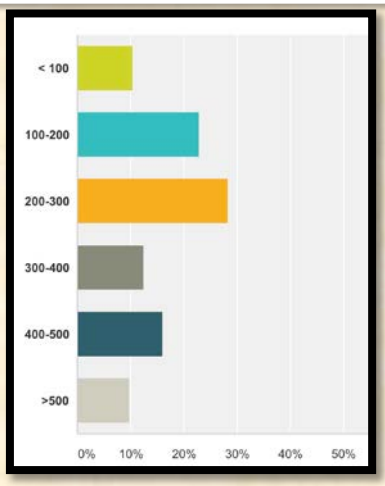
AIRBORNE LAW ENFORCEMENT ASSOCIATION

The Safety Wire

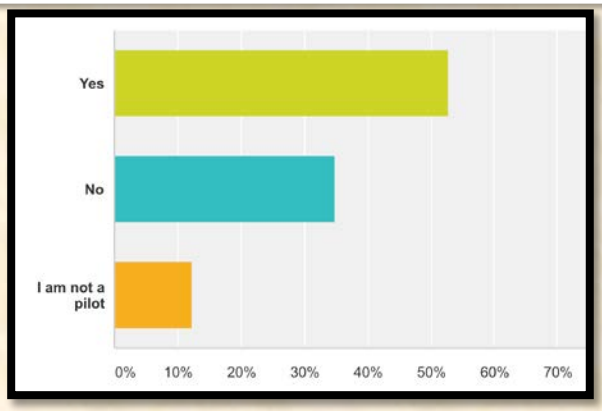
February 2016

Survey Results are in. I would like to thank those who took the time to fill out the ALEA Safety Survey. The information provided will be extremely useful in making this safety program as effective as possible. This month, I would like to share some of the results with you all.

Average annual flight hours per pilot:



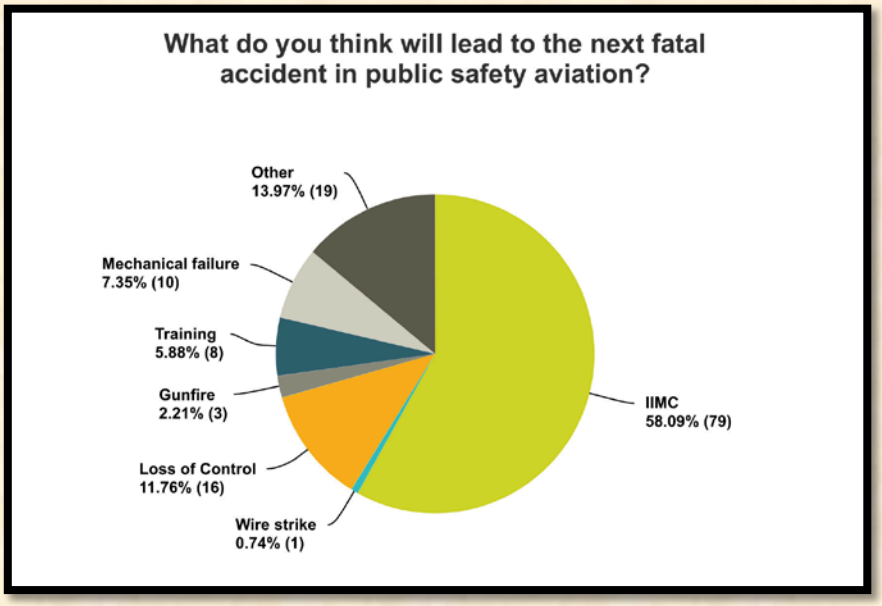
Do you have an instrument rating for the category of aircraft you are flying at your agency?



Note: Percentages listed indicate the number of those that responded YES unless otherwise noted.

- Have a Safety Management System (SMS) 63%
- SMS includes a Just Culture policy: 46% Yes
  29% Not sure
- Use a Flight Risk Assessment Tool (FRAT): 58%
- Have a Safety Officer: 85%
- Safety Officer received training: 57%

- Received refresher training on safety program in previous year: 43%
- Have an Emergency Response Plan (ERP): 78%
- Electronic tracking equipment onboard aircraft: 46%
- Have tool control system in place: 45%
- Maintenance personnel involved in the SMS: 48%
- Have a formal TFO training program: 66%
- Reported a safety concern/hazard/incident in 2015: 47%
- Received a response to that safety report: 38%
- At least one bird strike in the last three years: 54%
- Inadvertently entered into instrument meteorological conditions (IIMC) –
  In the last three years: 10%
  In the last ten years: 30%
- Hit by gunfire while flying a public safety mission in the last ten years: 4%



"Mix ignorance with arrogance at low altitude and the results are almost guaranteed to be spectacular."

