690
336	135	131.56	114	117.44	14	17.44	19	15.56	**RUAD336**	**1.63**	1.275
337	91	91.76	149	148.24	13	12.24	19	19.76	**RUAD337**	**0.09**	0.296
338	108	104.89	140	143.11	10	13.11	21	17.89	**RUAD338**	**1.44**	1.200
339	169	161.03	69	76.97	13	20.97	18	10.03	**RUAD339**	**10.59**	3.255
340	211	205.14	41	46.86	21	26.86	12	6.14	**RUAD340**	**7.78**	2.790
342	197	188.38	53	61.62	17	25.62	17	8.38	**RUAD342**	**13.37**	**3.656**
343	137	133.33	112	115.67	14	17.67	19	15.33	**RUAD343**	**1.86**	1.363
344	140	136.13	98	101.87	15	18.87	18	14.13	**RUAD344**	**2.12**	1.455
345	148	145.11	100	102.89	17	19.89	17	14.11	**RUAD345**	**1.15**	1.074
346	106	104.99	120	121.01	12	13.01	16	14.99	**RUAD346**	**0.16**	0.405
347	200	195.04	50	54.96	20	24.96	12	7.04	**RUAD347**	**5.07**	2.251
348	146	140.83	102	107.17	13	18.17	19	13.83	**RUAD348**	**3.85**	1.961
349	160	159.87	67	67.13	21	21.13	9	8.87	**RUAD349**	**0.00**	0.055
350	133	130.56	99	101.44	15	17.44	16	13.56	**RUAD350**	**0.89**	0.943
351	158	158.27	71	70.73	21	20.73	9	9.27	**RUAD351**	**0.01**	0.112
352	151	152.11	70	68.89	19	17.89	7	8.11	**RUAD352**	**0.24**	0.495
353	136	139.06	81	77.94	21	17.94	7	10.06	**RUAD353**	**1.64**	1.280
354	124	123.44	101	101.56	17	17.56	15	14.44	**RUAD354**	**0.04**	0.211
355	186	181.51	49	53.49	21	25.49	12	7.51	**RUAD355**	**3.96**	1.990
356	77	77.48	144	143.52	11	10.52	19	19.48	**RUAD356**	**0.04**	0.197
357	205	197.05	29	36.95	19	26.95	13	5.05	**RUAD357**	**16.87**	**4.108**

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	CAREER				VOLUNTEER						
	RUAD		Not RUAD		RUAD		Not RUAD			*Chi-Square*	Standard Deviations
Item #	Observed	Expected	Observed	Expected	Observed	Expected	Observed	Expected	#		
358	198	195.40	31	33.60	23	25.60	7	4.40	**RUAD358**	**2.03**	1.426
359	188	185.16	45	47.84	21	23.84	9	6.16	**RUAD359**	**1.86**	1.364
360	195	191.55	40	43.45	21	24.45	9	5.55	**RUAD360**	**2.97**	1.724
361	191	188.68	40	42.32	23	25.32	8	5.68	**RUAD361**	**1.32**	1.147
362	170	168.40	61	62.60	21	22.60	10	8.40	**RUAD362**	**0.47**	0.688
363	175	174.40	59	59.60	24	24.60	9	8.40	**RUAD363**	**0.06**	0.254
364	187	186.82	43	43.18	25	25.18	6	5.82	**RUAD364**	**0.01**	0.088
365	173	172.10	60	60.90	22	22.90	9	8.10	**RUAD365**	**0.15**	0.391
366	194	190.33	33	36.67	24	27.67	9	5.33	**RUAD366**	**3.45**	1.857
367	123	121.48	104	105.52	14	15.52	15	13.48	**RUAD367**	**0.36**	0.601
368	113	112.00	111	112.00	12	13.00	14	13.00	**RUAD368**	**0.17**	0.414
369	115	112.27	106	108.73	12	14.73	17	14.27	**RUAD369**	**1.16**	1.079
370	82	81.38	121	121.62	9	9.62	15	14.38	**RUAD370**	**0.07**	0.274
371	162	156.61	68	73.39	13	18.39	14	8.61	**RUAD371**	**5.52**	2.350
372	180	175.70	51	55.30	17	21.30	11	6.70	**RUAD372**	**4.06**	2.015
373	172	167.52	57	61.48	16	20.48	12	7.52	**RUAD373**	**4.10**	2.025
374	143	138.14	89	93.86	13	17.86	17	12.14	**RUAD374**	**3.69**	1.922
375	92	88.86	127	130.14	7	10.14	18	14.86	**RUAD375**	**1.83**	1.351
376	116	112.66	104	107.34	11	14.34	17	13.66	**RUAD376**	**1.80**	1.340
377	69	69.70	141	140.30	9	8.30	16	16.70	**RUAD377**	**0.10**	0.315
378	60	60.14	133	132.86	7	6.86	15	15.14	**RUAD378**	**0.00**	0.070
379	74	76.26	144	141.74	11	8.74	14	16.26	**RUAD379**	**1.00**	0.998
380	39	39.67	162	161.33	6	5.33	21	21.67	**RUAD380**	**0.12**	0.346
381	88	89.38	114	112.62	12	10.62	12	13.38	**RUAD381**	**0.36**	0.600
383	98	96.35	117	118.65	10	11.65	16	14.35	**RUAD383**	**0.48**	0.690
384	47	47.00	133	133.00	6	6.00	17	17.00	**RUAD384**	**0.00**	0.002
385	93	91.42	128	129.58	10	11.58	18	16.42	**RUAD385**	**0.42**	0.645
386	51	49.33	123	124.67	4	5.67	16	14.33	**RUAD386**	**0.77**	0.875
387	114	113.92	158	158.08	15	15.08	21	20.92	**RUAD387**	**0.00**	0.028
388	166	160.80	107	112.20	16	21.20	20	14.80	**RUAD388**	**3.52**	1.875
389	183	181.19	91	92.81	22	23.81	14	12.19	**RUAD389**	**0.46**	0.677
390	194	194.12	76	75.88	26	25.88	10	10.12	**RUAD390**	**0.00**	0.046
391	203	201.35	69	70.65	25	26.65	11	9.35	**RUAD391**	**0.45**	0.667
392	240	241.97	32	30.03	34	32.03	2	3.97	**RUAD392**	**1.25**	1.117
393	246	244.73	27	28.27	31	32.27	5	3.73	**RUAD393**	**0.00**	0.000
394	87	89.07	173	170.93	12	9.93	17	19.07	**RUAD394**	**0.73**	0.852
395	154	155.09	113	111.91	22	20.91	14	15.09	**RUAD395**	**0.15**	0.392
396	80	78.94	177	178.06	10	11.06	26	24.94	**RUAD396**	**0.17**	0.408
397	244	245.40	27	25.60	34	32.60	2	3.40	**RUAD397**	**0.72**	0.850
398	162	158.82	108	111.18	18	21.18	18	14.82	**RUAD398**	**1.31**	1.145
399	211	212.83	61	59.17	30	28.17	6	7.83	**RUAD399**	**0.00**	0.000
400	157	159.71	113	110.29	24	21.29	12	14.71	**RUAD400**	**0.95**	0.977
401	164	168.60	107	102.40	27	22.40	9	13.60	**RUAD401**	**2.84**	1.684
402	154	159.71	116	110.29	27	21.29	9	14.71	**RUAD402**	**4.24**	2.060
403	134	135.30	83	81.70	20	18.70	10	11.30	**RUAD403**	**0.27**	0.521
404	130	127.06	95	97.94	14	16.94	16	13.06	**RUAD404**	**1.33**	1.153
405	58	61.97	158	154.03	12	8.03	16	19.97	**RUAD405**	**3.10**	1.762
406	54	57.04	161	157.96	11	7.96	19	22.04	**RUAD406**	**1.80**	1.342
407	77	79.35	139	136.65	13	10.65	16	18.35	**RUAD407**	**0.93**	0.963
408	46	45.24	166	166.76	5	5.76	22	21.24	**RUAD408**	**0.14**	0.380

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	CAREER				VOLUNTEER						
	RUAD		Not RUAD		RUAD		Not RUAD			*Chi-Square*	Standard Deviations
Item #	Observed	Expected	Observed	Expected	Observed	Expected	Observed	Expected	#		
409	115	118.89	99	95.11	20	16.11	9	12.89	**RUAD409**	**2.40**	1.549
411	137	137.35	84	83.65	19	18.65	11	11.35	**RUAD411**	**0.02**	0.142
412	159	160.33	63	61.67	23	21.67	7	8.33	**RUAD412**	**0.34**	0.579
413	152	154.88	68	65.12	24	21.12	6	8.88	**RUAD413**	**1.51**	1.228
414	186	183.97	36	38.03	22	24.03	7	4.97	**RUAD414**	**1.13**	1.065
415	172	172.76	51	50.24	24	23.24	6	6.76	**RUAD415**	**0.12**	0.353
416	137	137.50	86	85.50	19	18.50	11	11.50	**RUAD416**	**0.04**	0.201
417	116	119.55	102	98.45	20	16.45	10	13.55	**RUAD417**	**1.93**	1.388
418	169	168.26	53	53.74	22	22.74	8	7.26	**RUAD418**	**0.11**	0.335
419	151	149.76	71	72.24	19	20.24	11	9.76	**RUAD419**	**0.26**	0.514
420	170	169.14	52	52.86	22	22.86	8	7.14	**RUAD420**	**0.15**	0.391
421	156	153.20	65	67.80	18	20.80	12	9.20	**RUAD421**	**1.39**	1.180
422	144	143.52	77	77.48	19	19.48	11	10.52	**RUAD422**	**0.04**	0.197
423	116	117.92	104	102.08	18	16.08	12	13.92	**RUAD423**	**0.56**	0.749
424	132	133.20	85	83.80	19	17.80	10	11.20	**RUAD424**	**0.24**	0.487
425	137	137.39	55	54.61	19	18.61	7	7.39	**RUAD425**	**0.03**	0.183
426	148	146.11	43	44.89	18	19.89	8	6.11	**RUAD426**	**0.87**	0.931
427	147	145.05	42	43.95	18	19.95	8	6.05	**RUAD427**	**0.94**	0.967
428	102	105.28	84	80.72	18	14.72	8	11.28	**RUAD428**	**1.92**	1.387
429	64	67.38	108	104.62	12	8.62	10	13.38	**RUAD429**	**2.46**	1.568
430	65	64.48	111	111.52	9	9.52	17	16.48	**RUAD430**	**0.05**	0.229
431	131	130.27	60	60.73	17	17.73	9	8.27	**RUAD431**	**0.11**	0.329
432	71	74.00	104	101.00	14	11.00	12	15.00	**RUAD432**	**1.63**	1.278
433	117	117.89	66	65.11	17	16.11	8	8.89	**RUAD433**	**0.16**	0.398
434	103	101.91	85	86.09	13	14.09	13	11.91	**RUAD434**	**0.21**	0.459
435	152	152.08	37	36.92	21	20.92	5	5.08	**RUAD435**	**0.00**	0.042
436	154	153.06	36	36.94	20	20.94	6	5.06	**RUAD436**	**0.25**	0.499
437	146	145.93	43	43.07	20	20.07	6	5.93	**RUAD437**	**0.00**	0.037
438	120	117.64	67	69.36	14	16.36	12	9.64	**RUAD438**	**1.04**	1.021
439	125	123.07	64	65.93	15	16.93	11	9.07	**RUAD439**	**0.72**	0.847
440	119	119.55	70	69.45	17	16.45	9	9.55	**RUAD440**	**0.06**	0.240
441	90	91.81	91	89.19	15	13.19	11	12.81	**RUAD441**	**0.58**	0.760
442	78	79.63	90	88.38	13	11.38	11	12.63	**RUAD442**	**0.50**	0.710
443	60	65.90	121	115.10	15	9.10	10	15.90	**RUAD443**	**6.84**	2.615
444	51	50.86	120	120.14	7	7.14	17	16.86	**RUAD444**	**0.00**	0.066
445	35	37.03	144	141.97	7	4.97	17	19.03	**RUAD445**	**1.19**	1.092
446	124	122.11	64	65.89	15	16.89	11	9.11	**RUAD446**	**0.69**	0.828
447	27	30.11	128	124.89	7	3.89	13	16.11	**RUAD447**	**3.50**	1.870
448	157	158.15	16	14.85	24	22.85	1	2.15	**RUAD448**	**0.77**	0.876
449	100	102.03	68	65.97	16	13.97	7	9.03	**RUAD449**	**0.86**	0.925
450	163	161.64	10	11.36	22	23.36	3	1.64	**RUAD450**	**1.38**	1.174
451	124	125.40	47	45.60	19	17.60	5	6.40	**RUAD451**	**0.48**	0.690
452	121	122.05	49	47.95	19	17.95	6	7.05	**RUAD452**	**0.25**	0.500
453	121	121.09	48	47.91	18	17.91	7	7.09	**RUAD453**	**0.00**	0.042
454	149	149.30	23	22.70	22	21.70	3	3.30	**RUAD454**	**0.04**	0.189
455	131	131.74	40	39.26	20	19.26	5	5.74	**RUAD455**	**0.14**	0.377
456	129	129.12	42	41.88	19	18.88	6	6.12	**RUAD456**	**0.00**	0.061
457	111	112.29	57	55.71	18	16.71	7	8.29	**RUAD457**	**0.35**	0.587
458	81	80.27	84	84.73	9	9.73	11	10.27	**RUAD458**	**0.12**	0.346
459	67	69.18	88	85.82	12	9.82	10	12.18	**RUAD459**	**1.00**	0.999

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	CAREER				VOLUNTEER						
	RUAD		Not RUAD		RUAD		Not RUAD			*Chi-Square*	Standard Deviations
Item #	Observed	Expected	Observed	Expected	Observed	Expected	Observed	Expected	#		
460	80	82.25	88	85.75	14	11.75	10	12.25	**RUAD460**	**0.96**	0.982
461	92	96.08	79	74.92	17	12.92	6	10.08	**RUAD461**	**3.33**	1.825
462	71	74.66	95	91.34	14	10.34	9	12.66	**RUAD462**	**2.67**	1.635
463	46	49.92	102	98.08	11	7.08	10	13.92	**RUAD463**	**3.73**	1.932
464	73	75.89	91	88.11	14	11.11	10	12.89	**RUAD464**	**1.61**	1.268
465	97	98.10	61	59.90	16	14.90	8	9.10	**RUAD465**	**0.25**	0.496
466	96	99.37	67	63.63	18	14.63	6	9.37	**RUAD466**	**2.28**	1.510
467	24	27.91	140	136.09	8	4.09	16	19.91	**RUAD467**	**5.18**	2.277
468	33	35.70	122	119.30	8	5.30	15	17.70	**RUAD468**	**2.06**	1.434
470	73	79.63	88	81.38	18	11.38	5	11.63	**RUAD470**	**8.72**	2.954
471	24	33.28	124	114.72	14	4.72	7	16.28	**RUAD471**	**26.86**	**5.182**
472	10	14.01	138	133.99	6	1.99	15	19.01	**RUAD472**	**10.21**	3.195
473	41	44.66	121	117.34	10	6.34	13	16.66	**RUAD473**	**3.33**	1.825
474	87	89.92	78	75.08	16	13.08	8	10.92	**RUAD474**	**1.64**	1.281
475	69	69.39	97	96.61	10	9.61	13	13.39	**RUAD475**	**0.03**	0.174
476	87	90.86	79	75.14	17	13.14	7	10.86	**RUAD476**	**2.87**	1.695
477	121	121.29	46	45.71	17	16.71	6	6.29	**RUAD477**	**0.02**	0.147
478	27	32.96	130	124.04	11	5.04	13	18.96	**RUAD478**	**10.29**	3.208
479	30	34.97	116	111.03	10	5.03	11	15.97	**RUAD479**	**7.39**	2.718
480	119	120.38	45	43.62	19	17.62	5	6.38	**RUAD480**	**0.47**	0.684

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Appendix P: Results of Essentiality Significance Test Results for the Position Type Comparison

	CAREER				VOLUNTEER						
	Essentiality		Not Essential		Essentiality		Not Essential			*Chi-Square*	Standard Deviations
Item #	Observed	Expected	Observed	Expected	Observed	Expected	Observed	Expected	#		
1	425	426.42	52	50.58	64	62.58	6	7.42	ESS1	**0.35**	0.591
2	538	537.09	7	7.91	73	73.91	2	1.09	ESS2	**0.88**	0.938
3	542	541.50	3	3.50	76	76.50	1	0.50	ESS3	**0.59**	0.769
4	543	542.37	2	2.63	76	76.63	1	0.37	ESS4	**1.22**	1.105
5	542	541.25	1	1.75	76	76.75	1	0.25	ESS5	**2.61**	1.614
6	529	525.31	13	16.69	69	72.69	6	2.31	ESS6	**6.93**	2.632
7	379	372.09	57	63.91	46	52.91	16	9.09	ESS7	**7.03**	2.652
8	487	487.49	32	31.51	70	69.51	4	4.49	ESS8	**0.07**	0.256
9	514	512.80	19	20.20	70	71.20	4	2.80	ESS9	**0.60**	0.777
10	436	435.64	74	74.36	62	62.36	11	10.64	ESS10	**0.02**	0.127
11	407	403.27	96	99.73	54	57.73	18	14.27	ESS11	**1.39**	1.177
12	498	492.98	30	35.02	65	70.02	10	4.98	ESS12	**6.21**	2.492
13	467	465.80	39	40.20	66	67.20	7	5.80	ESS13	**0.31**	0.556
14	506	503.81	18	20.19	68	70.19	5	2.81	ESS14	**2.02**	1.420
15	475	472.98	48	50.02	64	66.02	9	6.98	ESS15	**0.74**	0.858
16	463	464.24	44	42.76	69	67.76	5	6.24	ESS16	**0.31**	0.556
17	465	467.48	48	45.52	69	66.52	4	6.48	ESS17	**1.19**	1.090
18	505	504.16	21	21.84	72	72.84	4	3.16	ESS18	**0.27**	0.519
19	499	496.17	26	28.83	69	71.83	7	4.17	ESS19	**2.32**	1.523
20	419	420.82	90	88.18	63	61.18	11	12.82	ESS20	**0.36**	0.598
21	526	524.48	9	10.52	72	73.52	3	1.48	ESS21	**1.83**	1.354
22	413	409.59	65	68.41	54	57.41	13	9.59	ESS22	**1.61**	1.271
23	500	499.38	24	24.62	68	68.62	4	3.38	ESS23	**0.13**	0.367
24	433	432.59	11	11.41	60	60.41	2	1.59	ESS24	**0.12**	0.349
25	270	268.54	128	129.46	37	38.46	20	18.54	ESS25	**0.19**	0.441
27	378	378.64	57	56.36	52	51.36	7	7.64	ESS27	**0.07**	0.266
28	334	330.46	91	94.54	40	43.54	16	12.46	ESS28	**1.47**	1.211
29	429	425.50	15	18.50	54	57.50	6	2.50	ESS29	**5.80**	2.409
30	421	419.06	21	22.94	54	55.94	5	3.06	ESS30	**1.47**	1.211
31	416	415.53	26	26.47	55	55.47	4	3.53	ESS31	**0.07**	0.273
32	361	363.31	78	75.69	47	44.69	7	9.31	ESS32	**0.78**	0.882
33	22	20.35	2	3.65	45	46.65	10	8.35	ESS33	**1.26**	1.122
34	393	390.22	46	48.78	47	49.78	9	6.22	ESS34	**1.57**	1.254
35	428	425.92	12	14.08	56	58.08	4	1.92	ESS35	**2.65**	1.626
36	410	409.86	28	28.14	56	56.14	4	3.86	ESS36	**0.01**	0.081
37	378	376.54	23	24.46	53	54.46	5	3.54	ESS37	**0.74**	0.858
38	424	422.14	14	15.86	55	56.86	4	2.14	ESS38	**1.91**	1.383
39	433	432.28	9	9.72	56	56.72	2	1.28	ESS39	**0.48**	0.689
40	324	319.21	68	72.79	40	44.79	15	10.21	ESS40	**3.14**	1.773
41	436	434.08	6	7.92	57	58.92	3	1.08	ESS41	**3.98**	1.995
42	439	434.06	3	7.94	53	57.94	6	1.06	ESS42	**26.58**	5.155
43	153	156.56	153	149.44	23	19.44	15	18.56	ESS43	**1.50**	1.224
44	315	316.03	69	67.97	43	41.97	8	9.03	ESS44	**0.16**	0.401
45	336	332.85	96	99.15	40	43.15	16	12.85	ESS45	**1.13**	1.063
46	425	425.23	9	8.77	60	59.77	1	1.23	ESS46	**0.05**	0.226
47	426	425.01	14	14.99	56	56.99	3	2.01	ESS47	**0.57**	0.757
48	428	428.31	10	9.69	58	57.69	1	1.31	ESS48	**0.08**	0.288

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	CAREER				VOLUNTEER						
	Essentiality		Not Essential		Essentiality		Not Essential			*Chi-Square*	Standard Deviations
Item #	Observed	Expected	Observed	Expected	Observed	Expected	Observed	Expected	#		
49	353	350.40	53	55.60	44	46.60	10	7.40	ESS49	1.20	1.097
50	433	428.33	5	9.67	54	58.67	6	1.33	ESS50	19.17	4.378
51	386	384.06	42	43.94	51	52.94	8	6.06	ESS51	0.79	0.889
52	423	417.23	4	9.77	47	52.77	7	1.23	ESS52	31.03	5.570
53	421	418.78	4	6.22	50	52.22	3	0.78	ESS53	7.27	2.697
54	401	395.28	22	27.72	41	46.72	9	3.28	ESS54	11.96	3.458
55	422	416.98	3	8.02	46	51.02	6	0.98	ESS55	29.37	5.419
56	424	422.44	2	3.56	51	52.56	2	0.44	ESS56	6.21	2.493
57	407	403.69	10	13.31	48	51.31	5	1.69	ESS57	7.53	2.745
58	400	391.59	15	23.41	35	43.41	11	2.59	ESS58	32.06	5.662
59	393	387.21	29	34.79	41	46.79	10	4.21	ESS59	9.76	3.123
60	347	341.47	59	64.53	34	39.53	13	7.47	ESS60	5.43	2.330
61	408	402.31	13	18.69	44	49.69	8	2.31	ESS61	16.50	4.061
63	394	393.31	26	26.69	48	48.69	4	3.31	ESS63	0.18	0.419
64	403	399.75	20	23.25	44	47.25	6	2.75	ESS64	4.55	2.133
65	328	324.13	29	32.87	27	30.87	7	3.13	ESS65	5.77	2.402
66	411	406.86	11	15.14	46	50.14	6	1.86	ESS66	10.68	3.268
67	355	355.45	33	32.55	49	48.55	4	4.45	ESS67	0.06	0.236
68	317	317.71	50	49.29	44	43.29	6	6.71	ESS68	0.10	0.316
69	347	346.90	20	20.10	50	50.10	3	2.90	ESS69	0.00	0.063
70	304	303.78	37	37.22	47	47.22	6	5.78	ESS70	0.01	0.102
71	292	294.30	42	39.70	49	46.70	4	6.30	ESS71	1.10	1.051
72	253	251.39	66	67.61	37	38.61	12	10.39	ESS72	0.37	0.606
73	286	289.75	39	35.25	51	47.25	2	5.75	ESS73	3.19	1.786
74	276	278.07	44	41.93	49	46.93	5	7.07	ESS74	0.82	0.905
75	204	203.23	113	113.77	30	30.77	18	17.23	ESS75	0.06	0.249
76	211	214.01	116	112.99	39	35.99	16	19.01	ESS76	0.85	0.921
77	285	287.42	42	39.58	49	46.58	4	6.42	ESS77	1.20	1.097
78	272	273.19	46	44.81	45	43.81	6	7.19	ESS78	0.26	0.515
79	75	78.79	118	114.21	14	10.21	11	14.79	ESS79	2.69	1.641
80	210	209.22	82	82.78	20	20.78	9	8.22	ESS80	0.11	0.336
81	358	356.58	28	29.42	42	43.42	5	3.58	ESS81	0.68	0.826
82	335	332.86	52	54.14	40	42.14	9	6.86	ESS82	0.88	0.937
83	340	338.67	44	45.33	41	42.33	7	5.67	ESS83	0.40	0.633
84	388	387.30	9	9.70	51	51.70	2	1.30	ESS84	0.45	0.667
85	234	234.25	52	51.75	24	23.75	5	5.25	ESS85	0.02	0.125
86	361	353.58	38	45.42	36	43.42	13	5.58	ESS86	12.51	3.537
87	16	14.89	5	6.11	23	24.11	11	9.89	ESS87	0.46	0.678
88	313	308.40	83	87.60	32	36.60	15	10.40	ESS88	2.93	1.711
89	239	236.18	124	126.82	18	20.82	14	11.18	ESS89	1.19	1.091
90	295	288.73	103	109.27	30	36.27	20	13.73	ESS90	4.45	2.109
91	344	340.31	52	55.69	41	44.69	11	7.31	ESS91	2.45	1.565
92	370	362.89	29	36.11	42	49.11	12	4.89	ESS92	12.92	3.595
93	355	345.03	44	53.97	35	44.97	17	7.03	ESS93	18.46	4.297
94	352	351.01	29	29.99	46	46.99	5	4.01	ESS94	0.30	0.546
95	321	322.28	73	71.72	43	41.72	8	9.28	ESS95	0.24	0.495
96	351	347.70	47	50.30	43	46.30	10	6.70	ESS96	2.11	1.453
98	305	300.45	90	94.55	35	39.55	17	12.45	ESS98	2.48	1.574
99	279	272.15	115	121.85	27	33.85	22	15.15	ESS99	5.04	2.244
100	328	326.18	62	63.82	40	41.82	10	8.18	ESS100	0.55	0.738

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	CAREER				VOLUNTEER						
	Essentiality		Not Essential		Essentiality		Not Essential			*Chi-Square*	Standard Deviations
Item #	Observed	Expected	Observed	Expected	Observed	Expected	Observed	Expected	#		
101	317	315.57	4	5.43	32	33.43	2	0.57	ESS101	**3.98**	1.994
102	259	256.98	32	34.02	28	30.02	6	3.98	ESS102	**1.30**	1.142
103	308	304.03	16	19.97	27	30.97	6	2.03	ESS103	**9.08**	3.014
104	306	301.46	19	23.54	27	31.54	7	2.46	ESS104	**0.00**	0.000
105	298	295.04	26	28.96	28	30.96	6	3.04	ESS105	**0.00**	0.000
106	262	254.11	60	67.89	15	22.89	14	6.11	ESS106	**14.05**	3.748
107	315	310.52	10	14.48	28	32.48	6	1.52	ESS107	**15.35**	3.917
108	282	281.34	42	42.66	28	28.66	5	4.34	ESS108	**0.13**	0.354
109	191	183.74	131	138.26	11	18.26	21	13.74	ESS109	**7.39**	2.719
110	245	246.17	79	77.83	27	25.83	7	8.17	ESS110	**0.24**	0.493
111	225	220.56	95	99.44	19	23.44	15	10.56	ESS111	**2.99**	1.729
112	280	278.79	35	36.21	28	29.21	5	3.79	ESS112	**0.48**	0.692
113	270	266.00	53	57.00	24	28.00	10	6.00	ESS113	**3.58**	1.892
114	256	254.09	34	35.91	27	28.91	6	4.09	ESS114	**1.14**	1.067
115	172	165.52	112	118.48	11	17.48	19	12.52	ESS115	**6.37**	2.524
116	284	281.69	32	34.31	28	30.31	6	3.69	ESS116	**1.79**	1.339
117	312	311.12	10	10.88	31	31.88	2	1.12	ESS117	**0.80**	0.895
118	273	272.17	48	48.83	28	28.83	6	5.17	ESS118	**0.17**	0.416
119	203	203.08	113	112.92	20	19.92	11	11.08	ESS119	**0.00**	0.031
120	168	168.78	113	112.22	20	19.22	12	12.78	ESS120	**0.09**	0.297
121	179	180.74	93	91.26	23	21.26	9	10.74	ESS121	**0.47**	0.687
122	209	208.79	30	30.21	26	26.21	4	3.79	ESS122	**0.01**	0.121
123	250	246.83	20	23.17	27	30.17	6	2.83	ESS123	**4.35**	2.086
124	279	275.75	3	6.25	30	33.25	4	0.75	ESS124	**16.04**	4.005
125	273	272.97	8	8.03	33	33.03	1	0.97	ESS125	**0.00**	0.031
126	261	256.72	18	22.28	27	31.28	7	2.72	ESS126	**8.24**	2.871
127	274	272.18	8	9.82	31	32.82	3	1.18	ESS127	**3.24**	1.799
128	252	247.60	27	31.40	24	28.40	8	3.60	ESS128	**6.75**	2.598
129	250	246.11	30	33.89	26	29.89	8	4.11	ESS129	**4.68**	2.164
130	246	241.80	37	41.20	24	28.20	9	4.80	ESS130	**4.79**	2.189
131	215	211.79	65	68.21	21	24.21	11	7.79	ESS131	**1.94**	1.393
132	255	254.63	21	21.37	31	31.37	3	2.63	ESS132	**0.06**	0.250
133	239	231.86	36	43.14	19	26.14	12	4.86	ESS133	**13.83**	3.718
134	218	214.18	64	67.82	22	25.82	12	8.18	ESS134	**2.64**	1.624
135	270	268.61	12	13.39	31	32.39	3	1.61	ESS135	**1.40**	1.183
136	174	172.32	37	38.68	22	23.68	7	5.32	ESS136	**0.74**	0.862
137	179	178.26	30	30.74	24	24.74	5	4.26	ESS137	**0.17**	0.411
138	193	194.92	63	61.08	24	22.08	5	6.92	ESS138	**0.78**	0.882
139	188	188.79	56	55.21	24	23.21	6	6.79	ESS139	**0.13**	0.365
140	165	166.99	77	75.01	22	20.01	7	8.99	ESS140	**0.71**	0.845
141	178	177.08	59	59.92	20	20.92	8	7.08	ESS141	**0.18**	0.423
142	152	151.52	56	56.48	17	17.48	7	6.52	ESS142	**0.05**	0.234
143	190	192.79	53	50.21	25	22.21	3	5.79	ESS143	**1.89**	1.373
144	217	215.05	33	34.95	23	24.95	6	4.05	ESS144	**1.21**	1.101
145	206	201.78	46	50.22	19	23.22	10	5.78	ESS145	**4.29**	2.072
146	117	115.56	107	108.44	13	14.44	15	13.56	ESS146	**0.34**	0.579
148	191	192.73	60	58.27	24	22.27	5	6.73	ESS148	**0.65**	0.805
149	143	141.75	110	111.25	15	16.25	14	12.75	ESS149	**0.24**	0.493
150	191	191.60	46	45.40	20	19.40	4	4.60	ESS150	**0.11**	0.325
151	238	234.99	15	18.01	23	26.01	5	1.99	ESS151	**5.43**	2.329

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	CAREER				VOLUNTEER						
	Essentiality		Not Essential		Essentiality		Not Essential			*Chi-Square*	Standard Deviations
Item #	Observed	Expected	Observed	Expected	Observed	Expected	Observed	Expected	#		
152	240	236.95	14	17.05	24	27.05	5	1.95	**ESS152**	**5.72**	2.391
153	222	222.35	20	19.65	27	26.65	2	2.35	**ESS153**	**0.06**	0.255
154	221	218.36	26	28.64	23	25.64	6	3.36	**ESS154**	**2.62**	1.617
155	165	163.44	64	65.56	17	18.56	9	7.44	**ESS155**	**0.51**	0.713
156	161	157.85	48	51.15	18	21.15	10	6.85	**ESS156**	**2.17**	1.473
157	234	231.64	20	22.36	25	27.36	5	2.64	**ESS157**	**2.58**	1.607
158	188	183.91	51	55.09	19	23.09	11	6.91	**ESS158**	**3.53**	1.879
159	190	187.56	50	52.44	21	23.44	9	6.56	**ESS159**	**1.31**	1.145
160	229	229.39	21	20.61	27	26.61	2	2.39	**ESS160**	**0.08**	0.279
161	153	156.98	43	39.02	24	20.02	1	4.98	**ESS161**	**4.47**	2.115
162	180	180.70	49	48.30	22	21.30	5	5.70	**ESS162**	**0.12**	0.347
163	196	198.81	44	41.19	26	23.19	2	4.81	**ESS163**	**2.21**	1.486
164	182	181.28	63	63.72	20	20.72	8	7.28	**ESS164**	**0.11**	0.326
165	111	110.15	67	67.85	14	14.85	10	9.15	**ESS165**	**0.15**	0.381
166	137	135.39	75	76.61	15	16.61	11	9.39	**ESS166**	**0.48**	0.694
167	28	25.52	75	77.48	0	2.48	10	7.52	**ESS167**	**3.61**	1.901
168	203	202.44	29	29.56	23	23.56	4	3.44	**ESS168**	**0.12**	0.341
169	190	188.84	51	52.16	20	21.16	7	5.84	**ESS169**	**0.32**	0.570
170	168	171.75	55	51.25	23	19.25	2	5.75	**ESS170**	**3.53**	1.878
171	142	141.93	70	70.07	16	16.07	8	7.93	**ESS171**	**0.00**	0.031
172	147	142.92	56	60.08	10	14.08	10	5.92	**ESS172**	**4.39**	2.095
173	133	125.94	91	98.06	7	14.06	18	10.94	**ESS173**	**8.99**	2.999
174	157	153.07	78	81.93	13	16.93	13	9.07	**ESS174**	**2.91**	1.707
175	170	168.05	68	69.95	15	16.95	9	7.05	**ESS175**	**0.84**	0.915
176	34	32.80	7	8.20	18	19.20	6	4.80	**ESS176**	**0.59**	0.771
177	119	116.27	109	111.73	9	11.73	14	11.27	**ESS177**	**1.43**	1.194
178	107	103.43	120	123.57	6	9.57	15	11.43	**ESS178**	**2.67**	1.634
179	139	137.22	90	91.78	12	13.78	11	9.22	**ESS179**	**0.63**	0.795
180	59	59.21	114	113.79	5	4.79	9	9.21	**ESS180**	**0.01**	0.122
181	91	91.24	107	106.76	9	8.76	10	10.24	**ESS181**	**0.01**	0.118
182	199	198.18	41	41.82	19	19.82	5	4.18	**ESS182**	**0.21**	0.462
183	205	202.29	22	24.71	16	18.71	5	2.29	**ESS183**	**3.95**	1.987
184	182	182.18	28	27.82	21	20.82	3	3.18	**ESS184**	**0.01**	0.114
185	84	83.76	61	61.24	9	9.24	7	6.76	**ESS185**	**0.02**	0.129
186	220	219.92	19	19.08	22	22.08	2	1.92	**ESS186**	**0.00**	0.066
188	228	225.93	7	9.07	21	23.07	3	0.93	**ESS188**	**5.32**	2.306
189	194	192.26	42	43.74	17	18.74	6	4.26	**ESS189**	**0.95**	0.977
190	156	156.91	46	45.09	18	17.09	4	4.91	**ESS190**	**0.24**	0.491
191	174	172.34	20	21.66	17	18.66	4	2.34	**ESS191**	**1.46**	1.208
192	67	64.06	138	140.94	3	5.94	16	13.06	**ESS192**	**2.31**	1.520
193	141	139.59	84	85.41	11	12.41	9	7.59	**ESS193**	**0.46**	0.677
194	148	142.70	88	93.30	8	13.30	14	8.70	**ESS194**	**5.84**	2.417
195	194	189.17	42	46.83	12	16.83	9	4.17	**ESS195**	**7.61**	2.759
196	95	94.40	141	141.60	9	9.60	15	14.40	**ESS196**	**0.07**	0.262
197	201	196.14	36	40.86	15	19.86	9	4.14	**ESS197**	**7.60**	2.757
198	169	165.42	54	57.58	12	15.58	9	5.42	**ESS198**	**3.48**	1.866
199	203	201.14	30	31.86	18	19.86	5	3.14	**ESS199**	**1.39**	1.180
200	132	132.69	29	28.31	18	17.31	3	3.69	**ESS200**	**0.18**	0.422
201	200	198.76	48	49.24	18	19.24	6	4.76	**ESS201**	**0.44**	0.662
202	207	206.88	50	50.12	20	20.12	5	4.88	**ESS202**	**0.00**	0.066

