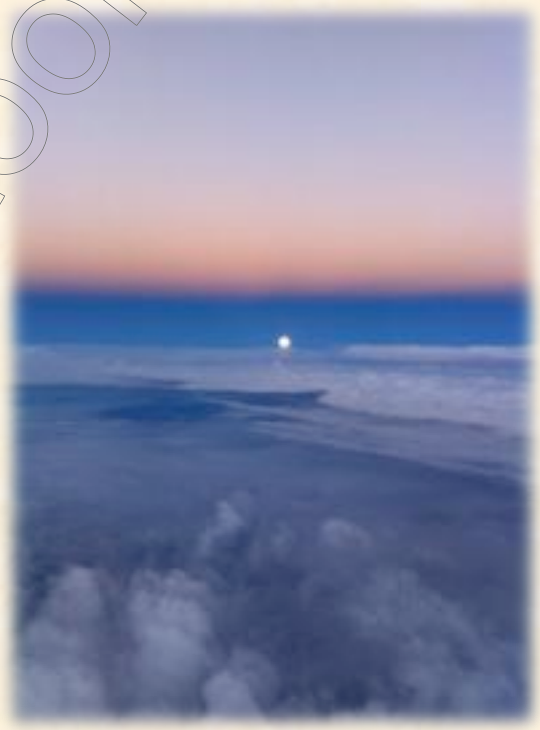
AIRBORNE LAW ENFORCEMENT ASSOCIATION

The Safety Wire

November 2014

ONE TOPIC, and only one topic is at the top of the law enforcement aviation safety discussion list this month. On November 5th the NTSB held a final hearing on the 2013 Alaska Department of Public Safety accident, which claimed the lives of three people. As you might expect, we will be talking quite a bit about this in the future. What I'd like to focus on right now is the fact that there were causal factors in this accident that exist, in part, in many of our respective agencies as well, which means that there are lessons and reminders for us all. It would be tragic if we were to think of this accident as an individual event isolated to the state of Alaska. The NTSB recommendations listed below apply to all law enforcement operations. You will see that most are not new concepts and the majority have been addressed by ALEA for many years. Unfortunately, you will also see that these factors are very similar to major law enforcement accidents that have claimed lives in the past. It is up to us to break this cycle.



This month it has been four years since three coworkers I was working with were lost in an airplane crash on a public safety mission. Every year those of us who were there send one another messages of support as we remember their sacrifice. I think one of the most difficult thoughts is that of their families, who are missing a loved one during the holidays. That same thought has occupied my mind as I've thought about the three men killed in the Alaska DPS accident. For that reason, let's look at the lessons learned, with an emphasis on one that goes unwritten: take the time to appreciate and love those most dear to us. Part of that is doing everything we can, without making excuses, to be safe so they do not have to suffer our loss. This week in the United States we are celebrating Thanksgiving Day. No matter where you live in the world, take the time to be thankful for the sacrifices of those we've lost, the costs paid by their families, and the support given us by our own loves ones.

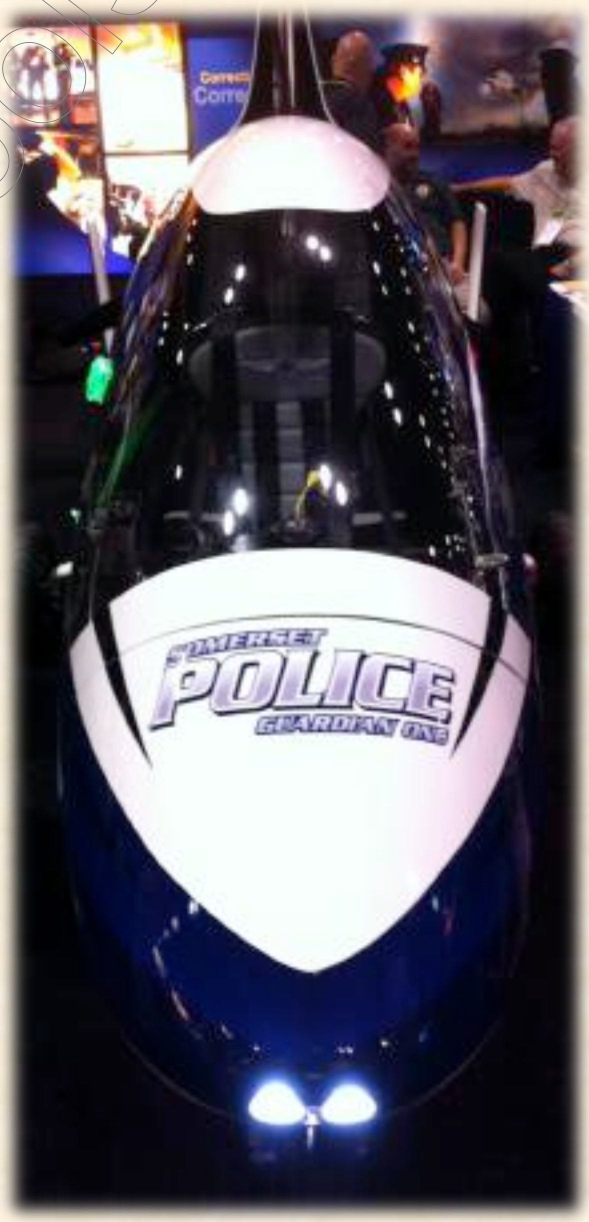
The details of the NTSB report can be seen here:
http://www.ntsb.gov/news/events/2014/2014_AKheli_BMG/2014_AKheli_BMG_abstract.html

