AIRBORNE LAW ENFORCEMENT ASSOCIATION

The Safety Wire

December 2014

THANK YOU to all who have given me gifts this year.

Thank you to:

- The aircrew in Canada who told me about 'fishing in the dark' IR settings for the camera,
- The pilot during the safety roundtable in Seattle who shared the correlation between trying to do three things at once (when flying an aircraft) and spatial disorientation,
- The safety manager in the Netherlands who gave me a stack of SMS documents and forms they used when setting up their program,
- The TFO in Texas who passed-on his favorite trick for establishing a search area using lighting sources,
- The safety officer who brought up the concept 'Safety Blind Spot' during the annual ALEA Expo in Phoenix last July,
- The many members who have shared their stories for this newsletter,
- The real life examples from two agencies of how flight risk assessments made a critical difference in saving lives on public safety aviation missions this year,
- The TFO trainer who gave me valuable feedback on my TFO training program,
- And to ALEA for continuing to provide me the opportunity to serve its members.

In my personal life, this holiday season is for spending time with family, conversation, laughter, food, more food, and gift giving. In my professional life, as an active member of this association, I enjoy all of those things every time I get together with you all. A complete list of 'gifts' I have received from ALEA members is much longer than the examples given above. I hope you all have taken the time to benefit from the exchange of information, tips, ideas, lessons learned, data, techniques and training materials…, which is the core of what this association is about. There is a pile of these presents there for you, it is up to you to take and use them.

So, to my professional family, the one thing that I most want to say to you this month is, “thank you,” and I hope you enjoy this holiday season.

Flyers have a sense of adventures yet to come, instead of dimly recalling adventures of long ago as the only moments in which they truly lived.

~ Richard Bach

Practical SMS

Much like the holidays, SMS should be about people. Your SMS should be an avenue for agency members to come together and make the operation better. The more involvement you can get from the unit members, the better it will run. An SMS cannot be focused on the safety manager’s thoughts, concerns and ideas of how to fix things. Sometimes it is difficult to get members to participate, but the effort is worth it.

Don’t wait for a formal report. You hear the concerns and complaints. Work with that person and make a report yourself (or walk them through the process) so you can get that person’s concerns into the SMS. Only then can improvements be made, and other unit members can see how well the SMS works.

If you are reading this, and you are not the safety manager, give them a holiday gift…submit a hazard report. Each person in this business has something safety related on their mind, so do something about it. The safety manager is likely the only person you know who will be happy to hear about the things you think are problems.

From the Field

I recently received the following photo and summary of the Minnesota DNR Enforcement Aviation safety stand down. I think this meeting is a great example of the advice given above to keep an SMS focused on people. Excellent work!

"Attached is a picture of the MN DNR Enforcement Aviation safety stand down meeting in December, 2014. This is a two day meet that has been held for the last ten years or so at the DNR Enforcement Training Center. Subjects that are included in the first day of the meeting are: Inadvertent VFR to IMC flight, SMS training, winter flight safety, training opportunities and budget/project updates. Day two was held at one of the DNR hangars where pilots went through a mock pre-flight of both fixed-wing aircraft and helicopters. After day one, the pilots eat supper and usually watch old aviation movies as teambuilding during the evening."

Safety Officer Mutual Aid

The next ALEA safety online meeting will be on January 20th. Please send me an email if you are not on the mailing list and would like to attend. safety@alea.org

January 20th, 2015
2:00pm EST (1900UTC)

[We] will never be destroyed from the outside.

If we falter and lose our freedoms,

it will be because we destroyed ourselves

~ Abraham Linc

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: Pilatus PC-12
Injuries: 6 Fatal
NTSB Identification: ERA12FA385

The instrument-rated pilot activated the autopilot shortly after takeoff and proceeded in a west-northwesterly direction while climbing to the assigned altitude of flight level (FL) 260. Light-to-moderate icing conditions were forecast for the area; the forecast conditions were well within the airplane's capability, and the pilot of a nearby airplane reported only encountering light rime ice at the top of FL260. About 26 minutes 35 seconds after takeoff, the airplane's central advisory and warning system (CAWS) recorded activation of Pusher Ice Mode at FL247, consistent with pilot's activation of the propeller de-ice and inertial separator; the de-ice boots were not selected. Less than a minute after the activation of Pusher Ice Mode, an air traffic controller cleared the flight to deviate right of course due to adverse weather well ahead of the airplane. The airplane then turned right while on autopilot in instrument meteorological conditions (IMC) at FL251; about 4 seconds into the turn, with the airplane indicating about 109 knots indicated airspeed and in a right bank of less than 25 degrees, the autopilot disconnected for undetermined reasons. The pilot allowed the bank angle to increase, and about 13 seconds after the autopilot disconnected, and with the airplane descending in a right bank of about 50 degrees, the pilot began a test of the autopilot system, which subsequently passed. Recovered data and subsequent analysis indicate that the pilot allowed the bank angle to increase to a minimum of 75 degrees while descending; the maximum airspeed reached 338 knots. During the right descending turn, while about 15,511 feet and 338 knots (about 175 knots above maximum operating maneuvering speed), the pilot likely applied either abrupt or full aft elevator control input, resulting in overstress fracture of both wings in a positive direction. The separated section of right wing impacted and breached the fuselage, causing one passenger to be ejected from the airplane. Following the in-flight break-up, the airplane descended uncontrolled into an open field.