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	CAREER				VOLUNTEER						
	Essentiality		Not Essential		Essentiality		Not Essential			*Chi-Square*	Standard Deviations
Item #	Observed	Expected	Observed	Expected	Observed	Expected	Observed	Expected	#		
203	168	166.43	63	64.57	15	16.57	8	6.43	**ESS203**	**0.59**	0.765
204	181	183.49	47	44.51	21	18.51	2	4.49	**ESS204**	**1.89**	1.374
205	231	228.12	17	19.88	10	12.88	4	1.12	**ESS205**	**8.48**	2.911
206	245	241.83	10	13.17	12	15.17	4	0.83	**ESS206**	**13.65**	3.695
207	192	192.38	51	50.63	17	16.63	4	4.38	**ESS207**	**0.04**	0.210
208	224	225.85	43	41.15	23	21.15	2	3.85	**ESS208**	**1.15**	1.073
209	266	263.76	6	8.24	22	24.24	3	0.76	**ESS209**	**7.47**	2.734
210	246	244.06	20	21.94	21	22.94	4	2.06	**ESS210**	**2.17**	1.474
211	233	233.85	31	30.15	23	22.15	2	2.85	**ESS211**	**0.32**	0.562
212	215	211.27	42	45.73	16	19.73	8	4.27	**ESS212**	**4.33**	2.081
213	261	257.02	8	11.98	18	21.98	5	1.02	**ESS213**	**17.54**	4.188
214	203	201.33	59	60.67	16	17.67	7	5.33	**ESS214**	**0.74**	0.863
215	227	226.55	37	37.45	21	21.45	4	3.55	**ESS215**	**0.07**	0.272
216	221	221.10	48	47.90	19	18.90	4	4.10	**ESS216**	**0.00**	0.054
217	201	197.06	55	58.94	13	16.94	9	5.06	**ESS217**	**4.31**	2.077
218	250	249.06	13	13.94	18	18.94	2	1.06	**ESS218**	**0.95**	0.973
219	257	252.47	12	16.53	18	22.53	6	1.47	**ESS219**	**16.12**	4.015
220	85	89.06	159	154.94	11	6.94	8	12.06	**ESS220**	**4.04**	2.011
222	143	147.06	107	102.94	17	12.94	5	9.06	**ESS222**	**3.36**	1.834
223	231	228.37	33	35.63	19	21.63	6	3.37	**ESS223**	**2.59**	1.608
224	217	216.14	17	17.86	13	13.86	2	1.14	**ESS224**	**0.74**	0.858
225	170	168.58	31	32.42	12	13.42	4	2.58	**ESS225**	**1.00**	1.002
226	214	212.78	15	16.22	9	10.22	2	0.78	**ESS226**	**2.16**	1.469
227	221	217.35	13	16.65	14	17.65	5	1.35	**ESS227**	**11.46**	3.385
228	167	168.40	68	66.60	10	8.60	2	3.40	**ESS228**	**0.85**	0.920
229	242	241.05	0	0.95	11	11.95	1	0.05	**ESS229**	**20.25**	4.500
230	240	237.36	2	4.64	16	18.64	3	0.36	**ESS230**	**20.99**	4.582
231	202	200.06	30	31.94	11	12.94	4	2.06	**ESS231**	**2.24**	1.496
232	228	225.01	9	11.99	16	18.99	4	1.01	**ESS232**	**10.08**	3.175
233	80	81.50	83	81.50	8	6.50	5	6.50	**ESS233**	**0.75**	0.865
234	236	235.52	5	5.48	22	22.48	1	0.52	**ESS234**	**0.49**	0.699
235	240	239.17	1	1.83	22	22.83	1	0.17	**ESS235**	**4.32**	2.078
236	241	241.00	0	0.00	17	17.00	0	0.00	**ESS236**	**0.00**	0.000
237	235	234.21	3	3.79	12	12.79	1	0.21	**ESS237**	**3.25**	1.803
238	137	136.84	38	38.16	10	10.16	3	2.84	**ESS238**	**0.01**	0.115
239	228	227.22	12	12.78	21	21.78	2	1.22	**ESS239**	**0.57**	0.754
240	210	209.83	8	8.18	21	21.18	1	0.83	**ESS240**	**0.04**	0.206
241	192	192.30	47	46.70	18	17.70	4	4.30	**ESS241**	**0.03**	0.168
242	238	238.09	1	0.91	23	22.91	0	0.09	**ESS242**	**0.10**	0.311
243	200	200.60	18	17.40	19	18.40	1	1.60	**ESS243**	**0.26**	0.514
244	143	143.16	21	20.84	15	14.84	2	2.16	**ESS244**	**0.02**	0.123
245	218	216.39	19	20.61	13	14.61	3	1.39	**ESS245**	**2.17**	1.475
246	182	181.70	42	42.30	7	7.30	2	1.70	**ESS246**	**0.07**	0.261
247	121	121.88	59	58.13	9	8.13	3	3.88	**ESS247**	**0.31**	0.558
248	154	154.59	42	41.41	14	13.41	3	3.59	**ESS248**	**0.13**	0.366
249	172	172.04	32	31.96	11	10.96	2	2.04	**ESS249**	**0.00**	0.029
250	143	143.74	31	30.26	9	8.26	1	1.74	**ESS250**	**0.40**	0.634
251	83	83.78	36	35.22	5	4.22	1	1.78	**ESS251**	**0.51**	0.711
252	71	72.52	48	46.48	7	5.48	2	3.52	**ESS252**	**1.15**	1.074
253	31	31.85	43	42.15	3	2.15	2	2.85	**ESS253**	**0.63**	0.791

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	CAREER				VOLUNTEER						
	Essentiality		Not Essential		Essentiality		Not Essential			*Chi-Square*	Standard Deviations
Item #	Observed	Expected	Observed	Expected	Observed	Expected	Observed	Expected	#		
254	33	32.47	52	52.53	1	1.53	3	2.47	**ESS254**	**0.31**	0.556
255	79	80.08	64	62.92	5	3.92	2	3.08	**ESS255**	**0.71**	0.842
256	57	58.79	71	69.21	5	3.21	2	3.79	**ESS256**	**1.93**	1.391
257	95	97.37	87	84.63	12	9.63	6	8.37	**ESS257**	**1.38**	1.174
258	156	156.57	47	46.43	16	15.43	4	4.57	**ESS258**	**0.10**	0.320
259	91	92.73	66	64.27	10	8.27	4	5.73	**ESS259**	**0.96**	0.982
260	131	131.62	89	88.38	9	8.38	5	5.62	**ESS260**	**0.12**	0.351
261	198	195.55	14	16.45	16	18.45	4	1.55	**ESS261**	**4.58**	2.141
262	207	207.22	13	12.78	20	19.78	1	1.22	**ESS262**	**0.05**	0.215
263	206	205.48	15	15.52	19	19.52	2	1.48	**ESS263**	**0.22**	0.469
265	86	89.90	92	88.10	14	10.10	6	9.90	**ESS265**	**3.38**	1.839
266	131	133.28	42	39.72	20	17.72	3	5.28	**ESS266**	**1.45**	1.204
267	190	191.03	12	10.97	19	17.97	0	1.03	**ESS267**	**1.19**	1.092
268	204	203.37	3	3.63	20	20.63	1	0.37	**ESS268**	**1.21**	1.102
269	148	150.96	38	35.04	20	17.04	1	3.96	**ESS269**	**3.03**	1.741
270	123	125.46	40	37.54	14	11.54	1	3.46	**ESS270**	**2.48**	1.573
271	58	59.24	54	52.76	6	4.76	3	4.24	**ESS271**	**0.74**	0.860
272	218	218.00	0	0.00	23	23.00	0	0.00	**ESS272**	**0.00**	0.000
273	136	137.06	44	42.94	14	12.94	3	4.06	**ESS273**	**0.40**	0.629
274	202	201.65	16	16.35	20	20.35	2	1.65	**ESS274**	**0.09**	0.297
275	213	212.29	2	2.71	22	22.71	1	0.29	**ESS275**	**1.95**	1.396
276	209	208.58	5	5.42	22	22.42	1	0.58	**ESS276**	**0.34**	0.584
277	204	204.69	7	6.31	23	22.31	0	0.69	**ESS277**	**0.79**	0.887
278	214	213.48	4	4.52	22	22.52	1	0.48	**ESS278**	**0.65**	0.804
279	186	187.11	22	20.89	20	18.89	1	2.11	**ESS279**	**0.71**	0.845
280	182	180.66	28	29.34	15	16.34	4	2.66	**ESS280**	**0.86**	0.929
281	201	199.53	15	16.47	17	18.47	3	1.53	**ESS281**	**1.69**	1.298
282	210	207.87	6	8.13	20	22.13	3	0.87	**ESS282**	**6.04**	2.459
283	203	201.54	13	14.46	20	21.46	3	1.54	**ESS283**	**1.64**	1.282
284	203	202.44	13	13.56	21	21.56	2	1.44	**ESS284**	**0.25**	0.503
285	217	215.26	1	2.74	19	20.74	2	0.26	**ESS285**	**12.70**	3.564
286	187	187.89	26	25.11	15	14.11	1	1.89	**ESS286**	**0.51**	0.713
287	138	137.49	61	61.51	14	14.51	7	6.49	**ESS287**	**0.06**	0.253
288	192	192.06	21	20.94	19	18.94	2	2.06	**ESS288**	**0.00**	0.049
289	179	180.67	36	34.33	21	19.33	2	3.67	**ESS289**	**1.00**	1.002
290	149	148.01	32	32.99	8	8.99	3	2.01	**ESS290**	**0.64**	0.800
291	150	148.03	44	45.97	11	12.97	6	4.03	**ESS291**	**1.38**	1.173
292	171	170.38	32	32.63	17	17.63	4	3.38	**ESS292**	**0.15**	0.390
293	323	319.67	2	5.33	37	40.33	4	0.67	**ESS293**	**18.86**	4.343
294	316	315.56	12	12.44	39	39.44	2	1.56	**ESS294**	**0.15**	0.385
295	316	313.74	12	14.26	36	38.26	4	1.74	**ESS295**	**3.45**	1.857
296	294	291.36	33	35.64	33	35.64	7	4.36	**ESS296**	**2.01**	1.419
297	177	177.02	121	120.98	22	21.98	15	15.02	**ESS297**	**0.00**	0.007
298	302	301.85	23	23.15	37	37.15	3	2.85	**ESS298**	**0.01**	0.098
300	185	186.32	119	117.68	24	22.68	13	14.32	**ESS300**	**0.22**	0.473
301	241	244.92	79	75.08	33	29.08	5	8.92	**ESS301**	**2.51**	1.586
302	278	276.26	8	9.74	34	35.74	3	1.26	**ESS302**	**2.81**	1.676
303	261	257.38	23	26.63	29	32.63	7	3.38	**ESS303**	**4.84**	2.200
304	256	250.28	21	26.72	25	30.72	9	3.28	**ESS304**	**12.40**	3.521
305	269	265.31	14	17.69	31	34.69	6	2.31	**ESS305**	**7.09**	2.663

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	CAREER				VOLUNTEER						
	Essentiality		Not Essential		Essentiality		Not Essential			*Chi-Square*	Standard Deviations
Item #	Observed	Expected	Observed	Expected	Observed	Expected	Observed	Expected	#		
306	218	217.29	62	62.71	28	28.71	9	8.29	**ESS306**	**0.09**	0.299
307	276	273.64	10	12.36	34	36.36	4	1.64	**ESS307**	**4.01**	2.002
308	269	267.24	15	16.76	34	35.76	4	2.24	**ESS308**	**1.66**	1.289
309	267	262.94	18	22.06	31	35.06	7	2.94	**ESS309**	**6.88**	2.623
310	277	278.06	9	7.94	38	36.94	0	1.06	**ESS310**	**1.23**	1.109
311	209	209.78	66	65.22	29	28.22	8	8.78	**ESS311**	**0.10**	0.319
312	272	270.99	14	15.01	35	36.01	3	1.99	**ESS312**	**0.61**	0.779
313	277	275.41	9	10.59	35	36.59	3	1.41	**ESS313**	**2.12**	1.456
314	285	284.23	1	1.77	37	37.77	1	0.23	**ESS314**	**2.85**	1.687
315	268	264.64	17	20.36	31	34.36	6	2.64	**ESS315**	**5.19**	2.278
316	256	254.91	29	30.09	32	33.09	5	3.91	**ESS316**	**0.39**	0.622
317	239	241.63	46	43.37	34	31.37	3	5.63	**ESS317**	**1.64**	1.280
318	255	254.91	30	30.09	33	33.09	4	3.91	**ESS318**	**0.00**	0.053
319	230	230.12	55	54.88	30	29.88	7	7.12	**ESS319**	**0.00**	0.055
320	251	252.25	34	32.75	34	32.75	3	4.25	**ESS320**	**0.47**	0.686
321	254	254.91	31	30.09	34	33.09	3	3.91	**ESS321**	**0.27**	0.516
322	249	248.71	36	36.29	32	32.29	5	4.71	**ESS322**	**0.02**	0.151
323	160	164.43	122	117.57	26	21.57	11	15.43	**ESS323**	**2.46**	1.570
324	233	233.48	28	27.52	30	29.52	3	3.48	**ESS324**	**0.08**	0.289
325	237	238.91	25	23.09	32	30.09	1	2.91	**ESS325**	**1.55**	1.244
326	234	234.77	31	30.23	30	29.23	3	3.77	**ESS326**	**0.20**	0.444
327	169	170.65	78	76.35	21	19.35	7	8.65	**ESS327**	**0.51**	0.714
328	224	222.03	38	39.97	26	27.97	7	5.03	**ESS328**	**1.02**	1.010
329	180	182.42	77	74.58	23	20.58	6	8.42	**ESS329**	**1.09**	1.043
330	108	108.57	119	118.43	13	12.43	13	13.57	**ESS330**	**0.05**	0.234
331	235	235.56	29	28.44	30	29.44	3	3.56	**ESS331**	**0.11**	0.331

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Appendix Q: Results of t-test of KSAO Importance by Position Type

KSAO	Position Type	N	Mean	*t*	Sig.
332. Basic Arithmetic: Ability to perform mathematical operations, such as counting, addition, subtraction, multiplication and division.	Paid/Career	248	**3.7339**	1.472	**.142**
	Volunteer	30	**3.4333**		
333. Deductive Reasoning: The ability to apply general rules to specific problems to produce answers that make sense. (Example: Interpretation of SOPs and SOGs).	Paid/Career	255	**4.1373**	.905	**.366**
	Volunteer	33	**4.0000**		
334. Flexibility of Closure: The ability to identify or detect a known pattern (a figure, object, word or sound) that is hidden in other distracting material. (Example: Listening to Engine RPM's in order to identify issues).	Paid/Career	239	**3.5063**	1.188	**.236**
	Volunteer	32	**3.2813**		
335. Inductive Reasoning: The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events). (Example: Reading the various clues of smoke/heat to reach a decision regarding	Paid/Career	252	**3.9643**	1.569	**.118**
	Volunteer	33	**3.6970**		
336. Information Ordering: The ability to arrange things or actions in a certain order or pattern according to a specific rule or set of rules (e.g., patterns of numbers, letters, words, pictures, mathematical operations). (Example: Using SOPs to follow p	Paid/Career	251	**3.6972**	-.170	**.865**
	Volunteer	33	**3.7273**		
337. Mathematical Reasoning: The ability to choose the right mathematical methods or formulas to solve a problem. (Example: Friction loss, ladder or hose length calculation).	Paid/Career	241	**3.5270**	.304	**.761**
	Volunteer	32	**3.4688**		
338. Memorization: The ability to remember information such as words, numbers, pictures, and procedures. (Example: Hydrant locations, previous building layouts).	Paid/Career	249	**3.6145**	-1.016	**.311**
	Volunteer	31	**3.8065**		
339. Number Facility: The ability to add, subtract, multiply or divide quickly and correctly.	Paid/Career	240	**3.4333**	.863	**.389**
	Volunteer	31	**3.2581**		
340. Oral Comprehension: The ability to listen to and understand information and ideas presented through spoken words and sentences.	Paid/Career	253	**4.2648**	-.676	**.499**
	Volunteer	33	**4.3636**		
342. Oral Expression: The ability to communicate information and ideas in speaking so others will understand.	Paid/Career	252	**4.1508**	-.365	**.715**
	Volunteer	34	**4.2059**		
343. Problem Sensitivity: The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.	Paid/Career	250	**4.1320**	1.115	**.266**
	Volunteer	33	**3.9394**		
344. Selective Attention: The ability to concentrate on a task over a period of time without being distracted. (Example: Being the only pump operator on-duty).	Paid/Career	240	**3.9583**	.994	**.321**
	Volunteer	33	**3.7879**		
345. Spatial Orientation: The ability to know your location in relation to the environment or to know where other objects are in relation to you.	Paid/Career	250	**3.9680**	.323	**.747**
	Volunteer	34	**3.9118**		
346. Visualization: The ability to imagine how something will look after it is moved around or when its parts are moved or rearranged.	Paid/Career	230	**3.2217**	1.052	**.294**
	Volunteer	28	**3.0000**		
347. Written Comprehension: The ability to read and understand information and ideas presented in writing.	Paid/Career	251	**3.8805**	.755	**.451**
	Volunteer	32	**3.7500**		
348. Written Expression: The ability to communicate information and ideas in writing so others will understand. (Example: Filling out maintenance records or logbooks).	Paid/Career	251	**3.6574**	.515	**.607**
	Volunteer	32	**3.5625**		
349. Reaction Time: The ability to quickly respond (with the hand, finger or foot) to a signal (sound, light, picture) when it appears.	Paid/Career	231	**3.6926**	-1.217	**.225**
	Volunteer	30	**3.9333**		

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KSAO	Position Type	N	Mean	*t*	Sig.
350. Arm-Hand Steadiness: The ability to keep your hand and arm steady while moving your arm or while holding your arm and hand in one position. (Example: Operating power tools for extrication).	Paid/Career	233	**3.5021**	-.074	**.941**
	Volunteer	31	**3.5161**		
351. Manual Dexterity: The ability to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate or assemble objects.	Paid/Career	231	**3.6364**	-.156	**.876**
	Volunteer	30	**3.6667**		
352. Multi-limb Coordination: The ability to coordinate two or more limbs (for example, two arms, two legs, or one leg and one arm) while sitting, standing or lying down. It does not involve performing the activities while the whole body is in motion. - I	Paid/Career	223	**3.4215**	-1.080	**.281**
	Volunteer	26	**3.6538**		
353. Response Orientation: The ability to choose quickly between two or more movements in response to two or more different signals (lights, sounds, pictures). It includes the speed with which the correct response is started with the hand, foot or other b	Paid/Career	219	**3.3836**	-.738	**.461**
	Volunteer	28	**3.5357**		
354. Rate Control: The ability to time your movements or the movement of a piece of equipment in anticipation of changes in the speed and/or direction of a moving object or scene. (Example: Controlling for water hammer).	Paid/Career	228	**3.4737**	-.856	**.393**
	Volunteer	32	**3.6250**		
355. Static Strength: The ability to exert maximum muscle force to lift, push, pull or carry objects.	Paid/Career	236	**3.7331**	-.147	**.884**
	Volunteer	33	**3.7576**		
356. Control Precision: The ability to quickly and repeatedly adjust the controls of a machine or a vehicle to exact positions. (Example: Operating the aerial ladder).	Paid/Career	223	**3.6054**	-1.562	**.119**
	Volunteer	30	**3.9000**		
357. Stamina: The ability to exert yourself physically over long periods of time without getting winded or out of breath.	Paid/Career	237	**4.2954**	1.611	**.108**
	Volunteer	32	**4.0625**		
358. Near Vision: The ability to see details at close range (within a few feet of the observer).	Paid/Career	230	**3.7000**	.181	**.856**
	Volunteer	30	**3.6667**		
359. Dynamic Strength: The ability to exert muscle force repeatedly or continuously over time. This involves muscular endurance and resistance to muscle fatigue.	Paid/Career	235	**3.9447**	1.262	**.208**
	Volunteer	30	**3.7333**		
360. Trunk Strength: The ability to use your abdominal and lower back muscles to support part of the body repeatedly or continuously over time without 'giving out' or fatiguing.	Paid/Career	235	**3.9702**	.846	**.398**
	Volunteer	30	**3.8333**		
361. Extent Flexibility: The ability to bend, stretch, twist or reach with your body, arms and/or legs.	Paid/Career	232	**3.7716**	.351	**.726**
	Volunteer	31	**3.7097**		
362. Depth Perception: The ability to judge which of several objects is closer or farther away from you, or to judge the distance between you and an object. (Example: Placement of aerial).	Paid/Career	232	**3.7155**	-.641	**.522**
	Volunteer	31	**3.8387**		
363. Auditory Attention: The ability to focus on a single source of sound in the presence of other distracting sounds. (Example: Focusing on your PASS device in a chaotic environment).	Paid/Career	236	**3.9788**	-.117	**.907**
	Volunteer	33	**4.0000**		
364. Gross Body Coordination: The ability to coordinate the movement of your arms, legs and torso together when the whole body is in motion.	Paid/Career	230	**3.7000**	.290	**.772**
	Volunteer	31	**3.6452**		
365. Gross Body Equilibrium: The ability to keep or regain your body balance or stay upright when in an unstable position. (Example: Gusting winds while firefighting from the aerial ladder).	Paid/Career	235	**3.8043**	.529	**.597**
	Volunteer	31	**3.7097**		
366. Far Vision: The ability to see details at a distance.	Paid/Career	230	**3.4609**	-.134	**.894**
	Volunteer	33	**3.4848**		
367. Problem Analysis: Quickly perceiving problem areas, identifying options	Paid/Career	228	**3.7939**	-.548	**.584**

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KSAO	Position Type	N	Mean	*t*	Sig.
and the potential impact of various solutions.	Volunteer	29	**3.8966**		
368. Problem-Solving: Determining courses of action/solutions to problems. Implementing targeted solutions.	Paid/Career	224	**3.7411**	-1.100	**.272**
	Volunteer	27	**3.9630**		
369. Decision-Making: Understanding when a decision must be made and to have the willingness to make a decision. Quickly and efficiently determining an appropriate course of action to target a particular situation.	Paid/Career	222	**3.9414**	-1.582	**.115**
	Volunteer	29	**4.2414**		
370. Planning and Organization: Skill in establishing a course of action for oneself and others to accomplish goals. Skill in properly planning assignments, work duties and tasks; appropriate allocation of resources to ensure efficient, timely and smooth	Paid/Career	203	**3.4975**	-.979	**.328**
	Volunteer	24	**3.7083**		
371. Interpersonal Skill: Listening to others and being considerate of the concerns of others.	Paid/Career	230	**4.0130**	.664	**.507**
	Volunteer	27	**3.8889**		
372. Oral Communication: Speaking in a clear, concise, understandable and appropriate manner.	Paid/Career	232	**4.0690**	-1.205	**.229**
	Volunteer	28	**4.2857**		
373. Self-Motivation: Working without supervision and accomplishing tasks without prodding.	Paid/Career	229	**4.0437**	2.093	**.037**
	Volunteer	28	**3.6786**		
374. Composure: Working under stress and performing in unpleasant or traumatic circumstances.	Paid/Career	231	**4.3939**	.419	**.675**
	Volunteer	30	**4.3333**		
375. Conflict Resolution: Skill in de-escalating tense situations and quieting potential disturbances.	Paid/Career	218	**3.7294**	-.761	**.447**
	Volunteer	26	**3.8846**		
376. Critical Thinking: Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.	Paid/Career	220	**3.8136**	-.041	**.967**
	Volunteer	28	**3.8214**		
377. Leadership: Willingness to lead, take charge and offer opinions and direction, and having people respond positively to those directions such that there are behavioral changes.	Paid/Career	210	**3.4571**	-.882	**.379**
	Volunteer	25	**3.6400**		
378. Monitoring: Monitoring/Assessing your performance or the performance of other individuals or organizations to make improvements or take corrective action.	Paid/Career	193	**3.1762**	-1.561	**.120**
	Volunteer	22	**3.5455**		
379. Operation and Control: Watching gauges, dials or other indicators to make sure a machine is working properly.	Paid/Career	219	**3.6484**	-2.417	**.016**
	Volunteer	25	**4.1600**		
380. Instructing: Teaching others how to do something.	Paid/Career	202	**3.1782**	-1.463	**.145**
	Volunteer	27	**3.4815**		
381. Judgment and Decision Making: Considering the relative costs and benefits of potential actions to choose the most appropriate one.	Paid/Career	203	**3.6207**	-1.629	**.105**
	Volunteer	24	**4.0000**		
383. Social Perceptiveness: Being aware of others' reactions and understanding why they react as they do.	Paid/Career	216	**3.2917**	.300	**.764**
	Volunteer	26	**3.2308**		
384. Negotiation: Bringing others together and trying to reconcile differences.	Paid/Career	181	**2.9392**	-1.443	**.151**
	Volunteer	23	**3.2609**		
385. Public Relations Skill: Dealing with the public in such a way as to protect the image and reputation of the department while providing the public or individuals with necessary or requested information.	Paid/Career	222	**3.9144**	.788	**.432**
	Volunteer	28	**3.7500**		
386. Persuasion: Persuading others to change their minds or behavior.	Paid/Career	175	**2.7486**	-.843	**.400**
	Volunteer	20	**2.9500**		

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KSAO	Position Type	N	Mean	*t*	Sig.
387. Achievement/Effort: Establishing and maintaining personally challenging achievement goals and exerting effort toward mastering tasks.	Paid/Career	273	**3.5824**	.981	**.328**
	Volunteer	36	**3.4444**		
388. Adaptability/Flexibility: Being open to change (positive or negative) and to considerable variety in the workplace.	Paid/Career	275	**3.8945**	1.432	**.153**
	Volunteer	37	**3.6757**		
389. Attention to Detail: Being careful about detail and thorough in completing work tasks.	Paid/Career	277	**4.1408**	-.336	**.737**
	Volunteer	37	**4.1892**		
390. Concern for Others: Being sensitive to others' needs and feelings and being understanding and helpful on the job. Showing compassion for others.	Paid/Career	275	**3.7782**	-1.141	**.255**
	Volunteer	37	**3.9730**		
391. Cooperation: Being pleasant with others on the job and displaying a good-natured, cooperative attitude.	Paid/Career	276	**3.9529**	-.703	**.483**
	Volunteer	37	**4.0541**		
392. Dependability: Being reliable, responsible and dependable and fulfilling obligations.	Paid/Career	274	**4.5547**	-.118	**.906**
	Volunteer	37	**4.5676**		
393. Ethics: Acting in an honest and fair manner. Willingness to accept responsibility for actions when things go wrong. Displaying a high degree of integrity and professionalism in action and word.	Paid/Career	273	**4.5604**	-.555	**.579**
	Volunteer	37	**4.6216**		
394. Independence: Developing one's own ways of doing things, guiding oneself with little or no supervision and depending on oneself to get things done.	Paid/Career	261	**3.2912**	-.585	**.559**
	Volunteer	30	**3.4000**		
395. Initiative: Willingness to take on responsibilities and challenges.	Paid/Career	270	**3.7185**	-.837	**.403**
	Volunteer	37	**3.8378**		
396. Innovation: Tendency towards creativity and alternative thinking to develop new ideas for and answers to work-related problems.	Paid/Career	260	**3.1577**	-.193	**.847**
	Volunteer	37	**3.1892**		
397. Integrity: Being honest and ethical, especially in situations where others could be taken advantage of.	Paid/Career	273	**4.5714**	-1.498	**.135**
	Volunteer	37	**4.7568**		
398. Persistence: In the face of obstacles, one continues to engage to overcome the obstacle.	Paid/Career	272	**3.8971**	.034	**.973**
	Volunteer	37	**3.8919**		
399. Self-Control: Maintaining composure, keeping emotions in check, controlling anger and avoiding aggressive behavior, even in very difficult situations.	Paid/Career	273	**4.2821**	-2.273	**.024**
	Volunteer	37	**4.5676**		
400. Service Orientation: Actively looking for ways to help people; a desire to place others' interests ahead of your own; showing compassion for others.	Paid/Career	272	**3.6544**	-.634	**.526**
	Volunteer	37	**3.7568**		
401. Social/Teamwork Orientation: Preferring to work with others rather than alone, and being personally connected with others on the job. The ability to work with others (teamwork) to achieve a mutual end.	Paid/Career	273	**4.1209**	-1.474	**.141**
	Volunteer	37	**4.3243**		
402. Stress Tolerance: Accepting criticism and dealing calmly and effectively with high stress situations.	Paid/Career	275	**4.2691**	-2.073	**.039**
	Volunteer	37	**4.5405**		
403. Knowledge of motor vehicle rules and regulations.	Paid/Career	219	**4.0183**	-1.120	**.264**
	Volunteer	31	**4.2258**		
404. Knowledge of common hand tools, such as wrenches, pliers, screw drivers, hammers and mauls, axes, prying tools, etc., e.g., their use, operation, limits and safety precautions/procedures.	Paid/Career	227	**3.9207**	-1.118	**.265**
	Volunteer	31	**4.0968**		
405. Knowledge of basic science terms and concepts, e.g., force, gravity, pressure, vacuum, etc.	Paid/Career	216	**2.9444**	-2.908	**.004**
	Volunteer	29	**3.4483**		

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KSAO	Position Type	N	Mean	*t*	Sig.
406. Knowledge of ratios and terms, expressing ratios and the practical use of ratios, e.g., pounds per square inch, gallons per minute, etc.	Paid/Career	216	**3.0278**	-.737	**.462**
	Volunteer	31	**3.1613**		
407. Knowledge of basic mechanical principles, e.g., leverage, gears, pulleys, screws, etc.	Paid/Career	217	**3.0968**	-1.830	**.068**
	Volunteer	30	**3.4333**		
408. Knowledge of typical occupancy activity at a given time of day	Paid/Career	213	**3.4038**	.160	**.873**
	Volunteer	27	**3.3704**		
409. Knowledge of the science behind fire propagation	Paid/Career	216	**3.8565**	-.213	**.832**
	Volunteer	30	**3.9000**		
411. Knowledge of common heat energy sources: chemical, electrical, and mechanical energy	Paid/Career	222	**3.3964**	-1.002	**.317**
	Volunteer	31	**3.5806**		
412. Knowledge of heat transmission and the mechanisms by which heat transfer occurs: conduction, convection, and radiation	Paid/Career	223	**3.6637**	-1.976	**.049**
	Volunteer	31	**4.0323**		
413. Knowledge of common products of combustion and their toxic effects	Paid/Career	222	**4.1126**	.464	**.643**
	Volunteer	31	**4.0323**		
414. Knowledge of classification of fires: class A, B, C, D, and K fires	Paid/Career	223	**3.9327**	-.192	**.848**
	Volunteer	31	**3.9677**		
415. Knowledge of Fire Control Theory: temperature reduction, fuel removal, oxygen exclusion, and chemical flame inhibition	Paid/Career	224	**4.1161**	.114	**.909**
	Volunteer	31	**4.0968**		
416. Knowledge of common materials found in building construction	Paid/Career	223	**3.8386**	-.747	**.456**
	Volunteer	31	**3.9677**		
417. Knowledge of the strengths and weaknesses associated with different types of building construction types	Paid/Career	220	**3.9955**	-.761	**.447**
	Volunteer	31	**4.1290**		
418. Knowledge of types of extinguishers and their common uses	Paid/Career	223	**3.8251**	-.073	**.942**
	Volunteer	31	**3.8387**		
419. Knowledge of types of knots, ropes, and webbing materials	Paid/Career	223	**3.4709**	-.065	**.948**
	Volunteer	31	**3.4839**		
420. Knowledge of types of ladders	Paid/Career	223	**3.8251**	-1.164	**.245**
	Volunteer	31	**4.0323**		
421. Knowledge of search operations	Paid/Career	222	**4.4099**	.801	**.424**
	Volunteer	31	**4.2903**		
422. Knowledge of rescue operations	Paid/Career	222	**4.3874**	.865	**.388**
	Volunteer	31	**4.2581**		
423. Knowledge of extrication operations	Paid/Career	221	**4.0995**	-1.028	**.305**
	Volunteer	31	**4.2581**		
424. Knowledge of types of carries	Paid/Career	220	**3.3318**	-.661	**.509**
	Volunteer	30	**3.4667**		
425. Knowledge of victim removal methods	Paid/Career	195	**4.0359**	.560	**.576**
	Volunteer	28	**3.9286**		

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KSAO	Position Type	N	Mean	*t*	Sig.
426. Knowledge of forcible entry methods	Paid/Career	193	**4.1347**	1.013	**.312**
	Volunteer	28	**3.9643**		
427. Knowledge of ventilation methods	Paid/Career	191	**4.1466**	1.760	**.080**
	Volunteer	28	**3.8571**		
428. Knowledge of types of hydrants and alternative water supplies	Paid/Career	188	**3.6223**	-.628	**.531**
	Volunteer	28	**3.7500**		
429. Knowledge of methods of moving water in a system	Paid/Career	174	**3.0517**	-1.495	**.137**
	Volunteer	24	**3.4167**		
430. Knowledge of static pressure, flow pressure, and residual pressure	Paid/Career	178	**2.9326**	-1.018	**.310**
	Volunteer	28	**3.1429**		
431. Knowledge of common hose rolls	Paid/Career	192	**2.9740**	-.914	**.362**
	Volunteer	28	**3.1786**		
432. Knowledge of friction loss, elevation loss/gain, and water hammers	Paid/Career	177	**3.1921**	-1.096	**.274**
	Volunteer	28	**3.4286**		
433. Knowledge of size classifications of fire streams	Paid/Career	185	**3.3405**	.034	**.973**
	Volunteer	27	**3.3333**		
434. Knowledge of foam techniques	Paid/Career	190	**3.3526**	-.024	**.981**
	Volunteer	28	**3.3571**		
435. Knowledge of direct attacks	Paid/Career	191	**4.1466**	1.027	**.305**
	Volunteer	28	**3.9643**		
436. Knowledge of indirect attacks	Paid/Career	191	**4.0942**	1.121	**.263**
	Volunteer	28	**3.8929**		
437. Knowledge of combination attacks	Paid/Career	191	**4.0419**	1.554	**.122**
	Volunteer	28	**3.7500**		
438. Knowledge of salvage operations	Paid/Career	189	**3.2169**	.567	**.572**
	Volunteer	28	**3.1071**		
439. Knowledge of overhaul operations	Paid/Career	191	**3.5131**	1.585	**.115**
	Volunteer	28	**3.2143**		
440. Knowledge of hidden fire indicators	Paid/Career	191	**4.0471**	.607	**.545**
	Volunteer	28	**3.9286**		
441. Knowledge of evidence protection methods	Paid/Career	183	**3.4590**	.148	**.882**
	Volunteer	28	**3.4286**		
442. Knowledge of procedures the public should use to report a fire or other emergency	Paid/Career	170	**3.0176**	-.796	**.427**
	Volunteer	26	**3.2308**		
443. Knowledge of necessary skills for fire department communications	Paid/Career	183	**3.4863**	-2.495	**.013**
	Volunteer	27	**4.0741**		
444. Knowledge of the types of information required for arrival and progress reports	Paid/Career	173	**3.4740**	.055	**.957**
	Volunteer	26	**3.4615**		