The recommendations made to law enforcement aviation are:

1. Develop and implement a flight risk evaluation program that includes training for all employees involved in the operation and procedures that support the systematic evaluation of flight risks and consultation with others trained in flight operations if the risks reach a predefined level.

2. Use formalized dispatch and flight-following procedures that include up-to-date weather information and assistance with flight risk assessment decisions.

3. Provide all pilots who will perform night vision goggle (NVG) operations with formal NVG ground and flight training and require them to complete this training on an annual basis to remain on flight status.



4. Require all pilots who perform state law enforcement search and rescue missions to receive, on an annual basis, scenario-based inadvertent instrument meteorological conditions simulator training that includes strategies for recognizing, avoiding, and safely escaping the conditions.

5. Create a formal tactical flight officer (TFO) training program that includes training on aeronautical decision-making, crew resource management, and operating aircraft navigational and communications equipment, and use TFOs during search and rescue operations.

6. Develop and implement a comprehensive safety management system for aircraft operations that (1) holds senior state personnel accountable for the safety of state law enforcement aircraft operations, (2) is tailored to the department's missions, and (3) is based on industry best practices.

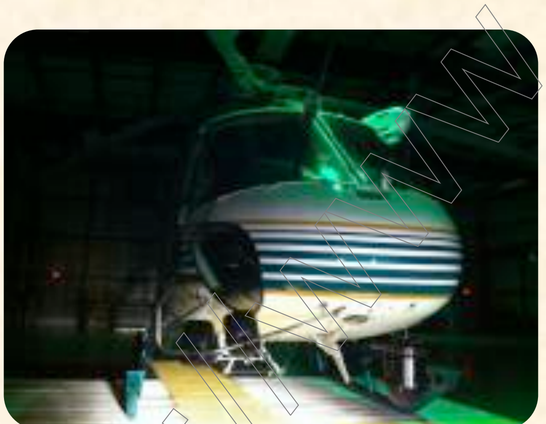
7. Arrange for an audit of the safety management system implemented in response to Safety Recommendation [#6] to be conducted every 3 years by an outside organization.

They weren't there, they went there.
They didn't run from the fire, they ran into the fire.
They didn't lose their lives, they gave them

~Peggy Noon

Practical SMS

I once had a conversation with a very experienced police chief about policy writing. I was surprised to hear him say that one of the first things he did when he was hired for his second chief job was to take the policy manual and cut it's length by two-thirds. He said that the huge policy manual had become ineffective because it wasn't a practical tool for day-to-day business due to its sheer bulk. I think this is a problem we can all relate to. We are expected to know every word of a 2000 page policy manual or a book of flight rules so think it makes *War and Peace* seem like a light read. The information simply cannot be remembered and it is difficult to access what we need, so we tend to give up on it. Our safety policy manuals suffer from the same bulk. When was the last time you sat down and read your own unit's policy manual? When was the last time you even opened it up? The volume of safety manuals is often increased by good intentions. We want to cover as many bases as possible to make sure we have a complete program. How can we find balance?



A policy manual should cover the 'what' points: What are the weather limitations, crew rest times, required personal protective gear, etc. Often I see safety policy covering safety theory 'why' and 'how' issues. Here is where we can cut some bulk. The safety policy does not need to explain what risk management is, theories on safety and the such. These issues can be covered in training, appendixes and reference materials. These changes will help make the safety policy section of your operations manual much easier to use, increasing the likelihood of unit members understanding the contents and referencing it when they have questions.