Examination of the separated structural components revealed no evidence of pre-existing cracks on any of the fracture surfaces. Postaccident examination of the primary flight controls and engine revealed no evidence of preimpact failure or malfunction. The flaps were found in the retracted position, and the landing gear was extended; it is likely that the pilot extended the landing gear during the descent. The CAWS log entries indicated no airframe or engine systems warnings or cautions before the airplane departed from controlled flight. A radar performance study indicated that the airplane did not enter an aerodynamic stall, and according to the CAWS log entries, there was no record that the stick pusher activated before the departure from controlled flight.

Before purchasing the airplane about 5 weeks earlier, the pilot had not logged any time

as pilot-in-command in a turbopropeller-equipped airplane and had not logged any actual instrument flight time in the previous 7 years 4 months. Additionally, his last logged simulated instrument before he purchased the airplane occurred 4 years 7 months earlier. Subsequent to the airplane purchase, he attended ground and simulator-based training that included extra flight sessions in the accident airplane, likely due to his inexperience. The training culminated with the pilot receiving his instrument proficiency check, flight review, and high-altitude endorsements; after the training, he subsequently logged about 14 hours as pilot-in-command of the accident airplane. Although the pilot likely met the minimum qualification standards to act as pilot-in-command by federal aviation regulations, his lack of experience in the make and model airplane was evidenced by the fact that he did not maintain control of the airplane after the autopilot disengaged. The airplane was operating in instrument conditions, but there was only light rime ice reported and no convective activity nearby; the pilot should have been able to control the airplane after the autopilot disengaged in such conditions. Further, his lack of experience was evident in his test of the autopilot system immediately following the airplane's departure from controlled flight rather than rolling the airplane to a wings-level position, regaining altitude; only after establishing coordinated flight should he have attempted to test the autopilot system.

The National Transportation Safety Board determines the probable cause(s) of this accident as follows: The failure of the pilot to maintain control of the airplane while climbing to cruise altitude in instrument meteorological conditions (IMC) following disconnect of the autopilot. Contributing to the accident was the pilot's lack of experience in high-performance, turbo-propeller airplanes and in IMC.

Here are two news stories related to this accident:
http://www.flyingmag.com/technique/accidents/pilatus-pc-12-crash-ntsb-points-surprising-cause?cmpid=enews120214&spPodID=030&spMailingID=21786283&spUserID=NTA1MjIyNTU5NQS2&spJobID=460232040&spReportId=NDYwMjMyMDQwS0

http://www.pddnet.com/news/2014/12/cockpit-automation-can-cause-pilots-lose-critical-thinking-skills

Aircraft: Bell 427
Injuries: 5 minor
NTSB Identification: ERA12LA379

The pilot reported that, about 25 minutes into the flight, he maneuvered the helicopter to avoid large birds. The pilot felt something impact the upper right side of the helicopter near the main rotor mast area. The helicopter began shaking violently and became difficult to control. He immediately decided to abort the flight. During the landing attempt, helicopter control was lost; the helicopter entered a left spin, impacted the ground, and rolled over. The main and tail rotor systems and the fuselage sustained substantial damage. The immediate decision to abort the flight after impact with the birds most likely aided the pilot in executing an emergency landing.

Evidence of bird remains were present on components of the rotor head, two of the four pitch change rods, and the tail rotor. Both pitch change rods with bird remains were separated from one of their attach points. The bird remains were removed and sent to the Smithsonian Institute for identification. According to the report, male and female Black Vulture DNA was found on the pitch control rods, pitch control linkages, and the tail rotor.

Examination of the rotor head parts found two pitch change links failed in tensile overstress; one of these exhibited an inward bending that could have been caused by a bird strike. The damage to the other pitch change link was most likely caused by the dynamic rollover as the rotor blades impacted the ground or other helicopter components. The accident sequence most likely initiated when the birds struck the pitch change rods.

The National Transportation Safety Board determines the probable cause(s) of this accident as follows: The inflight collision with birds, resulting in damage to the rotor head assembly and a subsequent forced landing and rollover.