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KSAO	Position Type	N	Mean	*t*	Sig.
445. Knowledge of preincident surveys and inspections	Paid/Career	180	**2.9944**	-.025	**.980**
	Volunteer	26	**3.0000**		
446. Knowledge of common fire hazards	Paid/Career	191	**3.8325**	.241	**.810**
	Volunteer	28	**3.7857**		
447. Knowledge of the steps in presenting fire and life safety information to the public	Paid/Career	156	**2.8974**	-.048	**.962**
	Volunteer	22	**2.9091**		
448. Knowledge of the components of personal protective equipment	Paid/Career	174	**4.7069**	-.489	**.625**
	Volunteer	26	**4.7692**		
449. Knowledge of the physiological aspects of stress	Paid/Career	169	**3.8166**	-1.270	**.206**
	Volunteer	24	**4.0833**		
450. Knowledge of cardiopulmonary resuscitation (CPR)	Paid/Career	174	**4.7299**	.926	**.356**
	Volunteer	26	**4.6154**		
451. Knowledge of scene safety considerations as hazardous materials incidents and rescue operations	Paid/Career	172	**4.2791**	-.005	**.996**
	Volunteer	25	**4.2800**		
452. Knowledge of the types and states of shock of victims and/or other fire personnel	Paid/Career	171	**4.0526**	-1.450	**.149**
	Volunteer	26	**4.3462**		
453. Knowledge of methods to managing shock of victims and/or other fire personnel	Paid/Career	170	**4.0824**	-1.080	**.281**
	Volunteer	26	**4.3077**		
454. Knowledge of Body Substance Isolation (BSI) or infection control precautions	Paid/Career	173	**4.5954**	.376	**.707**
	Volunteer	26	**4.5385**		
455. Knowledge of methods to prevent and/or reduce the effects of heat exposure while wearing protective clothing	Paid/Career	172	**4.2791**	-1.237	**.217**
	Volunteer	26	**4.5000**		
456. Knowledge of the main routes through which hazardous materials can enter the body	Paid/Career	172	**4.1977**	-.168	**.867**
	Volunteer	26	**4.2308**		
457. Knowledge of the clues which indicate the presence of hazardous materials	Paid/Career	169	**4.2189**	.341	**.733**
	Volunteer	26	**4.1538**		
458. Knowledge of chemical attack indicators	Paid/Career	165	**3.7879**	-.879	**.380**
	Volunteer	21	**4.0000**		
459. Knowledge of incident priorities at all HAZMAT and terrorist incidents	Paid/Career	154	**3.7143**	-.794	**.428**
	Volunteer	23	**3.9130**		
460. Knowledge of types of decontamination	Paid/Career	168	**3.6429**	-.167	**.868**
	Volunteer	25	**3.6800**		
461. Knowledge of hazard-control zones	Paid/Career	171	**3.6842**	-1.242	**.216**
	Volunteer	24	**3.9583**		
462. Knowledge of defensive confinement and spill control actions	Paid/Career	166	**3.4337**	-1.475	**.142**
	Volunteer	24	**3.7500**		
463. Knowledge of factors to address during large-scale evacuations	Paid/Career	148	**3.3108**	-.207	**.836**
	Volunteer	22	**3.3636**		

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KSAO	Position Type	N	Mean	*t*	Sig.
464. Knowledge of the organization of the fire department.	Paid/Career	165	**3.1333**	-.957	**.340**
	Volunteer	25	**3.3600**		
465. Knowledge of the role of the Fire Fighter I in the organization.	Paid/Career	158	**3.7468**	-1.481	**.140**
	Volunteer	25	**4.0800**		
466. Knowledge of the mission of fire service.	Paid/Career	165	**3.5091**	-2.162	**.032**
	Volunteer	25	**4.0400**		
467. Knowledge of the fire department's standard operating procedures (SOPs) and rules and regulations.	Paid/Career	165	**4.1212**	-1.265	**.207**
	Volunteer	25	**4.3600**		
468. Knowledge of the role of other agencies as they relate to the fire department.	Paid/Career	155	**2.9226**	-2.113	**.036**
	Volunteer	24	**3.3750**		
470. Knowledge of the critical aspects of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program.	Paid/Career	162	**3.0864**	-1.954	**.052**
	Volunteer	24	**3.5417**		
471. Knowledge of procedures for reporting an emergency; departmental SOPs for taking and receiving alarms, radio codes, or procedures; and information needs of dispatch center.	Paid/Career	149	**3.3221**	-3.123	**.002**
	Volunteer	22	**4.0909**		
472. Knowledge of fire department procedures for answering nonemergency telephone calls.	Paid/Career	149	**2.6107**	-1.981	**.049**
	Volunteer	22	**3.1364**		
473. Knowledge of departmental radio procedures and etiquette for routine traffic, emergency traffic, and emergency evacuation signals.	Paid/Career	163	**3.9141**	-.576	**.565**
	Volunteer	24	**4.0417**		
474. Knowledge of personnel accountability systems, emergency communication procedures, and emergency evacuation methods.	Paid/Career	166	**4.4337**	1.526	**.129**
	Volunteer	25	**4.1600**		
475. Knowledge of basic construction of typical doors, windows, and walls within the department's community or service area.	Paid/Career	167	**3.6587**	-.725	**.469**
	Volunteer	24	**3.7917**		
476. Knowledge of personnel accountability systems and communication procedures.	Paid/Career	167	**4.2635**	.593	**.554**
	Volunteer	25	**4.1600**		
477. Principles of fire streams as they relate to fighting automobile fires.	Paid/Career	168	**3.8333**	-1.739	**.084**
	Volunteer	25	**4.1600**		
478. Knowledge of SOPs for alarm assignments and fire department radio communication procedures.	Paid/Career	159	**3.4025**	-2.775	**.006**
	Volunteer	25	**4.0000**		
479. Knowledge of the methods to assess the origin and cause of fires.	Paid/Career	146	**2.8288**	-1.689	**.093**
	Volunteer	22	**3.2273**		
480. Knowledge of the characteristics of pressurized flammable gases	Paid/Career	167	**3.8383**	-.769	**.443**
	Volunteer	25	**4.0000**		

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Appendix R: Results of ANOVA Analysis of KSAO Importance by Region

Item #	KSAO	F	Sig.
332	**Basic Arithmetic**: Ability to perform mathematical operations, such as counting, addition, subtraction, multiplication and division.	1.191	.315
333	**Deductive Reasoning:** The ability to apply general rules to specific problems to produce answers that make sense. (Example: Interpretation of SOPs and SOGs).	2.419	.049
334	**Flexibility of Closure:** The ability to identify or detect a known pattern (a figure, object, word or sound) that is hidden in other distracting material. (Example: Listening to Engine RPM's in order to identify issues).	.971	.424
335	**Inductive Reasoning:** The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events). (Example: Reading the various clues of smoke/heat to reach a decision regarding the extent of fire).	.254	.907
336	**Information Ordering:** The ability to arrange things or actions in a certain order or pattern according to a specific rule or set of rules (e.g., patterns of numbers, letters, words, pictures, mathematical operations). (Example: Using SOPs to follow procedures for hoseline operation).	1.487	.206
337	**Mathematical Reasoning:** The ability to choose the right mathematical methods or formulas to solve a problem. (Example: Friction loss, ladder or hose length calculation).	1.862	.117
338	**Memorization:** The ability to remember information such as words, numbers, pictures, and procedures. (Example: Hydrant locations, previous building layouts).	3.627	.007
339	**Number Facility:** The ability to add, subtract, multiply or divide quickly and correctly.	2.803	.026
340	**Oral Comprehension:** The ability to listen to and understand information and ideas presented through spoken words and sentences.	1.842	.121
342	**Oral Expression:** The ability to communicate information and ideas in speaking so others will understand.	1.726	.144
343	**Problem Sensitivity:** The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.	1.684	.154
344	**Selective Attention:** The ability to concentrate on a task over a period of time without being distracted. (Example: Being the only pump operator on-duty).	.854	.492
345	**Spatial Orientation:** The ability to know your location in relation to the environment or to know where other objects are in relation to you.	.847	.496
346	**Visualization:** The ability to imagine how something will look after it is moved around or when its parts are moved or rearranged.	2.906	.022
347	**Written Comprehension:** The ability to read and understand information and ideas presented in writing.	3.189	.014
348	**Written Expression:** The ability to communicate information and ideas in writing so others will understand. (Example: Filling out maintenance records or logbooks).	4.536	.001
349	**Reaction Time:** The ability to quickly respond (with the hand, finger or foot) to a signal (sound, light, picture) when it appears.	1.887	.113
350	**Arm-Hand Steadiness:** The ability to keep your hand and arm steady while moving your arm or while holding your arm and hand in one position. (Example: Operating power tools for extrication).	1.658	.160
351	**Manual Dexterity:** The ability to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate or assemble objects.	.496	.739
352	**Multi-limb Coordination:** The ability to coordinate two or more limbs (for example, two arms, two legs, or one leg and one arm) while sitting, standing or lying down. It does not involve performing the activities while the whole body is in motion.	2.612	.036
353	**Response Orientation:** The ability to choose quickly between two or more movements in response to two or more different signals (lights, sounds, pictures). It includes the speed with which the correct response is started with the hand, foot or other body part.	2.213	.068
354	**Rate Control:** The ability to time your movements or the movement of a piece of equipment in anticipation of changes in the speed and/or direction of a moving object or scene. (Example: Controlling for water hammer).	1.476	.210
355	**Static Strength:** The ability to exert maximum muscle force to lift, push, pull or carry objects.	.348	.846
356	**Control Precision:** The ability to quickly and repeatedly adjust the controls of a machine or a vehicle to exact	.334	.855

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Item #	KSAO	F	Sig.
	positions. (Example: Operating the aerial ladder).		
357	**Stamina:** The ability to exert yourself physically over long periods of time without getting winded or out of breath.	.885	.474
358	**Near Vision:** The ability to see details at close range (within a few feet of the observer).	.731	.572
359	**Dynamic Strength:** The ability to exert muscle force repeatedly or continuously over time. This involves muscular endurance and resistance to muscle fatigue.	1.118	.348
360	**Trunk Strength:** The ability to use your abdominal and lower back muscles to support part of the body repeatedly or continuously over time without 'giving out' or fatiguing.	.770	.546
361	**Extent Flexibility:** The ability to bend, stretch, twist or reach with your body, arms and/or legs.	.518	.722
362	**Depth Perception:** The ability to judge which of several objects is closer or farther away from you, or to judge the distance between you and an object. (Example: Placement of aerial).	.607	.658
363	**Auditory Attention:** The ability to focus on a single source of sound in the presence of other distracting sounds. (Example: Focusing on your PASS device in a chaotic environment).	.146	.965
364	**Gross Body Coordination:** The ability to coordinate the movement of your arms, legs and torso together when the whole body is in motion.	.826	.509
365	**Gross Body Equilibrium:** The ability to keep or regain your body balance or stay upright when in an unstable position. (Example: Gusting winds while firefighting from the aerial ladder).	.435	.784
366	**Far Vision:** The ability to see details at a distance.	1.396	.236
367	**Problem Analysis:** Quickly perceiving problem areas, identifying options and the potential impact of various solutions.	1.050	.382
368	**Problem-Solving:** Determining courses of action/solutions to problems. Implementing targeted solutions.	.584	.674
369	**Decision-Making**: Understanding when a decision must be made and to have the willingness to make a decision. Quickly and efficiently determining an appropriate course of action to target a particular situation.	.699	.594
370	**Planning and Organization**: Skill in establishing a course of action for oneself and others to accomplish goals. Skill in properly planning assignments, work duties and tasks; appropriate allocation of resources to ensure efficient, timely and smooth department operations.	1.127	.344
371	**Interpersonal Skill**: Listening to others and being considerate of the concerns of others.	1.327	.260
372	**Oral Communication**: Speaking in a clear, concise, understandable and appropriate manner.	2.836	.025
373	**Self-Motivation**: Working without supervision and accomplishing tasks without prodding.	1.111	.352
374	**Composure**: Working under stress and performing in unpleasant or traumatic circumstances.	1.513	.199
375	**Conflict Resolution**: Skill in de-escalating tense situations and quieting potential disturbances.	1.451	.218
376	**Critical Thinking:** Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.	2.112	.080
377	**Leadership:** Willingness to lead, take charge and offer opinions and direction, and having people respond positively to those directions such that there are behavioral changes.	.383	.821
378	**Monitoring:** Monitoring/Assessing your performance or the performance of other individuals or organizations to make improvements or take corrective action.	.809	.521
379	**Operation and Control:** Watching gauges, dials or other indicators to make sure a machine is working properly.	1.360	.248
380	**Instructing:** Teaching others how to do something.	1.203	.310
381	**Judgment and Decision Making:** Considering the relative costs and benefits of potential actions to choose the most appropriate one.	2.682	.032
383	**Social Perceptiveness:** Being aware of others' reactions and understanding why they react as they do.	4.536	.002
384	**Negotiation:** Bringing others together and trying to reconcile differences.	2.657	.034
385	**Public Relations Skill:** Dealing with the public in such a way as to protect the image and reputation of the department while providing the public or individuals with necessary or requested information.	.670	.614
386	**Persuasion:** Persuading others to change their minds or behavior.	.423	.792
387	**Achievement/Effort:** Establishing and maintaining personally challenging achievement goals and exerting	.351	.844

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Item #	KSAO	F	Sig.
	effort toward mastering tasks.		
388	**Adaptability/Flexibility:** Being open to change (positive or negative) and to considerable variety in the workplace.	1.982	.097
389	**Attention to Detail:** Being careful about detail and thorough in completing work tasks.	.188	.945
390	**Concern for Others:** Being sensitive to others' needs and feelings and being understanding and helpful on the job. Showing compassion for others.	1.280	.278
391	**Cooperation:** Being pleasant with others on the job and displaying a good-natured, cooperative attitude.	.637	.636
392	**Dependability:** Being reliable, responsible and dependable and fulfilling obligations.	.339	.852
393	**Ethics.** Acting in an honest and fair manner. Willingness to accept responsibility for actions when things go wrong. Displaying a high degree of integrity and professionalism in action and word**.**	.380	.823
394	**Independence:** Developing one's own ways of doing things, guiding oneself with little or no supervision and depending on oneself to get things done.	.830	.507
395	**Initiative:** Willingness to take on responsibilities and challenges.	1.466	.213
396	**Innovation:** Tendency towards creativity and alternative thinking to develop new ideas for and answers to work-related problems.	.343	.849
397	**Integrity:** Being honest and ethical, especially in situations where others could be taken advantage of.	.286	.887
398	**Persistence:** In the face of obstacles, one continues to engage to overcome the obstacle.	.626	.644
399	**Self-Control:** Maintaining composure, keeping emotions in check, controlling anger and avoiding aggressive behavior, even in very difficult situations.	.304	.875
400	**Service Orientation:** Actively looking for ways to help people; a desire to place others' interests ahead of your own; showing compassion for others.	.536	.710
401	**Social/Teamwork Orientation:** Preferring to work with others rather than alone, and being personally connected with others on the job. The ability to work with others (teamwork) to achieve a mutual end.	.757	.554
402	**Stress Tolerance:** Accepting criticism and dealing calmly and effectively with high stress situations.	1.638	.164
403	Knowledge of motor vehicle rules and regulations.	1.104	.355
404	Knowledge of common hand tools, such as wrenches, pliers, screw drivers, hammers and mauls, axes, prying tools, etc., e.g., their use, operation, limits and safety precautions/procedures.	1.131	.342
405	Knowledge of basic science terms and concepts, e.g., force, gravity, pressure, vacuum, etc.	1.723	.146
406	Knowledge of ratios and terms, expressing ratios and the practical use of ratios, e.g., pounds per square inch, gallons per minute, etc.	2.334	.056
407	Knowledge of basic mechanical principles, e.g., leverage, gears, pulleys, screws, etc.	1.129	.343
408	Knowledge of typical occupancy activity at a given time of day.	.274	.895
409	Knowledge of the science behind fire propagation.	.686	.603
411	Knowledge of common heat energy sources: chemical, electrical, and mechanical energy.	1.673	.157
412	Knowledge of heat transmission and the mechanisms by which heat transfer occurs: conduction, convection, and radiation.	1.001	.408
413	Knowledge of common products of combustion and their toxic effects.	.382	.822
414	Knowledge of classification of fires: class A, B, C, D, and K fires.	.861	.488
415	Knowledge of Fire Control Theory: temperature reduction, fuel removal, oxygen exclusion, and chemical flame inhibition.	2.120	.079
416	Knowledge of common materials found in building construction.	1.009	.403
417	Knowledge of the strengths and weaknesses associated with different types of building construction types.	1.230	.299
418	Knowledge of types of extinguishers and their common uses.	1.401	.234
419	Knowledge of types of knots, ropes, and webbing materials.	1.160	.329
420	Knowledge of types of ladders.	2.014	.093
421	Knowledge of search operations.	.455	.769
422	Knowledge of rescue operations.	.116	.977
423	Knowledge of extrication operations.	1.319	.263

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Item #	KSAO	F	Sig.
424	Knowledge of types of carries.	.389	.816
425	Knowledge of victim removal methods.	.264	.901
426	Knowledge of forcible entry methods.	.364	.834
427	Knowledge of ventilation methods.	.736	.568
428	Knowledge of types of hydrants and alternative water supplies.	.314	.868
429	Knowledge of methods of moving water in a system.	1.462	.215
430	Knowledge of static pressure, flow pressure, and residual pressure.	1.583	.180
431	Knowledge of common hose rolls.	.779	.540
432	Knowledge of friction loss, elevation loss/gain, and water hammers.	2.733	.030
433	Knowledge of size classifications of fire streams.	.658	.622
434	Knowledge of foam techniques.	.569	.685
435	Knowledge of direct attacks.	.585	.674
436	Knowledge of indirect attacks.	.383	.821
437	Knowledge of combination attacks.	1.037	.389
438	Knowledge of salvage operations.	.457	.767
439	Knowledge of overhaul operations.	1.849	.120
440	Knowledge of hidden fire indicators.	.979	.420
441	Knowledge of evidence protection methods.	.096	.984
442	Knowledge of procedures the public should use to report a fire or other emergency.	.371	.829
443	Knowledge of necessary skills for fire department communications.	1.314	.266
444	Knowledge of the types of information required for arrival and progress reports.	2.361	.055
445	Knowledge of preincident surveys and inspections.	.138	.968
446	Knowledge of common fire hazards.	.537	.708
447	Knowledge of the steps in presenting fire and life safety information to the public.	1.670	.159
448	Knowledge of the components of personal protective equipment.	.347	.846
449	Knowledge of the physiological aspects of stress.	.849	.496
450	Knowledge of cardiopulmonary resuscitation (CPR).	.558	.693
451	Knowledge of scene safety considerations as hazardous materials incidents and rescue operations.	2.034	.091
452	Knowledge of the types and states of shock of victims and/or other fire personnel.	1.578	.182
453	Knowledge of methods to managing shock of victims and/or other fire personnel.	1.100	.358
454	Knowledge of Body Substance Isolation (BSI) or infection control precautions.	1.966	.101
455	Knowledge of methods to prevent and/or reduce the effects of heat exposure while wearing protective clothing.	.552	.698
456	Knowledge of the main routes through which hazardous materials can enter the body.	.603	.661
457	Knowledge of the clues which indicate the presence of hazardous materials.	1.019	.399
458	Knowledge of chemical attack indicators.	.777	.541
459	Knowledge of incident priorities at all HAZMAT and terrorist incidents.	1.568	.185
460	Knowledge of types of decontamination.	1.232	.299
461	Knowledge of hazard-control zones.	1.187	.318
462	Knowledge of defensive confinement and spill control actions.	.347	.846
463	Knowledge of factors to address during large-scale evacuations.	.294	.882
464	Knowledge of the organization of the fire department.	2.894	.023
465	Knowledge of the role of the Fire Fighter I in the organization.	1.371	.246
466	Knowledge of the mission of fire service.	2.304	.060
467	Knowledge of the fire department's standard operating procedures (SOPs) and rules and regulations.	1.538	.193
468	Knowledge of the role of other agencies as they relate to the fire department.	.769	.547
470	Knowledge of the critical aspects of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program.	1.214	.306

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Item #	KSAO	F	Sig.
471	Knowledge of procedures for reporting an emergency; departmental SOPs for taking and receiving alarms, radio codes, or procedures; and information needs of dispatch center.	1.641	.166
472	Knowledge of fire department procedures for answering nonemergency telephone calls.	2.216	.069
473	Knowledge of departmental radio procedures and etiquette for routine traffic, emergency traffic, and emergency evacuation signals.	1.258	.288
474	Knowledge of personnel accountability systems, emergency communication procedures, and emergency evacuation methods.	.504	.733
475	Knowledge of basic construction of typical doors, windows, and walls within the department's community or service area.	.660	.620
476	Knowledge of personnel accountability systems and communication procedures.	.944	.440
477	Principles of fire streams as they relate to fighting automobile fires.	.461	.765
478	Knowledge of SOPs for alarm assignments and fire department radio communication procedures.	1.204	.311
479	Knowledge of the methods to assess the origin and cause of fires.	.404	.806
480	Knowledge of the characteristics of pressurized flammable gases.	.815	.517

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Appendix S: Ability Linkage Questionnaire

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THE BUREAU OF FIRE STANDARDS AND TRAINING

ABILITY LINKAGE QUESTIONNAIRE

FIREFIGHTER POSITION

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INTRODUCTION

You have been selected to complete a linkage questionnaire for The Bureau of Fire Standards and Training. A linkage questionnaire is a survey that collects expert opinions that are used to tie (or "LINK") the knowledge, skills, abilities and other characteristics necessary to successfully perform a target job - in this case, the job of a firefighter – to the essential job tasks of that job. To help in reducing the amount of time needed from participants, the linkage questionnaire in this study has been divided into two booklets: 1) knowledge, and 2) ability. You have been selected to complete the ability linkage questionnaire.

The results from a linkage questionnaire are used to support the validation of the knowledge, skills, abilities, and other characteristics necessary to perform the job of a firefighter. You will be asked to provide your expert opinions regarding the firefighter position within your department. The results of this questionnaire will be used in the evaluation of the training requirements for our firefighters and volunteer firefighters within the State of Florida.

As you complete this questionnaire, please make sure that your responses are reflective of only that of the firefighter position. If you are of a higher rank, your responses should reflect the firefighter position. If you are volunteer, please only respond from the perspective of a volunteer firefighter.

Also, please ensure that you are following the specific instructions for the section you are working in. The section-specific instructions will be provided to you at the start of that chapter. This questionnaire takes approximately 90 minutes to complete.

INSTRUCTIONS FOR COMPLETING THE LINKAGE QUESTIONNAIRE— PLEASE READ ALL INSTRUCTIONS.

1. First, please make sure that you have all the materials you will need to complete this survey. In addition to this booklet, you will need to have a pen with dark ink or a pencil and the accompanying answer sheet packet. This answer sheet packet is a separate printed document. All responses will be placed on this answer sheet packet when responding to the items in this questionnaire.

2. Fill in the demographic information on the answer sheet as follows:
    a. On the answer sheet, please fill the information out by first writing down your information in the boxes provided, and then filling in the corresponding circles underneath.
    b. In the space marked "LAST NAME", please write your last name and darken the corresponding circles. Do the same for "FIRST NAME" and "M" (middle initial).
    c. It is crucial that you place the last four digits of your SSN on the answer sheet.
    d. Next, write in your age and fill in the appropriate circles in the box marked "AGE".
    e. Under the box marked "Tenure", please write in your Tenure with your Department (in years, rounding to the nearest year) in the boxes and fill in the corresponding circles beneath the box.

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f. Under the box marked “Rk Tenure”, please indicate your tenure in your current rank (rounding to the nearest year) and fill in the circles below.

g. Please identify your “Race” and “Gender” in the space provided on the answer sheet. This information is collected for governmental reporting purposes and to ensure that our sample is representative of the population.

h. Next, fill in the circle that corresponds to your “Education” level.

i. Very importantly, please indicate your “Position Type” by darkening the appropriate circle.

j. Please darken the circle corresponding to your “Current Rank” in the appropriate box.

k. Finally, please darken the circle corresponding to the “Size of your Department” and write in the name of your department in the “Department Name” box.

3. This LINKAGE is divided into three (3) sections. Section-specific instructions will be provided at the beginning of each section.
    a. Section One lists all of the definitions for the skills, abilities, and other characteristic areas that you should familiarize yourself with prior to beginning your ratings in Section Two.
    b. Section Two will ask you to rate the importance of the list of skills, abilities, and other characteristics in performing each job duty area. You will rate one job duty area at a time. There are 15 job duty areas in total.
    c. Section Three will have you complete relative importance and frequency rates regarding the defined job duty areas that you would have become familiar with after completing Section Two.

4. When you have completed the questionnaire, please return the booklet and answer sheet packet back to the person who provided you with these materials. This person will then collect all questionnaires and return them to the vendor so that the data can be analyzed for the statewide job analysis study.

We understand that this linkage questionnaire is time consuming. We ask that you remain diligent as you complete this survey. The results from this survey provide a great deal of valuable information for the firefighter position, but only when participants provide accurate and thoroughly-completed responses. Feel free to complete this questionnaire in small sections as you have some time during your day. We do ask that the survey be completed within 2 weeks from the time that the questionnaire is distributed to you.

As an expert in the field, we value and appreciate your assistance. Your expertise and experience are of critical importance. **Thank you in advance for your cooperation.**

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SECTION ONE

Defining Key Terms: Skill, Ability, and Other Characteristic Areas Defined

You must familiarize yourself with the skill, ability, and other characteristic areas and their definitions as you will first start by "linking" these areas needed for performance as a firefighter with the fifteen (15) core job duty areas. To make informed judgments/ratings, you must understand what these skill, ability, and other characteristic areas entail.

Please familiarize yourself with the skill, ability, and other characteristic areas and their definitions before beginning your ratings. **You can and should refer back to this section as you go through your linkage ratings when you need help remembering what a particular skill/ability/other characteristic area entails.**

Skills

1. **Problem Analysis:** Quickly perceiving problem areas, identifying options and the potential impact of various solutions.
2. **Problem-Solving:** Determining courses of action/solutions to problems. Implementing targeted solutions.
3. **Decision-Making**: Understanding when a decision must be made and to have the willingness to make a decision. Quickly and efficiently determining an appropriate course of action to target a particular situation.
4. **Planning and Organization**: Skill in establishing a course of action for oneself and others to accomplish goals. Skill in properly planning assignments, work duties and tasks; appropriate allocation of resources to ensure efficient, timely and smooth department operations.
5. **Interpersonal Skill**: Listening to others and being considerate of the concerns of others.
6. **Oral Communication**: Speaking in a clear, concise, understandable and appropriate manner.
7. **Self-Motivation**: Working without supervision and accomplishing tasks without prodding.
8. **Composure**: Working under stress and performing in unpleasant or traumatic circumstances.
9. **Conflict Resolution**: Skill in de-escalating tense situations and quieting potential disturbances.
10. **Critical Thinking:** Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
11. **Leadership:** Willingness to lead, take charge and offer opinions and direction, and having people respond positively to those directions such that there are behavioral changes.
12. **Monitoring:** Monitoring/Assessing your performance or the performance of other individuals or organizations to make improvements or take corrective action.
13. **Operation and Control:** Watching gauges, dials or other indicators to make sure a machine is working properly.
14. **Instructing:** Teaching others how to do something.
15. **Judgment and Decision Making:** Considering the relative costs and benefits of potential actions to choose the most appropriate one.
16. **Social Perceptiveness:** Being aware of others' reactions and understanding why they react as they do.

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17. **Negotiation:** Bringing others together and trying to reconcile differences.
18. **Public Relations Skill:** Dealing with the public in such a way as to protect the image and reputation of the department while providing the public or individuals with necessary or requested information.
19. **Persuasion:** Persuading others to change their minds or behavior.

Cognitive Abilities

20. **Basic Arithmetic**: Ability to perform mathematical operations, such as counting, addition, subtraction, multiplication and division.
21. **Deductive Reasoning:** The ability to apply general rules to specific problems to produce answers that make sense. (Example: Interpretation of SOPs and SOGs.)
22. **Flexibility of Closure:** The ability to identify or detect a known pattern (a figure, object, word or sound) that is hidden in other distracting material. (Example: Listening to Engine RPM's in order to identify issues.)
23. **Inductive Reasoning:** The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events). (Example: Reading the various clues of smoke/heat to reach a decision regarding the extent of fire.)
24. **Information Ordering:** The ability to arrange things or actions in a certain order or pattern according to a specific rule or set of rules (e.g., patterns of numbers, letters, words, pictures, mathematical operations). (Example: Using SOPs to follow procedures for hoseline operation.)
25. **Mathematical Reasoning:** The ability to choose the right mathematical methods or formulas to solve a problem. (Example: Friction loss, ladder or hose length calculation.)
26. **Memorization:** The ability to remember information such as words, numbers, pictures, and procedures. (Example: Hydrant locations, previous building layouts.)
27. **Number Facility:** The ability to add, subtract, multiply or divide quickly and correctly.
28. **Oral Comprehension:** The ability to listen to and understand information and ideas presented through spoken words and sentences.
29. **Oral Expression:** The ability to communicate information and ideas in speaking so others will understand.
30. **Problem Sensitivity:** The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
31. **Selective Attention:** The ability to concentrate on a task over a period of time without being distracted. (Example: Being the only pump operator on-duty.)
32. **Spatial Orientation:** The ability to know your location in relation to the environment or to know where other objects are in relation to you.
33. **Visualization:** The ability to imagine how something will look after it is moved around or when its parts are moved or rearranged.
34. **Written Comprehension:** The ability to read and understand information and ideas presented in writing.
35. **Written Expression:** The ability to communicate information and ideas in writing so others will understand. (Example: Filling out maintenance records or logbooks.)

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Physical Abilities

36. **Reaction Time:** The ability to quickly respond (with the hand, finger or foot) to a signal (sound, light, picture) when it appears.
37. **Arm-Hand Steadiness:** The ability to keep your hand and arm steady while moving your arm or while holding your arm and hand in one position. (Example: Operating power tools for extrication.)
38. **Manual Dexterity:** The ability to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate or assemble objects.
39. **Multi-limb Coordination:** The ability to coordinate two or more limbs (for example, two arms, two legs, or one leg and one arm) while sitting, standing or lying down. It does not involve performing the activities while the whole body is in motion.
40. **Response Orientation:** The ability to choose quickly between two or more movements in response to two or more different signals (lights, sounds, pictures). It includes the speed with which the correct response is started with the hand, foot or other body part.
41. **Rate Control:** The ability to time your movements or the movement of a piece of equipment in anticipation of changes in the speed and/or direction of a moving object or scene. (Example: Controlling for water hammer.)
42. **Static Strength:** The ability to exert maximum muscle force to lift, push, pull or carry objects.
43. **Control Precision:** The ability to quickly and repeatedly adjust the controls of a machine or a vehicle to exact positions. (Example: Operating the aerial ladder.)
44. **Stamina:** The ability to exert yourself physically over long periods of time without getting winded or out of breath.
45. **Near Vision:** The ability to see details at close range (within a few feet of the observer).
46. **Dynamic Strength:** The ability to exert muscle force repeatedly or continuously over time. This involves muscular endurance and resistance to muscle fatigue.
47. **Trunk Strength:** The ability to use your abdominal and lower back muscles to support part of the body repeatedly or continuously over time without 'giving out' or fatiguing.
48. **Extent Flexibility:** The ability to bend, stretch, twist or reach with your body, arms and/or legs.
49. **Depth Perception:** The ability to judge which of several objects is closer or farther away from you, or to judge the distance between you and an object. (Example: Placement of aerial.)
50. **Auditory Attention:** The ability to focus on a single source of sound in the presence of other distracting sounds. (Example: Focusing on your PASS device in a chaotic environment.)
51. **Gross Body Coordination:** The ability to coordinate the movement of your arms, legs and torso together when the whole body is in motion.
52. **Gross Body Equilibrium:** The ability to keep or regain your body balance or stay upright when in an unstable position. (Example: Gusting winds while firefighting from the aerial ladder.)
53. **Far Vision:** The ability to see details at a distance.

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Other Characteristics

54. **Achievement/Effort:** Establishing and maintaining personally challenging achievement goals and exerting effort toward mastering tasks.
55. **Adaptability/Flexibility:** Being open to change (positive or negative) and to considerable variety in the workplace.
56. **Attention to Detail:** Being careful about detail and thorough in completing work tasks.
57. **Concern for Others:** Being sensitive to others' needs and feelings and being understanding and helpful on the job. Showing compassion for others.
58. **Cooperation:** Being pleasant with others on the job and displaying a good-natured, cooperative attitude.
59. **Dependability:** Being reliable, responsible and dependable and fulfilling obligations.
60. **Ethics:** Acting in an honest and fair manner. Willingness to accept responsibility for actions when things go wrong. Displaying a high degree of integrity and professionalism in action and word.
61. **Independence:** Developing one's own ways of doing things, guiding oneself with little or no supervision and depending on oneself to get things done.
62. **Initiative:** Willingness to take on responsibilities and challenges.
63. **Innovation:** Tendency towards creativity and alternative thinking to develop new ideas for and answers to work-related problems.
64. **Integrity:** Being honest and ethical, especially in situations where others could be taken advantage of.
65. **Persistence:** In the face of obstacles, one continues to engage to overcome the obstacle.
66. **Self-Control:** Maintaining composure, keeping emotions in check, controlling anger and avoiding aggressive behavior, even in very difficult situations.
67. **Service Orientation:** Actively looking for ways to help people; a desire to place others' interests ahead of your own; showing compassion for others.
68. **Social/Teamwork Orientation:** Preferring to work with others rather than alone, and being personally connected with others on the job. The ability to work with others (teamwork) to achieve a mutual end.
69. **Stress Tolerance:** Accepting criticism and dealing calmly and effectively with high stress situations.

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SECTION TWO

Job Duty to Skill, Ability, and Other Characteristic Area Linkage

INSTRUCTIONS

1. You will be making linkage ratings to indicate how important various skills, abilities and other characteristics are to a given job duty area. This "linkage" will indicate what skills, abilities and other characteristics are performed in fulfilling the job tasks that comprise the job duty area. Essentially, this activity will "LINK" these skills, abilities, and other characteristics to the job.

2. Prior to making ratings, please make sure you have reviewed the definitions of the skills, abilities and other characteristics provided in Section One. As you go through your ratings, feel free to refer to Section One to familiarize yourself with a particular skill, ability, or other characteristic.

Each job duty area that you will rate will first begin with the listing of job tasks that comprise that particular area. Be sure to understand what a job duty area entails before you begin your ratings for that area.

3. Please mark your ratings directly on the answer sheet. Be sure that you are filling in the correct item number on the answer sheet as you complete your linkage ratings. To make your ratings, please use the importance scale below.

