AIRBORNE LAW ENFORCEMENT ASSOCIATION

The Safety Wire

August 2014

"Perspective" is one of the main benefits of the ALEA annual Expo. Last month in Phoenix, those who attended were able to step out of their own operation and see the world of law enforcement aviation from the collective perspective of everyone at the event. I know that I certainly benefited from this opportunity. One example is a conversation that was had with a fellow safety officer on operational perspective. He referred to some concepts we were discussing as 'blind spots'. It is a great theory we should all be reminded of.

Most of us operate with a certain perspective based on our own operation. For some of us, all of our training and experience comes from a single, small group of people within one unit. Over time, even the best pilots, TFOs, mechanics and instructors can get so accustomed to the way things are done at their agency that they cannot see small problems in their system. These small, unaddressed issues can limit capabilities and also lead to accidents. We have learned that hazard identification is the fuel that the entire SMS machine needs to run. Blind spots can hide important hazards that need to be targeted. If we fail to do so, we may find ourselves standing in the aftermath of an accident thinking, "I didn't see *that* coming."

Wanting to get some more perspective on the concept myself, I did a little research and found these interesting points on how blind spots can be formed.

1. “Schedule compression” a.k.a. being in a hurry. When are we not in a hurry? If ten tasks take ten minutes to complete properly, and we routinely try to do those same ten tasks in five minutes, some of the tasks will not be completed correctly, if at all. The ‘routine’ will be established through repetition and the failure to perform all of the original objectives will become normal, and forgotten. Example: Preparing to launch for a time critical mission (i.e. pursuit or other crime in progress).

2. Insufficient training is a major cause of blind spots. Simply put, if employees do not have quality training on equipment or procedures, there will be blind spots, guaranteed. Misunderstanding how to update a piece of avionics or interpret information shown on the display can lead to serious problems, although the operator, or maintainer, thinks all bases have been covered. Example: During training, I was shocked by major misunderstandings I had on the proper use of a HEEDs (emergency air) bottle. Prior to my first formal class on the topic, I had been flying with one on my survival vest for almost a year, over water, thinking I fully understood how to use it.

3. When safety is managed in mainly a regulatory format, blind spots are unavoidable. Safety programs that are focused on violations of rules are only equipped to deal with issues that have already been identified and codified by rules. Blind spots are, by definition, either unnoticed or undefined. Example: Safety meetings that are focused on talking about incidents in the context of policy and determining a response, especially punishment or retraining of the specific person(s) involved.

4. The training program itself can create blind spots. No single trainer or training program is perfect. The imperfections of a single, established source of training can be amplified over time as new equipment, techniques, software, etc. is brought into the operation. Most of us know this, but we often think this applies to programs outside of our own operation. The training at our own agency, and from our own mentors, can become sacred over time. When it is sacred, we fail to question it or look for areas in need of improvement. Blind spots are passed down from generation to generation, growing bigger each time. Training ‘inbreeding’ is something we joke about, but it is deadly. Example: Anything justified solely because, “we’ve always done it that way.”

Compared to other safety challenges, the solutions to these problems are actually easy. Hint: you are doing one right now. Next month, we will discuss a few techniques we can use to find blind spots and erase them at our own operations.

Anyone who conducts an argument by appealing to authority is not using his intelligence; he is just using his memory.

~Leonardo da Vinci

Thank You!

I'd like to use this public forum to thank everyone who made ALEA EXPO 2014 in Phoenix such a success. . On the safety side of the event, I would specifically like to express my gratitude to:

ALEA Education Program Manager Don Roby and all of the excellent safety instructors who gave presentations throughout the week.

Sgt. Karen Vance and all of the members of the Phoenix Police Air Support Unit who organized, planned and executed a flawless helicopter fly-in and fly-out to the convention center.

Resources

International Helicopter Safety Team (IHST)

New Safety Bulletin on FRAT added:
http://www.ihst.org/portals/54/IHST_News/FRAT%20GRAT%20Bulletin2014.pdf
http://www.ihst.org/Default.aspx?tabid=3089&language=en-US

