OAS-35A
(4/18)

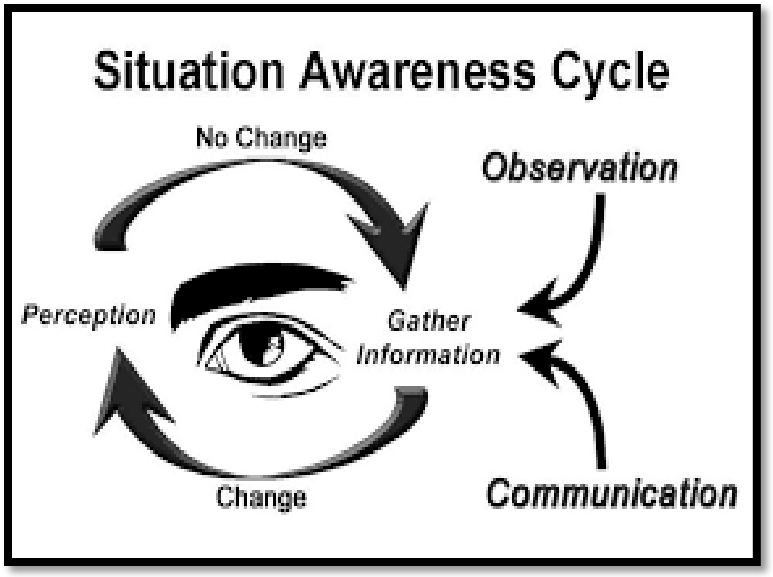
Interagency Aviation Lessons Learned

Subject: Preventing Channelized Attention - Aviation Operations

Area of Focus: Human Factors

Distribution: All Aviation Operations

Discussion: Whether operating from the cockpit of an airplane, a helicopter, or a UAS ground station, pilots and operators face some of the same human factors: pressure, workload, stress, and fixation on one problem at the expense of the bigger picture. Situational awareness is a common term we use in avaition to describe the process to be aware, recognize, comprehend, and effectively respond to surroundings by gathering information, analyzing it, and making informed decisions using training and experience. Channelized attention is often defined as the narrowing of focus on one task at the expense of other inputs, which can degrade situational awareness.



A recent event involving a DOI-operated Freefly Alta X UAS highlights that channelized attention and the underuse of available resources are risks common to all aircraft and mission types. During a fire reconnaissance mission, the UAS experienced a repeated loss of link during the return leg of the flight. The pilot's attention became fixated on resolving link issues rather than assessing the aircraft's position or altitude. After reestablishing control, the pilot did not command a climb and continued troubleshooting, unaware that the aircraft was in a gradual descent. Despite having onboard camera imagery and automation features available to assist in improving situational awareness, these resources were not used. The aircraft ultimately impacted terrain after losing link again.

This event underscores how quickly channelized attention can degrade situational awareness. Critical cues such as horizon reference, camera feed, and telemetry data were available but unused due to cognitive fixation on restoring the data link.

Using all available resources is a fundamental safety principle that applies universally across aviation. Whether through cockpit instruments, crew coordination, automation systems, or visual inputs, maintaining situational awareness requires constant scanning and prioritizing. The key is recognizing when focus narrows and deliberately stepping back to evaluate the situation.

Channelized attention doesn't discriminate and can affect everyone in aviation. No matter the platform, maintaining situational awareness means using every resource available and prioritizing comprehensive safety over individual task completion. Aviation personnel should take a deliberate pause when focus begins to narrow. In this case, a brief operational reset to evaluate altitude data to diagnose the root cause of the link issues could have prevented this mishap from occurring.

Managing several tasks concurrently is an everyday part of aviation operations. For the most part, crews handle concurrent task demands efficiently, yet crew preoccupation with one task to the detriment of other tasks is one of the more common forms of error. Most pilots are familiar with the December 1972 L-1011 crash that occurred when the crew became preoccupied with a landing gear light malfunction and failed to notice that someone had inadvertently disengaged the autopilot. Additional insight into this subject is available in "Cockpit Interruptions and Distractions," on the NASA website.

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