

So Far, So Good – Situational Awareness



Tunnels - Many years ago, when spell check was a dictionary, there was a term for an individual that so concentrated on a particular point, topic or component of available visual field (staring at a fire for example) that all else was forgotten, ignored or actually not seen. This condition occurred because all brain processing power was directed at a specific point and there was nothing left to dedicate elsewhere. The term was tunnel vision. An example of tunnel vision (as opposed to medical disambiguation) is the concentrated attention while driving. A driver cognitively, but unknowingly restricts his attention to a limited field of view of about 5 degrees while driving. Outside this field of view, only flicker and motion is detected. This is why the center red brake light was added to cars. If you would like a simple and inexpensive test to check this out for yourself, go to Peripheral Vision at

http://www.exploratorium.edu/snacks/peripheral_vision/index.html

Air-to-Air Combat - United States Air Force (USAF) crews in Korea and Vietnam used the terms “situational awareness” or the “Ace Factor”. To a USAF fighter pilot, situational awareness was a process consisting of two components; observation and orientation. Determining what was going on (observation) and what it meant (orientation). Situational awareness allowed a pilot to make informed decisions ahead of the opponent (decide) and most importantly to take action (act). Repeating this process every time action was taken (Loop) resulted in returning home safely. This process is known as the OODA Loop (Observation,

Orientation, Decision, Action Loop). A web search for USAF Ace, theorist and OODA developer Col. John Boyd will provide additional information.

Disaster - In 1972, an Eastern Air Lines Lockheed L1011, Flight 401, was preparing to land at Miami. An indicator on the console indicated that the front (nose) wheel was not down and locked. With the aircraft on auto pilot, the entire cockpit crew concentrated on the nose wheel issue. Unknowingly a member inadvertently caused the auto-pilot to start an imperceptible descent. A crewmember went into the wheel well, below the cockpit, to visually check the status of the wheel through an observation panel. What he saw was the wheel down and the marshy waters of the Everglades rapidly approaching. The plane crashed with the loss of 101 passengers and crew. The wheel may or may not have been down (observation) but the fact that the L-1011 was still flying and losing altitude was lost (lack of orientation).

Situational Awareness - It was not until the 1990's that situational awareness completed its migration from military to industry / business as a term and process. When it did hit the private sector, the definitions and examples varied from the simplistic to the academically acceptable. Simply put situational awareness is: "knowing what is going on so you can figure out what to do" (Adam, 1993). At the high end is researcher Mica Endsley's definition: "Situation awareness is the perception of elements in the environment within a volume of time and space, the comprehension of their meaning, and the projection of their status in the near future." I believe that the ultimate lack of situational awareness is the individual who jumps off a tall building and keeps on yelling "so far, so good" until impact.

Fire Service – For us, situational awareness is based upon the continuous observation and understanding of the past, present and future in a dynamic situation. While many of us are familiar with the term, some may not realize that situational awareness is dependent upon three critical, interrelated components. With any one of them missing, the potential for injury, crash and or death rises as fast as a fire grows. Without all three of them, we rely upon pure luck rather than our version of OODA.

- **Past Observation** - What has been going on? You gather information on all that contributes to the incident from your assignment within the incident command system and what is observable by all senses.
- **Present Understanding** - Why has it been going on? Is what we are doing working? What is the desired incident outcome? Are there enough resources, time and acceptable conditions to induce a better outcome? Is the incident stable or unstable? Is this an incident that I am familiar with or is it new and not experienced before?
- **Future Outcomes** - What's going to happen and what can I, my crew, my company, etc. do about it to meet our mission and avoid injuries / fatalities?

The use of past, present and future is quite applicable to the situations we work and or manage. They are non- fixed moments of time. We need to consider the past because what has not worked will continue to not work. The present quickly becomes the past and the future of a moment ago is now our present with a new future to anticipate. We need to make decisions in the present because the actions directed will take place with resultant outcomes in the future. We need to

project the future because potential outcomes must be considered, especially when putting firefighters in harm's way. For example:

- The fire was through the roof when the crew of three arrived. The 360 revealed about 50% involvement with visible fire in multiple rooms, no life safety and no exposures (the present).
 - What started the fire? Are the conditions suspicious (the past)
 - What is the outcome if nothing is done? (future)
 - What are the possible outcomes, if we go defensive? (future)
 - What are the possible outcomes, if we go offensive? (future)
 - Do any actions being considered have an impact on the outcome that outweighs the potential for firefighter injury? (future)

How many times have we led or been led into situations, actions, positions or evolutions because that is what we always do, regardless of the specific situation? If you review any fatality, injury or near miss report, you will likely discover that one of the three critical interrelated components missing. For example:

- Risky interior operations in a structure, late in operations, with no life safety, results in the severe injury of a firefighter. The building is bulldozed 2 weeks later.
- A crew responds yet again to an alarm in a condo. With both alarm and sprinkler activation known, the crew forces entry and is met by heavy black smoke. They were not fully bunkered out or on air.

It is important to ask yourself this question, when deploying companies or conducting operations: - Did you actively consider past or present conditions, resources, abilities, limitations and outcomes (situational awareness) or just yell "so far, so good".

Reference: <http://encyclopedia.thefreedictionary.com/Situational+awareness>