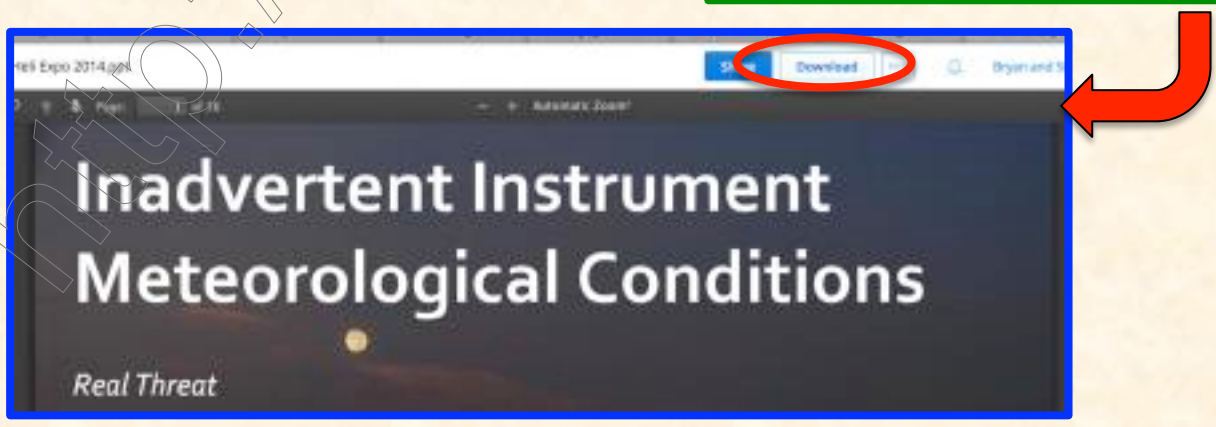
ALEA Resource Update

Several new presentations have been added to the Safety Section of the ALEA website. Under the links below, you will find both .pdf and PowerPoint versions (ppt).

The files are too big to store online without using the Dropbox link. If your computer at work does not allow access, try a home computer. If that does not work, email me directly and I will send you the file by some other means (safety@alea.org).

The presentation will work better in PowerPoint than the .pdf file. Either way, these presentations are often written using only speaking points, so you may have questions on the material. Also, you may want the movies that were removed to reduce file size. As always, call or email me 24/7/365.

http://www.alea.org/resources/safety-presentations



For some years, I have been afflicted with the belief that flight is possible to man. My disease has increased in severity and I feel that it will soon cost me an increased amount of money if not my life.

~ Wilbur Wright
Letter to Octave Chanute
May 13, 1900

Training & Safety

Every year, we read accident reports about simulated engine failure training that turns into a bad day because they were conducted over terrain that was not suitable for landing. I have written about my experience having an engine flame out while conducting practice autorotations. Luckily, we were doing them to a taxiway and we just ended up with a little unscheduled touchdown autorotation practice.

Here is an article from the US Navy and Marine Corps aviation safety magazine on a similar incident (thanks to Dudley Crosson for forwarding the article).

http://www.public.navy.mil/comnavsafecen/Documents/media/approach/2014/AppJulAug2014.pdf
Article starts on page 27

Last month, we had some great comments on the discussion board about training vs. evaluation flights. http://www.alea.org/forum/topic.aspx?i=4307

This month: What are your thoughts on 'throttle chops' in either airplanes or rotorcraft? How should terrain selection play into it?

ALEA Safety Discussion Forum:
http://www.alea.org/forum/topic.aspx?i=4323

The mediocre teacher tells.
The good teacher explains.
The superior teacher demonstrates.
The great teacher inspires

~ William Arthur Ward

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: Cessna 180J
Injuries: 2 Uninjured
NTSB Identification: ERA13LA257
http://www.ntsb.gov/aviationquery/brief.aspx?ev_id=20130529X35908&key=1

A Cessna 180J nosed over while making a forced landing in a field following a partial loss of engine power. According to the CFI, about 1,000 feet above ground level (agl), he simulated an engine failure by retarding the throttle to the idle position. Subsequently, the student pilot had performed the engine failure checklist, which included: carburetor heat to be "ON" and the mixture to be "RICH." About 300 feet agl, the CFI commanded a go-around and the student pilot advanced the throttle to full power; however, the engine backfired and would not develop full power. The CFI verified that the throttle was at the full power setting and the carburetor heat was off. He further stated that about one minute had elapsed from the beginning of the simulated engine failure until the airplane came to rest inverted.

According to a Federal Aviation Administration (FAA) inspector who responded to the accident location, the airplane came to rest inverted in a field with 4-foot-high wheat. The inspector also noted that visual inspection of the engine revealed no evidence of preimpact failure or malfunction. He further stated that local first responders reported to him that fuel was observed flowing out of the fuel vent located in each wing of the airplane. The airplane sustained substantial damage to the right wing forward spar, wing strut, and the vertical stabilizer. The 1053 recorded weather observation at GWO, located about 5 miles from the accident location, included wind from 260 degrees at 3 knots, visibility 10 miles, clear skies, temperature 26 degrees C, dew point 19 degrees C.

