AIRBORNE PUBLIC SAFETY ASSOCIATION

The Safety Wire

September 2018

2-4 SECONDS does not seem like a significant amount of time. However, for many of us it is difficult to stop our eyes on one spot and hold them there for that length of time. For us to 'see' an object we have to do more than place it in our field of view. First, we need to stop our scan so the focus process can start. Once we stop our scan, we need to wait 2-4 seconds for our eyes to focus and our brains to process the information. Try it. Scan an area quickly and then scan it again while counting in your head, "one-one-thousand, two-one-thousand…" You will 'see' more with a slow scan, but you will also likely find that it is a painfully slow process. The last aspect to remember is the object we want to see ideally needs to be placed in the center ten degrees of our field of view. That is about the size of your fist at arm's length.

Photo courtesy of Uldis Pelna

During pilot training, we are taught to look for other air traffic by dividing the sky into ten-degree segments. The slow scanning pace is rarely mentioned though, which adds to the false sense of security 'see-and-avoid' provides. The slow, ten-degree scan does not just work outside of the window. When transitioning to instruments, we should maintain the 2-4 second scan on the panel. It is good to actually practice the cadence in our heads during training. The slow scan makes sure we actually confirm what the instrument is doing. Timing the scan also makes sure we do not fixate on an instrument. Look at it for 2-4 seconds and move on.

As public safety aviators, we can apply these techniques to the ground search. One of the biggest mistakes we make while looking for a suspect, missing person or any other ground target is looking too fast. Slow the scan for better results. We also need to employ a systemic scan of an area to make sure we cover it all. Letting our eyes or camera dart around a search area is guaranteed to leave big holes in our coverage of that area. All that is needed is a ten-degree gap for us to fail to locate a target that is there for us to see. A ten-degree spot in our field of view is not big.

The method is needed for locating ground threats such as wires and towers. When looking for wire structures or signs, we need to scan slow and scan wide to either side of the aircraft's projected flight path. We will not often see the wire, we will see the associated 'sign', which is often well outside the center of our field of view even if the wire is directly in front of us.

The scanning techniques suggested here work just as well when we are on the ground. During aircraft inspection, when a maintenance technician or pilot is looking over the aircraft, we need to look with a slow and methodical process. Just pointing our eyes at a component doesn't mean we will 'see' it. I like to use a flashlight for several reasons. A primary reason is to keep my attention focused on the ten-degree range in front of me.

For you parents out there, I can promise you this method is very useful when asked by a child to locate a certain Lego piece out of a mountain of thousands of similar pieces.

YEARS OF EXPERIENCE, HOWEVER, HAD CONDITIONED ME TO TREAT ANY TYPE OF WARNING AS AN ACTUAL EMERGENCY.

~ BOB HOOVER

Resources

NASA Callback – Airspace violations
https://asrs.arc.nasa.gov/publications/callback/cb_462.html

NASA Callback – Go Arounds
https://asrs.arc.nasa.gov/publications/callback/cb_463.html

FAA Safety Alert - NVGs and LED obstacle lighting
https://content.govdelivery.com/attachments/USAFAA/2018/09/25/file_attachments/1078160/SAFO18010.pdf

Association of Air Medical Services - flight suits and undergarments:
http://aams.org/fashion-vs-function-just-how-necessary-is-fire-resistant-clothing-within-the-hems-industry-part-1/

APSA Online Meetings

The schedule for upcoming APSA online meetings is as follows.
If you would like to join, send an email to: Safety@PublicSafetyAviation.org

UAS:
Wednesday, Oct 10, 2018
1:00 PM - 2:00 PM EDT (1800 UTC)

Maintenance:
Wednesday, Oct 17, 2018
1:00 PM - 2:00 PM EDT (1800 UTC)

Safety Officers:
Friday, Oct 19, 2018
1:00 PM - 2:00 PM EDT (1800 UTC)

If your system involves accidents, then the solution is not to find excuses for the accidents. The solution is to change the system.

~ Richard Bach
The gift of Wings

Reality Check...

Note: *The following reports are taken directly from the reporting source and edited for length. The grammatical format and writing style of the reporting source has been retained. My comments are added in red where appropriate. The goal of publishing these reports is to learn from these tragic events and not to pass judgment on the persons involved.*

Aircraft: **Piper PA-18**
Injuries: **2 seriously injured**
NTSB#: **ANC15FA009A**

http://www.ntsb.gov/_layouts/ntsb.aviation/brief.aspx?ev_id=20150202X20456&key=1

A wheel/ski-equipped Piper PA-18 airplane, N82735, and a ski-equipped Piper PA-18 airplane, N78NR, collided midair near South Hollywood Airport, about 5 miles southwest of Wasilla, Alaska. N82735 was operated by the State of Alaska Department of Public Safety, Alaska State Troopers. The sole occupants of the airplanes, both certificated commercial pilots, sustained serious injuries. After the collision, both aircraft descended uncontrolled into an area of densely populated birch and spruce trees and sustained substantial damage. Visual meteorological conditions prevailed in the area at the time of the accident. N82735 departed Wasilla Airport about 1300 bound for Beluga, Alaska, and company flight following procedures were in effect.