Aircraft: Cessna 185
Injuries: None
NASA ACN# 867923

Synopsis
A C185 pilot noticed open flame under the dash, turned off electrical and fuel, and landed on a county road.

Narrative:
After announcing on CTAF that I was 9 miles south of airport and inbound, I smelled something burning. I started to shut some non-important items off like lights, when I started to see smoke come up from under the dash. As I turned off the master switch, I could see a small flame from near my left foot. I turned the fuel switch to the off position and searched for a landing area. The flame went out almost immediately. I noticed a paved county road below me and I landed into the small amount of wind that was present that day. A Mechanic came to the scene and found one power wire had fallen from the wiring harness somehow and landed on a small fuel pressure hose (metal) and created an arc. Some wires burned and a pitot-static tube was damaged, since the airspeed indicator went dead sometime after I took off from the road and returned to the airport. Due to training, I knew to immediately shut off fuel for a fire, shut down electricity and find a place to land. This plane has a 28 volt electric system, so no circuits tripped.

Aircraft: Bell OH-58
Injuries: None
NASA ACN# 849000

Synopsis
A helicopter pilot reported striking a telephone line with the tail rotor during departure.

Narrative:
Before landing, we did 2 orbits over the field to determine suitability for landing. The landing zone was large, about 175 yards long and 80 yards wide. Based on more than 13 years of military, commercial, and EMS flying experience, this landing zone was very typical for off-airport helicopter operations. There were wires on the North, South and East sides of the field. There were trees on the West side. The topography of the zone was quite level and considering the large size of the zone; I determined it to be a very suitable landing area. The winds were reported to be South South-East at 8 KTS. I

planned my approach to the South into the wind. We flew a steep approach. My Tactical Flight Officer (TFO) called me clear over the wires on the left side of the aircraft and I ensured we were clear of obstacles on the right. We landed uneventfully on the South end of the landing zone. Prior to first departure out of the LZ, I turned the helicopter around and hover-taxied back to the North end of the zone to facilitate a departure into the wind (to the South). When done with the fly over, we landed uneventfully back in the landing zone the same way as described above on the first landing. I again turned the aircraft and hover-taxied to the North end of the field to depart in a Southerly direction. After reaching the North end, I was turning the aircraft around with a left pedal turn. I saw a large portable advertising sign in the field and told my TFO, "I have the sign in sight. I'm bringing the tail to the right. We're clear of the sign." As I completed the pedal turn, I felt a "thud" briefly. There were no unusual cockpit indications, vibrations, or other unusual handling characteristics. My first thought was that a stick or branch had been blown upward possibly underneath or maybe even into the tail rotor. My TFO then noticed a wire dangling from a pole by the road near the sign mentioned above. I landed and shut down the helicopter. On examination, it was apparent that a telephone wire had made contact with the rotor system. This small telephone wire was strung diagonally across the Northeast corner of the landing zone. Neither of us ever saw that wire running diagonally across the corner of the zone. This wire was no factor to the helicopter's landing flight path. Due to the viewing angle of this wire while taxiing Northbound with many more prominent wires and trees in the background, spotting this wire was extremely difficult. I believe a contributing factor may have been that I had just moments before, taxied the aircraft in the same manner and did not hit anything. Also, the sign was much more prominent and may have drawn my attention more to it than to the wire above. Also, this wire was smaller than many of the others and the only wire strung diagonally across the zone rather than around the perimeter. Lastly, the background made this wire nearly impossible to see. It is hard to pick out even after the event and knowing it is there. We were lucky in that there was no substantial damage and no one was hurt or injured. It may heighten the awareness of others to read this. Expect the unexpected. We are trained to look not only for the wires but for the poles. These two poles, with a wire running diagonally, were an unusual place to have a wire but I for one will look closer and longer for wires in unusual, unexpected locations or where they may be masked from view by either the background or the sun.

Aircraft: Airbus EC135
Injuries: 1 minor
NASA ACN# 980381

Synopsis
EC135 pilot struck in the face by birds after raising visor to lower NVG. Birds penetrated through windscreen while helicopter was on approach to land at a hospital.

Narrative: 1
Descending to a hospital, two birds came through the windshield and hit the pilot in the face. I had just lifted my visor to lower my goggles and look for wires around the hospital. I got hit without my facemask being down. Airspeed was about 90 KTS. I don't believe I passed out but there was certainly a time that I was not controlling the helicopter due to being stunned and clearing my eyes and throat. There is that time while switching to goggles where my eyes are not protected and also when wearing

goggles. These goggles could easily get pushed into your eye sockets. I don't know of a way to protect the pilots face during this phase of flight. All lights were on; landing light, searchlight and even the DeVore lights.