AIRBORNE LAW ENFORCEMENT ASSOCIATION

The Safety Wire

November 2017

Required experience is a subject we discuss quite often. What should the minimum hour limit be for a new pilot? How many years should someone work patrol before being allowed to apply for a TFO position? How much experience is reasonable before starting hoist, firefighting or fast rope training with a new pilot? The reason we discuss these questions so much is because there are no clear answers.

The law enforcement and aviation industries put a significant amount of weight in the number of years 'on the job' and flight hours. When I started my career in law enforcement, I was told that there were officers with 20 years of experience and others with 1 year of experience 20 times. I've heard the same statement about flight hours. When evaluating a professional, we want to determine how much experience they have. Total time engaged in a profession is an indicator of experience, however, it is an imperfect one.

When faced with a critical situation, we have the option of using three basic processes to reach a favorable conclusion. All three are gained through specific experiences. Training, such as emergency procedures and shoot-don't shoot events, gives us the ability to apply choice and rule based solutions. It is important that this

training be as close as possible to the actual scenario so the specific queues and responses are engrained into the learner. This is one reason why make and model time is so important when determining when to sign a pilot off as PIC at your operation.

We all know that we cannot train for every possible scenario that may arise in our industry. When critical incidents arise that we have not specifically trained for, we are left with only a creative decision making process. The ability to quickly develop an effective creative response comes through experience. This is why total time in a profession is still a valid aspect to consider when setting operator requirements. However, it is not just experience ‘in the seat’. It would take more than a lifetime to gain all of the experience in this manner alone. Attending classes, reading articles and trading stories at industry events are also ways we can gather more of the information we will need to handle the unscripted nature of our jobs.

It is important to look at how long someone has been performing the skills required of an assignment such a pilot, TFO or mechanic. We must also look at how much training that person has in the critical tasks related to their specific role, and equipment, at our operation. Finally, what has the person done away from ‘the seat’? Additional training, participation in industry education and overall involvement are important factors to consider when determining how a new employee will perform when given an unscripted challenge.

Flight hours and years on the job are important, but they are not everything we need to stay safe. I read a lot of accident reports and I cannot remember ever reading one that said the cause of the accident was that the operator had too much experience.

Maintenance Spotlight

Please take the time to complete the maintenance staffing survey and check out our new maintenance safety brochure! I'd like to thank Mike Broderick and the participants of the monthly maintenance online meetings for putting these together.

MAINTENANCE BROCHURE

MAINTENANCE STAFFING SURVEY

"The benefits of scientific inquiry, or any form of exploration, cannot always be known when the first steps are taken."

~ John Glenn

Practical Safety Management

The end of the year is upon us. How did the safety program perform over the last 11 months? There are sample annual reports in the ALEA SMS Installation Guide, which can be found in the safety section of the ALEA website. Here is what you should consider including in your report:

- Executive Summary on the first page, covering the most important points.
- The status of the safety objectives that were set at the beginning of the year.

- Overall reduction in risk in the hazards you tackled this year (i.e. change in risk score).
- Performance of risk controls. What is working and what needs to be changed?
- A summary of the results of any major accident or incidents.
- Any change in Safety Culture (i.e. number of reports being submitted by employees).
- The number of safety meetings and training sessions held in the year.
- Any new safety program elements put in place (i.e. Emergency Response Plan).
- Safety related training that was completed.

Resources

NASA Safety Newsletter – Weather
https://asrs.arc.nasa.gov/publications/callback/cb_454.html

HAI Rotor Safety Tips – Make and Model Time
https://www.youtube.com/watch?v=-Bap4ekmSaY

"More than anything else the sensation is one of perfect peace mingled with an excitement that strains every nerve to the utmost, if you can conceive of such a combination."