Rating Scale for SKILL/ABILITY AREA/OTHER CHARACTERISTIC Linkage			
N/A	***1***	***2***	***3***
Skill/Ability area is not relevant to task group	***Skill/Ability area is somewhat important and there is some value in performing task group***	***Skill/Ability area is moderately important and there is a tangible value in performing task group***	***Skill/Ability area is essential and must be possessed to perform task group***

When making linkage assessments, consider if the skill/ability/other characteristics you are evaluating is necessary for the successful performance of the tasks associated with the job duty area listed. For example, consider the linkage of *deductive reasoning* with "emergency medical service operations." To successfully complete the tasks that comprise the duty area of "emergency medical service operations," does one need to have the cognitive ability of *deductive reasoning*? How important is this ability in performing the job tasks associated with this particular job duty area?

Use the importance scale above to answer this question. If there is no need to have this cognitive ability to successfully complete the tasks, then N/A would be marked on the answer sheet. If it is vital to the successful completion of the job tasks, such that one MUST have this ability, then "3" would be marked on the answer sheet. Use your expert judgment to evaluate **(1)** if there is a link and **(2)** if a link is present, to what degree the particular skill/ability/other characteristic is required to successfully complete the job tasks associated with that job duty area.

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Job Duty Area #1: INCIDENT RESONSE

The following job task statements compose the INCIDENT RESPONSE job duty area. Please review to familiarize yourself with this particular job duty area.

- Accurately take incoming calls or information from the dispatcher regarding alarms (e.g., fire alarms, requests for emergency medical services).
- Be in a response-ready status to respond to alarms at all hours of the day and night.
- Respond to a vast range of emergencies including fire alarms, automobile accidents, medical emergencies, hazardous materials, or other incidents.
- Put on situation-appropriate personal protective equipment (PPE) (example: full turnout gear, HAZ-MAT Equipment, Universal Protections [Body Substance Isolation Gear]).
- Put on and wear self-contained breathing apparatus (SCBA).
- Carry equipment when needed (RIT Pack, High-Rise Pack, Medical Bag).
- Perform tasks only in established, protected work areas.

Turn to the next page to provide linkage ratings for the INCIDENT RESPONSE job duty area.

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Rating Scale for SKILL/ABILITY AREA/OTHER CHARACTERISTIC Linkage			
N/A	***1***	***2***	***3***
Skill/Ability area is not relevant to task group	***Skill/Ability area is somewhat important and there is some value in performing task group***	***Skill/Ability area is moderately important and there is a tangible value in performing task group***	***Skill/Ability area is essential and must be possessed to perform task group***

Please use the scale provided above to rate the importance of the skill, ability, and other characteristic areas (presented below) in performing tasks associated with the following job duty area: **INCIDENT RESPONSE**. **Please mark your answers under items 1-69 on the answer sheet.**

Skills

1. Problem Analysis
2. Problem-Solving
3. Decision-Making
4. Planning and Organization
5. Interpersonal Skill
6. Oral Communication
7. Self-Motivation
8. Composure
9. Conflict Resolution
10. Critical Thinking
11. Leadership.
12. Monitoring
13. Operation and Control
14. Instructing
15. Judgment and Decision Making
16. Social Perceptiveness
17. Negotiation
18. Public Relations Skill
19. Persuasion

Cognitive Abilities

20. Basic Arithmetic
21. Deductive Reasoning
22. Flexibility of Closure
23. Inductive Reasoning
24. Information Ordering
25. Mathematical Reasoning
26. Memorization
27. Number Facility
28. Oral Comprehension
29. Oral Expression
30. Problem Sensitivity
31. Selective Attention
32. Spatial Orientation
33. Visualization
34. Written Comprehension
35. Written Expression

Physical Abilities

36. Reaction Time
37. Arm-Hand Steadiness
38. Manual Dexterity
39. Multi-limb Coordination
40. Response Orientation
41. Rate Control
42. Static Strength
43. Control Precision
44. Stamina
45. Near Vision
46. Dynamic Strength
47. Trunk Strength
48. Extent Flexibility
49. Depth Perception
50. Auditory Attention
51. Gross Body Coordination
52. Gross Body Equilibrium
53. Far Vision

Other Characteristics

54. Achievement/Effort
55. Adaptability/Flexibility
56. Attention to Detail
57. Concern for Others
58. Cooperation
59. Dependability
60. Ethics
61. Independence
62. Initiative
63. Innovation
64. Integrity
65. Persistence
66. Self-Control
67. Service Orientation

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68. Social/Teamwork Orientation

69. Stress Tolerance

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Job Duty Area #2: INCIDENT ASSESSMENT/SIZE-UP

The following job task statements compose the INCIDENT ASSESSMENT/SIZE-UP job duty area. Please review to familiarize yourself with this particular job duty area.

- Assess fires and situations and report conditions to superiors to receive instructions, using two-way radios.
- Conduct a mental size-up of the emergency scene.
- Check the wind direction in relation to the fire or HAZ-MAT scene.
- Assess the potential effects of weather on emergency response.
- Assess the color, location and movement of smoke.
- Assess fire conditions to ensure proper fire suppression agent is used.
- Determine the safest evacuation route and primary and secondary means of egress.
- Safely shut off utility services to buildings in emergency situations (e.g., electrical and gas valves).
- Communicate with the dispatcher, other fire vehicles and commanding officers by radio and request any necessary assistance.
- Advise the commanding officer of fire conditions, hazards and exposures at the scene.
- Communicate with the superior during a live fire.
- Collaborate with other firefighters, supervisors and other firefighter companies to conduct firefighting and rescue operations.
- Illuminate the emergency scene.
- Recognize potential hazards on emergency scenes regarding vehicle traffic.
- Discriminate between routine and emergency traffic.
- Use personnel accountability systems to locate team members and communicate loss of air supply.

Turn to the next page to provide linkage ratings for the INCIDENT ASSESSMENT/SIZE-UP job duty area.

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Rating Scale for SKILL/ABILITY AREA/OTHER CHARACTERISTIC Linkage			
N/A	***1***	***2***	***3***
Skill/Ability area is not relevant to task group	***Skill/Ability area is somewhat important and there is some value in performing task group***	***Skill/Ability area is moderately important and there is a tangible value in performing task group***	***Skill/Ability area is essential and must be possessed to perform task group***

Please use the scale provided above to rate the importance of the skill, ability, and other characteristic areas (presented below) in performing tasks associated with the following job duty area: **INCIDENT ASSESSMENT/SIZE-UP**. **Please mark your answers under items 70-138 on the answer sheet.**

Skills

70. Problem Analysis
71. Problem-Solving
72. Decision-Making
73. Planning and Organization
74. Interpersonal Skill
75. Oral Communication
76. Self-Motivation
77. Composure
78. Conflict Resolution
79. Critical Thinking
80. Leadership.
81. Monitoring
82. Operation and Control
83. Instructing
84. Judgment and Decision Making
85. Social Perceptiveness
86. Negotiation
87. Public Relations Skill
88. Persuasion

Cognitive Abilities

89. Basic Arithmetic
90. Deductive Reasoning
91. Flexibility of Closure
92. Inductive Reasoning
93. Information Ordering
94. Mathematical Reasoning
95. Memorization
96. Number Facility
97. Oral Comprehension
98. Oral Expression
99. Problem Sensitivity
100. Selective Attention
101. Spatial Orientation
102. Visualization
103. Written Comprehension
104. Written Expression

Physical Abilities

105. Reaction Time
106. Arm-Hand Steadiness
107. Manual Dexterity
108. Multi-limb Coordination
109. Response Orientation
110. Rate Control
111. Static Strength
112. Control Precision
113. Stamina
114. Near Vision
115. Dynamic Strength
116. Trunk Strength
117. Extent Flexibility
118. Depth Perception
119. Auditory Attention
120. Gross Body Coordination
121. Gross Body Equilibrium
122. Far Vision

Other Characteristics

123. Achievement/Effort
124. Adaptability/Flexibility
125. Attention to Detail
126. Concern for Others
127. Cooperation
128. Dependability
129. Ethics
130. Independence
131. Initiative
132. Innovation
133. Integrity
134. Persistence
135. Self-Control
136. Service Orientation

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Rating Scale for SKILL/ABILITY AREA/OTHER CHARACTERISTIC Linkage			
N/A	***1***	***2***	***3***
Skill/Ability area is not relevant to task group	***Skill/Ability area is somewhat important and there is some value in performing task group***	***Skill/Ability area is moderately important and there is a tangible value in performing task group***	***Skill/Ability area is essential and must be possessed to perform task group***

137. Social/Teamwork Orientation **138. Stress Tolerance**

Job Duty Area #3: RESCUE OPERATIONS

The following job task statements compose the RESCUE OPERATIONS job duty area. Please review to familiarize yourself with this particular job duty area.

- Rescue victims from burning buildings and accident sites.
- Assist at a water rescue (e.g., swollen rivers, frozen lakes).
- Interact with victims or casualties who have sustained severe or life-ending injuries.
- Interact with victims who have witnessed the loss or injury of companions.
- Safely remove persons from entrapments.
- Safely lift, hoist or drag victim(s), taking care to minimize further injuries.
- Drag or carry a victim(s) out of a building wearing appropriate PPE.
- Carry victim(s) via ladders wearing appropriate PPE.
- Drag or carry victim(s) up or down stairs wearing appropriate PPE.
- Evacuate persons from a fire area.
- Extricate persons from automobiles.
- Cut vehicle power during extrication.
- Strategically position apparatus to protect incident scene from oncoming traffic.
- Bring and use the necessary tools to extricate or free trapped persons.
- Systematically search burning buildings to locate fire victims.
- Gather information (e.g., bystanders, neighbors, family members) about probable victim locations and/or building floor plans.
- Enter unfamiliar, smoke-filled buildings and rooms while wearing PPE and SCBA equipment.
- Systematically search for trapped persons.
- Operate and/or man firefighting watercraft/boats for civilian rescue.
- Assess risk/benefit of rescue and relay to company officer.
- Tie knots to a hose line, ladder, or other object as necessary during a large area search.
- Maintain team integrity and firefighter safety.
- Rescue a firefighter with functioning respiratory protection.
- Rescue a firefighter whose respiratory protection is not functioning.
- Recognize and manage psychological effects resulting from operating in obscured conditions.
- Ensure respiratory protection is not compromised.

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- Choose and apply appropriate techniques for opening or removing trunks, engine compartments, vehicle roofs, doors, windshields, windows, steering wheels or columns, and dashboards.

Turn to the next page to provide linkage ratings for the RESCUE OPERATIONS job duty area.

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Rating Scale for SKILL/ABILITY AREA/OTHER CHARACTERISTIC Linkage			
N/A	***1***	***2***	***3***
Skill/Ability area is not relevant to task group	***Skill/Ability area is somewhat important and there is some value in performing task group***	***Skill/Ability area is moderately important and there is a tangible value in performing task group***	***Skill/Ability area is essential and must be possessed to perform task group***

Please use the scale provided above to rate the importance of the skill, ability, and other characteristic areas (presented below) in performing tasks associated with the following job duty area: **RESCUE OPERATIONS**. **Please mark your answers under items 139-207 on the answer sheet.**

Skills

139. Problem Analysis
140. Problem-Solving
141. Decision-Making
142. Planning and Organization
143. Interpersonal Skill
144. Oral Communication
145. Self-Motivation
146. Composure
147. Conflict Resolution
148. Critical Thinking
149. Leadership.
150. Monitoring
151. Operation and Control
152. Instructing
153. Judgment and Decision Making
154. Social Perceptiveness
155. Negotiation
156. Public Relations Skill
157. Persuasion

Cognitive Abilities

158. Basic Arithmetic
159. Deductive Reasoning
160. Flexibility of Closure
161. Inductive Reasoning
162. Information Ordering
163. Mathematical Reasoning
164. Memorization
165. Number Facility
166. Oral Comprehension
167. Oral Expression
168. Problem Sensitivity
169. Selective Attention
170. Spatial Orientation
171. Visualization
172. Written Comprehension
173. Written Expression

Physical Abilities

174. Reaction Time
175. Arm-Hand Steadiness
176. Manual Dexterity
177. Multi-limb Coordination
178. Response Orientation
179. Rate Control
180. Static Strength
181. Control Precision
182. Stamina
183. Near Vision
184. Dynamic Strength
185. Trunk Strength
186. Extent Flexibility
187. Depth Perception
188. Auditory Attention
189. Gross Body Coordination
190. Gross Body Equilibrium
191. Far Vision

Other Characteristics

192. Achievement/Effort
193. Adaptability/Flexibility
194. Attention to Detail
195. Concern for Others
196. Cooperation
197. Dependability
198. Ethics
199. Independence
200. Initiative
201. Innovation
202. Integrity
203. Persistence
204. Self-Control
205. Service Orientation

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Rating Scale for SKILL/ABILITY AREA/OTHER CHARACTERISTIC Linkage			
N/A	***1***	***2***	***3***
Skill/Ability area is not relevant to task group	***Skill/Ability area is somewhat important and there is some value in performing task group***	***Skill/Ability area is moderately important and there is a tangible value in performing task group***	***Skill/Ability area is essential and must be possessed to perform task group***

206. Social/Teamwork Orientation

207. Stress Tolerance

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Job Duty Area #4: EMERGENCY MEDICAL SERVICE OPERATIONS

The following job task statements compose the EMERGENCY MEDICAL SERVICE OPERATIONS job duty area. Please review to familiarize yourself with this particular job duty area.

- Administer first aid to injured persons.
- Assess a patient's condition (e.g. alertness level, orientation, breathing, circulation).
- Gather information from patient or family member regarding medical history.
- Control bleeding and bandage wounds.
- Perform cardiopulmonary resuscitation.
- Operate Defibrillator (AED).
- Use airway adjuncts.
- Immobilize painful, swollen, or deformed extremities.
- Appropriately control patients who are hysterical, mentally disturbed, or in an altered state of consciousness that require medical attention.
- Administer appropriate oxygen flow to patients.
- Prepare and transfer a patient to an ambulance.
- Lift a patient into a bed/onto a stretcher; carry patient through tight quarters and down flights of stairs using a stair chair or Reeve stretcher; carry patient to ambulance.
- Monitor and provide needed care when transporting a patient to a medical facility.
- Properly utilize emergency equipment and supplies.

Turn to the next page to provide linkage ratings for the EMERGENCY MEDICAL SERVICE OPERATIONS job duty area.

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Rating Scale for SKILL/ABILITY AREA/OTHER CHARACTERISTIC Linkage			
N/A	***1***	***2***	***3***
Skill/Ability area is not relevant to task group	***Skill/Ability area is somewhat important and there is some value in performing task group***	***Skill/Ability area is moderately important and there is a tangible value in performing task group***	***Skill/Ability area is essential and must be possessed to perform task group***

Please use the scale provided above to rate the importance of the skill, ability, and other characteristic areas (presented below) in performing tasks associated with the following job duty area: **EMERGENCY MEDICAL SERVICE OPERATIONS**. **Please mark your answers under items 208-276 on the answer sheet.**

Skills

208. Problem Analysis
209. Problem-Solving
210. Decision-Making
211. Planning and Organization
212. Interpersonal Skill
213. Oral Communication
214. Self-Motivation
215. Composure
216. Conflict Resolution
217. Critical Thinking
218. Leadership.
219. Monitoring
220. Operation and Control
221. Instructing
222. Judgment and Decision Making
223. Social Perceptiveness
224. Negotiation
225. Public Relations Skill
226. Persuasion

Cognitive Abilities

227. Basic Arithmetic
228. Deductive Reasoning
229. Flexibility of Closure
230. Inductive Reasoning
231. Information Ordering
232. Mathematical Reasoning
233. Memorization
234. Number Facility
235. Oral Comprehension
236. Oral Expression
237. Problem Sensitivity
238. Selective Attention
239. Spatial Orientation
240. Visualization
241. Written Comprehension
242. Written Expression

Physical Abilities

243. Reaction Time
244. Arm-Hand Steadiness
245. Manual Dexterity
246. Multi-limb Coordination
247. Response Orientation
248. Rate Control
249. Static Strength
250. Control Precision
251. Stamina
252. Near Vision
253. Dynamic Strength
254. Trunk Strength
255. Extent Flexibility
256. Depth Perception
257. Auditory Attention
258. Gross Body Coordination
259. Gross Body Equilibrium
260. Far Vision

Other Characteristics

261. Achievement/Effort
262. Adaptability/Flexibility
263. Attention to Detail
264. Concern for Others
265. Cooperation
266. Dependability
267. Ethics
268. Independence
269. Initiative
270. Innovation
271. Integrity
272. Persistence
273. Self-Control
274. Service Orientation

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Rating Scale for SKILL/ABILITY AREA/OTHER CHARACTERISTIC Linkage			
N/A	***1***	***2***	***3***
Skill/Ability area is not relevant to task group	***Skill/Ability area is somewhat important and there is some value in performing task group***	***Skill/Ability area is moderately important and there is a tangible value in performing task group***	***Skill/Ability area is essential and must be possessed to perform task group***

275. Social/Teamwork Orientation **276. Stress Tolerance**

Job Duty Area #5: PUMPING AND DRIVING OPERATIONS

The following job task statements compose the PUMPING AND DRIVING OPERATIONS job duty area. Please review to familiarize yourself with this particular job duty area.

- Know street layouts, addresses, intersections and alternative routes in response area.
- Know the location of hydrants and mains in a response area.
- Efficiently and safely drive firefighting emergency equipment to and from a scene.
- Operate pumps connected to hoses.
- Check gauges for pressures and proper water flow.
- Calculate and/or estimate friction loss rates or other pertinent values.
- Maintain constant water supply through proper management of pumping apparatus.
- Monitor apparatus during operations.
- Calculate foam amounts.
- Conduct drafting operations.
- Charge lines at officer's command by opening discharge valves to support fire operations.
- Control pumper output by regulating engine RPMs, pressure relief valve and output gate valves so that pressure or flow is correct for the given operation.
- Utilize watercraft to supply water for fighting fires.

Turn to the next page to provide linkage ratings for the PUMPING AND DRIVING OPERATIONS job duty area.

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Rating Scale for SKILL/ABILITY AREA/OTHER CHARACTERISTIC Linkage			
N/A	***1***	***2***	***3***
Skill/Ability area is not relevant to task group	***Skill/Ability area is somewhat important and there is some value in performing task group***	***Skill/Ability area is moderately important and there is a tangible value in performing task group***	***Skill/Ability area is essential and must be possessed to perform task group***

Please use the scale provided above to rate the importance of the skill, ability, and other characteristic areas (presented below) in performing tasks associated with the following job duty area: **PUMPING AND DRIVING OPERATIONS**. **Please mark your answers under items 277-345 on the answer sheet.**

Skills

277. Problem Analysis
278. Problem-Solving
279. Decision-Making
280. Planning and Organization
281. Interpersonal Skill
282. Oral Communication
283. Self-Motivation
284. Composure
285. Conflict Resolution
286. Critical Thinking
287. Leadership.
288. Monitoring
289. Operation and Control
290. Instructing
291. Judgment and Decision Making
292. Social Perceptiveness
293. Negotiation
294. Public Relations Skill
295. Persuasion

Cognitive Abilities

296. Basic Arithmetic
297. Deductive Reasoning
298. Flexibility of Closure
299. Inductive Reasoning
300. Information Ordering
301. Mathematical Reasoning
302. Memorization
303. Number Facility
304. Oral Comprehension
305. Oral Expression
306. Problem Sensitivity
307. Selective Attention
308. Spatial Orientation
309. Visualization
310. Written Comprehension
311. Written Expression

Physical Abilities

312. Reaction Time
313. Arm-Hand Steadiness
314. Manual Dexterity
315. Multi-limb Coordination
316. Response Orientation
317. Rate Control
318. Static Strength
319. Control Precision
320. Stamina
321. Near Vision
322. Dynamic Strength
323. Trunk Strength
324. Extent Flexibility
325. Depth Perception
326. Auditory Attention
327. Gross Body Coordination
328. Gross Body Equilibrium
329. Far Vision

Other Characteristics

330. Achievement/Effort
331. Adaptability/Flexibility
332. Attention to Detail
333. Concern for Others
334. Cooperation
335. Dependability
336. Ethics
337. Independence
338. Initiative
339. Innovation
340. Integrity
341. Persistence
342. Self-Control
343. Service Orientation

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344. Social/Teamwork Orientation **345. Stress Tolerance**

Job Duty Area #6: LADDER OPERATIONS

The following job task statements compose the LADDER OPERATIONS job duty area. Please review to familiarize yourself with this particular job duty area.

- Operate the ladder pipe as per apparatus specifications.
- Position and climb ladders to gain access to upper levels of buildings or to rescue individuals from burning structures.
- Determine the size and type of ladders required.
- Identify proper ladder locations to allow access to upper levels of buildings or to ensure proper evacuation of fire personnel.
- Be aware of electrical lines when setting up ladders.
- For aerial ladders: position truck, place chocks and set-up truck jacks.
- Raise a 24-foot extension ladder and extend the fly section of that ladder.
- With assistance, raise a 35-foot extension ladder and extend the fly section of that ladder.
- With assistance, carry extension ladders (24-foot, 35-foot) from truck to incident scene.
- Climb an aerial ladder to a height up to 100 feet while wearing PPE equipment.
- Lower ground ladders and stow them onto the truck.
- Create openings in buildings for ventilation or entrance using axes, chisels, crowbars, power saws or core cutters.
- Remove equipment from truck and start power tools.
- Use equipment (e.g., swing axe or sledge hammer) to make forcible entries.
- Determine the stability of supporting surfaces such as roofs and fire escapes.
- Cut openings in roof with a fire axe or power saw (e.g., K-12 saw) for ventilation or examination.
- Remove ceiling materials, such as plaster and lath, sheet rock, ceiling tiles and insulation by poking from above with pike pole or axe so that smoke and hot gases can escape.
- Remove and transport equipment (e.g., electrical extension cords, ventilation fans) from the truck as needed.
- Properly knot and tie rope to hoist equipment weighing up to 50 pounds to upper levels.
- Retreat from the area as a team when ventilation is accomplished.

Turn to the next page to provide linkage ratings for the LADDER OPERATIONS job duty area.

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Rating Scale for SKILL/ABILITY AREA/OTHER CHARACTERISTIC Linkage			
N/A	***1***	***2***	***3***
Skill/Ability area is not relevant to task group	***Skill/Ability area is somewhat important and there is some value in performing task group***	***Skill/Ability area is moderately important and there is a tangible value in performing task group***	***Skill/Ability area is essential and must be possessed to perform task group***

Please use the scale provided above to rate the importance of the skill, ability, and other characteristic areas (presented below) in performing tasks associated with the following job duty area: **LADDER OPERATIONS**. **Please mark your answers under items 346-414 on the answer sheet.**

Skills

346. Problem Analysis
347. Problem-Solving
348. Decision-Making
349. Planning and Organization
350. Interpersonal Skill
351. Oral Communication
352. Self-Motivation
353. Composure
354. Conflict Resolution
355. Critical Thinking
356. Leadership.
357. Monitoring
358. Operation and Control
359. Instructing
360. Judgment and Decision Making
361. Social Perceptiveness
362. Negotiation
363. Public Relations Skill
364. Persuasion

Cognitive Abilities

365. Basic Arithmetic
366. Deductive Reasoning
367. Flexibility of Closure
368. Inductive Reasoning
369. Information Ordering
370. Mathematical Reasoning
371. Memorization
372. Number Facility
373. Oral Comprehension
374. Oral Expression
375. Problem Sensitivity
376. Selective Attention
377. Spatial Orientation
378. Visualization
379. Written Comprehension
380. Written Expression

Physical Abilities

381. Reaction Time
382. Arm-Hand Steadiness
383. Manual Dexterity
384. Multi-limb Coordination
385. Response Orientation
386. Rate Control
387. Static Strength
388. Control Precision
389. Stamina
390. Near Vision
391. Dynamic Strength
392. Trunk Strength
393. Extent Flexibility
394. Depth Perception
395. Auditory Attention
396. Gross Body Coordination
397. Gross Body Equilibrium
398. Far Vision

Other Characteristics

399. Achievement/Effort
400. Adaptability/Flexibility
401. Attention to Detail
402. Concern for Others
403. Cooperation
404. Dependability
405. Ethics
406. Independence
407. Initiative
408. Innovation
409. Integrity
410. Persistence
411. Self-Control
412. Service Orientation

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Rating Scale for SKILL/ABILITY AREA/OTHER CHARACTERISTIC Linkage			
N/A	***1***	***2***	***3***
Skill/Ability area is not relevant to task group	***Skill/Ability area is somewhat important and there is some value in performing task group***	***Skill/Ability area is moderately important and there is a tangible value in performing task group***	***Skill/Ability area is essential and must be possessed to perform task group***

413. Social/Teamwork Orientation

414. Stress Tolerance

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Job Duty Area #7: HOSELINE AND ATTACK OPERATIONS

The following job task statements compose the HOSELINE AND ATTACK OPERATIONS job duty area. Please review to familiarize yourself with this particular job duty area.

- Establish an appropriate water supply, lay hose lines and connect them to water supplies.
- Coordinate firefighting and rescue operations with other firefighters, supervisors and other firefighter companies.
- Pull the supply line from an engine to a hydrant.
- Wrap a hose around functioning hydrant, unscrew the hydrant cap, screw the hose connection to the hydrant and turn on the hydrant (i.e., catch the plug).
- Make and unmake coupling connections.
- Carry a high-rise pack up multiple flights of stairs while wearing PPE so that attack line can be set up.
- Advance and fully extend a pre-connected, charged or uncharged hose of a diameter between 1¾ to 2½ inches.
- Remove kinks in charged supply line by lifting and/or turning hose so that water flow is not obstructed.
- Carry, assemble and operate deluge set (ground monitor).
- Connect multiple small lines (example: 50-foot) and extend them to reach fire when required.
- Carry a 50-foot section of rolled hose unassisted while in appropriate PPE.
- Feed charged hose line of a diameter between 1¾ to 2½ inches to attacking firefighter units.
- Re-bed hose line back onto the proper apparatus (e.g., engine or truck).
- Select the proper hose size based upon fire scene and method of attack.
- Calculate the height of a building in feet from its floors.
- Determine the correct spray pattern based upon fire scene (e.g., solid stream, hollow cone, full cone, fog stream, etc.).
- Hold a charged 1¾ inch hose and open the nozzle.
- While assisted, hold a charged 2½ inch hose and open the nozzle.
- Operate a charged hose line from elevated positions and direct spray at fire.
- While on a ladder, operate and direct spray at fire.
- Operate a charged hose line from confined spaces and direct spray at fire.
- Continue to monitor fire suppression and adjust suppression tactics to extinguish fire and prevent the extension of the fire.
- Move toward the source of a fire using knowledge of types of fires, construction design, building materials and physical layout of properties.
- Enter smoky buildings and rooms with a hose in hand while wearing SCBA.
- Seek the source of a fire and extinguish.
- Select the correct tool or equipment for various firefighting maneuvers.
- Fight fires in smoky buildings when visibility is poor or nonexistent.

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- Fight fires for prolonged periods of time in extreme temperatures.
- Use other senses to find the source of a fire when you cannot see.
- Carry equipment up stairs while wearing PPE gear and SCBA.
- Climb obstacles while wearing PPE and SCBA.
- Identify and respond to hazards at the scene.
- Operate a thermal imaging camera (TIC).
- Operate a fire extinguisher by carrying it to objective, aiming and discharging at seat of fire or spill.
- Attack a passenger vehicle fire.
- Communicate attack techniques to the attack teams.
- Communicate and manage search, rescue, and ventilation requirements.
- Control a flammable gas cylinder fire.
- Identify the contents of cylinder.
- Close cylinder valves.
- Eliminate leaking gas and then extinguish fire.
- Evaluate the cylinder integrity and ensure cylinder has cooled.
- Face the cylinder during approach and retreat.
- Maintain correct body posture during attack operations.
- Extinguish fires in exterior Class A materials, given fires in stacked or piled and small unattached structures or storage containers.
- Deploy portable water tanks as well as the equipment necessary to transfer water between and draft from them.
- Prevent water hammers when shutting down nozzles.
- Replace burst hose sections.
- Anticipate the injuries which could result from common types of accidents.
- Prevent exposure to products of combustion.
- Follow precautions when advancing hose lines to a fire.
- Assess proper application of fire stream.
- Use appropriate water application methods for exposure protection and fire extinguishment.
- Identify automobile fuel types and assess and control fuel leaks.
- Choose attack and control techniques for grade level and above and below grade level fires.
- Recognize hazards associated with an automobile fire.
- Apply appropriate attack lines and water streams for stacked, piled materials and outdoor fires.
- Ensure complete extinguishment of stacked and piled materials.
- Recognize dangers of exposure to toxins or hazardous materials associated with storage building and container fires.

Turn to the next page to provide linkage ratings for the HOSELINE AND ATTACK OPERATIONS job duty area.

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Rating Scale for SKILL/ABILITY AREA/OTHER CHARACTERISTIC Linkage			
N/A	***1***	***2***	***3***
Skill/Ability area is not relevant to task group	***Skill/Ability area is somewhat important and there is some value in performing task group***	***Skill/Ability area is moderately important and there is a tangible value in performing task group***	***Skill/Ability area is essential and must be possessed to perform task group***

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Rating Scale for SKILL/ABILITY AREA/OTHER CHARACTERISTIC Linkage			
N/A	***1***	***2***	***3***
Skill/Ability area is not relevant to task group	***Skill/Ability area is somewhat important and there is some value in performing task group***	***Skill/Ability area is moderately important and there is a tangible value in performing task group***	***Skill/Ability area is essential and must be possessed to perform task group***

Please use the scale provided above to rate the importance of the skill, ability, and other characteristic areas (presented below) in performing tasks associated with the following job duty area: **HOSELINE AND ATTACK OPERATIONS**. **Please mark your answers under items 415-483 on the answer sheet.**

Skills

415. Problem Analysis
416. Problem-Solving
417. Decision-Making
418. Planning and Organization
419. Interpersonal Skill
420. Oral Communication
421. Self-Motivation
422. Composure
423. Conflict Resolution
424. Critical Thinking
425. Leadership.
426. Monitoring
427. Operation and Control
428. Instructing
429. Judgment and Decision Making
430. Social Perceptiveness
431. Negotiation
432. Public Relations Skill
433. Persuasion

Cognitive Abilities

434. Basic Arithmetic
435. Deductive Reasoning
436. Flexibility of Closure
437. Inductive Reasoning
438. Information Ordering
439. Mathematical Reasoning
440. Memorization
441. Number Facility
442. Oral Comprehension
443. Oral Expression
444. Problem Sensitivity
445. Selective Attention
446. Spatial Orientation
447. Visualization
448. Written Comprehension
449. Written Expression

Physical Abilities

450. Reaction Time
451. Arm-Hand Steadiness
452. Manual Dexterity
453. Multi-limb Coordination
454. Response Orientation
455. Rate Control
456. Static Strength
457. Control Precision
458. Stamina
459. Near Vision
460. Dynamic Strength
461. Trunk Strength
462. Extent Flexibility
463. Depth Perception
464. Auditory Attention
465. Gross Body Coordination
466. Gross Body Equilibrium
467. Far Vision

Other Characteristics

468. Achievement/Effort
469. Adaptability/Flexibility
470. Attention to Detail
471. Concern for Others
472. Cooperation
473. Dependability
474. Ethics
475. Independence
476. Initiative
477. Innovation
478. Integrity
479. Persistence
480. Self-Control
481. Service Orientation

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Rating Scale for SKILL/ABILITY AREA/OTHER CHARACTERISTIC Linkage			
N/A	***1***	***2***	***3***
Skill/Ability area is not relevant to task group	***Skill/Ability area is somewhat important and there is some value in performing task group***	***Skill/Ability area is moderately important and there is a tangible value in performing task group***	***Skill/Ability area is essential and must be possessed to perform task group***

482. Social/Teamwork Orientation

483. Stress Tolerance

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Job Duty Area #8: HAZARDOUS MATERIALS OPERATIONS

The following job task statements compose the HAZARDOUS MATERIALS OPERATIONS job duty area. Please review to familiarize yourself with this particular job duty area.

- Conduct a size-up of HAZ-MAT scene.
- Respond to the release or potential release of hazardous material according to outlined protocols.
- Identify HAZ-MAT by use of signage and HAZ-MAT reference materials.
- Apply a foam blanket or other suppressants.
- Provide onsite crowd control in a HAZ-MAT situation.
- Conduct a decontamination setup.
- Utilize watercraft to trace source of oil slicks.
- Exit a hazardous area as a team.
- Extinguish an ignitable liquid fire.
- Identify and control leaking flammable liquids, such that protection from flash fire is maintained.
- Take corrective measures to rectify poor foam generation.
- Use the appropriate concentrates on hydrocarbon and polar solvent fuels.
- Reduce or avoid hazards associated with firefighting foams.
- Use fog nozzles or foam nozzles depending on situation.

Turn to the next page to provide linkage ratings for the HAZARDOUS MATERIALS OPERATIONS job duty area.

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Rating Scale for SKILL/ABILITY AREA/OTHER CHARACTERISTIC Linkage			
N/A	***1***	***2***	***3***
Skill/Ability area is not relevant to task group	***Skill/Ability area is somewhat important and there is some value in performing task group***	***Skill/Ability area is moderately important and there is a tangible value in performing task group***	***Skill/Ability area is essential and must be possessed to perform task group***

Please use the scale provided above to rate the importance of the skill, ability, and other characteristic areas (presented below) in performing tasks associated with the following job duty area: **HAZARDOUS MATERIALS OPERATIONS**. **Please mark your answers under items 484-552 on the answer sheet.**

Skills

484. Problem Analysis
485. Problem-Solving
486. Decision-Making
487. Planning and Organization
488. Interpersonal Skill
489. Oral Communication
490. Self-Motivation
491. Composure
492. Conflict Resolution
493. Critical Thinking
494. Leadership.
495. Monitoring
496. Operation and Control
497. Instructing
498. Judgment and Decision Making
499. Social Perceptiveness
500. Negotiation
501. Public Relations Skill
502. Persuasion

Cognitive Abilities

503. Basic Arithmetic
504. Deductive Reasoning
505. Flexibility of Closure
506. Inductive Reasoning
507. Information Ordering
508. Mathematical Reasoning
509. Memorization
510. Number Facility
511. Oral Comprehension
512. Oral Expression
513. Problem Sensitivity
514. Selective Attention
515. Spatial Orientation
516. Visualization
517. Written Comprehension
518. Written Expression

Physical Abilities

519. Reaction Time
520. Arm-Hand Steadiness
521. Manual Dexterity
522. Multi-limb Coordination
523. Response Orientation
524. Rate Control
525. Static Strength
526. Control Precision
527. Stamina
528. Near Vision
529. Dynamic Strength
530. Trunk Strength
531. Extent Flexibility
532. Depth Perception
533. Auditory Attention
534. Gross Body Coordination
535. Gross Body Equilibrium
536. Far Vision

Other Characteristics

537. Achievement/Effort
538. Adaptability/Flexibility
539. Attention to Detail
540. Concern for Others
541. Cooperation
542. Dependability
543. Ethics
544. Independence
545. Initiative
546. Innovation
547. Integrity
548. Persistence
549. Self-Control
550. Service Orientation

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Rating Scale for SKILL/ABILITY AREA/OTHER CHARACTERISTIC Linkage			
N/A	***1***	***2***	***3***
Skill/Ability area is not relevant to task group	***Skill/Ability area is somewhat important and there is some value in performing task group***	***Skill/Ability area is moderately important and there is a tangible value in performing task group***	***Skill/Ability area is essential and must be possessed to perform task group***

551. Social/Teamwork Orientation **552. Stress Tolerance**

Job Duty Area #9: SALVAGE AND OVERHAUL OPERATIONS

The following job task statements compose the SALVAGE AND OVERHAUL OPERATIONS job duty area. Please review to familiarize yourself with this particular job duty area.

