

Situational Awareness:

Tips, Techniques & Strategies

Aviators on the front lines offer their advice for maintaining this crucial skill.

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Professional aviators know the textbook definition of situational awareness. In short, it is the knowledge and comprehension of all information that allows an aircrew to know their position and operating parameters with certainty.

The FAA and NTSB, as well as pilot organizations such as the Aircraft Owners and Pilots Association, recognize the deadly threat of loss of situational awareness. Databases maintained by these organizations show that at least half of all accidents involve some degree of a loss of situational awareness. These accidents are almost always fatal. In the Air Safety Foundation's accident database, 35 accidents examined involved some degree of "loss of situational awareness" and only two listed "no injuries" or "minor injuries." The rest were fatal.

All segments of the aviation industry have fallen victim to a loss of situational awareness. In the airline segment, the crash of an American Airlines flight in Colombia was caused by a communication error with air traffic control, which led to uncertainty as to the navigational fix they were to fly towards. In another example, a regional jet taking off from Lexington, KY, in 2006 from the wrong runway demonstrated the deadly result of a loss of situational awareness. There are also examples in corporate, EMS, military and law enforcement flying.

So, how do airborne law enforcement aviators recognize and maintain situational awareness? What tips, techniques and strategies do the men and women on the front lines utilize to ensure they do not fall victim to loss of situational awareness?

"I think the key to situational awareness remains excellent communications and excellent cockpit resource management," said a 5,000-hour police aviator from Canada. "In the professional cockpit, if there is any apprehension, doubt or uncertainty, most issues can be clarified or corrected early by a sharp crew working together."

The value of crew resource management (CRM) and communication are reinforced by the FAA, which mandates initial and recurrent training in the subjects for all Part 121 operators. Most general aviation operators also conduct some CRM training.

"Particularly in the police environment, it is very easy to get caught up in the mission," said Officer Larry King of the Newark (NJ) Police Department Aviation Unit. "We always make certain that the pilot flying keeps his head in the flying game and does not get wrapped up in the police mission. If the police mission gets intense and demanding, the pilot flying will often switch off the police radio in order to give 100 percent attention to flying the aircraft." This requires excellent communications within the aircraft in order to accomplish the mission.

Another pilot from a Midwestern department likes to challenge his fellow pilots when flying. "We will ask each other questions about a specific flight instrument," he said. "What is the exact temperature showing on the TOT gauge? Or, what is the exact outside air temperature? This keeps all pilots on their toes, as the loser in the contest buys lunch."

Glenn Daley, former lieutenant/pilot with the New York City Police Department Aviation Unit and current police aviation consultant, says to always have a plan and constantly evaluate options in order to maintain situational awareness. Daley believes there are two critical questions that need to be answered and constantly reevaluated during a police aviation mission: where would we go in an emergency and what could we hit?

"Every police aviator I have trained, I always impressed on them the importance of those two questions," he said. "Especially when orbiting a scene, we should know where we could land in an emergency at all times while in the orbit. In addition, they must be aware of terrain, wires, buildings, etc. that pose a hazard."

Situational awareness is something that must be formally learned and practiced in order to stay proficient. Joe Schmaltz, instructor specialist with the Bell Helicopter Customer Training Academy, former Army aviator and retired police aviator, likes to end his situational awareness classes with an analogy.

"Instinct will teach us how to walk; fear will teach us how to run," he tells his students. "Situational awareness will teach us how not to trip over our own untied shoelace. The important part of this analogy is that

the first two actions we perform instinctively, they require no conscious thought. Situational awareness, on the other hand, is not an instinctive process. It is something we have to learn and practice to remain proficient.”

According to Kevin Means, author of Tactical Helicopter Missions and currently assigned to the San Diego (CA) Police Aviation Unit, it is not overstating the importance of situational awareness to say that it is a matter of life and death.

“Situational awareness is what aviators must strive to maintain during all phases of flight,” he said. “It is the process we use to conceptualize the world around our aircraft – spatial and environmental hazards that can adversely affect safety of flight. The difficulty in maintaining it can range from simple, where barely a thought is given to it, to dangerously difficult, a condition that may require all of an aviator’s concentration, knowledge and skill just to survive, the latter of which indicates that they have truly screwed up.”

Dan Bitton, commander of the Winthrop Harbor (IL) Police Department Law Enforcement Aviation Coalition, makes certain his operation places situational awareness as its top priority. “Situational awareness is just a buzzword unless trained for and debriefed after flights,” he said.

Bitton’s aircrews formally brief situational awareness before and after flights. “Situational awareness begins before a flight and ends after landing,” he said. “Our briefings include actions in the event of loss of situational awareness. If at any given time either crewmember is not certain where obstacles are, ceiling permitting, an immediate climb is required to 500 feet above the highest obstacle in the area, which we brief prior to departure. That ‘safe altitude’ is the first item on the TFO mission log and set in our altitude minders.”

In summing up his feelings on situational awareness, Bitton said, “Situational awareness, the essence of preventing accidents, is an integral part of a safety management system and requires a constant reminder to crews to be effective communicators, trust their instincts and trust each other, have a good working relationship with each other, and the ability to objectively critique each other after the mission and strengthen any weaknesses discovered.”

Aircrews are susceptible to boredom and routine. The same patrol flight and missions can make them complacent. A flight instructor from a major East Coast department always keeps his fellow pilots on their toes by asking them questions to which they should immediately know the answer.

“I will ask them where a particular obstacle is in reference to the aircraft. Or if air traffic control points out a particular aircraft and we state we will maintain visual separation, I will ask my student a few seconds later, where did that previously called traffic go?” he said. According to the flight instructor, most pilots get caught once and then raise their situational awareness and almost always know the answer immediately.

“I always stress that situational awareness means knowing not only where our aircraft is, it also means listening to air traffic control to develop a sense for what is happening in the immediate airspace,” commented Tom, a 10,000-hour police aviator from the Southeast. He said that at his home airport, there is a fairly unusual visual approach that the airlines use that requires a relatively sharp turn at a low altitude. Occasionally, an airliner misses the turn and must execute a go-around. One night, while working a mission just beyond this turn, the police aircrew was sharing the frequency and listening to the steady and routine arrival of airliners from around the world.

“I heard a foreign carrier check in, and just by his tone, I could sense some apprehension and confusion in his voice,” Tom said. “I casually mentioned to my copilot to monitor this particular airliner, and sure enough, they missed the turn and headed straight for us.” Even before being queried by air traffic control, the aircrew was performing avoidance maneuvers, sensing the situation before it developed.

As Bitton noted, situational awareness must be more than a buzzword. It means constantly guarding against complacency and routine. It means always challenging yourself and your aircrews to keep situational awareness as a top priority.