Aircraft: AS 350B3
Injuries: 2 Uninjured
NTSB Identification: CEN14CA016
http://www.ntsb.gov/aviationquery/brief.aspx?ev_id=20131024X90206&key=1

The instructor pilot provided instruction to the private pilot and conducted practice autorotation landings. The instructor pilot demonstrated an autorotation and during the landing the helicopter slid on the skids for about 10-15 feet before the skids dug into the soft landing surface. The helicopter began to pitch nose down so both pilots applied aft cyclic and up collective. The helicopter continued to pitch nose down when the main

rotor impacted the ground, which resulted in the helicopter rolling on its right side. The helicopter sustained substantial damage to the main rotor blades, fuselage, and tail boom. The instructor pilot reported no preaccident mechanical malfunctions or anomalies that would have precluded normal operation.

Aircraft: Cessna 172M
Injuries: 2 Uninjured
NTSB Identification: ERA12CA546
http://www.ntsb.gov/aviationquery/brief.aspx?ev_id=20120906X03759&key=1

According to the flight instructor, he and the student pilot had practiced various maneuvers during the training flight and were returning to the airport. The airplane was about 2,500 feet above ground level and within gliding distance of the airport when the flight instructor turned the fuel selector to the "OFF" position so the student pilot could practice engine failure procedures. (Although no regulations prohibit turning the fuel selector to the off position while practicing engine failure procedures, the practice results in an actual, not a simulated, loss of engine power, and is therefore inherently more risky than a reduction in engine power to idle, especially when initiated at a low altitude.) The student pilot trimmed the airplane for best glide speed, initiated a turn toward the airport, and reviewed the pertinent emergency procedure guidance in the pilot operating handbook. The student pilot could not locate the airport until the flight instructor directed him. When the student pilot was unable to restart the engine, the flight instructor took control of the airplane and tried to restart the engine. The flight instructor's efforts to restart the engine were also unsuccessful, and, believing it was too risky to try to reach the airport, the flight instructor selected the best available field for a forced landing. During the landing, the nose landing gear impacted the ground and the firewall was substantially damaged. The student pilot, who was also a mechanic, reported that there were no preimpact mechanical malfunctions or failures with the airplane that would have precluded normal engine restart and operation.

Aircraft: Bell 206L-3
Injuries: 2 Uninjured
NTSB Identification: ERA12CA095
http://www.ntsb.gov/aviationquery/brief.aspx?ev_id=20111202X00359&key=1

The certified flight instructor (CFI) was demonstrating a touchdown autorotation from an altitude of 1,500 feet above ground level to a turf runway. He stated that, during the maneuver, the helicopter's sink rate seemed high, so he continued to pull pitch to arrest the descent rate. The helicopter touched down with a slight forward speed on a downhill slope, and the rear portion of the skids became momentarily stuck in the soft turf. The helicopter pitched forward after breaking loose from the turf, and the main rotor blade contacted the vertical stabilizers and tail rotor drive shaft cover, resulting in

substantial damage. The CFI stated that there were no mechanical malfunctions or anomalies with the helicopter.

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The certified flight instructor did not select an adequate landing site for the practice autorotation.

Aircraft: Bell 206L-3
Injuries: 2 Uninjured
NTSB Identification: ERA14CA216
http://www.ntsb.gov/aviationquery/brief.aspx?ev_id=20140501X55649&key=1

According to the flight instructor, he gave the pilot under instruction (PUI) a simulated engine failure after takeoff when the helicopter reached approximately 50 knots. The PUI pulled the cyclic aft and increased collective. The flight instructor joined the PUI on the controls to prevent him from pulling too much collective and to lower the helicopter's nose to a level attitude. Both pilots were on the controls as the collective was increased to cushion the landing. The helicopter landed on the paved runway's centerline, and as it slid across what the pilots described as an uneven surface, it began to porpoise. The flight instructor lowered the collective to slow the slide and heard a noise, then the helicopter began vibrate and turned 220 degrees to the right before coming to a stop. During the slide, a main rotor blade cut off the tail boom. Neither pilot reported any preexisting mechanical anomalies that would have precluded normal operation.

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The flightcrew's improper recovery from a simulated engine failure after takeoff. Contributing to the accident was the flight instructor's failure to clarify who had control of the helicopter.