- Protect property from water and smoke using waterproof salvage covers and/or smoke ejectors (i.e., powered fans).
- Place a smoke ejector in strategic locations throughout the fire scene to aid in proper ventilation and smoke removal.
- Gather furniture into an appropriate location and protect it with salvage covers.
- Place salvage covers over lower floors to prevent unnecessary damage.
- Salvage property by removing broken glass, removing water and ventilating buildings to remove smoke.
- After a fire is extinguished, drain or pump out water and clean up remaining water on the floors.
- Remove burned and charred waste and other debris, if hazardous.
- Perform overhaul and salvage operations.
- Check for fire extension or hotspots using thermal imaging camera.
- Inspect fire sites after flames have been extinguished to ensure that there is no further danger.
- Coordinate inspections with other firefighters, supervisors and other firefighter companies.
- Check for smoldering fire inside walls and ceiling by means of fire tools and equipment (e.g., fire axe, ceiling hook).
- Search for missing persons not accounted for.
- Preserve evidence at fire scene.
- Secure the fire scene.
- Monitor the air for harmful toxins.
- Remove water via water chutes or other devices.
- Overhaul all vehicle compartments.
- Stop the flow of water from building sprinkler with sprinkler wedges or stoppers.
- Remove flooring, ceiling, and wall components to expose void spaces without compromising structural integrity.
- Roll and fold salvage covers for reuse.
- Perform horizontal ventilation on a structure, so that the ventilation openings are free of obstructions.
- Recognize points of strength and weakness in auto body construction.

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- Recognize and communicate dangers associated with overhaul.
- Designate work zones for safe operation at emergency scenes.

Turn to the next page to provide linkage ratings for the SALVAGE AND OVERHAUL OPERATIONS job duty area.

Please use the scale provided above to rate the importance of the skill, ability, and other characteristic areas (presented below) in performing tasks associated with the following job duty area: **SALVAGE AND OVERHAUL OPERATIONS**. **Please mark your answers under items 553-621 on the answer sheet.**

Skills

553. Problem Analysis
554. Problem-Solving
555. Decision-Making
556. Planning and Organization
557. Interpersonal Skill
558. Oral Communication
559. Self-Motivation
560. Composure
561. Conflict Resolution
562. Critical Thinking
563. Leadership.
564. Monitoring
565. Operation and Control
566. Instructing
567. Judgment and Decision Making
568. Social Perceptiveness
569. Negotiation
570. Public Relations Skill
571. Persuasion

Cognitive Abilities

572. Basic Arithmetic
573. Deductive Reasoning
574. Flexibility of Closure
575. Inductive Reasoning
576. Information Ordering
577. Mathematical Reasoning
578. Memorization
579. Number Facility
580. Oral Comprehension
581. Oral Expression
582. Problem Sensitivity
583. Selective Attention
584. Spatial Orientation
585. Visualization
586. Written Comprehension
587. Written Expression

Physical Abilities

588. Reaction Time
589. Arm-Hand Steadiness
590. Manual Dexterity
591. Multi-limb Coordination
592. Response Orientation
593. Rate Control
594. Static Strength
595. Control Precision
596. Stamina
597. Near Vision
598. Dynamic Strength
599. Trunk Strength
600. Extent Flexibility
601. Depth Perception
602. Auditory Attention
603. Gross Body Coordination
604. Gross Body Equilibrium
605. Far Vision

Other Characteristics

606. Achievement/Effort
607. Adaptability/Flexibility
608. Attention to Detail
609. Concern for Others
610. Cooperation
611. Dependability

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Rating Scale for SKILL/ABILITY AREA/OTHER CHARACTERISTIC Linkage			
N/A	***1***	***2***	***3***
Skill/Ability area is not relevant to task group	***Skill/Ability area is somewhat important and there is some value in performing task group***	***Skill/Ability area is moderately important and there is a tangible value in performing task group***	***Skill/Ability area is essential and must be possessed to perform task group***

612. Ethics
613. Independence
614. Initiative
615. Innovation
616. Integrity
617. Persistence
618. Self-Control
619. Service Orientation
620. Social/Teamwork Orientation
621. Stress Tolerance

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Job Duty Area #10: EXTERNAL AND INTERAGENCY COLLABORATIONS

The following job task statements compose the EXTERNAL AND INTERAGENCY COLLABORATIONS job duty area. Please review to familiarize yourself with this particular job duty area.

- Collaborate with other agencies and individuals to respond to accidents and/or disasters.
- Exchange information with law enforcement officials.
- Coordinate tasks and responsibilities with law enforcement officials (e.g., traffic control, crowd control).
- Monitor emergency scene and request assistance from other agencies as needed.
- Clearly and accurately communicate patient information, assessment and treatment via radio on route to a medical facility.
- Clearly and accurately communicate patient information and care to medical staff.
- Assist medical staff as needed until released by medical staff.

Turn to the next page to provide linkage ratings for the EXTERNAL AND INTERAGENCY COLLABORATIONS job duty area.

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Rating Scale for SKILL/ABILITY AREA/OTHER CHARACTERISTIC Linkage			
N/A	***1***	***2***	***3***
Skill/Ability area is not relevant to task group	***Skill/Ability area is somewhat important and there is some value in performing task group***	***Skill/Ability area is moderately important and there is a tangible value in performing task group***	***Skill/Ability area is essential and must be possessed to perform task group***

Please use the scale provided above to rate the importance of the skill, ability, and other characteristic areas (presented below) in performing tasks associated with the following job duty area: **EXTERNAL AND INTERAGENCY COLLABORATIONS**. **Please mark your answers under items 622-690 on the answer sheet.**

Skills

622. Problem Analysis
623. Problem-Solving
624. Decision-Making
625. Planning and Organization
626. Interpersonal Skill
627. Oral Communication
628. Self-Motivation
629. Composure
630. Conflict Resolution
631. Critical Thinking
632. Leadership.
633. Monitoring
634. Operation and Control
635. Instructing
636. Judgment and Decision Making
637. Social Perceptiveness
638. Negotiation
639. Public Relations Skill
640. Persuasion

Cognitive Abilities

641. Basic Arithmetic
642. Deductive Reasoning
643. Flexibility of Closure
644. Inductive Reasoning
645. Information Ordering
646. Mathematical Reasoning
647. Memorization
648. Number Facility
649. Oral Comprehension
650. Oral Expression
651. Problem Sensitivity
652. Selective Attention
653. Spatial Orientation
654. Visualization
655. Written Comprehension
656. Written Expression

Physical Abilities

657. Reaction Time
658. Arm-Hand Steadiness
659. Manual Dexterity
660. Multi-limb Coordination
661. Response Orientation
662. Rate Control
663. Static Strength
664. Control Precision
665. Stamina
666. Near Vision
667. Dynamic Strength
668. Trunk Strength
669. Extent Flexibility
670. Depth Perception
671. Auditory Attention
672. Gross Body Coordination
673. Gross Body Equilibrium
674. Far Vision

Other Characteristics

675. Achievement/Effort
676. Adaptability/Flexibility
677. Attention to Detail
678. Concern for Others
679. Cooperation
680. Dependability
681. Ethics
682. Independence
683. Initiative
684. Innovation
685. Integrity
686. Persistence
687. Self-Control
688. Service Orientation

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Rating Scale for SKILL/ABILITY AREA/OTHER CHARACTERISTIC Linkage			
N/A	***1***	***2***	***3***
Skill/Ability area is not relevant to task group	***Skill/Ability area is somewhat important and there is some value in performing task group***	***Skill/Ability area is moderately important and there is a tangible value in performing task group***	***Skill/Ability area is essential and must be possessed to perform task group***

689. Social/Teamwork Orientation **690. Stress Tolerance**

Job Duty Area #11: TRAINING AND EDUCATION

The following job task statements compose the TRAINING AND EDUCATION job duty area. Please review to familiarize yourself with this particular job duty area.

- Participate in fire drills and demonstrations of firefighting techniques.
- Participate in ongoing training drills to develop and maintain proficiency (e.g., HAZ-MAT, search and rescue operations, SCBA and air management, automobile extrication, rapid intervention team (RIT) training, etc.).
- Participate in training drills with new firefighters, assisting in their training through coaching and mentoring.
- Train in equipment operations such as apparatus driving, hydraulics and pump operation and aerial ladder operation.
- Participate in demonstrations, Officer classes, company level training or educational reviews (e.g., signs and symptoms of heat stroke, winter fireground operations, review of response zone building construction and floor plans, review of response zone street maps).
- Participate in physical training activities to maintain a high level of physical fitness.
- Participate in courses, seminars and conferences, and study fire science literature to learn firefighting techniques.
- Complete required training courses such as hazardous materials and automobile extrication.
- Read, comprehend and retain information from training materials (e.g., text books and manuals).
- Successfully complete and pass written exams that test coursework learning and training objectives.
- Take and complete course work required to obtain medical certifications.
- Maintain ongoing certification requirements through continuing education or training.
- Read and comprehend aspects of the fire department's member assistance program.
- Read, comprehend and retain information of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program.
- Participate in life safety initiatives in support of the fire department’s mission and to reduce firefighter line-of-duty injuries and fatalities.

Turn to the next page to provide linkage ratings for the TRAINING AND EDUCATION job duty area.

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Rating Scale for SKILL/ABILITY AREA/OTHER CHARACTERISTIC Linkage			
N/A	***1***	***2***	***3***
Skill/Ability area is not relevant to task group	***Skill/Ability area is somewhat important and there is some value in performing task group***	***Skill/Ability area is moderately important and there is a tangible value in performing task group***	***Skill/Ability area is essential and must be possessed to perform task group***

Please use the scale provided above to rate the importance of the skill, ability, and other characteristic areas (presented below) in performing tasks associated with the following job duty area: **TRAINING AND EDUCATION**. **Please mark your answers under items 691-759 on the answer sheet.**

Skills

691. Problem Analysis
692. Problem-Solving
693. Decision-Making
694. Planning and Organization
695. Interpersonal Skill
696. Oral Communication
697. Self-Motivation
698. Composure
699. Conflict Resolution
700. Critical Thinking
701. Leadership.
702. Monitoring
703. Operation and Control
704. Instructing
705. Judgment and Decision Making
706. Social Perceptiveness
707. Negotiation
708. Public Relations Skill
709. Persuasion

Cognitive Abilities

710. Basic Arithmetic
711. Deductive Reasoning
712. Flexibility of Closure
713. Inductive Reasoning
714. Information Ordering
715. Mathematical Reasoning
716. Memorization
717. Number Facility
718. Oral Comprehension
719. Oral Expression
720. Problem Sensitivity
721. Selective Attention
722. Spatial Orientation
723. Visualization
724. Written Comprehension
725. Written Expression

Physical Abilities

726. Reaction Time
727. Arm-Hand Steadiness
728. Manual Dexterity
729. Multi-limb Coordination
730. Response Orientation
731. Rate Control
732. Static Strength
733. Control Precision
734. Stamina
735. Near Vision
736. Dynamic Strength
737. Trunk Strength
738. Extent Flexibility
739. Depth Perception
740. Auditory Attention
741. Gross Body Coordination
742. Gross Body Equilibrium
743. Far Vision

Other Characteristics

744. Achievement/Effort
745. Adaptability/Flexibility
746. Attention to Detail
747. Concern for Others
748. Cooperation
749. Dependability
750. Ethics
751. Independence
752. Initiative
753. Innovation
754. Integrity
755. Persistence
756. Self-Control
757. Service Orientation

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Rating Scale for SKILL/ABILITY AREA/OTHER CHARACTERISTIC Linkage			
N/A	***1***	***2***	***3***
Skill/Ability area is not relevant to task group	***Skill/Ability area is somewhat important and there is some value in performing task group***	***Skill/Ability area is moderately important and there is a tangible value in performing task group***	***Skill/Ability area is essential and must be possessed to perform task group***

758. Social/Teamwork Orientation **759. Stress Tolerance**

Job Duty Area #12: ADMINISTRATIVE DUTIES AND COMMUNICATIONS

The following job task statements compose the ADMINISTRATIVE DUTIES AND COMMUNICATIONS job duty area. Please review to familiarize yourself with this particular job duty area.

- Document required information such as personal information of patients or citizens involved in emergency scenes.
- Summarize incidents that occurred at an emergency scene, detailing tactics, equipment and procedures used through written narratives.
- Write descriptions of situations in medical reports, including details of symptoms, actions taken, etc.
- Complete reports required of the job (daily maintenance, inspections and truck checks).
- Answer routine phone calls in the station.
- Report for duty on time.
- Maintain professional appearance and personal hygiene in accordance with regulations.
- Remain on-duty for extended periods of time per department-specific SOGs.
- Read all internal communications (emails, handouts, etc.) from department (e.g., SOGs, policies and procedures, rules and regulations, etc.).
- Document presentations and use prepared materials.

Turn to the next page to provide linkage ratings for the ADMINISTRATIVE DUTIES AND COMMUNICATIONS job duty area.

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Rating Scale for SKILL/ABILITY AREA/OTHER CHARACTERISTIC Linkage			
N/A	***1***	***2***	***3***
Skill/Ability area is not relevant to task group	***Skill/Ability area is somewhat important and there is some value in performing task group***	***Skill/Ability area is moderately important and there is a tangible value in performing task group***	***Skill/Ability area is essential and must be possessed to perform task group***

Please use the scale provided above to rate the importance of the skill, ability, and other characteristic areas (presented below) in performing tasks associated with the following job duty area: **ADMINISTRATIVE DUTIES AND COMMUNICATIONS**. **Please mark your answers under items 760-828 on the answer sheet.**

Skills

760. Problem Analysis
761. Problem-Solving
762. Decision-Making
763. Planning and Organization
764. Interpersonal Skill
765. Oral Communication
766. Self-Motivation
767. Composure
768. Conflict Resolution
769. Critical Thinking
770. Leadership.
771. Monitoring
772. Operation and Control
773. Instructing
774. Judgment and Decision Making
775. Social Perceptiveness
776. Negotiation
777. Public Relations Skill
778. Persuasion

Cognitive Abilities

779. Basic Arithmetic
780. Deductive Reasoning
781. Flexibility of Closure
782. Inductive Reasoning
783. Information Ordering
784. Mathematical Reasoning
785. Memorization
786. Number Facility
787. Oral Comprehension
788. Oral Expression
789. Problem Sensitivity
790. Selective Attention
791. Spatial Orientation
792. Visualization
793. Written Comprehension
794. Written Expression

Physical Abilities

795. Reaction Time
796. Arm-Hand Steadiness
797. Manual Dexterity
798. Multi-limb Coordination
799. Response Orientation
800. Rate Control
801. Static Strength
802. Control Precision
803. Stamina
804. Near Vision
805. Dynamic Strength
806. Trunk Strength
807. Extent Flexibility
808. Depth Perception
809. Auditory Attention
810. Gross Body Coordination
811. Gross Body Equilibrium
812. Far Vision

Other Characteristics

813. Achievement/Effort
814. Adaptability/Flexibility
815. Attention to Detail
816. Concern for Others
817. Cooperation
818. Dependability
819. Ethics
820. Independence
821. Initiative
822. Innovation
823. Integrity
824. Persistence
825. Self-Control
826. Service Orientation

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Rating Scale for SKILL/ABILITY AREA/OTHER CHARACTERISTIC Linkage			
N/A	***1***	***2***	***3***
Skill/Ability area is not relevant to task group	***Skill/Ability area is somewhat important and there is some value in performing task group***	***Skill/Ability area is moderately important and there is a tangible value in performing task group***	***Skill/Ability area is essential and must be possessed to perform task group***

827. Social/Teamwork Orientation **828. Stress Tolerance**

Job Duty Area #13: STATION AND EQUIPMENT MAINTENANCE

The following job task statements compose the STATION AND EQUIPMENT MAINTENANCE job duty area. Please review to familiarize yourself with this particular job duty area.

- Clean and maintain fire stations and firefighting equipment and apparatus.
- Ensure apparatus is in response-ready state, including decontaminating and disinfecting the unit and equipment, restocking of supplies and inspection of equipment.
- Ensure proper function of SCBA by inspecting and performing daily tests at the start of each shift; service SCBA if malfunctioning.
- Coordinate with firefighters from off-going shift as to the actions needed to ensure the apparatus is in a response ready state.
- Checks bells and other signaling devices in the fire station by operating them to ensure that they work properly.
- Report damaged and out of service equipment to company officer.
- Perform maintenance and upkeep for equipment and apparatus as necessary to ensure a response-ready state.
- Wash used hoses and re-bed them on the truck.
- Maintain all personal protective equipment (PPEs).
- Maintain an inventory of tools and equipment.
- Maintain maintenance records of all equipment and apparatus.
- Perform daily chores to ensure a neat and clean working and living environment at the fire station.
- Perform and coordinate kitchen chores such as planning meals, cooking meals and cleaning up after meals.
- Maintain the exterior of fire station: lawns, walkways and driveways.
- Perform an annual service test on fire hose, using a pump, a marking device, pressure gauges, and a timer.

Turn to the next page to provide linkage ratings for the STATION AND EQUIPMENT MAINTENANCE job duty area.

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Rating Scale for SKILL/ABILITY AREA/OTHER CHARACTERISTIC Linkage			
N/A	***1***	***2***	***3***
Skill/Ability area is not relevant to task group	***Skill/Ability area is somewhat important and there is some value in performing task group***	***Skill/Ability area is moderately important and there is a tangible value in performing task group***	***Skill/Ability area is essential and must be possessed to perform task group***

Please use the scale provided above to rate the importance of the skill, ability, and other characteristic areas (presented below) in performing tasks associated with the following job duty area: **STATION AND EQUIPMENT MAINTENANCE**. **Please mark your answers under items 829-897 on the answer sheet.**

Skills

829. Problem Analysis
830. Problem-Solving
831. Decision-Making
832. Planning and Organization
833. Interpersonal Skill
834. Oral Communication
835. Self-Motivation
836. Composure
837. Conflict Resolution
838. Critical Thinking
839. Leadership.
840. Monitoring
841. Operation and Control
842. Instructing
843. Judgment and Decision Making
844. Social Perceptiveness
845. Negotiation
846. Public Relations Skill
847. Persuasion

Cognitive Abilities

848. Basic Arithmetic
849. Deductive Reasoning
850. Flexibility of Closure
851. Inductive Reasoning
852. Information Ordering
853. Mathematical Reasoning
854. Memorization
855. Number Facility
856. Oral Comprehension
857. Oral Expression
858. Problem Sensitivity
859. Selective Attention
860. Spatial Orientation
861. Visualization
862. Written Comprehension
863. Written Expression

Physical Abilities

864. Reaction Time
865. Arm-Hand Steadiness
866. Manual Dexterity
867. Multi-limb Coordination
868. Response Orientation
869. Rate Control
870. Static Strength
871. Control Precision
872. Stamina
873. Near Vision
874. Dynamic Strength
875. Trunk Strength
876. Extent Flexibility
877. Depth Perception
878. Auditory Attention
879. Gross Body Coordination
880. Gross Body Equilibrium
881. Far Vision

Other Characteristics

882. Achievement/Effort
883. Adaptability/Flexibility
884. Attention to Detail
885. Concern for Others
886. Cooperation
887. Dependability
888. Ethics
889. Independence
890. Initiative
891. Innovation
892. Integrity
893. Persistence
894. Self-Control
895. Service Orientation

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Rating Scale for SKILL/ABILITY AREA/OTHER CHARACTERISTIC Linkage			
N/A	***1***	***2***	***3***
Skill/Ability area is not relevant to task group	***Skill/Ability area is somewhat important and there is some value in performing task group***	***Skill/Ability area is moderately important and there is a tangible value in performing task group***	***Skill/Ability area is essential and must be possessed to perform task group***

896. Social/Teamwork Orientation

897. Stress Tolerance

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Job Duty Area #14: PREVENTION AND INSPECTIONS

The following job task statements compose the PREVENTION AND INSPECTIONS job duty area. Please review to familiarize yourself with this particular job duty area.

- Engage in pre-planning operations such as documenting building layouts, building construction, fire suppression and other tactical information such as location of exits to assist in future operations.
- Inspect fire hydrant functioning in response zones and conduct hydrant flow tests.
- Inspect businesses and non-owner occupied private dwellings.
- Identify code enforcement issues and alert superiors.
- Complete smoke detector certifications.
- Identify illegal occupant dwellings or other occupancies.
- Use commonly recognized symbols when diagramming construction features, utilities, hazards, and fire protection systems.

Turn to the next page to provide linkage ratings for the PREVENTION AND INSPECTIONS job duty area.

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Rating Scale for SKILL/ABILITY AREA/OTHER CHARACTERISTIC Linkage			
N/A	***1***	***2***	***3***
Skill/Ability area is not relevant to task group	***Skill/Ability area is somewhat important and there is some value in performing task group***	***Skill/Ability area is moderately important and there is a tangible value in performing task group***	***Skill/Ability area is essential and must be possessed to perform task group***

Please use the scale provided above to rate the importance of the skill, ability, and other characteristic areas (presented below) in performing tasks associated with the following job duty area: **PREVENTION AND INSPECTIONS**. **Please mark your answers under items 898-966 on the answer sheet.**

Skills

898. Problem Analysis
899. Problem-Solving
900. Decision-Making
901. Planning and Organization
902. Interpersonal Skill
903. Oral Communication
904. Self-Motivation
905. Composure
906. Conflict Resolution
907. Critical Thinking
908. Leadership.
909. Monitoring
910. Operation and Control
911. Instructing
912. Judgment and Decision Making
913. Social Perceptiveness
914. Negotiation
915. Public Relations Skill
916. Persuasion

Cognitive Abilities

917. Basic Arithmetic
918. Deductive Reasoning
919. Flexibility of Closure
920. Inductive Reasoning
921. Information Ordering
922. Mathematical Reasoning
923. Memorization
924. Number Facility
925. Oral Comprehension
926. Oral Expression
927. Problem Sensitivity
928. Selective Attention
929. Spatial Orientation
930. Visualization
931. Written Comprehension
932. Written Expression

Physical Abilities

933. Reaction Time
934. Arm-Hand Steadiness
935. Manual Dexterity
936. Multi-limb Coordination
937. Response Orientation
938. Rate Control
939. Static Strength
940. Control Precision
941. Stamina
942. Near Vision
943. Dynamic Strength
944. Trunk Strength
945. Extent Flexibility
946. Depth Perception
947. Auditory Attention
948. Gross Body Coordination
949. Gross Body Equilibrium
950. Far Vision

Other Characteristics

951. Achievement/Effort
952. Adaptability/Flexibility
953. Attention to Detail
954. Concern for Others
955. Cooperation
956. Dependability
957. Ethics
958. Independence
959. Initiative
960. Innovation
961. Integrity
962. Persistence
963. Self-Control
964. Service Orientation

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Rating Scale for SKILL/ABILITY AREA/OTHER CHARACTERISTIC Linkage			
N/A	***1***	***2***	***3***
Skill/Ability area is not relevant to task group	***Skill/Ability area is somewhat important and there is some value in performing task group***	***Skill/Ability area is moderately important and there is a tangible value in performing task group***	***Skill/Ability area is essential and must be possessed to perform task group***

965. Social/Teamwork Orientation **966. Stress Tolerance**

Job Duty Area #15: PUBLIC RELATIONS AND CUSTOMER SERVICE

The following job task statements compose the PUBLIC RELATIONS AND CUSTOMER SERVICE job duty area. Please review to familiarize yourself with this particular job duty area.

- Maintain a log of visitors to the fire station by recording their names, date, time and other relevant information so a written record is available.
- At superior's command, accompany owners/occupants into burned structure to allow them to retrieve possessions safely and to reduce liability risk to the fire department.
- Inform and educate the public on fire prevention.
- Perform community service and outreach programs such as fire alarm installations, child safety seat installations, etc.
- Conduct fire station tours for groups of individuals and children.
- Maintain a service orientation or public servant mentality when dealing with the public.
- Use tact and diplomacy in dealing with the public under times of high stress or with disgruntled, agitated or hysterical persons.
- Interact and work with citizens.
- Attend community meetings, ceremonies and parades as representatives of the department.
- Establish perimeter lines to prevent unauthorized persons from entering areas near emergencies.
- Provide assistance to victims.
- Control the emergency scene to protect yourself, coworkers and the patient or victim.
- Communicate with the public to prevent them from crossing perimeter lines.
- Assist rescue operation teams so that rescue items are recognized and retrieved in the time as prescribed by the Authorities Having Jurisdiction (AHJ).
- Support and conduct community risk reduction programs.

Turn to the next page to provide linkage ratings for the PUBLIC RELATIONS AND CUSTOMER SERVICE job duty area.

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Rating Scale for SKILL/ABILITY AREA/OTHER CHARACTERISTIC Linkage			
N/A	***1***	***2***	***3***
Skill/Ability area is not relevant to task group	***Skill/Ability area is somewhat important and there is some value in performing task group***	***Skill/Ability area is moderately important and there is a tangible value in performing task group***	***Skill/Ability area is essential and must be possessed to perform task group***

Please use the scale provided above to rate the importance of the skill, ability, and other characteristic areas (presented below) in performing tasks associated with the following job duty area: **PUBLIC RELATIONS AND CUSTOMER SERVICE**. **Please mark your answers under items 967-1035 on the answer sheet.**

Skills

967. Problem Analysis
968. Problem-Solving
969. Decision-Making
970. Planning and Organization
971. Interpersonal Skill
972. Oral Communication
973. Self-Motivation
974. Composure
975. Conflict Resolution
976. Critical Thinking
977. Leadership.
978. Monitoring
979. Operation and Control
980. Instructing
981. Judgment and Decision Making
982. Social Perceptiveness
983. Negotiation
984. Public Relations Skill
985. Persuasion

Cognitive Abilities

986. Basic Arithmetic
987. Deductive Reasoning
988. Flexibility of Closure
989. Inductive Reasoning
990. Information Ordering
991. Mathematical Reasoning
992. Memorization
993. Number Facility
994. Oral Comprehension
995. Oral Expression
996. Problem Sensitivity
997. Selective Attention
998. Spatial Orientation
999. Visualization
1000. Written Comprehension
1001. Written Expression

Physical Abilities

1002. Reaction Time
1003. Arm-Hand Steadiness
1004. Manual Dexterity
1005. Multi-limb Coordination
1006. Response Orientation
1007. Rate Control
1008. Static Strength
1009. Control Precision
1010. Stamina
1011. Near Vision
1012. Dynamic Strength
1013. Trunk Strength
1014. Extent Flexibility
1015. Depth Perception
1016. Auditory Attention
1017. Gross Body Coordination
1018. Gross Body Equilibrium
1019. Far Vision

Other Characteristics

1020. Achievement/Effort
1021. Adaptability/Flexibility
1022. Attention to Detail
1023. Concern for Others
1024. Cooperation
1025. Dependability
1026. Ethics
1027. Independence
1028. Initiative
1029. Innovation
1030. Integrity
1031. Persistence
1032. Self-Control
1033. Service Orientation

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Rating Scale for SKILL/ABILITY AREA/OTHER CHARACTERISTIC Linkage			
N/A	***1***	***2***	***3***
Skill/Ability area is not relevant to task group	***Skill/Ability area is somewhat important and there is some value in performing task group***	***Skill/Ability area is moderately important and there is a tangible value in performing task group***	***Skill/Ability area is essential and must be possessed to perform task group***

1034. Social/Teamwork Orientation

1035. Stress Tolerance

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SECTION THREE

RELATIVE JOB DUTY AREA RATINGS & COMPREHENSIVENESS RATINGS

INSTRUCTIONS:

1. COMPREHENSIVENESS RATINGS OF JOB TASKS

Consider all of the job-tasks listed in the previous section. How comprehensively do they describe the firefighter job at your department? That is, consider the total amount of time that a firefighter spends engaging in their job tasks. Of that total amount of time, what percentage is described by the job tasks listed in the previous section?

For example, if all of the time that a firefighter spends on their job tasks is accounted for by the job tasks listed in the previous section, then the percentage would be 100%. If 90% of the time a firefighter is accounted for by these job tasks, then the percentage would be 90%, and so on. When considering the appropriate percentage value, please include the time spent actually engaging in job tasks not the total time you are "on call." We are looking for only the time actually engaging in job tasks and are not considering the time during sleeping hours or on breaks.

In the "Comprehensiveness Rating" on your answer sheet, please indicate the percentage of time that a firefighter spends engaged in job tasks accounted for in the previous section. A value from 0% to 100% should be used. If the percentage you indicate is less than 100, be sure to fill in the "0" digit in the first space in this box. For example, 85% would be completed by writing and bubbling in "085."

2. RELATIVE JOB DUTY AREA RATINGS OF JOB TASKS

Certain job duty areas will be performed more frequently than other duty areas, and certain duty areas are more important to the job than other areas. You will be asked to rate the relative importance and frequency of the duty areas.

- **For importance**, consider how important a given job duty area is relative to all other job duties.
- **For frequency**, consider how much time is spent by firefighters engaging in the job tasks defined by the job duty area.

You will be asked to make two sets of relative importance and frequency ratings.

Part One:

First, you will make relative ratings based upon a larger categorization of the job duty areas into groups based upon the job duty areas' tactical nature. That is, you will rate the relative importance and frequency of job duty areas that are "Tactical" and those that are "Non-Tactical."

i. To make these ratings, divide 100% across the two larger headings. Consider the job duty areas listed under each heading (e.g., Tactical / Non-tactical) and assign a relative percentage score to indicate the split of importance between the Tactical and Non-Tactical job duty areas, and then the split of frequency between the Tactical and Non-Tactical job duty areas.

ii. Write in the relative percentage scores for the "Tactical" and "Non-Tactical" job duty areas in their respective columns (importance and frequency). **You will mark your answers directly on the answer sheet in the table provided.** The percentage scores

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should sum to 100% for each column. *(Refer to the example below to see a table with completed percentages.)*

Part Two:

The second set of relative importance and frequency ratings you will make will be for each of the job duty areas. You will be asked to assign percentage points across these job duty areas. These ratings should be made completely independently of the Tactical/Non-Tactical ratings that you just completed.

iii. To make these ratings, divide 100% across the job duty areas. Consider the importance and frequency of a given job duty area as it compares to all other job duty areas when devising your ratings.

iv. Write in the relative percentage scores for the job duty areas in their respective columns (importance and frequency). **You will mark your answers directly on the answer sheet.** The percentage scores should sum to 100% in each column. Again, these ratings can be independent from the first set of ratings you made in this section. *(Refer to the example below to see a table with completed percentages.)*

EXAMPLE of a completed table:

		PART ONE		PART TWO	
Duty Areas		Importance %	Frequency %	Importance %	Frequency %
Tactical Duties					
1	INCIDENT RESPONSE	65	40	5	5
2	INCIDENT ASSESSMENT/SIZE-UP			5	5
3	RESCUE OPERATIONS			10	5
4	EMERGENCY MEDICAL SERVICE OPERATIONS			10	10
5	PUMPING AND DRIVING OPERATIONS			5	4
6	LADDER OPERATIONS			5	4
7	HOSELINE AND ATTACK OPERATIONS			5	4
8	HAZARDOUS MATERIALS OPERATIONS (HAZ-MAT)			5	4
9	SALVAGE AND OVERHAUL OPERATIONS			5	4
Non-Tactical Duties					
10	EXTERNAL AND INTERAGENCY COLLABORATIONS	35	60	5	5
11	TRAINING AND EDUCATION			10	15
12	ADMINISTRATIVE DUTIES AND COMMUNICATIONS			5	10
13	STATION AND EQUIPMENT MAINTENANCE			10	10
14	PREVENTION AND INSPECTIONS			5	5
15	PUBLIC RELATIONS AND CUSTOMER SERVICE			10	10
Totals		100%	100%	100%	100%

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THANK YOU FOR COMPLETING THIS LINKAGE QUESTIONNAIRE!

DELIVERY INSTRUCTIONS:

Please make sure that you place the answer sheet inside this booklet. Then, give the completed questionnaire to your questionnaire administrator.

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Appendix T: Knowledge Linkage Questionnaire

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THE BUREAU OF FIRE STANDARDS AND TRAINING

KNOWLEDGE LINKAGE QUESTIONNAIRE

FIREFIGHTER POSITION

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INTRODUCTION

You have been selected to complete a linkage questionnaire for The Bureau of Fire Standards and Training. A linkage questionnaire is a survey that collects expert opinions that are used to tie (or "LINK") the knowledge, skills, abilities and other characteristics necessary to successfully perform a target job - in this case, the job of a firefighter – to the essential job tasks of that job. To help in reducing the amount of time needed from participants, the linkage questionnaire in this study has been divided into two booklets: 1) knowledge; 2) ability. You have been selected to complete the knowledge linkage questionnaire.

The results from a linkage questionnaire are used to support the validation of the knowledge, skills, abilities, and other characteristics necessary to perform the job of a firefighter. You will be asked to provide your expert opinions regarding the firefighter position within your department. The results of this questionnaire will be used in the evaluation of the training requirements for our firefighters and volunteer firefighters within the State of Florida.

As you complete this questionnaire, please make sure that your responses are reflective of only that of the firefighter position. If you are of a higher rank, your responses should reflect the firefighter position. If you are volunteer, please only respond from the perspective of a volunteer firefighter.

Also, please ensure that you are following the specific instructions for the section you are working in. The section-specific instructions will be provided to you at the start of that chapter. This questionnaire takes approximately 90 minutes to complete.

INSTRUCTIONS FOR COMPLETING THE LINKAGE QUESTIONNAIRE— PLEASE READ ALL INSTRUCTIONS.

5. First, please make sure that you have all the materials you will need to complete this survey. In addition to this booklet, you will need to have a pen with dark ink or a pencil and the accompanying answer sheet packet. This answer sheet packet is a separate printed document. All responses will be placed on this answer sheet packet when responding to the items in this questionnaire.

6. Fill in the demographic information on the answer sheet as follows:
    a. On the answer sheet, please fill the information out by first writing down your information in the boxes provided, and then filling in the corresponding circles underneath.
    b. In the space marked "LAST NAME", please write your last name and darken the corresponding circles. Do the same for "FIRST NAME" and "M" (middle initial).
    c. It is crucial that you place the last four digits of your SSN on the answer sheet.
    d. Next, write in your age and fill in the appropriate circles in the box marked "AGE".
    e. Under the box marked "Tenure", please write in your Tenure with your Department (in years, rounding to the nearest year) in the boxes and fill in the corresponding circles beneath the box.

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f. Under the box marked “Rk Tenure”, please indicate your tenure in your current rank (rounding to the nearest year) and fill in the circles below.

g. Please identify your “Race” and “Gender” in the space provided on the answer sheet. This information is collected for governmental reporting purposes and to ensure that our sample is representative of the population.

h. Next, fill in the circle that corresponds to your “Education” level.

i. Very importantly, please indicate your “Position Type” by darkening the appropriate circle.

j. Please darken the circle corresponding to your “Current Rank” in the appropriate box.

k. Finally, please darken the circle corresponding to the “Size of your Department” and write in the name of your department in the “Department Name” box.

7. This LINKAGE is divided into two (2) sections. Section-specific instructions will be provided at the beginning of each section.
    a. Section One will ask you to rate the importance of the list of knowledge areas in performing each job duty area. You will rate one job duty area at a time. There are 15 job duty areas in total.
    b. Section Two will have you complete relative importance and frequency ratings regarding the defined job duty areas that you would have become familiar with after completing Section One.

8. When you have completed the questionnaire, please return the booklet and answer sheet packet back to the person who provided you with these materials. This person will then collect all questionnaires and return them to the vendor so that the data can be analyzed for the statewide job analysis study.