The accident site for N82735 was located approximately 1,125 feet southwest of N78NR. Two large birch trees penetrated the cockpit, and pieces of the pilots fractured flight helmet were found near the base of the trees. All the primary flight control surfaces were identified at the accident site, and flight control continuity was verified from all of the primary flight control surfaces to the cockpit.

During on-scene interviews with the NTSB IIC on February 1, witnesses consistently reported that they observed one Piper PA-18 traveling in a southwesterly heading, and the other Piper PA-18 traveling in a northwesterly direction. One witness on the ground observed both airplanes converge at approximately a 90 degree, right angle. The witness said that as both airplanes converged, neither airplane changed altitude or direction as they approached each other, and the two subsequently collided.

During an interview with NTSB IIC on February 1, a pilot-rated witness that was standing on the east end of South Hollywood Airport, who observed the airplanes just after the collision, stated that he recognized the Alaska State Trooper airplane. He said that after the collision the state trooper's airplane entered a spin, and it began a nose low, spiraling descent. As the airplane reached approximately 400 feet above ground level, the airplane recovered from the spin, briefly leveled off, this was followed by an increase in engine noise. The nose of the airplane then pitched abruptly down, and then the engine noise decreased, which was followed by the sound of the airplane impacting the tree-covered terrain. He said that after the midair collision, the other Piper PA-18 appeared to snap roll to the right as the airplane traveled away from his location. He then observed a large portion of that airplane's right wing flutter to the ground, as it entered a near vertical, uncontrolled, spiraling descent.

During a hospital room interview with the NTSB IIC on February 2, the Alaska state trooper pilot of N82735 stated that after departure from the Wasilla Airport, he climbed the airplane to approximately 1,500 to 2,000 feet MSL, and configured the airplane for cruise flight. While in level cruise flight, traveling in a southwesterly heading, with the sun at his 1130 to 1200 o'clock position, he saw a momentary flash in the upper left corner of his windscreen, which was instantaneously followed by the collision. After the collision his airplane entered an uncontrollable dive, with no elevator control. In a final effort to regain control, he pushed the control stick forward, and he was able to regain limited elevator authority, but the airplane continued to descend, nose low, into the tree-covered terrain. The last thing the trooper pilot remembered was entering the trees.

Aircraft: **Bell OH-58A**
Injuries: **1 Uninjured**
ATSB#: **AO-2014-071**
http://www.atsb.gov.au/publications/investigation_reports/2014/aair/ao-2014-071.aspx

The previous day, the pilot, who was also a licensed aircraft maintenance engineer, completed a 50-hourly inspection on the helicopter and replaced the battery. During the inspection, the pilot noted that the engine oil level indicated slightly below full. However, to obtain an accurate oil quantity, the level needed to be checked within 45 minutes of shutting down the engine, so he planned to run the engine the next morning and recheck the oil level prior to departure.

At about 0700, the pilot conducted the pre-start checks and started the engine. He carried out the after-start checks and confirmed all engine indications were normal, and ran the engine for about 10 minutes to recharge the new battery following start-up. He then shut the helicopter down, conducted the shut-down checks and the pilot and passenger exited the helicopter. The pilot added 0.5 L of oil. After a brief return to the terminal building, the pilot and passenger reboarded the helicopter.

The pilot selected the master switch on, confirmed all indications were normal and started the engine. The pilot lifted the helicopter off into the hover, climbed to about 35-50 ft. above ground level and commenced the transition to forward flight. He then heard the turbine engine wind down, the red engine out warning light illuminated and the helicopter descended in an autorotation.
The pilot attempted to run the helicopter onto the ground, however, the helicopter touched down on soft grass and the landing skids detached. The main rotor blades chopped the tail boom and the helicopter landed heavily, resulting in substantial damage. The pilot observed that the fuel valve was selected to ‘OFF’.

The pilot reported that this incident provided a reminder of the effect a change in routine can have, particularly on completing checklists.

Aircraft: **Cessna T210L**
Injuries: **1 Uninjured**
NTSB#: **CEN10LA014**

http://www.ntsb.gov/_layouts/ntsb.aviation/brief.aspx?ev_id=20091015X45544&key=1&queryId=50a8609e-4aae-47eb-b53b-4908654825f8&pgno=3&pgsize=50

The single-engine airplane had just undergone an annual inspection, which included several landing gear retraction and emergency gear extension tests. The commercial pilot performed an extensive pre-flight inspection before he departed on its first post-maintenance flight and found no anomalies. Shortly after takeoff, as the pilot retracted the landing gear, the hydraulic pump stopped and the "gear-up" light did not illuminate. He then tried to extend the gear and nothing happened. The pilot referenced an inspection mirror on the right wing and realized all three landing gear were dangling between the up and down positions. The pilot stabilized the airplane and used his cell phone to call Cessna Aircraft Company. An engineer provided troubleshooting techniques, but the pilot was unable to secure the gear in the down-and-locked position. The pilot then made a partial gear-up landing, which resulted in substantial damage to the left horizontal stabilizer. The airplane had been modified under a Supplemental Type Certificate in 1987, which removed the main landing gear doors and replaced them with fairings. As a result, some of the landing gear hydraulic lines were capped. A Federal Aviation Administration inspector performed an examination of the airplane and found a hydraulic line in the landing gear system that was not properly capped and was leaking. The line was re-capped and several gear extension/retraction tests were successfully performed. The uncapped line should have been found and repaired during the annual inspection.