~ Wilbur Wright

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: **AS 350 B3**
Injuries: **2 Uninjured**
NTSB#: **LAX04TA052**

https://www.ntsb.gov/_layouts/NTSB.Aviation/brief2.aspx?ev_id=20031219X02069&ntsbno=LAX04TA052&akey=1

An AS 350 B3 made a hard forced landing at the Yuma MCAS International Airport, Yuma, Arizona. The commercial pilot and a crewmember (observer) sustained no injuries. The helicopter was owned and operated by the United States Border Patrol (USPB), Air Operations, El Paso, Texas, and it was substantially damaged during the public-use flight. Visual meteorological conditions prevailed during the nighttime patrol flight that was performed under the provisions of 14 CFR Part 91. A company flight plan was filed. The flight was originating at the time of the accident. The operator indicated that a few seconds after taking off, a mechanical malfunction occurred about 20 feet above ground level. The pilot made a forced landing during which the helicopter touched down hard. During the subsequent examination of the helicopter, the flex coupling between the engine drive shaft and the main gear box drive was found separated. The three bolts in the flex coupling assembly were found sheared. A further examination of the bolts revealed that they were devoid of three required cotter pins.

The American Eurocopter Corporation's U.S. manager of accident investigation reported to the National Transportation Safety Board investigator that company records indicated that the accident helicopter was delivered to the USPB with the cotter pins installed. A subsequent examination of the broken components in the wreckage revealed evidence that at some point in time cotter pins had been installed in the bolts. However, no cotter pins were found in the wreckage. American Eurocopters accident investigation manager opined that the component examination performed by Eurocopter France's materials laboratory indicated that both sides of the flats on the recovered nuts revealed evidence of marks consistent with mechanical damage (see attached report). Maintenance records indicated that, following the helicopter's sale to the USBP, USBP mechanics performed a module 1 change. In addition, other maintenance was performed such as installation of an air conditioner. This maintenance may have involved manipulation of the drive. Maintenance or handling of the drive, if performed in accordance with Eurocopter's maintenance manual, would have required removing the three cotter pins and unscrewing (untorquing) the self locking flex coupling bolts. Regarding the effect of having the flex coupling disconnect, according to American Eurocopter's manager of accident investigation, when the bolts sheared, their disconnection from the drive shaft to the coupling flange link resulted in a total loss of drive to the rotors. The manager further reported that when properly installed, the subject self locking nuts are torqued, and then they are cotter pinned. Even if the cotter pins are not installed, when properly torqued the nuts should not unscrew.

The NTSB database revealed that two similar events have occurred: WPR10FA112, occurred in January 2010 and LAX04TA052 on November 24, 2003.

Aircraft: **Piper PA-18-150**
Injuries: **1 Minor**
NTSB#: **FTW01TA194**
https://ntsb.gov/about/organization/AS/_layouts/ntsb.aviation/brief.aspx?ev_id=20010912X01917&key=1

On August 23, 2001, approximately 1800 central daylight time, a Piper PA-18-150 single-engine airplane, was destroyed upon impact with terrain following a loss of control while maneuvering. The instrument rated commercial pilot, sole occupant of the airplane, received minor injuries. Visual meteorological conditions prevailed.

The 1,668-hour pilot reported that he was performing routine patrol duties over rolling terrain at an estimated altitude of about 500 feet above ground level. The pilot added that he "made a right turn and crossed a ridge when the bottom fell out." The pilot further stated that he applied full power and leveled the wings in order to recover; however, his actions were not sufficient to arrest the rate of descent and the airplane impacted the next ridge line.

The FAA inspector, who traveled to the accident site, confirmed that the airplane was destroyed by impact forces. Examination of the 1981 model airplane, which at the time of the accident had accumulated a total of 8,889 hours, did not reveal any anomalies that could have prevented normal flight operations. Company records confirmed that the pilot had accumulated a total of 1,668 hours, of which 192 hours were in the same make and model of airplane.

At the time of the accident, density altitude was calculated by the NTSB investigator-in-charge as 7,428 feet.

The National Transportation Safety Board determines the probable cause(s) of this accident as follows:

- The pilot's failure to maintain adequate airspeed which resulted in an inadvertent stall. A factor contributing to the accident was the high density altitude.