We understand that this linkage questionnaire is time consuming. We ask that you remain diligent as you complete this survey. The results from this survey provide a great deal of valuable information for the firefighter position, but only when participants provide accurate and thoroughly-completed responses. Feel free to complete this questionnaire in small sections as you have some time during your day. We do ask that the survey be completed within 2 weeks from the time that the questionnaire is distributed to you.

As an expert in the field, we value and appreciate your assistance. Your expertise and experience are of critical importance. **Thank you in advance for your cooperation.**

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SECTION ONE.

KNOWLEDGE LINKAGE INSTRUCTIONS

4. You will be making linkage ratings to indicate how important various knowledge areas are to a given job duty area. This "linkage" will indicate what knowledge is used to perform the job tasks that comprise the job duty area. Essentially, this activity will "LINK" these knowledge areas to the job.
5. Each job duty area that you will rate will first begin with the listing of job tasks that comprise that particular area. Be sure to understand what each job duty area entails before you begin your ratings for that area.
6. Please mark your ratings directly on the answer sheet. Be sure that you are filling in the correct item number on the answer sheet as you complete your linkage ratings. To make your ratings, please use the importance scale below.

Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

When making linkage assessments, consider if the knowledge area you are evaluating is necessary for the successful performance of the tasks associated with the job duty area listed. For example, consider the linkage of "*knowledge of motor vehicle rules and regulations"* with the job duty area of "incident response." To successfully complete the tasks that comprise the duty area of "incident response," does one need to possess *"knowledge of motor vehicle rules and regulations"*? How important is this knowledge in performing the job tasks associated with this particular job duty area?

Use the importance scale above to answer this question. If there is no need to have this specific knowledge to successfully complete the tasks, then N/A would be marked on the answer sheet. If it is vital to the successful completion of the job tasks, such that one MUST possess this knowledge, then "3" would be marked on the answer sheet. Use your expert judgments to evaluate **(1)** if there is a link and **(2)** if a link is present, to what degree the particular knowledge area is required to successfully complete the job tasks associated with that job duty area.

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Job Duty Area #1: INCIDENT RESONSE

The following job task statements compose the INCIDENT RESPONSE job duty area. Please review to familiarize yourself with this particular job duty area.

- Accurately take incoming calls or information from the dispatcher regarding alarms (e.g., fire alarms, requests for emergency medical services).
- Be in a response-ready status to respond to alarms at all hours of the day and night.
- Respond to a vast range of emergencies including fire alarms, automobile accidents, medical emergencies, hazardous materials, or other incidents.
- Put on situation-appropriate personal protective equipment (PPE) (example: full turnout gear, HAZ-MAT Equipment, Universal Protections [Body Substance Isolation Gear]).
- Put on and wear self-contained breathing apparatus (SCBA).
- Carry equipment when needed (RIT Pack, High-Rise Pack, Medical Bag).
- Perform tasks only in established, protected work areas.

Turn to the next page to provide knowledge linkage ratings for the INCIDENT RESPONSE job duty area.

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Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

Please use the scale provided above to rate the importance of the 76 job knowledge areas (presented below) in performing tasks associated with the following job duty area: **INCIDENT RESPONSE**. **Please mark your answers under items 1-76 on the answer sheet.**

1. Knowledge of motor vehicle rules and regulations.
2. Knowledge of common hand tools, such as wrenches, pliers, screw drivers, hammers and mauls, axes, prying tools, etc., e.g., their use, operation, limits and safety precautions/procedures.
3. Knowledge of basic science terms and concepts, e.g., force, gravity, pressure, vacuum, etc.
4. Knowledge of ratios and terms, expressing ratios and the practical use of ratios, e.g., pounds per square inch, gallons per minute, etc.
5. Knowledge of basic mechanical principles, e.g., leverage, gears, pulleys, screws, etc.
6. Knowledge of typical occupancy activity at a given time of day.
7. Knowledge of the science behind fire propagation.
8. Knowledge of common heat energy sources: chemical, electrical, and mechanical energy.
9. Knowledge of heat transmission and the mechanisms by which heat transfer occurs: conduction, convection, and radiation.
10. Knowledge of common products of combustion and their toxic effects.
11. Knowledge of classification of fires: class A, B, C, D, and K fires.
12. Knowledge of Fire Control Theory: temperature reduction, fuel removal, oxygen exclusion, and chemical flame inhibition.
13. Knowledge of common materials found in building construction.
14. Knowledge of the strengths and weaknesses associated with different types of building construction types.
15. Knowledge of types of extinguishers and their common uses.
16. Knowledge of types of knots, ropes, and webbing materials.
17. Knowledge of types of ladders.
18. Knowledge of search operations.
19. Knowledge of rescue operations.
20. Knowledge of extrication operations.
21. Knowledge of types of carries.
22. Knowledge of victim removal methods.
23. Knowledge of forcible entry methods.
24. Knowledge of ventilation methods.
25. Knowledge of types of hydrants and alternative water supplies.
26. Knowledge of methods of moving water in a system.
27. Knowledge of static pressure, flow pressure, and residual pressure.
28. Knowledge of common hose rolls.

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Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

29. Knowledge of friction loss, elevation loss/gain, and water hammers.
30. Knowledge of size classifications of fire streams.
31. Knowledge of foam techniques.
32. Knowledge of direct attacks.
33. Knowledge of indirect attacks.
34. Knowledge of combination attacks.
35. Knowledge of salvage operations.
36. Knowledge of overhaul operations.
37. Knowledge of hidden fire indicators.
38. Knowledge of evidence protection methods.
39. Knowledge of procedures the public should use to report a fire or other emergency.
40. Knowledge of necessary skills for fire department communications.
41. Knowledge of the types of information required for arrival and progress reports.
42. Knowledge of pre-incident surveys and inspections.
43. Knowledge of common fire hazards.
44. Knowledge of the steps in presenting fire and life safety information to the public.
45. Knowledge of the components of personal protective equipment.
46. Knowledge of the physiological aspects of stress.
47. Knowledge of cardiopulmonary resuscitation (CPR).
48. Knowledge of scene safety considerations such as hazardous materials incidents and rescue operations.
49. Knowledge of the types and states of shock of victims and/or other fire personnel
50. Knowledge of methods to managing shock of victims and/or other fire personnel.
51. Knowledge of Body Substance Isolation (BSI) or infection control precautions.
52. Knowledge of methods to prevent and/or reduce the effects of heat exposure while wearing protective clothing.
53. Knowledge of the main routes through which hazardous materials can enter the body.
54. Knowledge of the clues which indicate the presence of hazardous materials.
55. Knowledge of chemical attack indicators.
56. Knowledge of incident priorities at all HAZMAT and terrorist incidents.
57. Knowledge of types of decontamination.
58. Knowledge of hazard-control zones.
59. Knowledge of defensive confinement and spill control actions.
60. Knowledge of factors to address during large-scale evacuations.
61. Knowledge of the organization of the fire department .
62. Knowledge of the role of the Fire Fighter I in the organization.
63. Knowledge of the mission of fire service.

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You are rating the INCIDENT RESPONSE job duty area.

Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

64. Knowledge of the fire department's standard operating procedures (SOPs) and rules and regulations.
65. Knowledge of the role of other agencies as they relate to the fire department.
66. Knowledge of the critical aspects of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program.
67. Knowledge of procedures for reporting an emergency; departmental SOPs for taking and receiving alarms, radio codes, or procedures; and information needs of dispatch center.
68. Knowledge of fire department procedures for answering nonemergency telephone calls.
69. Knowledge of departmental radio procedures and etiquette for routine traffic, emergency traffic, and emergency evacuation signals.
70. Knowledge of personnel accountability systems, emergency communication procedures, and emergency evacuation methods.
71. Knowledge of basic construction of typical doors, windows, and walls within the department's community or service area.
72. Knowledge of personnel accountability systems and communication procedures.
73. Principles of fire streams as they relate to fighting automobile fires.
74. Knowledge of SOPs for alarm assignments and fire department radio communication procedures.
75. Knowledge of the methods to assess the origin and cause of fires.
76. Knowledge of the characteristics of pressurized flammable gases.

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Job Duty Area #2: INCIDENT ASSESSMENT/SIZE-UP

The following job task statements compose the INCIDENT ASSESSMENT/SIZE-UP job duty area. Please review to familiarize yourself with this particular job duty area.

- Assess fires and situations and report conditions to superiors to receive instructions, using two-way radios.
- Conduct a mental size-up of the emergency scene.
- Check the wind direction in relation to the fire or HAZ-MAT scene.
- Assess the potential effects of weather on emergency response.
- Assess the color, location and movement of smoke.
- Assess fire conditions to ensure proper fire suppression agent is used.
- Determine the safest evacuation route and primary and secondary means of egress.
- Safely shut off utility services to buildings in emergency situations (e.g., electrical and gas valves).
- Communicate with the dispatcher, other fire vehicles and commanding officers by radio and request any necessary assistance.
- Advise the commanding officer of fire conditions, hazards and exposures at the scene.
- Communicate with the superior during a live fire.
- Collaborate with other firefighters, supervisors and other firefighter companies to conduct firefighting and rescue operations.
- Illuminate the emergency scene.
- Recognize potential hazards on emergency scenes regarding vehicle traffic.
- Discriminate between routine and emergency traffic.
- Use personnel accountability systems to locate team members and communicate loss of air supply.

Turn to the next page to provide knowledge linkage ratings for the INCIDENT ASSESSMENT/SIZE-UP job duty area.

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Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

Please use the scale provided above to rate the importance of the 76 job knowledge areas (presented below) in performing tasks associated with the following job duty area: **INCIDENT ASSESSMENT/SIZE-UP**. **Please mark your answers under items 77-152 on the answer sheet.**

77. Knowledge of motor vehicle rules and regulations.
78. Knowledge of common hand tools, such as wrenches, pliers, screw drivers, hammers and mauls, axes, prying tools, etc., e.g., their use, operation, limits and safety precautions/procedures.
79. Knowledge of basic science terms and concepts, e.g., force, gravity, pressure, vacuum, etc.
80. Knowledge of ratios and terms, expressing ratios and the practical use of ratios, e.g., pounds per square inch, gallons per minute, etc.
81. Knowledge of basic mechanical principles, e.g., leverage, gears, pulleys, screws, etc.
82. Knowledge of typical occupancy activity at a given time of day.
83. Knowledge of the science behind fire propagation.
84. Knowledge of common heat energy sources: chemical, electrical, and mechanical energy.
85. Knowledge of heat transmission and the mechanisms by which heat transfer occurs: conduction, convection, and radiation.
86. Knowledge of common products of combustion and their toxic effects.
87. Knowledge of classification of fires: class A, B, C, D, and K fires.
88. Knowledge of Fire Control Theory: temperature reduction, fuel removal, oxygen exclusion, and chemical flame inhibition.
89. Knowledge of common materials found in building construction.
90. Knowledge of the strengths and weaknesses associated with different types of building construction types.
91. Knowledge of types of extinguishers and their common uses.
92. Knowledge of types of knots, ropes, and webbing materials.
93. Knowledge of types of ladders.
94. Knowledge of search operations.
95. Knowledge of rescue operations.
96. Knowledge of extrication operations.
97. Knowledge of types of carries.
98. Knowledge of victim removal methods.
99. Knowledge of forcible entry methods.
100. Knowledge of ventilation methods.
101. Knowledge of types of hydrants and alternative water supplies.
102. Knowledge of methods of moving water in a system.
103. Knowledge of static pressure, flow pressure, and residual pressure.
104. Knowledge of common hose rolls.

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You are rating the INCIDENT ASSESSMENT/SIZE-UP job duty area.

Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

105. Knowledge of friction loss, elevation loss/gain, and water hammers.
106. Knowledge of size classifications of fire streams.
107. Knowledge of foam techniques.
108. Knowledge of direct attacks.
109. Knowledge of indirect attacks.
110. Knowledge of combination attacks.
111. Knowledge of salvage operations.
112. Knowledge of overhaul operations.
113. Knowledge of hidden fire indicators.
114. Knowledge of evidence protection methods.
115. Knowledge of procedures the public should use to report a fire or other emergency.
116. Knowledge of necessary skills for fire department communications.
117. Knowledge of the types of information required for arrival and progress reports.
118. Knowledge of pre-incident surveys and inspections.
119. Knowledge of common fire hazards.
120. Knowledge of the steps in presenting fire and life safety information to the public.
121. Knowledge of the components of personal protective equipment.
122. Knowledge of the physiological aspects of stress.
123. Knowledge of cardiopulmonary resuscitation (CPR).
124. Knowledge of scene safety considerations such as hazardous materials incidents and rescue operations.
125. Knowledge of the types and states of shock of victims and/or other fire personnel
126. Knowledge of methods to managing shock of victims and/or other fire personnel.
127. Knowledge of Body Substance Isolation (BSI) or infection control precautions.
128. Knowledge of methods to prevent and/or reduce the effects of heat exposure while wearing protective clothing.
129. Knowledge of the main routes through which hazardous materials can enter the body.
130. Knowledge of the clues which indicate the presence of hazardous materials.
131. Knowledge of chemical attack indicators.
132. Knowledge of incident priorities at all HAZMAT and terrorist incidents.
133. Knowledge of types of decontamination.
134. Knowledge of hazard-control zones.
135. Knowledge of defensive confinement and spill control actions.
136. Knowledge of factors to address during large-scale evacuations.
137. Knowledge of the organization of the fire department .
138. Knowledge of the role of the Fire Fighter I in the organization.

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You are rating the INCIDENT ASSESSMENT/SIZE-UP job duty area.

Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

139. Knowledge of the mission of fire service.
140. Knowledge of the fire department's standard operating procedures (SOPs) and rules and regulations.
141. Knowledge of the role of other agencies as they relate to the fire department.
142. Knowledge of the critical aspects of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program.
143. Knowledge of procedures for reporting an emergency; departmental SOPs for taking and receiving alarms, radio codes, or procedures; and information needs of dispatch center.
144. Knowledge of fire department procedures for answering nonemergency telephone calls.
145. Knowledge of departmental radio procedures and etiquette for routine traffic, emergency traffic, and emergency evacuation signals.
146. Knowledge of personnel accountability systems, emergency communication procedures, and emergency evacuation methods.
147. Knowledge of basic construction of typical doors, windows, and walls within the department's community or service area.
148. Knowledge of personnel accountability systems and communication procedures.
149. Principles of fire streams as they relate to fighting automobile fires.
150. Knowledge of SOPs for alarm assignments and fire department radio communication procedures.
151. Knowledge of the methods to assess the origin and cause of fires.
152. Knowledge of the characteristics of pressurized flammable gases.

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Job Duty Area #3: RESCUE OPERATIONS

The following job task statements compose the RESCUE OPERATIONS job duty area. Please review to familiarize yourself with this particular job duty area.

- Rescue victims from burning buildings and accident sites.
- Assist at a water rescue (e.g., swollen rivers, frozen lakes).
- Interact with victims or casualties who have sustained severe or life-ending injuries.
- Interact with victims who have witnessed the loss or injury of companions.
- Safely remove persons from entrapments.
- Safely lift, hoist or drag victim(s), taking care to minimize further injuries.
- Drag or carry a victim(s) out of a building wearing appropriate PPE.
- Carry victim(s) via ladders wearing appropriate PPE.
- Drag or carry victim(s) up or down stairs wearing appropriate PPE.
- Evacuate persons from a fire area.
- Extricate persons from automobiles.
- Cut vehicle power during extrication.
- Strategically position apparatus to protect incident scene from oncoming traffic.
- Bring and use the necessary tools to extricate or free trapped persons.
- Systematically search burning buildings to locate fire victims.
- Gather information (e.g., bystanders, neighbors, family members) about probable victim locations and/or building floor plans.
- Enter unfamiliar, smoke-filled buildings and rooms while wearing PPE and SCBA equipment.
- Systematically search for trapped persons.
- Operate and/or man firefighting watercraft/boats for civilian rescue.
- Assess risk/benefit of rescue and relay to company officer.
- Tie knots to a hose line, ladder, or other object as necessary during a large area search.
- Maintain team integrity and firefighter safety.
- Rescue a firefighter with functioning respiratory protection.
- Rescue a firefighter whose respiratory protection is not functioning.
- Recognize and manage psychological effects resulting from operating in obscured conditions.
- Ensure respiratory protection is not compromised.
- Choose and apply appropriate techniques for opening or removing trunks, engine compartments, vehicle roofs, doors, windshields, windows, steering wheels or columns, and dashboards.

Turn to the next page to provide knowledge linkage ratings for the RESCUE OPERATIONS job duty area.

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Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

Please use the scale provided above to rate the importance of the 76 job knowledge areas (presented below) in performing tasks associated with the following job duty area: **RESCUE OPERATIONS**. **Please mark your answers under items 153-228 on the answer sheet.**

153. Knowledge of motor vehicle rules and regulations.
154. Knowledge of common hand tools, such as wrenches, pliers, screw drivers, hammers and mauls, axes, prying tools, etc., e.g., their use, operation, limits and safety precautions/procedures.
155. Knowledge of basic science terms and concepts, e.g., force, gravity, pressure, vacuum, etc.
156. Knowledge of ratios and terms, expressing ratios and the practical use of ratios, e.g., pounds per square inch, gallons per minute, etc.
157. Knowledge of basic mechanical principles, e.g., leverage, gears, pulleys, screws, etc.
158. Knowledge of typical occupancy activity at a given time of day.
159. Knowledge of the science behind fire propagation.
160. Knowledge of common heat energy sources: chemical, electrical, and mechanical energy.
161. Knowledge of heat transmission and the mechanisms by which heat transfer occurs: conduction, convection, and radiation.
162. Knowledge of common products of combustion and their toxic effects.
163. Knowledge of classification of fires: class A, B, C, D, and K fires.
164. Knowledge of Fire Control Theory: temperature reduction, fuel removal, oxygen exclusion, and chemical flame inhibition.
165. Knowledge of common materials found in building construction.
166. Knowledge of the strengths and weaknesses associated with different types of building construction types.
167. Knowledge of types of extinguishers and their common uses.
168. Knowledge of types of knots, ropes, and webbing materials.
169. Knowledge of types of ladders.
170. Knowledge of search operations.
171. Knowledge of rescue operations.
172. Knowledge of extrication operations.
173. Knowledge of types of carries.
174. Knowledge of victim removal methods.
175. Knowledge of forcible entry methods.
176. Knowledge of ventilation methods.
177. Knowledge of types of hydrants and alternative water supplies.
178. Knowledge of methods of moving water in a system.
179. Knowledge of static pressure, flow pressure, and residual pressure.
180. Knowledge of common hose rolls.

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You are rating the RESCUE OPERATIONS job duty area.

Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

181. Knowledge of friction loss, elevation loss/gain, and water hammers.
182. Knowledge of size classifications of fire streams.
183. Knowledge of foam techniques.
184. Knowledge of direct attacks.
185. Knowledge of indirect attacks.
186. Knowledge of combination attacks.
187. Knowledge of salvage operations.
188. Knowledge of overhaul operations.
189. Knowledge of hidden fire indicators.
190. Knowledge of evidence protection methods.
191. Knowledge of procedures the public should use to report a fire or other emergency.
192. Knowledge of necessary skills for fire department communications.
193. Knowledge of the types of information required for arrival and progress reports.
194. Knowledge of pre-incident surveys and inspections.
195. Knowledge of common fire hazards.
196. Knowledge of the steps in presenting fire and life safety information to the public.
197. Knowledge of the components of personal protective equipment.
198. Knowledge of the physiological aspects of stress.
199. Knowledge of cardiopulmonary resuscitation (CPR).
200. Knowledge of scene safety considerations such as hazardous materials incidents and rescue operations.
201. Knowledge of the types and states of shock of victims and/or other fire personnel
202. Knowledge of methods to managing shock of victims and/or other fire personnel.
203. Knowledge of Body Substance Isolation (BSI) or infection control precautions.
204. Knowledge of methods to prevent and/or reduce the effects of heat exposure while wearing protective clothing.
205. Knowledge of the main routes through which hazardous materials can enter the body.
206. Knowledge of the clues which indicate the presence of hazardous materials.
207. Knowledge of chemical attack indicators.
208. Knowledge of incident priorities at all HAZMAT and terrorist incidents.
209. Knowledge of types of decontamination.
210. Knowledge of hazard-control zones.
211. Knowledge of defensive confinement and spill control actions.
212. Knowledge of factors to address during large-scale evacuations.
213. Knowledge of the organization of the fire department .
214. Knowledge of the role of the Fire Fighter I in the organization.

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You are rating the RESCUE OPERATIONS job duty area.

Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

215. Knowledge of the mission of fire service.
216. Knowledge of the fire department's standard operating procedures (SOPs) and rules and regulations.
217. Knowledge of the role of other agencies as they relate to the fire department.
218. Knowledge of the critical aspects of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program.
219. Knowledge of procedures for reporting an emergency; departmental SOPs for taking and receiving alarms, radio codes, or procedures; and information needs of dispatch center.
220. Knowledge of fire department procedures for answering nonemergency telephone calls.
221. Knowledge of departmental radio procedures and etiquette for routine traffic, emergency traffic, and emergency evacuation signals.
222. Knowledge of personnel accountability systems, emergency communication procedures, and emergency evacuation methods.
223. Knowledge of basic construction of typical doors, windows, and walls within the department's community or service area.
224. Knowledge of personnel accountability systems and communication procedures.
225. Principles of fire streams as they relate to fighting automobile fires.
226. Knowledge of SOPs for alarm assignments and fire department radio communication procedures.
227. Knowledge of the methods to assess the origin and cause of fires.
228. Knowledge of the characteristics of pressurized flammable gases.

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Job Duty Area #4: EMERGENCY MEDICAL SERVICE OPERATIONS

The following job task statements compose the EMERGENCY MEDICAL SERVICE OPERATIONS job duty area. Please review to familiarize yourself with this particular job duty area.

- Administer first aid to injured persons.
- Assess a patient's condition (e.g. alertness level, orientation, breathing, circulation).
- Gather information from patient or family member regarding medical history.
- Control bleeding and bandage wounds.
- Perform cardiopulmonary resuscitation.
- Operate Defibrillator (AED).
- Use airway adjuncts.
- Immobilize painful, swollen, or deformed extremities.
- Appropriately control patients who are hysterical, mentally disturbed, or in an altered state of consciousness that require medical attention.
- Administer appropriate oxygen flow to patients.
- Prepare and transfer a patient to an ambulance.
- Lift a patient into a bed/onto a stretcher; carry patient through tight quarters and down flights of stairs using a stair chair or Reeve stretcher; carry patient to ambulance.
- Monitor and provide needed care when transporting a patient to a medical facility.
- Properly utilize emergency equipment and supplies.

Turn to the next page to provide knowledge linkage ratings for the EMERGENCY MEDICAL SERVICE OPERATIONS job duty area.

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Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

Please use the scale provided above to rate the importance of the 76 job knowledge areas (presented below) in performing tasks associated with the following job duty area: **EMERGENCY MEDICAL SERVICE OPERATIONS**. **Please mark your answers under items 229-304 on the answer sheet.**

229. Knowledge of motor vehicle rules and regulations.
230. Knowledge of common hand tools, such as wrenches, pliers, screw drivers, hammers and mauls, axes, prying tools, etc., e.g., their use, operation, limits and safety precautions/procedures.
231. Knowledge of basic science terms and concepts, e.g., force, gravity, pressure, vacuum, etc.
232. Knowledge of ratios and terms, expressing ratios and the practical use of ratios, e.g., pounds per square inch, gallons per minute, etc.
233. Knowledge of basic mechanical principles, e.g., leverage, gears, pulleys, screws, etc.
234. Knowledge of typical occupancy activity at a given time of day.
235. Knowledge of the science behind fire propagation.
236. Knowledge of common heat energy sources: chemical, electrical, and mechanical energy.
237. Knowledge of heat transmission and the mechanisms by which heat transfer occurs: conduction, convection, and radiation.
238. Knowledge of common products of combustion and their toxic effects.
239. Knowledge of classification of fires: class A, B, C, D, and K fires.
240. Knowledge of Fire Control Theory: temperature reduction, fuel removal, oxygen exclusion, and chemical flame inhibition.
241. Knowledge of common materials found in building construction.
242. Knowledge of the strengths and weaknesses associated with different types of building construction types.
243. Knowledge of types of extinguishers and their common uses.
244. Knowledge of types of knots, ropes, and webbing materials.
245. Knowledge of types of ladders.
246. Knowledge of search operations.
247. Knowledge of rescue operations.
248. Knowledge of extrication operations.
249. Knowledge of types of carries.
250. Knowledge of victim removal methods.
251. Knowledge of forcible entry methods.
252. Knowledge of ventilation methods.
253. Knowledge of types of hydrants and alternative water supplies.
254. Knowledge of methods of moving water in a system.
255. Knowledge of static pressure, flow pressure, and residual pressure.
256. Knowledge of common hose rolls.

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You are rating the EMERGENCY MEDICAL SERVICE OPERATIONS job duty area.

Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

257. Knowledge of friction loss, elevation loss/gain, and water hammers.
258. Knowledge of size classifications of fire streams.
259. Knowledge of foam techniques.
260. Knowledge of direct attacks.
261. Knowledge of indirect attacks.
262. Knowledge of combination attacks.
263. Knowledge of salvage operations.
264. Knowledge of overhaul operations.
265. Knowledge of hidden fire indicators.
266. Knowledge of evidence protection methods.
267. Knowledge of procedures the public should use to report a fire or other emergency.
268. Knowledge of necessary skills for fire department communications.
269. Knowledge of the types of information required for arrival and progress reports.
270. Knowledge of pre-incident surveys and inspections.
271. Knowledge of common fire hazards.
272. Knowledge of the steps in presenting fire and life safety information to the public.
273. Knowledge of the components of personal protective equipment.
274. Knowledge of the physiological aspects of stress.
275. Knowledge of cardiopulmonary resuscitation (CPR).
276. Knowledge of scene safety considerations such as hazardous materials incidents and rescue operations.
277. Knowledge of the types and states of shock of victims and/or other fire personnel
278. Knowledge of methods to managing shock of victims and/or other fire personnel.
279. Knowledge of Body Substance Isolation (BSI) or infection control precautions.
280. Knowledge of methods to prevent and/or reduce the effects of heat exposure while wearing protective clothing.
281. Knowledge of the main routes through which hazardous materials can enter the body.
282. Knowledge of the clues which indicate the presence of hazardous materials.
283. Knowledge of chemical attack indicators.
284. Knowledge of incident priorities at all HAZMAT and terrorist incidents.
285. Knowledge of types of decontamination.
286. Knowledge of hazard-control zones.
287. Knowledge of defensive confinement and spill control actions.
288. Knowledge of factors to address during large-scale evacuations.
289. Knowledge of the organization of the fire department .
290. Knowledge of the role of the Fire Fighter I in the organization.

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You are rating the EMERGENCY MEDICAL SERVICE OPERATIONS job duty area.

Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

291. Knowledge of the mission of fire service.
292. Knowledge of the fire department's standard operating procedures (SOPs) and rules and regulations.
293. Knowledge of the role of other agencies as they relate to the fire department.
294. Knowledge of the critical aspects of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program.
295. Knowledge of procedures for reporting an emergency; departmental SOPs for taking and receiving alarms, radio codes, or procedures; and information needs of dispatch center.
296. Knowledge of fire department procedures for answering nonemergency telephone calls.
297. Knowledge of departmental radio procedures and etiquette for routine traffic, emergency traffic, and emergency evacuation signals.
298. Knowledge of personnel accountability systems, emergency communication procedures, and emergency evacuation methods.
299. Knowledge of basic construction of typical doors, windows, and walls within the department's community or service area.
300. Knowledge of personnel accountability systems and communication procedures.
301. Principles of fire streams as they relate to fighting automobile fires.
302. Knowledge of SOPs for alarm assignments and fire department radio communication procedures.
303. Knowledge of the methods to assess the origin and cause of fires.
304. Knowledge of the characteristics of pressurized flammable gases.

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Job Duty Area #5: PUMPING AND DRIVING OPERATIONS

The following job task statements compose the PUMPING AND DRIVING OPERATIONS job duty area. Please review to familiarize yourself with this particular job duty area.

- Know street layouts, addresses, intersections and alternative routes in response area.
- Know the location of hydrants and mains in a response area.
- Efficiently and safely drive firefighting emergency equipment to and from a scene.
- Operate pumps connected to hoses.
- Check gauges for pressures and proper water flow.
- Calculate and/or estimate friction loss rates or other pertinent values.
- Maintain constant water supply through proper management of pumping apparatus.
- Monitor apparatus during operations.
- Calculate foam amounts.
- Conduct drafting operations.
- Charge lines at officer's command by opening discharge valves to support fire operations.
- Control pumper output by regulating engine RPMs, pressure relief valve and output gate valves so that pressure or flow is correct for the given operation.
- Utilize watercraft to supply water for fighting fires.

Turn to the next page to provide knowledge linkage ratings for the PUMPING AND DRIVING OPERATIONS job duty area.

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Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

Please use the scale provided above to rate the importance of the 76 job knowledge areas (presented below) in performing tasks associated with the following job duty area: **PUMPING AND DRIVING OPERATIONS**. **Please mark your answers under items 305-380 on the answer sheet.**

305. Knowledge of motor vehicle rules and regulations.
306. Knowledge of common hand tools, such as wrenches, pliers, screw drivers, hammers and mauls, axes, prying tools, etc., e.g., their use, operation, limits and safety precautions/procedures.
307. Knowledge of basic science terms and concepts, e.g., force, gravity, pressure, vacuum, etc.
308. Knowledge of ratios and terms, expressing ratios and the practical use of ratios, e.g., pounds per square inch, gallons per minute, etc.
309. Knowledge of basic mechanical principles, e.g., leverage, gears, pulleys, screws, etc.
310. Knowledge of typical occupancy activity at a given time of day.
311. Knowledge of the science behind fire propagation.
312. Knowledge of common heat energy sources: chemical, electrical, and mechanical energy.
313. Knowledge of heat transmission and the mechanisms by which heat transfer occurs: conduction, convection, and radiation.
314. Knowledge of common products of combustion and their toxic effects.
315. Knowledge of classification of fires: class A, B, C, D, and K fires.
316. Knowledge of Fire Control Theory: temperature reduction, fuel removal, oxygen exclusion, and chemical flame inhibition.
317. Knowledge of common materials found in building construction.
318. Knowledge of the strengths and weaknesses associated with different types of building construction types.
319. Knowledge of types of extinguishers and their common uses.
320. Knowledge of types of knots, ropes, and webbing materials.
321. Knowledge of types of ladders.
322. Knowledge of search operations.
323. Knowledge of rescue operations.
324. Knowledge of extrication operations.
325. Knowledge of types of carries.
326. Knowledge of victim removal methods.
327. Knowledge of forcible entry methods.
328. Knowledge of ventilation methods.
329. Knowledge of types of hydrants and alternative water supplies.
330. Knowledge of methods of moving water in a system.
331. Knowledge of static pressure, flow pressure, and residual pressure.
332. Knowledge of common hose rolls.

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Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

333. Knowledge of friction loss, elevation loss/gain, and water hammers.
334. Knowledge of size classifications of fire streams.
335. Knowledge of foam techniques.
336. Knowledge of direct attacks.
337. Knowledge of indirect attacks.
338. Knowledge of combination attacks.
339. Knowledge of salvage operations.
340. Knowledge of overhaul operations.
341. Knowledge of hidden fire indicators.
342. Knowledge of evidence protection methods.
343. Knowledge of procedures the public should use to report a fire or other emergency.
344. Knowledge of necessary skills for fire department communications.
345. Knowledge of the types of information required for arrival and progress reports.
346. Knowledge of pre-incident surveys and inspections.
347. Knowledge of common fire hazards.
348. Knowledge of the steps in presenting fire and life safety information to the public.
349. Knowledge of the components of personal protective equipment.
350. Knowledge of the physiological aspects of stress.
351. Knowledge of cardiopulmonary resuscitation (CPR).
352. Knowledge of scene safety considerations such as hazardous materials incidents and rescue operations.
353. Knowledge of the types and states of shock of victims and/or other fire personnel
354. Knowledge of methods to managing shock of victims and/or other fire personnel.
355. Knowledge of Body Substance Isolation (BSI) or infection control precautions.
356. Knowledge of methods to prevent and/or reduce the effects of heat exposure while wearing protective clothing.
357. Knowledge of the main routes through which hazardous materials can enter the body.
358. Knowledge of the clues which indicate the presence of hazardous materials.
359. Knowledge of chemical attack indicators.
360. Knowledge of incident priorities at all HAZMAT and terrorist incidents.
361. Knowledge of types of decontamination.
362. Knowledge of hazard-control zones.
363. Knowledge of defensive confinement and spill control actions.
364. Knowledge of factors to address during large-scale evacuations.
365. Knowledge of the organization of the fire department .
366. Knowledge of the role of the Fire Fighter I in the organization.
367. Knowledge of the mission of fire service.

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You are rating the PUMPING AND DRIVING OPERATIONS job duty area.

Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

368. Knowledge of the fire department's standard operating procedures (SOPs) and rules and regulations.
369. Knowledge of the role of other agencies as they relate to the fire department.
370. Knowledge of the critical aspects of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program.
371. Knowledge of procedures for reporting an emergency; departmental SOPs for taking and receiving alarms, radio codes, or procedures; and information needs of dispatch center.
372. Knowledge of fire department procedures for answering nonemergency telephone calls.
373. Knowledge of departmental radio procedures and etiquette for routine traffic, emergency traffic, and emergency evacuation signals.
374. Knowledge of personnel accountability systems, emergency communication procedures, and emergency evacuation methods.
375. Knowledge of basic construction of typical doors, windows, and walls within the department's community or service area.
376. Knowledge of personnel accountability systems and communication procedures.
377. Principles of fire streams as they relate to fighting automobile fires.
378. Knowledge of SOPs for alarm assignments and fire department radio communication procedures.
379. Knowledge of the methods to assess the origin and cause of fires.
380. Knowledge of the characteristics of pressurized flammable gases.

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Job Duty Area #6: LADDER OPERATIONS

The following job task statements compose the LADDER OPERATIONS job duty area. Please review to familiarize yourself with this particular job duty area.

- Operate the ladder pipe as per apparatus specifications.
- Position and climb ladders to gain access to upper levels of buildings or to rescue individuals from burning structures.
- Determine the size and type of ladders required.
- Identify proper ladder locations to allow access to upper levels of buildings or to ensure proper evacuation of fire personnel.
- Be aware of electrical lines when setting up ladders.
- For aerial ladders: position truck, place chocks and set-up truck jacks.
- Raise a 24-foot extension ladder and extend the fly section of that ladder.
- With assistance, raise a 35-foot extension ladder and extend the fly section of that ladder.
- With assistance, carry extension ladders (24-foot, 35-foot) from truck to incident scene.
- Climb an aerial ladder to a height up to 100 feet while wearing PPE equipment.
- Lower ground ladders and stow them onto the truck.
- Create openings in buildings for ventilation or entrance using axes, chisels, crowbars, power saws or core cutters.
- Remove equipment from truck and start power tools.
- Use equipment (e.g., swing axe or sledge hammer) to make forcible entries.
- Determine the stability of supporting surfaces such as roofs and fire escapes.
- Cut openings in roof with a fire axe or power saw (e.g., K-12 saw) for ventilation or examination.
- Remove ceiling materials, such as plaster and lath, sheet rock, ceiling tiles and insulation by poking from above with pike pole or axe so that smoke and hot gases can escape.
- Remove and transport equipment (e.g., electrical extension cords, ventilation fans) from the truck as needed.
- Properly knot and tie rope to hoist equipment weighing up to 50 pounds to upper levels.
- Retreat from the area as a team when ventilation is accomplished.