Safety Officer Mutual Aid

The next ALEA safety online meeting will be on December 12th. Please send me an email if you are not on the mailing list and would like to attend.
safety@alea.org

Dec. 12th, 2014
3:00pm EST (1900UTC)

Concern for man himself and his fate must form the chief interest for all technical endeavors. Never forget this in the midst of your diagrams and equations

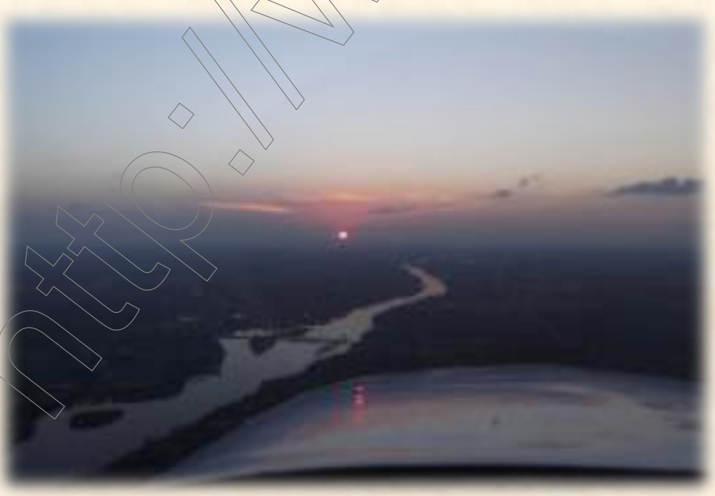
~ Albert Einst

Training Safely

I recently received an email about training. That member agreed to let me share it here:

I had something happen a short time back that I wanted to advise you of so maybe you could get it out to the membership. I had completed a normal flight and shut the helo down without issue. Since the engine is still hot I do not rotate the throttle after shutting down. I did my post-flight and was done.

A few days later I came back and began my pre-flight in the cockpit. I usually "clear" the throttle meaning I rotate the throttle full open, back to idle, release the throttle to cut off. I generally do this three times. This time the throttle was in the shut off position and would not open.



Long story shortened, I could not identify a reason for the throttle to be frozen. Eventually we found a problem in the throttle cable that required its replacement.

Here is the purpose of the email. If this had been a maintenance or training flight where the throttle was reduced to idle (for a rotor rpm check for instance) I would not have been able to restore power. Of course this would have led to a real auto rotation to the ground.

The takeaway is this: Any time you are closing the throttle in flight for whatever reason realize that it may not open again and if it doesn't you won't know until it happens. ALWAYS HAVE A SUITABLE SPOT TO PERFORM THAT AUTOROTATION TO.   Let someone know where you are and what you are doing and when to expect you back. Have a handheld radio and a cell phone.

I have done auto-rotation checks for years and never had a problem. I have never had a frozen throttle in 30 years of flying. It was an unrecognized hazard. The risk can be mitigated with training and a good place to auto rotate to.

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: Bell 407
Injuries: 1 Fatal, 2 Serious
NTSB Identification: WPR12GA106

http://www.ntsb.gov/aviationquery/brief.aspx?ev_id=20120216X03340&key=1

The helicopter was dispatched on a search and rescue (SAR) mission in response to a snowmobile accident in remote, mountainous terrain. The helicopter was on lease to the local sheriff's office, and was being flown by the chief pilot of the company that owned it. Two SAR personnel were passengers. After an initial but fruitless search to locate the snowmobile victim, the helicopter located members of the snowmobile party. After a landing and brief discussion with the snowmobilers, they agreed to lead the helicopter to the accident site on their snowmobiles. The helicopter lifted off to follow the snowmobilers, flying about 100 to 200 feet above the trees. Because the helicopter was faster than the snowmobiles, the pilot stopped several times in a hover to allow the snowmobiles to catch up. During one hover, the pilot experienced a slight left yaw, which he believed he corrected. The helicopter then began to spin rapidly and descended into the trees. The sheriff's office dispatchers used a commercial flight following system to track the helicopter, but system difficulties prevented them from detecting the accident via that system. The injured pilot climbed a nearby hill, and notified the dispatchers of the accident via radio. The recovered wreckage was examined, and no evidence of any preimpact deficiencies or failures that would have prevented normal operation and continued flight was discovered.