~ Bruce Landsberg
AOPA

Maintenance & UAS Professionals

ALEA will be hosting online meetings for those involved in, or interested in, aviation maintenance and/or UAS operations.

The online workgroups will be similar to the safety officer group that has been meeting online for over a year.

It will be a chance for ALEA members to get together and discuss issues they are working with, lessons learned, news, and share ideas. The safety officer group has proven to be very useful for those involved. We are looking forward to extending this concept to our maintenance and UAS professionals. Please send me an email if you are interested in participating in any of these groups.

Safety@alea.org

"Flexible is much too rigid;
in aviation you have to be fluid."

~ Verne Jobst
Experimental Aircraft Association

Free Online Training

Embry-Riddle Aeronautical University will be hosting another free online course. The next Massive Open Online Course (MOOC), which starts on March 21st, 2016, will be:

The Human Factor in Aviation

Go here for more information:
https://www.canvas.net/browse/erau/courses/human-factor-in-aviation

Practical SMS

The recent safety survey asked a number of questions about the components of a Safety Management System. Here are the results:

	Yes	No	Not sure
Means of reporting safety concerns (hazards)	84.29%	13.57%	2.14%
System for estimating risk in identified hazards	67.63%	28.78%	3.60%
System for developing risk controls (mitigations)	63.77%	31.16%	5.07%
A Safety Committee	50.00%	48.53%	1.47%
A Flight Risk Assessment Tool (FRAT)	58.27%	38.13%	3.60%
A Safety Bulletin Board	66.67%	31.16%	2.17%
A Safety Library	50.00%	42.03%	7.97%
Feedback on safety concerns that you report	67.63%	27.34%	5.04%
Reports that show status/performance of safety program	33.33%	57.97%	8.70%

Of those who responded to the survey, most had a means of reporting a safety concern. About one-third of respondents indicated that there were major elements of their safety program missing. Half said that there was no safety committee or library. The lowest scoring element, at 33%, was safety reporting.

The bad news is that if you are missing any of these components, your safety program is not a fully functional Safety Management System. More importantly, you are not as safe as you could be.

The good news is that all of these elements can be implemented, and ALEA has the resources available to help you do that. First, check out the SMS Installation guide (see below). Second, contact me…I am happy to help any ALEA member install, improve or upgrade their SMS. Even better, come see me at the next ALEA regional safety seminar. In addition to the various safety related presentations, we hold a three-hour safety officer workshop. Finally, sign up for the SMS or Aviation Safety Officer course at ALEA EXPO this July in Savannah, Georgia. Click here for more information:

http://alea.org/alea-expo-2016-savannah-ga

Free SMS Webinar

The next SMS webinar will be on March 16th at 1:00 PM EST (1700 UTC). Check www.alea.org for more information coming soon.

SMS Installation

If you are working on setting up a Safety Management System at your agency, please look through the new SMS Installation Guide, which is available through the link below. It has references to the original SMS Toolkit, PSAAC Accreditation Standards and a series of sample documents and policies to get you started. If you have questions, comments or feedback, please let me know.

http://aleaprod.ungerboeck.com/sms-installation-guide

(Note: *You must be logged in to the website first*)

"Nothing will ever equal that moment of exhilaration which filled my whole being when I felt myself flying away from the earth. It was not mere pleasure; it was perfect bliss"

~ Professor Jacques Alexandre Cesare Charles

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.*

Sad news from the Tulare County Sheriff's Office in California this month. Our hearts go out to the friends and family of the two men lost in the accident. James Chavez and Scott Ballantyne were fellow ALEA members.

http://www.turnto23.com/news/local-news/ntsb-faa-at-crash-site-where-tulare-county-sheriffs-plane-crashed

Aircraft: Bell 206L-1
Injuries: 1 minor
NTSB#: LAX00GA114

http://www.ntsb.gov/about/employment/_layouts/ntsb.aviation/brief.aspx?ev_id=20001212X21792&key=1&queryId=1a9cad79-460a-4e6f-bbcb-b061b98a9b12&pgno=4&pgsize=200

A Bell 206L-1 was substantially damaged when the helicopter landed hard and rolled over on the rooftop heliport and came to rest on its left side. The hard landing and rollover were preceded by a main rotor system imbalance during the transition from hover to forward flight at Los Angeles, California. The certificated airline transport pilot, the sole occupant, received minor injuries. The helicopter was operated as a public-use aircraft. The heliport is elevated one additional story above the top parking level, and is about 150 feet square with the sides oriented facing northeast, southeast, southwest, and northwest. The pilot was a reserve pilot for the department who was regularly employed as an airline pilot. About 1 week prior to the accident he completed a sheriff's department training program of about 10 flight hours duration.