Turn to the next page to provide knowledge linkage ratings for the LADDER OPERATIONS job duty area.

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Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

Please use the scale provided above to rate the importance of the 76 job knowledge areas (presented below) in performing tasks associated with the following job duty area: **LADDER OPERATIONS**. **Please mark your answers under items 381-456 on the answer sheet.**

381. Knowledge of motor vehicle rules and regulations.
382. Knowledge of common hand tools, such as wrenches, pliers, screw drivers, hammers and mauls, axes, prying tools, etc., e.g., their use, operation, limits and safety precautions/procedures.
383. Knowledge of basic science terms and concepts, e.g., force, gravity, pressure, vacuum, etc.
384. Knowledge of ratios and terms, expressing ratios and the practical use of ratios, e.g., pounds per square inch, gallons per minute, etc.
385. Knowledge of basic mechanical principles, e.g., leverage, gears, pulleys, screws, etc.
386. Knowledge of typical occupancy activity at a given time of day.
387. Knowledge of the science behind fire propagation.
388. Knowledge of common heat energy sources: chemical, electrical, and mechanical energy.
389. Knowledge of heat transmission and the mechanisms by which heat transfer occurs: conduction, convection, and radiation.
390. Knowledge of common products of combustion and their toxic effects.
391. Knowledge of classification of fires: class A, B, C, D, and K fires.
392. Knowledge of Fire Control Theory: temperature reduction, fuel removal, oxygen exclusion, and chemical flame inhibition.
393. Knowledge of common materials found in building construction.
394. Knowledge of the strengths and weaknesses associated with different types of building construction types.
395. Knowledge of types of extinguishers and their common uses.
396. Knowledge of types of knots, ropes, and webbing materials.
397. Knowledge of types of ladders.
398. Knowledge of search operations.
399. Knowledge of rescue operations.
400. Knowledge of extrication operations.
401. Knowledge of types of carries.
402. Knowledge of victim removal methods.
403. Knowledge of forcible entry methods.
404. Knowledge of ventilation methods.
405. Knowledge of types of hydrants and alternative water supplies.
406. Knowledge of methods of moving water in a system.
407. Knowledge of static pressure, flow pressure, and residual pressure.
408. Knowledge of common hose rolls.

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You are rating the LADDER OPERATIONS job duty area.

Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

409. Knowledge of friction loss, elevation loss/gain, and water hammers.
410. Knowledge of size classifications of fire streams.
411. Knowledge of foam techniques.
412. Knowledge of direct attacks.
413. Knowledge of indirect attacks.
414. Knowledge of combination attacks.
415. Knowledge of salvage operations.
416. Knowledge of overhaul operations.
417. Knowledge of hidden fire indicators.
418. Knowledge of evidence protection methods.
419. Knowledge of procedures the public should use to report a fire or other emergency.
420. Knowledge of necessary skills for fire department communications.
421. Knowledge of the types of information required for arrival and progress reports.
422. Knowledge of pre-incident surveys and inspections.
423. Knowledge of common fire hazards.
424. Knowledge of the steps in presenting fire and life safety information to the public.
425. Knowledge of the components of personal protective equipment.
426. Knowledge of the physiological aspects of stress.
427. Knowledge of cardiopulmonary resuscitation (CPR).
428. Knowledge of scene safety considerations such as hazardous materials incidents and rescue operations.
429. Knowledge of the types and states of shock of victims and/or other fire personnel
430. Knowledge of methods to managing shock of victims and/or other fire personnel.
431. Knowledge of Body Substance Isolation (BSI) or infection control precautions.
432. Knowledge of methods to prevent and/or reduce the effects of heat exposure while wearing protective clothing.
433. Knowledge of the main routes through which hazardous materials can enter the body.
434. Knowledge of the clues which indicate the presence of hazardous materials.
435. Knowledge of chemical attack indicators.
436. Knowledge of incident priorities at all HAZMAT and terrorist incidents.
437. Knowledge of types of decontamination.
438. Knowledge of hazard-control zones.
439. Knowledge of defensive confinement and spill control actions.
440. Knowledge of factors to address during large-scale evacuations.
441. Knowledge of the organization of the fire department .
442. Knowledge of the role of the Fire Fighter I in the organization.

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You are rating the LADDER OPERATIONS job duty area.

Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

443. Knowledge of the mission of fire service.
444. Knowledge of the fire department's standard operating procedures (SOPs) and rules and regulations.
445. Knowledge of the role of other agencies as they relate to the fire department.
446. Knowledge of the critical aspects of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program.
447. Knowledge of procedures for reporting an emergency; departmental SOPs for taking and receiving alarms, radio codes, or procedures; and information needs of dispatch center.
448. Knowledge of fire department procedures for answering nonemergency telephone calls.
449. Knowledge of departmental radio procedures and etiquette for routine traffic, emergency traffic, and emergency evacuation signals.
450. Knowledge of personnel accountability systems, emergency communication procedures, and emergency evacuation methods.
451. Knowledge of basic construction of typical doors, windows, and walls within the department's community or service area.
452. Knowledge of personnel accountability systems and communication procedures.
453. Principles of fire streams as they relate to fighting automobile fires.
454. Knowledge of SOPs for alarm assignments and fire department radio communication procedures.
455. Knowledge of the methods to assess the origin and cause of fires.
456. Knowledge of the characteristics of pressurized flammable gases.

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Job Duty Area #7: HOSELINE AND ATTACK OPERATIONS

The following job task statements compose the HOSELINE AND ATTACK OPERATIONS job duty area. Please review to familiarize yourself with this particular job duty area.

- Establish an appropriate water supply, lay hose lines and connect them to water supplies.
- Coordinate firefighting and rescue operations with other firefighters, supervisors and other firefighter companies.
- Pull the supply line from an engine to a hydrant.
- Wrap a hose around functioning hydrant, unscrew the hydrant cap, screw the hose connection to the hydrant and turn on the hydrant (i.e., catch the plug).
- Make and unmake coupling connections.
- Carry a high-rise pack up multiple flights of stairs while wearing PPE so that attack line can be set up.
- Advance and fully extend a pre-connected, charged or uncharged hose of a diameter between 1¾ to 2½ inches.
- Remove kinks in charged supply line by lifting and/or turning hose so that water flow is not obstructed.
- Carry, assemble and operate deluge set (ground monitor).
- Connect multiple small lines (example: 50-foot) and extend them to reach fire when required.
- Carry a 50-foot section of rolled hose unassisted while in appropriate PPE.
- Feed charged hose line of a diameter between 1¾ to 2½ inches to attacking firefighter units.
- Re-bed hose line back onto the proper apparatus (e.g., engine or truck).
- Select the proper hose size based upon fire scene and method of attack.
- Calculate the height of a building in feet from its floors.
- Determine the correct spray pattern based upon fire scene (e.g., solid stream, hollow cone, full cone, fog stream, etc.).
- Hold a charged 1¾ inch hose and open the nozzle.
- While assisted, hold a charged 2½ inch hose and open the nozzle.
- Operate a charged hose line from elevated positions and direct spray at fire.
- While on a ladder, operate and direct spray at fire.
- Operate a charged hose line from confined spaces and direct spray at fire.
- Continue to monitor fire suppression and adjust suppression tactics to extinguish fire and prevent the extension of the fire.
- Move toward the source of a fire using knowledge of types of fires, construction design, building materials and physical layout of properties.
- Enter smoky buildings and rooms with a hose in hand while wearing SCBA.
- Seek the source of a fire and extinguish.
- Select the correct tool or equipment for various firefighting maneuvers.
- Fight fires in smoky buildings when visibility is poor or nonexistent.
- Fight fires for prolonged periods of time in extreme temperatures.

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- Use other senses to find the source of a fire when you cannot see.
- Carry equipment up stairs while wearing PPE gear and SCBA.
- Climb obstacles while wearing PPE and SCBA.
- Identify and respond to hazards at the scene.
- Operate a thermal imaging camera (TIC).
- Operate a fire extinguisher by carrying it to objective, aiming and discharging at seat of fire or spill.
- Attack a passenger vehicle fire.
- Communicate attack techniques to the attack teams.
- Communicate and manage search, rescue, and ventilation requirements.
- Control a flammable gas cylinder fire.
- Identify the contents of cylinder.
- Close cylinder valves.
- Eliminate leaking gas and then extinguish fire.
- Evaluate the cylinder integrity and ensure cylinder has cooled.
- Face the cylinder during approach and retreat.
- Maintain correct body posture during attack operations.
- Extinguish fires in exterior Class A materials, given fires in stacked or piled and small unattached structures or storage containers.
- Deploy portable water tanks as well as the equipment necessary to transfer water between and draft from them.
- Prevent water hammers when shutting down nozzles.
- Replace burst hose sections.
- Anticipate the injuries which could result from common types of accidents.
- Prevent exposure to products of combustion.
- Follow precautions when advancing hose lines to a fire.
- Assess proper application of fire stream.
- Use appropriate water application methods for exposure protection and fire extinguishment.
- Identify automobile fuel types and assess and control fuel leaks.
- Choose attack and control techniques for grade level and above and below grade level fires.
- Recognize hazards associated with an automobile fire.
- Apply appropriate attack lines and water streams for stacked, piled materials and outdoor fires.
- Ensure complete extinguishment of stacked and piled materials.
- Recognize dangers of exposure to toxins or hazardous materials associated with storage building and container fires.

Turn to the next page to provide knowledge linkage ratings for the HOSELINE AND ATTACK OPERATIONS job duty area.

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Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

Please use the scale provided above to rate the importance of the 76 job knowledge areas (presented below) in performing tasks associated with the following job duty area: **HOSELINE AND ATTACK OPERATIONS**. **Please mark your answers under items 457-532 on the answer sheet.**

457. Knowledge of motor vehicle rules and regulations.
458. Knowledge of common hand tools, such as wrenches, pliers, screw drivers, hammers and mauls, axes, prying tools, etc., e.g., their use, operation, limits and safety precautions/procedures.
459. Knowledge of basic science terms and concepts, e.g., force, gravity, pressure, vacuum, etc.
460. Knowledge of ratios and terms, expressing ratios and the practical use of ratios, e.g., pounds per square inch, gallons per minute, etc.
461. Knowledge of basic mechanical principles, e.g., leverage, gears, pulleys, screws, etc.
462. Knowledge of typical occupancy activity at a given time of day.
463. Knowledge of the science behind fire propagation.
464. Knowledge of common heat energy sources: chemical, electrical, and mechanical energy.
465. Knowledge of heat transmission and the mechanisms by which heat transfer occurs: conduction, convection, and radiation.
466. Knowledge of common products of combustion and their toxic effects.
467. Knowledge of classification of fires: class A, B, C, D, and K fires.
468. Knowledge of Fire Control Theory: temperature reduction, fuel removal, oxygen exclusion, and chemical flame inhibition.
469. Knowledge of common materials found in building construction.
470. Knowledge of the strengths and weaknesses associated with different types of building construction types.
471. Knowledge of types of extinguishers and their common uses.
472. Knowledge of types of knots, ropes, and webbing materials.
473. Knowledge of types of ladders.
474. Knowledge of search operations.
475. Knowledge of rescue operations.
476. Knowledge of extrication operations.
477. Knowledge of types of carries.
478. Knowledge of victim removal methods.
479. Knowledge of forcible entry methods.
480. Knowledge of ventilation methods.
481. Knowledge of types of hydrants and alternative water supplies.
482. Knowledge of methods of moving water in a system.
483. Knowledge of static pressure, flow pressure, and residual pressure.
484. Knowledge of common hose rolls.

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You are rating the HOSELINE AND ATTACK OPERATIONS job duty area.

Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

485. Knowledge of friction loss, elevation loss/gain, and water hammers.
486. Knowledge of size classifications of fire streams.
487. Knowledge of foam techniques.
488. Knowledge of direct attacks.
489. Knowledge of indirect attacks.
490. Knowledge of combination attacks.
491. Knowledge of salvage operations.
492. Knowledge of overhaul operations.
493. Knowledge of hidden fire indicators.
494. Knowledge of evidence protection methods.
495. Knowledge of procedures the public should use to report a fire or other emergency.
496. Knowledge of necessary skills for fire department communications.
497. Knowledge of the types of information required for arrival and progress reports.
498. Knowledge of pre-incident surveys and inspections.
499. Knowledge of common fire hazards.
500. Knowledge of the steps in presenting fire and life safety information to the public.
501. Knowledge of the components of personal protective equipment.
502. Knowledge of the physiological aspects of stress.
503. Knowledge of cardiopulmonary resuscitation (CPR).
504. Knowledge of scene safety considerations such as hazardous materials incidents and rescue operations.
505. Knowledge of the types and states of shock of victims and/or other fire personnel
506. Knowledge of methods to managing shock of victims and/or other fire personnel.
507. Knowledge of Body Substance Isolation (BSI) or infection control precautions.
508. Knowledge of methods to prevent and/or reduce the effects of heat exposure while wearing protective clothing.
509. Knowledge of the main routes through which hazardous materials can enter the body.
510. Knowledge of the clues which indicate the presence of hazardous materials.
511. Knowledge of chemical attack indicators.
512. Knowledge of incident priorities at all HAZMAT and terrorist incidents.
513. Knowledge of types of decontamination.
514. Knowledge of hazard-control zones.
515. Knowledge of defensive confinement and spill control actions.
516. Knowledge of factors to address during large-scale evacuations.
517. Knowledge of the organization of the fire department .
518. Knowledge of the role of the Fire Fighter I in the organization.

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You are rating the HOSELINE AND ATTACK OPERATIONS job duty area.

Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

519. Knowledge of the mission of fire service.
520. Knowledge of the fire department's standard operating procedures (SOPs) and rules and regulations.
521. Knowledge of the role of other agencies as they relate to the fire department.
522. Knowledge of the critical aspects of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program.
523. Knowledge of procedures for reporting an emergency; departmental SOPs for taking and receiving alarms, radio codes, or procedures; and information needs of dispatch center.
524. Knowledge of fire department procedures for answering nonemergency telephone calls.
525. Knowledge of departmental radio procedures and etiquette for routine traffic, emergency traffic, and emergency evacuation signals.
526. Knowledge of personnel accountability systems, emergency communication procedures, and emergency evacuation methods.
527. Knowledge of basic construction of typical doors, windows, and walls within the department's community or service area.
528. Knowledge of personnel accountability systems and communication procedures.
529. Principles of fire streams as they relate to fighting automobile fires.
530. Knowledge of SOPs for alarm assignments and fire department radio communication procedures.
531. Knowledge of the methods to assess the origin and cause of fires.
532. Knowledge of the characteristics of pressurized flammable gases.

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Job Duty Area #8: HAZARDOUS MATERIALS OPERATIONS

The following job task statements compose the HAZARDOUS MATERIALS OPERATIONS job duty area. Please review to familiarize yourself with this particular job duty area.

- Conduct a size-up of HAZ-MAT scene.
- Respond to the release or potential release of hazardous material according to outlined protocols.
- Identify HAZ-MAT by use of signage and HAZ-MAT reference materials.
- Apply a foam blanket or other suppressants.
- Provide onsite crowd control in a HAZ-MAT situation.
- Conduct a decontamination setup.
- Utilize watercraft to trace source of oil slicks.
- Exit a hazardous area as a team.
- Extinguish an ignitable liquid fire.
- Identify and control leaking flammable liquids, such that protection from flash fire is maintained.
- Take corrective measures to rectify poor foam generation.
- Use the appropriate concentrates on hydrocarbon and polar solvent fuels.
- Reduce or avoid hazards associated with firefighting foams.
- Use fog nozzles or foam nozzles depending on situation.

Turn to the next page to provide knowledge linkage ratings for the HAZARDOUS MATERIALS OPERATIONS job duty area.

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Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

Please use the scale provided above to rate the importance of the 76 job knowledge areas (presented below) in performing tasks associated with the following job duty area: **HAZARDOUS MATERIALS OPERATIONS**. **Please mark your answers under items 533-608 on the answer sheet.**

533. Knowledge of motor vehicle rules and regulations.
534. Knowledge of common hand tools, such as wrenches, pliers, screw drivers, hammers and mauls, axes, prying tools, etc., e.g., their use, operation, limits and safety precautions/procedures.
535. Knowledge of basic science terms and concepts, e.g., force, gravity, pressure, vacuum, etc.
536. Knowledge of ratios and terms, expressing ratios and the practical use of ratios, e.g., pounds per square inch, gallons per minute, etc.
537. Knowledge of basic mechanical principles, e.g., leverage, gears, pulleys, screws, etc.
538. Knowledge of typical occupancy activity at a given time of day.
539. Knowledge of the science behind fire propagation.
540. Knowledge of common heat energy sources: chemical, electrical, and mechanical energy.
541. Knowledge of heat transmission and the mechanisms by which heat transfer occurs: conduction, convection, and radiation.
542. Knowledge of common products of combustion and their toxic effects.
543. Knowledge of classification of fires: class A, B, C, D, and K fires.
544. Knowledge of Fire Control Theory: temperature reduction, fuel removal, oxygen exclusion, and chemical flame inhibition.
545. Knowledge of common materials found in building construction.
546. Knowledge of the strengths and weaknesses associated with different types of building construction types.
547. Knowledge of types of extinguishers and their common uses.
548. Knowledge of types of knots, ropes, and webbing materials.
549. Knowledge of types of ladders.
550. Knowledge of search operations.
551. Knowledge of rescue operations.
552. Knowledge of extrication operations.
553. Knowledge of types of carries.
554. Knowledge of victim removal methods.
555. Knowledge of forcible entry methods.
556. Knowledge of ventilation methods.
557. Knowledge of types of hydrants and alternative water supplies.
558. Knowledge of methods of moving water in a system.
559. Knowledge of static pressure, flow pressure, and residual pressure.
560. Knowledge of common hose rolls.

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Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

561. Knowledge of friction loss, elevation loss/gain, and water hammers.
562. Knowledge of size classifications of fire streams.
563. Knowledge of foam techniques.
564. Knowledge of direct attacks.
565. Knowledge of indirect attacks.
566. Knowledge of combination attacks.
567. Knowledge of salvage operations.
568. Knowledge of overhaul operations.
569. Knowledge of hidden fire indicators.
570. Knowledge of evidence protection methods.
571. Knowledge of procedures the public should use to report a fire or other emergency.
572. Knowledge of necessary skills for fire department communications.
573. Knowledge of the types of information required for arrival and progress reports.
574. Knowledge of pre-incident surveys and inspections.
575. Knowledge of common fire hazards.
576. Knowledge of the steps in presenting fire and life safety information to the public.
577. Knowledge of the components of personal protective equipment.
578. Knowledge of the physiological aspects of stress.
579. Knowledge of cardiopulmonary resuscitation (CPR).
580. Knowledge of scene safety considerations such as hazardous materials incidents and rescue operations.
581. Knowledge of the types and states of shock of victims and/or other fire personnel
582. Knowledge of methods to managing shock of victims and/or other fire personnel.
583. Knowledge of Body Substance Isolation (BSI) or infection control precautions.
584. Knowledge of methods to prevent and/or reduce the effects of heat exposure while wearing protective clothing.
585. Knowledge of the main routes through which hazardous materials can enter the body.
586. Knowledge of the clues which indicate the presence of hazardous materials.
587. Knowledge of chemical attack indicators.
588. Knowledge of incident priorities at all HAZMAT and terrorist incidents.
589. Knowledge of types of decontamination.
590. Knowledge of hazard-control zones.
591. Knowledge of defensive confinement and spill control actions.
592. Knowledge of factors to address during large-scale evacuations.
593. Knowledge of the organization of the fire department .
594. Knowledge of the role of the Fire Fighter I in the organization.
595. Knowledge of the mission of fire service.

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You are rating the HAZARDOUS MATERIALS OPERATIONS job duty area.

Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

596. Knowledge of the fire department's standard operating procedures (SOPs) and rules and regulations.
597. Knowledge of the role of other agencies as they relate to the fire department.
598. Knowledge of the critical aspects of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program.
599. Knowledge of procedures for reporting an emergency; departmental SOPs for taking and receiving alarms, radio codes, or procedures; and information needs of dispatch center.
600. Knowledge of fire department procedures for answering nonemergency telephone calls.
601. Knowledge of departmental radio procedures and etiquette for routine traffic, emergency traffic, and emergency evacuation signals.
602. Knowledge of personnel accountability systems, emergency communication procedures, and emergency evacuation methods.
603. Knowledge of basic construction of typical doors, windows, and walls within the department's community or service area.
604. Knowledge of personnel accountability systems and communication procedures.
605. Principles of fire streams as they relate to fighting automobile fires.
606. Knowledge of SOPs for alarm assignments and fire department radio communication procedures.
607. Knowledge of the methods to assess the origin and cause of fires.
608. Knowledge of the characteristics of pressurized flammable gases.

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Job Duty Area #9: SALVAGE AND OVERHAUL OPERATIONS

The following job task statements compose the SALVAGE AND OVERHAUL OPERATIONS job duty area. Please review to familiarize yourself with this particular job duty area.

- Protect property from water and smoke using waterproof salvage covers and/or smoke ejectors (i.e., powered fans).
- Place a smoke ejector in strategic locations throughout the fire scene to aid in proper ventilation and smoke removal.
- Gather furniture into an appropriate location and protect it with salvage covers.
- Place salvage covers over lower floors to prevent unnecessary damage.
- Salvage property by removing broken glass, removing water and ventilating buildings to remove smoke.
- After a fire is extinguished, drain or pump out water and clean up remaining water on the floors.
- Remove burned and charred waste and other debris, if hazardous.
- Perform overhaul and salvage operations.
- Check for fire extension or hotspots using thermal imaging camera.
- Inspect fire sites after flames have been extinguished to ensure that there is no further danger.
- Coordinate inspections with other firefighters, supervisors and other firefighter companies.
- Check for smoldering fire inside walls and ceiling by means of fire tools and equipment (e.g., fire axe, ceiling hook).
- Search for missing persons not accounted for.
- Preserve evidence at fire scene.
- Secure the fire scene.
- Monitor the air for harmful toxins.
- Remove water via water chutes or other devices.
- Overhaul all vehicle compartments.
- Stop the flow of water from building sprinklers with sprinkler wedges or stoppers.
- Remove flooring, ceiling, and wall components to expose void spaces without compromising structural integrity.
- Roll and fold salvage covers for reuse.
- Perform horizontal ventilation on a structure, so that the ventilation openings are free of obstructions.
- Recognize points of strength and weakness in auto body construction.
- Recognize and communicate dangers associated with overhaul.
- Designate work zones for safe operation at emergency scenes.

Turn to the next page to provide knowledge linkage ratings for the SALVAGE AND OVERHAUL OPERATIONS job duty area.

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Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

Please use the scale provided above to rate the importance of the 76 job knowledge areas (presented below) in performing tasks associated with the following job duty area: **SALVAGE AND OVERHAUL OPERATIONS**. **Please mark your answers under items 609-684 on the answer sheet.**

609. Knowledge of motor vehicle rules and regulations.
610. Knowledge of common hand tools, such as wrenches, pliers, screw drivers, hammers and mauls, axes, prying tools, etc., e.g., their use, operation, limits and safety precautions/procedures.
611. Knowledge of basic science terms and concepts, e.g., force, gravity, pressure, vacuum, etc.
612. Knowledge of ratios and terms, expressing ratios and the practical use of ratios, e.g., pounds per square inch, gallons per minute, etc.
613. Knowledge of basic mechanical principles, e.g., leverage, gears, pulleys, screws, etc.
614. Knowledge of typical occupancy activity at a given time of day.
615. Knowledge of the science behind fire propagation.
616. Knowledge of common heat energy sources: chemical, electrical, and mechanical energy.
617. Knowledge of heat transmission and the mechanisms by which heat transfer occurs: conduction, convection, and radiation.
618. Knowledge of common products of combustion and their toxic effects.
619. Knowledge of classification of fires: class A, B, C, D, and K fires.
620. Knowledge of Fire Control Theory: temperature reduction, fuel removal, oxygen exclusion, and chemical flame inhibition.
621. Knowledge of common materials found in building construction.
622. Knowledge of the strengths and weaknesses associated with different types of building construction types.
623. Knowledge of types of extinguishers and their common uses.
624. Knowledge of types of knots, ropes, and webbing materials.
625. Knowledge of types of ladders.
626. Knowledge of search operations.
627. Knowledge of rescue operations.
628. Knowledge of extrication operations.
629. Knowledge of types of carries.
630. Knowledge of victim removal methods.
631. Knowledge of forcible entry methods.
632. Knowledge of ventilation methods.
633. Knowledge of types of hydrants and alternative water supplies.
634. Knowledge of methods of moving water in a system.
635. Knowledge of static pressure, flow pressure, and residual pressure.
636. Knowledge of common hose rolls.

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You are rating the SALVAGE AND OVERHAUL OPERATIONS job duty area.

Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

637. Knowledge of friction loss, elevation loss/gain, and water hammers.
638. Knowledge of size classifications of fire streams.
639. Knowledge of foam techniques.
640. Knowledge of direct attacks.
641. Knowledge of indirect attacks.
642. Knowledge of combination attacks.
643. Knowledge of salvage operations.
644. Knowledge of overhaul operations.
645. Knowledge of hidden fire indicators.
646. Knowledge of evidence protection methods.
647. Knowledge of procedures the public should use to report a fire or other emergency.
648. Knowledge of necessary skills for fire department communications.
649. Knowledge of the types of information required for arrival and progress reports.
650. Knowledge of pre-incident surveys and inspections.
651. Knowledge of common fire hazards.
652. Knowledge of the steps in presenting fire and life safety information to the public.
653. Knowledge of the components of personal protective equipment.
654. Knowledge of the physiological aspects of stress.
655. Knowledge of cardiopulmonary resuscitation (CPR).
656. Knowledge of scene safety considerations such as hazardous materials incidents and rescue operations.
657. Knowledge of the types and states of shock of victims and/or other fire personnel
658. Knowledge of methods to managing shock of victims and/or other fire personnel.
659. Knowledge of Body Substance Isolation (BSI) or infection control precautions.
660. Knowledge of methods to prevent and/or reduce the effects of heat exposure while wearing protective clothing.
661. Knowledge of the main routes through which hazardous materials can enter the body.
662. Knowledge of the clues which indicate the presence of hazardous materials.
663. Knowledge of chemical attack indicators.
664. Knowledge of incident priorities at all HAZMAT and terrorist incidents.
665. Knowledge of types of decontamination.
666. Knowledge of hazard-control zones.
667. Knowledge of defensive confinement and spill control actions.
668. Knowledge of factors to address during large-scale evacuations.
669. Knowledge of the organization of the fire department .
670. Knowledge of the role of the Fire Fighter I in the organization.

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You are rating the SALVAGE AND OVERHAUL OPERATIONS job duty area.

Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

671. Knowledge of the mission of fire service.
672. Knowledge of the fire department's standard operating procedures (SOPs) and rules and regulations.
673. Knowledge of the role of other agencies as they relate to the fire department.
674. Knowledge of the critical aspects of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program.
675. Knowledge of procedures for reporting an emergency; departmental SOPs for taking and receiving alarms, radio codes, or procedures; and information needs of dispatch center.
676. Knowledge of fire department procedures for answering nonemergency telephone calls.
677. Knowledge of departmental radio procedures and etiquette for routine traffic, emergency traffic, and emergency evacuation signals.
678. Knowledge of personnel accountability systems, emergency communication procedures, and emergency evacuation methods.
679. Knowledge of basic construction of typical doors, windows, and walls within the department's community or service area.
680. Knowledge of personnel accountability systems and communication procedures.
681. Principles of fire streams as they relate to fighting automobile fires.
682. Knowledge of SOPs for alarm assignments and fire department radio communication procedures.
683. Knowledge of the methods to assess the origin and cause of fires.
684. Knowledge of the characteristics of pressurized flammable gases.

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Job Duty Area #10: EXTERNAL AND INTERAGENCY COLLABORATIONS

The following job task statements compose the EXTERNAL AND INTERAGENCY COLLABORATIONS job duty area. Please review to familiarize yourself with this particular job duty area.

- Collaborate with other agencies and individuals to respond to accidents and/or disasters.
- Exchange information with law enforcement officials.
- Coordinate tasks and responsibilities with law enforcement officials (e.g., traffic control, crowd control).
- Monitor emergency scene and request assistance from other agencies as needed.
- Clearly and accurately communicate patient information, assessment and treatment via radio on route to a medical facility.
- Clearly and accurately communicate patient information and care to medical staff.
- Assist medical staff as needed until released by medical staff.

Turn to the next page to provide knowledge linkage ratings for the EXTERNAL AND INTERAGENCY COLLABORATIONS job duty area.

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Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

Please use the scale provided above to rate the importance of the 76 job knowledge areas (presented below) in performing tasks associated with the following job duty area: **EXTERNAL AND INTERAGENCY COLLABORATIONS**. **Please mark your answers under items 685-760 on the answer sheet.**

685. Knowledge of motor vehicle rules and regulations.
686. Knowledge of common hand tools, such as wrenches, pliers, screw drivers, hammers and mauls, axes, prying tools, etc., e.g., their use, operation, limits and safety precautions/procedures.
687. Knowledge of basic science terms and concepts, e.g., force, gravity, pressure, vacuum, etc.
688. Knowledge of ratios and terms, expressing ratios and the practical use of ratios, e.g., pounds per square inch, gallons per minute, etc.
689. Knowledge of basic mechanical principles, e.g., leverage, gears, pulleys, screws, etc.
690. Knowledge of typical occupancy activity at a given time of day.
691. Knowledge of the science behind fire propagation.
692. Knowledge of common heat energy sources: chemical, electrical, and mechanical energy.
693. Knowledge of heat transmission and the mechanisms by which heat transfer occurs: conduction, convection, and radiation.
694. Knowledge of common products of combustion and their toxic effects.
695. Knowledge of classification of fires: class A, B, C, D, and K fires.
696. Knowledge of Fire Control Theory: temperature reduction, fuel removal, oxygen exclusion, and chemical flame inhibition.
697. Knowledge of common materials found in building construction.
698. Knowledge of the strengths and weaknesses associated with different types of building construction types.
699. Knowledge of types of extinguishers and their common uses.
700. Knowledge of types of knots, ropes, and webbing materials.
701. Knowledge of types of ladders.
702. Knowledge of search operations.
703. Knowledge of rescue operations.
704. Knowledge of extrication operations.
705. Knowledge of types of carries.
706. Knowledge of victim removal methods.
707. Knowledge of forcible entry methods.
708. Knowledge of ventilation methods.
709. Knowledge of types of hydrants and alternative water supplies.
710. Knowledge of methods of moving water in a system.
711. Knowledge of static pressure, flow pressure, and residual pressure.

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You are rating the EXTERNAL AND INTERAGENCY COLLABORATIONS job duty area.

Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

712. Knowledge of common hose rolls.
713. Knowledge of friction loss, elevation loss/gain, and water hammers.
714. Knowledge of size classifications of fire streams.
715. Knowledge of foam techniques.
716. Knowledge of direct attacks.
717. Knowledge of indirect attacks.
718. Knowledge of combination attacks.
719. Knowledge of salvage operations.
720. Knowledge of overhaul operations.
721. Knowledge of hidden fire indicators.
722. Knowledge of evidence protection methods.
723. Knowledge of procedures the public should use to report a fire or other emergency.
724. Knowledge of necessary skills for fire department communications.
725. Knowledge of the types of information required for arrival and progress reports.
726. Knowledge of pre-incident surveys and inspections.
727. Knowledge of common fire hazards.
728. Knowledge of the steps in presenting fire and life safety information to the public.
729. Knowledge of the components of personal protective equipment.
730. Knowledge of the physiological aspects of stress.
731. Knowledge of cardiopulmonary resuscitation (CPR).
732. Knowledge of scene safety considerations such as hazardous materials incidents and rescue operations.
733. Knowledge of the types and states of shock of victims and/or other fire personnel
734. Knowledge of methods to managing shock of victims and/or other fire personnel.
735. Knowledge of Body Substance Isolation (BSI) or infection control precautions.
736. Knowledge of methods to prevent and/or reduce the effects of heat exposure while wearing protective clothing.
737. Knowledge of the main routes through which hazardous materials can enter the body.
738. Knowledge of the clues which indicate the presence of hazardous materials.
739. Knowledge of chemical attack indicators.
740. Knowledge of incident priorities at all HAZMAT and terrorist incidents.
741. Knowledge of types of decontamination.
742. Knowledge of hazard-control zones.
743. Knowledge of defensive confinement and spill control actions.
744. Knowledge of factors to address during large-scale evacuations.
745. Knowledge of the organization of the fire department .

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You are rating the EXTERNAL AND INTERAGENCY COLLABORATIONS job duty area.

Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

746. Knowledge of the role of the Fire Fighter I in the organization.
747. Knowledge of the mission of fire service.
748. Knowledge of the fire department's standard operating procedures (SOPs) and rules and regulations.
749. Knowledge of the role of other agencies as they relate to the fire department.
750. Knowledge of the critical aspects of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program.
751. Knowledge of procedures for reporting an emergency; departmental SOPs for taking and receiving alarms, radio codes, or procedures; and information needs of dispatch center.
752. Knowledge of fire department procedures for answering nonemergency telephone calls.
753. Knowledge of departmental radio procedures and etiquette for routine traffic, emergency traffic, and emergency evacuation signals.
754. Knowledge of personnel accountability systems, emergency communication procedures, and emergency evacuation methods.
755. Knowledge of basic construction of typical doors, windows, and walls within the department's community or service area.
756. Knowledge of personnel accountability systems and communication procedures.
757. Principles of fire streams as they relate to fighting automobile fires.
758. Knowledge of SOPs for alarm assignments and fire department radio communication procedures.
759. Knowledge of the methods to assess the origin and cause of fires.
760. Knowledge of the characteristics of pressurized flammable gases.

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Job Duty Area #11: TRAINING AND EDUCATION

The following job task statements compose the TRAINING AND EDUCATION job duty area. Please review to familiarize yourself with this particular job duty area.

- Participate in fire drills and demonstrations of firefighting techniques.
- Participate in ongoing training drills to develop and maintain proficiency (e.g., HAZ-MAT, search and rescue operations, SCBA and air management, automobile extrication, rapid intervention team (RIT) training, etc.).
- Participate in training drills with new firefighters, assisting in their training through coaching and mentoring.
- Train in equipment operations such as apparatus driving, hydraulics and pump operation and aerial ladder operation.
- Participate in demonstrations, Officer classes, company level training or educational reviews (e.g., signs and symptoms of heat stroke, winter fireground operations, review of response zone building construction and floor plans, review of response zone street maps).
- Participate in physical training activities to maintain a high level of physical fitness.
- Participate in courses, seminars and conferences, and study fire science literature to learn firefighting techniques.
- Complete required training courses such as hazardous materials and automobile extrication.
- Read, comprehend and retain information from training materials (e.g., text books and manuals).
- Successfully complete and pass written exams that test coursework learning and training objectives.
- Take and complete course work required to obtain medical certifications.
- Maintain ongoing certification requirements through continuing education or training.
- Read and comprehend aspects of the fire department's member assistance program.
- Read, comprehend and retain information of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program.
- Participate in life safety initiatives in support of the fire department’s mission and to reduce firefighter line-of-duty injuries and fatalities.

Turn to the next page to provide knowledge linkage ratings for the TRAINING AND EDUCATION job duty area.

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Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

Please use the scale provided above to rate the importance of the 76 job knowledge areas (presented below) in performing tasks associated with the following job duty area: **TRAINING AND EDUCATION**.
Please mark your answers under items 761-836 on the answer sheet.