Single-main-rotor helicopters are susceptible to a phenomenon known as "loss of tail rotor effectiveness" (LTE), which can occur at low airspeeds, and is a function of relative wind direction. The loss of control occurred in a hover, but the relative wind direction could not be determined. LTE is more likely at high density altitude and/or gross weight. The accident occurred at a density altitude of about 9,000 feet, and at a weight about 800 pounds below the maximum certificated operating weight. In the accident helicopter, LTE would result in a nose-right spin direction.

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to maintain yaw control while hovering at high density altitude, which resulted in a loss of tail rotor effectiveness.

Aircraft: Piper L-21
Injuries: 2 Fatal
NTSB Identification: MIA95GA178
http://www.ntsb.gov/aviationquery/brief.aspx?ev_id=20001207X04022&key=1

A Piper L-21 operated by a Sheriff's Office while on a public-use law enforcement flight. The airplane was destroyed and the pilot and aerial observer received fatal injuries. The flight had originated about 20 minutes earlier.

The airplane was flying low over trees attempting to spot a suspect escaping on foot. Witnesses on the ground observed the airplane bank rapidly to the right, pitch down and strike trees. The airplane then hit a tree and the ground near the suspect. Some of the witnesses stated they heard the engine noise decrease just prior to impact. Examination of the airplane and the engine revealed no evidence of pre-accident failure nor malfunction.

The NTSB determines the probable cause(s) of this accident to be: The pilot's failure to maintain airspeed while his attention was diverted.

Aircraft: Bell 407
Injuries: 2 Minor
NTSB Identification: ERA12TA251
http://www.ntsb.gov/aviationquery/brief.aspx?ev_id=20120324X31438&key=1

Bell 407 helicopter experienced a hard landing following a simulated engine failure induced while maneuvering. The commercial pilots sustained minor injuries. Visual meteorological conditions prevailed, and no flight plan was filed for the public use aerial surveillance flight.

Witnesses reported the helicopter was flying south along a main state road, at an estimated altitude of 800 feet above ground level (agl). It made a left turn heading east and continued the turn heading north just before it was seen losing altitude. The helicopter landed hard in a wooded area, and the nose section made contact with a masonry wall that separated a residential neighborhood from a construction site. The helicopter's main rotor and tail rotor blades, the skids, and the fuselage sustained substantial damage.

Both pilots provided written statements and their accounts of the flight were consistent throughout. The purpose of the flight was for the unit instructor pilot in the left seat to evaluate the pilot in the right seat for an upgrade to pilot-in-command duties on future aerial surveillance missions.

The instructor stated that the pilot showed a tendency to release the collective control in order to actuate switches and adjust radios, so the instructor elected to induce a simulated engine failure to evaluate the pilot's response to the emergency. While in cruise flight at 750 feet agl, the instructor gradually reduced the throttle, the helicopter yawed, the pilot responded verbally, but he did not respond to the loss of engine power with any control inputs.

The instructor stated he was surprised by the pilot's lack of response, announced that he was taking the flight controls, and increased the throttle back to the flight position. The instructor stated that due to the helicopter's low altitude, low airspeed, low rotor rpm, and high sink rate that 100 percent engine power was not be able to restore "flight" in order to reach the open forced landing area he had selected. The helicopter landed in trees along the border of a residential neighborhood and prior to the open construction area he attempted to reach.

According to the pilot, the helicopter was in cruise flight at 700 feet and 100 knots when an audio alarm sounded, he "reached" for the collective control, and scanned the instruments for caution lights or gauges out of limits, but found none. He looked and noticed the throttle was at the idle position, asked the instructor if he had reduced the throttle, and then initiated an increase in throttle back to the flight position.

At that time, the instructor announced that he was taking the controls and the pilot released and then confirmed the transfer of the flight controls. The helicopter's altitude had decayed to 500 feet, and the instructor was "laboring" with the flight controls as the helicopter transitioned through a "series of unusual attitudes and a variety of G loads."

According to the instructor pilot, there were no mechanical malfunctions or failures with the helicopter.

ADDITIONAL INFORMATION

Examination of the Training Program revealed that the conditions and standards for the performance of a simulated engine failure were not outlined as a separate task within the manual. There was no discussion with regards to entry altitudes, call-outs, recovery altitudes and procedures, or maneuver termination protocols.