761. Knowledge of motor vehicle rules and regulations.
762. Knowledge of common hand tools, such as wrenches, pliers, screw drivers, hammers and mauls, axes, prying tools, etc., e.g., their use, operation, limits and safety precautions/procedures.
763. Knowledge of basic science terms and concepts, e.g., force, gravity, pressure, vacuum, etc.
764. Knowledge of ratios and terms, expressing ratios and the practical use of ratios, e.g., pounds per square inch, gallons per minute, etc.
765. Knowledge of basic mechanical principles, e.g., leverage, gears, pulleys, screws, etc.
766. Knowledge of typical occupancy activity at a given time of day.
767. Knowledge of the science behind fire propagation.
768. Knowledge of common heat energy sources: chemical, electrical, and mechanical energy.
769. Knowledge of heat transmission and the mechanisms by which heat transfer occurs: conduction, convection, and radiation.
770. Knowledge of common products of combustion and their toxic effects.
771. Knowledge of classification of fires: class A, B, C, D, and K fires.
772. Knowledge of Fire Control Theory: temperature reduction, fuel removal, oxygen exclusion, and chemical flame inhibition.
773. Knowledge of common materials found in building construction.
774. Knowledge of the strengths and weaknesses associated with different types of building construction types.
775. Knowledge of types of extinguishers and their common uses.
776. Knowledge of types of knots, ropes, and webbing materials.
777. Knowledge of types of ladders.
778. Knowledge of search operations.
779. Knowledge of rescue operations.
780. Knowledge of extrication operations.
781. Knowledge of types of carries.
782. Knowledge of victim removal methods.
783. Knowledge of forcible entry methods.
784. Knowledge of ventilation methods.
785. Knowledge of types of hydrants and alternative water supplies.
786. Knowledge of methods of moving water in a system.
787. Knowledge of static pressure, flow pressure, and residual pressure.
788. Knowledge of common hose rolls.

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You are rating the TRAINING AND EDUCATION job duty area.

Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

789. Knowledge of friction loss, elevation loss/gain, and water hammers.
790. Knowledge of size classifications of fire streams.
791. Knowledge of foam techniques.
792. Knowledge of direct attacks.
793. Knowledge of indirect attacks.
794. Knowledge of combination attacks.
795. Knowledge of salvage operations.
796. Knowledge of overhaul operations.
797. Knowledge of hidden fire indicators.
798. Knowledge of evidence protection methods.
799. Knowledge of procedures the public should use to report a fire or other emergency.
800. Knowledge of necessary skills for fire department communications.
801. Knowledge of the types of information required for arrival and progress reports.
802. Knowledge of pre-incident surveys and inspections.
803. Knowledge of common fire hazards.
804. Knowledge of the steps in presenting fire and life safety information to the public.
805. Knowledge of the components of personal protective equipment.
806. Knowledge of the physiological aspects of stress.
807. Knowledge of cardiopulmonary resuscitation (CPR).
808. Knowledge of scene safety considerations such as hazardous materials incidents and rescue operations.
809. Knowledge of the types and states of shock of victims and/or other fire personnel
810. Knowledge of methods to managing shock of victims and/or other fire personnel.
811. Knowledge of Body Substance Isolation (BSI) or infection control precautions.
812. Knowledge of methods to prevent and/or reduce the effects of heat exposure while wearing protective clothing.
813. Knowledge of the main routes through which hazardous materials can enter the body.
814. Knowledge of the clues which indicate the presence of hazardous materials.
815. Knowledge of chemical attack indicators.
816. Knowledge of incident priorities at all HAZMAT and terrorist incidents.
817. Knowledge of types of decontamination.
818. Knowledge of hazard-control zones.
819. Knowledge of defensive confinement and spill control actions.
820. Knowledge of factors to address during large-scale evacuations.
821. Knowledge of the organization of the fire department .
822. Knowledge of the role of the Fire Fighter I in the organization.

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You are rating the TRAINING AND EDUCATION job duty area.

Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

823. Knowledge of the mission of fire service.
824. Knowledge of the fire department's standard operating procedures (SOPs) and rules and regulations.
825. Knowledge of the role of other agencies as they relate to the fire department.
826. Knowledge of the critical aspects of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program.
827. Knowledge of procedures for reporting an emergency; departmental SOPs for taking and receiving alarms, radio codes, or procedures; and information needs of dispatch center.
828. Knowledge of fire department procedures for answering nonemergency telephone calls.
829. Knowledge of departmental radio procedures and etiquette for routine traffic, emergency traffic, and emergency evacuation signals.
830. Knowledge of personnel accountability systems, emergency communication procedures, and emergency evacuation methods.
831. Knowledge of basic construction of typical doors, windows, and walls within the department's community or service area.
832. Knowledge of personnel accountability systems and communication procedures.
833. Principles of fire streams as they relate to fighting automobile fires.
834. Knowledge of SOPs for alarm assignments and fire department radio communication procedures.
835. Knowledge of the methods to assess the origin and cause of fires.
836. Knowledge of the characteristics of pressurized flammable gases.

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Job Duty Area #12: ADMINISTRATIVE DUTIES AND COMMUNICATIONS

The following job task statements compose the ADMINISTRATIVE DUTIES AND COMMUNICATIONS job duty area. Please review to familiarize yourself with this particular job duty area.

- Document required information such as personal information of patients or citizens involved in emergency scenes.
- Summarize incidents that occurred at an emergency scene, detailing tactics, equipment and procedures used through written narratives.
- Write descriptions of situations in medical reports, including details of symptoms, actions taken, etc.
- Complete reports required of the job (daily maintenance, inspections and truck checks).
- Answer routine phone calls in the station.
- Report for duty on time.
- Maintain professional appearance and personal hygiene in accordance with regulations.
- Remain on-duty for extended periods of time per department-specific SOGs.
- Read all internal communications (emails, handouts, etc.) from department (e.g., SOGs, policies and procedures, rules and regulations, etc.).
- Document presentations and use prepared materials.

Turn to the next page to provide knowledge linkage ratings for the ADMINISTRATIVE DUTIES AND COMMUNICATIONS job duty area.

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Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

Please use the scale provided above to rate the importance of the 76 job knowledge areas (presented below) in performing tasks associated with the following job duty area: **ADMINISTRATIVE DUTIES AND COMMUNICATIONS**. **Please mark your answers under items 837-912 on the answer sheet.**

837. Knowledge of motor vehicle rules and regulations.
838. Knowledge of common hand tools, such as wrenches, pliers, screw drivers, hammers and mauls, axes, prying tools, etc., e.g., their use, operation, limits and safety precautions/procedures.
839. Knowledge of basic science terms and concepts, e.g., force, gravity, pressure, vacuum, etc.
840. Knowledge of ratios and terms, expressing ratios and the practical use of ratios, e.g., pounds per square inch, gallons per minute, etc.
841. Knowledge of basic mechanical principles, e.g., leverage, gears, pulleys, screws, etc.
842. Knowledge of typical occupancy activity at a given time of day.
843. Knowledge of the science behind fire propagation.
844. Knowledge of common heat energy sources: chemical, electrical, and mechanical energy.
845. Knowledge of heat transmission and the mechanisms by which heat transfer occurs: conduction, convection, and radiation.
846. Knowledge of common products of combustion and their toxic effects.
847. Knowledge of classification of fires: class A, B, C, D, and K fires.
848. Knowledge of Fire Control Theory: temperature reduction, fuel removal, oxygen exclusion, and chemical flame inhibition.
849. Knowledge of common materials found in building construction.
850. Knowledge of the strengths and weaknesses associated with different types of building construction types.
851. Knowledge of types of extinguishers and their common uses.
852. Knowledge of types of knots, ropes, and webbing materials.
853. Knowledge of types of ladders.
854. Knowledge of search operations.
855. Knowledge of rescue operations.
856. Knowledge of extrication operations.
857. Knowledge of types of carries.
858. Knowledge of victim removal methods.
859. Knowledge of forcible entry methods.
860. Knowledge of ventilation methods.
861. Knowledge of types of hydrants and alternative water supplies.
862. Knowledge of methods of moving water in a system.
863. Knowledge of static pressure, flow pressure, and residual pressure.
864. Knowledge of common hose rolls.

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You are rating the ADMINISTRATIVE DUTIES AND COMMUNICATIONS job duty area.

Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

865. Knowledge of friction loss, elevation loss/gain, and water hammers.
866. Knowledge of size classifications of fire streams.
867. Knowledge of foam techniques.
868. Knowledge of direct attacks.
869. Knowledge of indirect attacks.
870. Knowledge of combination attacks.
871. Knowledge of salvage operations.
872. Knowledge of overhaul operations.
873. Knowledge of hidden fire indicators.
874. Knowledge of evidence protection methods.
875. Knowledge of procedures the public should use to report a fire or other emergency.
876. Knowledge of necessary skills for fire department communications.
877. Knowledge of the types of information required for arrival and progress reports.
878. Knowledge of pre-incident surveys and inspections.
879. Knowledge of common fire hazards.
880. Knowledge of the steps in presenting fire and life safety information to the public.
881. Knowledge of the components of personal protective equipment.
882. Knowledge of the physiological aspects of stress.
883. Knowledge of cardiopulmonary resuscitation (CPR).
884. Knowledge of scene safety considerations such as hazardous materials incidents and rescue operations.
885. Knowledge of the types and states of shock of victims and/or other fire personnel
886. Knowledge of methods to managing shock of victims and/or other fire personnel.
887. Knowledge of Body Substance Isolation (BSI) or infection control precautions.
888. Knowledge of methods to prevent and/or reduce the effects of heat exposure while wearing protective clothing.
889. Knowledge of the main routes through which hazardous materials can enter the body.
890. Knowledge of the clues which indicate the presence of hazardous materials.
891. Knowledge of chemical attack indicators.
892. Knowledge of incident priorities at all HAZMAT and terrorist incidents.
893. Knowledge of types of decontamination.
894. Knowledge of hazard-control zones.
895. Knowledge of defensive confinement and spill control actions.
896. Knowledge of factors to address during large-scale evacuations.
897. Knowledge of the organization of the fire department .
898. Knowledge of the role of the Fire Fighter I in the organization.

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You are rating the ADMINISTRATIVE DUTIES AND COMMUNICATIONS job duty area.

Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

899. Knowledge of the mission of fire service.
900. Knowledge of the fire department's standard operating procedures (SOPs) and rules and regulations.
901. Knowledge of the role of other agencies as they relate to the fire department.
902. Knowledge of the critical aspects of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program.
903. Knowledge of procedures for reporting an emergency; departmental SOPs for taking and receiving alarms, radio codes, or procedures; and information needs of dispatch center.
904. Knowledge of fire department procedures for answering nonemergency telephone calls.
905. Knowledge of departmental radio procedures and etiquette for routine traffic, emergency traffic, and emergency evacuation signals.
906. Knowledge of personnel accountability systems, emergency communication procedures, and emergency evacuation methods.
907. Knowledge of basic construction of typical doors, windows, and walls within the department's community or service area.
908. Knowledge of personnel accountability systems and communication procedures.
909. Principles of fire streams as they relate to fighting automobile fires.
910. Knowledge of SOPs for alarm assignments and fire department radio communication procedures.
911. Knowledge of the methods to assess the origin and cause of fires.
912. Knowledge of the characteristics of pressurized flammable gases.

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Job Duty Area #13: STATION AND EQUIPMENT MAINTENANCE

The following job task statements compose the STATION AND EQUIPMENT MAINTENANCE job duty area. Please review to familiarize yourself with this particular job duty area.

- Clean and maintain fire stations and firefighting equipment and apparatus.
- Ensure apparatus is in response-ready state, including decontaminating and disinfecting the unit and equipment, restocking of supplies and inspection of equipment.
- Ensure proper function of SCBA by inspecting and performing daily tests at the start of each shift; service SCBA if malfunctioning.
- Coordinate with firefighters from off-going shift as to the actions needed to ensure the apparatus is in a response ready state.
- Check bells and other signaling devices in the fire station by operating them to ensure that they work properly.
- Report damaged and out of service equipment to company officer.
- Perform maintenance and upkeep for equipment and apparatus as necessary to ensure a response-ready state.
- Wash used hoses and re-bed them on the truck.
- Maintain all personal protective equipment (PPEs).
- Maintain an inventory of tools and equipment.
- Maintain maintenance records of all equipment and apparatus.
- Perform daily chores to ensure a neat and clean working and living environment at the fire station.
- Perform and coordinate kitchen chores such as planning meals, cooking meals and cleaning up after meals.
- Maintain the exterior of fire station: lawns, walkways and driveways.
- Perform an annual service test on fire hose, using a pump, a marking device, pressure gauges, and a timer.

Turn to the next page to provide knowledge linkage ratings for the STATION AND EQUIPMENT MAINTENANCE job duty area.

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Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

Please use the scale provided above to rate the importance of the 76 job knowledge areas (presented below) in performing tasks associated with the following job duty area: **STATION AND EQUIPMENT MAINTENANCE**. **Please mark your answers under items 913-988 on the answer sheet.**

913. Knowledge of motor vehicle rules and regulations.
914. Knowledge of common hand tools, such as wrenches, pliers, screw drivers, hammers and mauls, axes, prying tools, etc., e.g., their use, operation, limits and safety precautions/procedures.
915. Knowledge of basic science terms and concepts, e.g., force, gravity, pressure, vacuum, etc.
916. Knowledge of ratios and terms, expressing ratios and the practical use of ratios, e.g., pounds per square inch, gallons per minute, etc.
917. Knowledge of basic mechanical principles, e.g., leverage, gears, pulleys, screws, etc.
918. Knowledge of typical occupancy activity at a given time of day.
919. Knowledge of the science behind fire propagation.
920. Knowledge of common heat energy sources: chemical, electrical, and mechanical energy.
921. Knowledge of heat transmission and the mechanisms by which heat transfer occurs: conduction, convection, and radiation.
922. Knowledge of common products of combustion and their toxic effects.
923. Knowledge of classification of fires: class A, B, C, D, and K fires.
924. Knowledge of Fire Control Theory: temperature reduction, fuel removal, oxygen exclusion, and chemical flame inhibition.
925. Knowledge of common materials found in building construction.
926. Knowledge of the strengths and weaknesses associated with different types of building construction types.
927. Knowledge of types of extinguishers and their common uses.
928. Knowledge of types of knots, ropes, and webbing materials.
929. Knowledge of types of ladders.
930. Knowledge of search operations.
931. Knowledge of rescue operations.
932. Knowledge of extrication operations.
933. Knowledge of types of carries.
934. Knowledge of victim removal methods.
935. Knowledge of forcible entry methods.
936. Knowledge of ventilation methods.
937. Knowledge of types of hydrants and alternative water supplies.
938. Knowledge of methods of moving water in a system.
939. Knowledge of static pressure, flow pressure, and residual pressure.
940. Knowledge of common hose rolls.

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You are rating the STATION AND EQUIPMENT MAINTENANCE job duty area.

Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

941. Knowledge of friction loss, elevation loss/gain, and water hammers.
942. Knowledge of size classifications of fire streams.
943. Knowledge of foam techniques.
944. Knowledge of direct attacks.
945. Knowledge of indirect attacks.
946. Knowledge of combination attacks.
947. Knowledge of salvage operations.
948. Knowledge of overhaul operations.
949. Knowledge of hidden fire indicators.
950. Knowledge of evidence protection methods.
951. Knowledge of procedures the public should use to report a fire or other emergency.
952. Knowledge of necessary skills for fire department communications.
953. Knowledge of the types of information required for arrival and progress reports.
954. Knowledge of pre-incident surveys and inspections.
955. Knowledge of common fire hazards.
956. Knowledge of the steps in presenting fire and life safety information to the public.
957. Knowledge of the components of personal protective equipment.
958. Knowledge of the physiological aspects of stress.
959. Knowledge of cardiopulmonary resuscitation (CPR).
960. Knowledge of scene safety considerations such as hazardous materials incidents and rescue operations.
961. Knowledge of the types and states of shock of victims and/or other fire personnel
962. Knowledge of methods to managing shock of victims and/or other fire personnel.
963. Knowledge of Body Substance Isolation (BSI) or infection control precautions.
964. Knowledge of methods to prevent and/or reduce the effects of heat exposure while wearing protective clothing.
965. Knowledge of the main routes through which hazardous materials can enter the body.
966. Knowledge of the clues which indicate the presence of hazardous materials.
967. Knowledge of chemical attack indicators.
968. Knowledge of incident priorities at all HAZMAT and terrorist incidents.
969. Knowledge of types of decontamination.
970. Knowledge of hazard-control zones.
971. Knowledge of defensive confinement and spill control actions.
972. Knowledge of factors to address during large-scale evacuations.
973. Knowledge of the organization of the fire department .
974. Knowledge of the role of the Fire Fighter I in the organization.

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You are rating the STATION AND EQUIPMENT MAINTENANCE job duty area.

Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

975. Knowledge of the mission of fire service.
976. Knowledge of the fire department's standard operating procedures (SOPs) and rules and regulations.
977. Knowledge of the role of other agencies as they relate to the fire department.
978. Knowledge of the critical aspects of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program.
979. Knowledge of procedures for reporting an emergency; departmental SOPs for taking and receiving alarms, radio codes, or procedures; and information needs of dispatch center.
980. Knowledge of fire department procedures for answering nonemergency telephone calls.
981. Knowledge of departmental radio procedures and etiquette for routine traffic, emergency traffic, and emergency evacuation signals.
982. Knowledge of personnel accountability systems, emergency communication procedures, and emergency evacuation methods.
983. Knowledge of basic construction of typical doors, windows, and walls within the department's community or service area.
984. Knowledge of personnel accountability systems and communication procedures.
985. Principles of fire streams as they relate to fighting automobile fires.
986. Knowledge of SOPs for alarm assignments and fire department radio communication procedures.
987. Knowledge of the methods to assess the origin and cause of fires.
988. Knowledge of the characteristics of pressurized flammable gases.

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Job Duty Area #14: PREVENTION AND INSPECTIONS

The following job task statements compose the PREVENTION AND INSPECTIONS job duty area. Please review to familiarize yourself with this particular job duty area.

- Engage in pre-planning operations such as documenting building layouts, building construction, fire suppression and other tactical information such as location of exits to assist in future operations.
- Inspect fire hydrant functioning in response zones and conduct hydrant flow tests.
- Inspect businesses and non-owner occupied private dwellings.
- Identify code enforcement issues and alert superiors.
- Complete smoke detector certifications.
- Identify illegal occupant dwellings or other occupancies.
- Use commonly recognized symbols when diagramming construction features, utilities, hazards, and fire protection systems.

Turn to the next page to provide knowledge linkage ratings for the PREVENTION AND INSPECTIONS job duty area.

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Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

Please use the scale provided above to rate the importance of the 76 job knowledge areas (presented below) in performing tasks associated with the following job duty area: **PREVENTION AND INSPECTIONS**. **Please mark your answers under items 989-1064 on the answer sheet.**

989. Knowledge of motor vehicle rules and regulations.
990. Knowledge of common hand tools, such as wrenches, pliers, screw drivers, hammers and mauls, axes, prying tools, etc., e.g., their use, operation, limits and safety precautions/procedures.
991. Knowledge of basic science terms and concepts, e.g., force, gravity, pressure, vacuum, etc.
992. Knowledge of ratios and terms, expressing ratios and the practical use of ratios, e.g., pounds per square inch, gallons per minute, etc.
993. Knowledge of basic mechanical principles, e.g., leverage, gears, pulleys, screws, etc.
994. Knowledge of typical occupancy activity at a given time of day.
995. Knowledge of the science behind fire propagation.
996. Knowledge of common heat energy sources: chemical, electrical, and mechanical energy.
997. Knowledge of heat transmission and the mechanisms by which heat transfer occurs: conduction, convection, and radiation.
998. Knowledge of common products of combustion and their toxic effects.
999. Knowledge of classification of fires: class A, B, C, D, and K fires.
1000. Knowledge of Fire Control Theory: temperature reduction, fuel removal, oxygen exclusion, and chemical flame inhibition.
1001. Knowledge of common materials found in building construction.
1002. Knowledge of the strengths and weaknesses associated with different types of building construction types.
1003. Knowledge of types of extinguishers and their common uses.
1004. Knowledge of types of knots, ropes, and webbing materials.
1005. Knowledge of types of ladders.
1006. Knowledge of search operations.
1007. Knowledge of rescue operations.
1008. Knowledge of extrication operations.
1009. Knowledge of types of carries.
1010. Knowledge of victim removal methods.
1011. Knowledge of forcible entry methods.
1012. Knowledge of ventilation methods.
1013. Knowledge of types of hydrants and alternative water supplies.
1014. Knowledge of methods of moving water in a system.
1015. Knowledge of static pressure, flow pressure, and residual pressure.
1016. Knowledge of common hose rolls.

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Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

1017. Knowledge of friction loss, elevation loss/gain, and water hammers.
1018. Knowledge of size classifications of fire streams.
1019. Knowledge of foam techniques.
1020. Knowledge of direct attacks.
1021. Knowledge of indirect attacks.
1022. Knowledge of combination attacks.
1023. Knowledge of salvage operations.
1024. Knowledge of overhaul operations.
1025. Knowledge of hidden fire indicators.
1026. Knowledge of evidence protection methods.
1027. Knowledge of procedures the public should use to report a fire or other emergency.
1028. Knowledge of necessary skills for fire department communications.
1029. Knowledge of the types of information required for arrival and progress reports.
1030. Knowledge of pre-incident surveys and inspections.
1031. Knowledge of common fire hazards.
1032. Knowledge of the steps in presenting fire and life safety information to the public.
1033. Knowledge of the components of personal protective equipment.
1034. Knowledge of the physiological aspects of stress.
1035. Knowledge of cardiopulmonary resuscitation (CPR).
1036. Knowledge of scene safety considerations as hazardous materials incidents and rescue operations.
1037. Knowledge of the types and states of shock of victims and/or other fire personnel
1038. Knowledge of methods to managing shock of victims and/or other fire personnel.
1039. Knowledge of Body Substance Isolation (BSI) or infection control precautions.
1040. Knowledge of methods to prevent and/or reduce the effects of heat exposure while wearing protective clothing.
1041. Knowledge of the main routes through which hazardous materials can enter the body.
1042. Knowledge of the clues which indicate the presence of hazardous materials.
1043. Knowledge of chemical attack indicators.
1044. Knowledge of incident priorities at all HAZMAT and terrorist incidents.
1045. Knowledge of types of decontamination.
1046. Knowledge of hazard-control zones.
1047. Knowledge of defensive confinement and spill control actions.
1048. Knowledge of factors to address during large-scale evacuations.
1049. Knowledge of the organization of the fire department .
1050. Knowledge of the role of the Fire Fighter I in the organization.
1051. Knowledge of the mission of fire service.

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You are rating the PREVENTION AND INSPECTIONS job duty area.

Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

1052. Knowledge of the fire department's standard operating procedures (SOPs) and rules and regulations.
1053. Knowledge of the role of other agencies as they relate to the fire department.
1054. Knowledge of the critical aspects of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program.
1055. Knowledge of procedures for reporting an emergency; departmental SOPs for taking and receiving alarms, radio codes, or procedures; and information needs of dispatch center.
1056. Knowledge of fire department procedures for answering nonemergency telephone calls.
1057. Knowledge of departmental radio procedures and etiquette for routine traffic, emergency traffic, and emergency evacuation signals.
1058. Knowledge of personnel accountability systems, emergency communication procedures, and emergency evacuation methods.
1059. Knowledge of basic construction of typical doors, windows, and walls within the department's community or service area.
1060. Knowledge of personnel accountability systems and communication procedures.
1061. Principles of fire streams as they relate to fighting automobile fires.
1062. Knowledge of SOPs for alarm assignments and fire department radio communication procedures.
1063. Knowledge of the methods to assess the origin and cause of fires.
1064. Knowledge of the characteristics of pressurized flammable gases.

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Job Duty Area #15: PUBLIC RELATIONS AND CUSTOMER SERVICE

The following job task statements compose the PUBLIC RELATIONS AND CUSTOMER SERVICE job duty area. Please review to familiarize yourself with this particular job duty area.

- Maintain a log of visitors to the fire station by recording their names, date, time and other relevant information so a written record is available.
- At a superior's command, accompany owners/occupants into a burned structure to allow them to retrieve possessions safely and to reduce liability risk to the fire department.
- Inform and educate the public on fire prevention.
- Perform community service and outreach programs such as fire alarm installations, child safety seat installations, etc.
- Conduct fire station tours for groups of individuals and children.
- Maintain a service orientation or public servant mentality when dealing with the public.
- Use tact and diplomacy in dealing with the public under times of high stress or with disgruntled, agitated or hysterical persons.
- Interact and work with citizens.
- Attend community meetings, ceremonies and parades as representatives of the department.
- Establish perimeter lines to prevent unauthorized persons from entering areas near emergencies.
- Provide assistance to victims.
- Control the emergency scene to protect yourself, coworkers and the patient or victim.
- Communicate with the public to prevent them from crossing perimeter lines.
- Assist rescue operation teams so that rescue items are recognized and retrieved in the time as prescribed by the Authorities Having Jurisdiction (AHJ).
- Support and conduct community risk reduction programs.

Turn to the next page to provide knowledge linkage ratings for the PUBLIC RELATIONS AND CUSTOMER SERVICE job duty area.

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Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

Please use the scale provided above to rate the importance of the 76 job knowledge areas (presented below) in performing tasks associated with the following job duty area: **PUBLIC RELATIONS AND CUSTOMER SERVICE**. **Please mark your answers under items 1065-1140 on the answer sheet.**

1065. Knowledge of motor vehicle rules and regulations.
1066. Knowledge of common hand tools, such as wrenches, pliers, screw drivers, hammers and mauls, axes, prying tools, etc., e.g., their use, operation, limits and safety precautions/procedures.
1067. Knowledge of basic science terms and concepts, e.g., force, gravity, pressure, vacuum, etc.
1068. Knowledge of ratios and terms, expressing ratios and the practical use of ratios, e.g., pounds per square inch, gallons per minute, etc.
1069. Knowledge of basic mechanical principles, e.g., leverage, gears, pulleys, screws, etc.
1070. Knowledge of typical occupancy activity at a given time of day.
1071. Knowledge of the science behind fire propagation.
1072. Knowledge of common heat energy sources: chemical, electrical, and mechanical energy.
1073. Knowledge of heat transmission and the mechanisms by which heat transfer occurs: conduction, convection, and radiation.
1074. Knowledge of common products of combustion and their toxic effects.
1075. Knowledge of classification of fires: class A, B, C, D, and K fires.
1076. Knowledge of Fire Control Theory: temperature reduction, fuel removal, oxygen exclusion, and chemical flame inhibition.
1077. Knowledge of common materials found in building construction.
1078. Knowledge of the strengths and weaknesses associated with different types of building construction types.
1079. Knowledge of types of extinguishers and their common uses.
1080. Knowledge of types of knots, ropes, and webbing materials.
1081. Knowledge of types of ladders.
1082. Knowledge of search operations.
1083. Knowledge of rescue operations.
1084. Knowledge of extrication operations.
1085. Knowledge of types of carries.
1086. Knowledge of victim removal methods.
1087. Knowledge of forcible entry methods.
1088. Knowledge of ventilation methods.
1089. Knowledge of types of hydrants and alternative water supplies.
1090. Knowledge of methods of moving water in a system.
1091. Knowledge of static pressure, flow pressure, and residual pressure.
1092. Knowledge of common hose rolls.

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You are rating the PUBLIC RELATIONS AND CUSTOMER SERVICE job duty area.

Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

1093. Knowledge of friction loss, elevation loss/gain, and water hammers.
1094. Knowledge of size classifications of fire streams.
1095. Knowledge of foam techniques.
1096. Knowledge of direct attacks.
1097. Knowledge of indirect attacks.
1098. Knowledge of combination attacks.
1099. Knowledge of salvage operations.
1100. Knowledge of overhaul operations.
1101. Knowledge of hidden fire indicators.
1102. Knowledge of evidence protection methods.
1103. Knowledge of procedures the public should use to report a fire or other emergency.
1104. Knowledge of necessary skills for fire department communications.
1105. Knowledge of the types of information required for arrival and progress reports.
1106. Knowledge of pre-incident surveys and inspections.
1107. Knowledge of common fire hazards.
1108. Knowledge of the steps in presenting fire and life safety information to the public.
1109. Knowledge of the components of personal protective equipment.
1110. Knowledge of the physiological aspects of stress.
1111. Knowledge of cardiopulmonary resuscitation (CPR).
1112. Knowledge of scene safety considerations such as hazardous materials incidents and rescue operations.
1113. Knowledge of the types and states of shock of victims and/or other fire personnel
1114. Knowledge of methods to managing shock of victims and/or other fire personnel.
1115. Knowledge of Body Substance Isolation (BSI) or infection control precautions.
1116. Knowledge of methods to prevent and/or reduce the effects of heat exposure while wearing protective clothing.
1117. Knowledge of the main routes through which hazardous materials can enter the body.
1118. Knowledge of the clues which indicate the presence of hazardous materials.
1119. Knowledge of chemical attack indicators.
1120. Knowledge of incident priorities at all HAZMAT and terrorist incidents.
1121. Knowledge of types of decontamination.
1122. Knowledge of hazard-control zones.
1123. Knowledge of defensive confinement and spill control actions.
1124. Knowledge of factors to address during large-scale evacuations.
1125. Knowledge of the organization of the fire department .
1126. Knowledge of the role of the Fire Fighter I in the organization.

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You are rating the PUBLIC RELATIONS AND CUSTOMER SERVICE job duty area.

Rating Scale for KNOWLEDGE Linkage			
N/A	***1***	***2***	***3***
Knowledge area is not relevant to task group	***Knowledge area is somewhat important and there is some value in performing task group***	***Knowledge area is moderately important and there is a tangible value in performing task group***	***Knowledge area is essential and must be possessed to perform task group***

1127. Knowledge of the mission of fire service.
1128. Knowledge of the fire department's standard operating procedures (SOPs) and rules and regulations.
1129. Knowledge of the role of other agencies as they relate to the fire department.
1130. Knowledge of the critical aspects of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program.
1131. Knowledge of procedures for reporting an emergency; departmental SOPs for taking and receiving alarms, radio codes, or procedures; and information needs of dispatch center.
1132. Knowledge of fire department procedures for answering nonemergency telephone calls.
1133. Knowledge of departmental radio procedures and etiquette for routine traffic, emergency traffic, and emergency evacuation signals.
1134. Knowledge of personnel accountability systems, emergency communication procedures, and emergency evacuation methods.
1135. Knowledge of basic construction of typical doors, windows, and walls within the department's community or service area.
1136. Knowledge of personnel accountability systems and communication procedures.
1137. Principles of fire streams as they relate to fighting automobile fires.
1138. Knowledge of SOPs for alarm assignments and fire department radio communication procedures.
1139. Knowledge of the methods to assess the origin and cause of fires.
1140. Knowledge of the characteristics of pressurized flammable gases.

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SECTION TWO.

RELATIVE JOB DUTY AREA RATINGS & COMPREHENSIVENESS RATINGS

INSTRUCTIONS:

3. COMPREHENSIVENESS RATINGS OF JOB TASKS

Consider all of the job-tasks listed in the previous section. How comprehensively do they describe the firefighter job at your department? That is, consider the total amount of time that a firefighter spends engaging in their job tasks. Of that total amount of time, what percentage is described by the job tasks listed in the previous section?

For example, if all of the time that a firefighter spends on their job tasks is accounted for by the job tasks listed in the previous section, then the percentage would be 100%. If 90% of the time a firefighter is accounted for by these job tasks, then the percentage would be 90%, and so on. When considering the appropriate percentage value, please include the time spent actually engaging in job tasks not the total time you are "on call." We are looking for only the time actually engaging in job tasks and are not considering the time during sleeping hours or on breaks.

In the "Comprehensiveness Rating" on your answer sheet, please indicate the percentage of time that a firefighter spends engaged in job tasks accounted for in the previous section. A value from 0% to 100% should be used. If the percentage you indicate is less than 100, be sure to fill in the "0" digit in the first space in this box. For example, 85% would be completed by bubbling and writing in "085."

4. RELATIVE JOB DUTY AREA RATINGS OF JOB TASKS

Certain job duty areas will be performed more frequently than other duty areas, and certain duty areas are more important to the job than other areas. You will be asked to rate the relative importance and frequency of the duty areas.

- **For importance**, consider how important a given job duty area is relative to all other job duties.
- **For frequency**, consider how much time is spent by firefighters engaging in the job tasks defined by the job duty area.

You will be asked to make two sets of relative importance and frequency ratings.

Part One:

First, you will make relative ratings based upon a larger categorization of the job duty areas into groups based upon the job duty areas' tactical nature. That is, you will rate the relative importance and frequency of job duty areas that are "Tactical" and those that are "Non-Tactical."

i. To make these ratings, divide 100% across the two larger headings. Consider the job duty areas listed under each heading (e.g., Tactical / Non-tactical) and assign a relative percentage score to indicate the split of importance between the Tactical and Non-Tactical job duty areas, and then the split of frequency between the Tactical and Non-Tactical job duty areas.

ii. Write in the relative percentage scores for the "Tactical" and "Non-Tactical" job duty areas in their respective columns (importance and frequency). **You will mark your answers directly on the answer sheet in the table provided.** The percentage scores

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should sum to 100% for each column. *(Refer to the example below to see a table with completed percentages.)*

Part Two:

The second set of relative importance and frequency ratings you will make will be for each of the job duty areas. You will be asked to assign percentage points across these job duty areas. These ratings should be made completely independently of the Tactical/Non-Tactical ratings that you just completed.

iii. To make these ratings, divide 100% across the job duty areas. Consider the importance and frequency of a given job duty area as it compares to all other job duty areas when devising your ratings.

iv. Write in the relative percentage scores for the job duty areas in their respective columns (importance and frequency). **You will mark your answers directly on the answer sheet.** The percentage scores should sum to 100% in each column. Again, these ratings can be independent from the first set of ratings you made in this section. *(Refer to the example below to see a table with completed percentages.)*

EXAMPLE of a completed table:

		PART ONE		PART TWO	
Duty Areas		Importance %	Frequency %	Importance %	Frequency %
Tactical Duties					
1	INCIDENT RESPONSE	65	40	5	5
2	INCIDENT ASSESSMENT/SIZE-UP			5	5
3	RESCUE OPERATIONS			10	5
4	EMERGENCY MEDICAL SERVICE OPERATIONS			10	10
5	PUMPING AND DRIVING OPERATIONS			5	4
6	LADDER OPERATIONS			5	4
7	HOSELINE AND ATTACK OPERATIONS			5	4
8	HAZARDOUS MATERIALS OPERATIONS (HAZ-MAT)			5	4
9	SALVAGE AND OVERHAUL OPERATIONS			5	4
Non-Tactical Duties					
10	EXTERNAL AND INTERAGENCY COLLABORATIONS	35	60	5	5
11	TRAINING AND EDUCATION			10	15
12	ADMINISTRATIVE DUTIES AND COMMUNICATIONS			5	10
13	STATION AND EQUIPMENT MAINTENANCE			10	10
14	PREVENTION AND INSPECTIONS			5	5
15	PUBLIC RELATIONS AND CUSTOMER SERVICE			10	10
Totals		100%	100%	100%	100%

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THANK YOU FOR COMPLETING THIS LINKAGE QUESTIONNAIRE!

DELIVERY INSTRUCTIONS:

Please make sure that you place the answer sheet inside this booklet. Then, give the completed questionnaire to your questionnaire administrator.

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