After deplaning two passengers, he was departing, alone in the helicopter, when the accident occurred. He reported there were no discrepancies with the helicopter during the photo mission flight. After he lifted to a 3-foot hover height and was transitioning to forward flight he heard "a loud snap or popping sound," and experienced the "main rotor system was oscillating and out of balance." He later recalled he could see that the two main rotor blades were no longer tracking in the same plane. He was able to return the helicopter to the helipad and landed on both skids, however, the helicopter subsequently rolled onto its left side.

The tip of one main rotor blade and part of one pitch change link were not located after the accident. The mating end of the pitch change link exhibited bending along its length and crippling at the separation point consistent with overload failure.

The National Transportation Safety Board determines the probable cause(s) of this accident as follows: The probable loss of the main rotor tip weight on the red blade for undetermined reasons resulting in main rotor vibration and oscillation. Sideward movement during the ensuing emergency landing resulted in a dynamic rollover.

Aircraft: Cessna 185F
Injuries: 1 fatal
NTSB#: ERA11GA207

http://www.ntsb.gov/_layouts/ntsb.aviation/brief.aspx?ev_id=20110325X14309&key=1&queryId=0746ced3-7920-4799-9593-6058d60e8614&pgno=1&pgsize=200

On March 24, 2011, about 1715 EST, a Cessna A185F operated by the Maine Department of Inland Fisheries and Wildlife, was substantially damaged when it impacted frozen Clear Lake about 30 nautical miles southwest of Ashland, Maine. The certificated commercial pilot/Maine Game Warden was fatally injured. According to the operator, the pilot had taken the airplane he customarily flew to Greenville, Maine (3B1), for routine maintenance. He then picked up the ski-equipped accident airplane and returned to his patrol area. Later that day, the pilot responded to nearby Eagle Lake to assist another game warden in freeing his trapped snowmobile.

The pilot departed about 1 hour later, and the game warden reported that almost immediately after the airplane departed, visibility was reduced to less than 1/2-mile due to snow. A former pilot/Maine Game Warden was working on some encampments he owned located about 2 to 3 miles west of Clear Lake on the day of the accident. He stated that the weather throughout the day consisted of intermittent "blue skies" and snow showers. About 1715, he heard an airplane operating on Clear Lake. The engine sounds he heard about that time gave him the impression that an airplane was departing. The sound then ceased about that time and he assumed that the airplane had departed the area.

According to preliminary information provided by the operator, the pilot was reported missing about 2000, when he did not return to his home as expected. A subsequent search ensued, and the wreckage was located about 0850 the following day. The wreckage was located on a frozen, snow-covered Clear Lake and all major components of the airplane were accounted for at the scene. The initial impact point was identified by an area of broken ice, with debris from the airplane scattered along a wreckage path about 350 feet in length. The main cabin exhibited extensive impact-related damage and deformation. The propeller was separated from the engine, and all three blades exhibiting damage. The wreckage was retained for further post-recovery examination.

The pilot provided updated personal information to the operator on March 13, 2011. In that report the pilot stated he obtained his commercial pilot certificate and instrument rating in 2004, and reported 3,548 total hours of pilot-in-command flight experience. He also reported 3,146 total hours of flight experience in the Cessna 185, 376 hours of which were accumulated in the 12 months preceding the date of the application. The pilot also reported 10, 70, and 2 hours of instrument flight experience in the Beechcraft BE-19, Cessna 172, and Cessna 185, respectively. The pilot's most recent flight review and instrument proficiency check (IPC) were completed on April 1, 2010.

Review of personal flight logs provided by the operator showed entries for flights completed through September 22, 2010. A log entry dated April 1, 2010 noted a 1.2 hour flight in a Cessna 185, 0.7 hours of which were logged as simulated instrument flight experience. The remark for the log entry noted, "Flight Review Completed, IPC Check Completed." Additionally, 3 takeoffs and landings were logged under their respective columns, and no instrument approaches were logged under its respective column.

Handheld GPS Receiver Data

The Garmin GPSMAP 496 battery-powered portable GPS receiver recovered from the wreckage was examined in the NTSB Vehicle Recorders Laboratory.

The final flight track recorded by the GPS began at 1613, as the airplane departed from Chamberlain Lake, turned to the northeast, and climbed to about 1,500 feet GPS altitude. About 1619, the airplane's track turned about 20 degrees left of its previously established track, toward Clear Lake. A survey of the terrain elevation directly below the airplane's track for this portion of the flight showed that it varied from around 980 feet to nearly 1,350 feet, while the airplane's GPS altitude remained around 1,500 feet.

At 1622:13, the airplane began slowing from the previously established approximate groundspeed of 120 knots, to about 110 knots 30 seconds later. At 1622:30, the airplane's established track turned about 40 degrees left, when it was about 1/2-mile south of Clear Lake. At 1622:49, the airplane crossed the southern bank of Clear Lake, at

a GPS altitude of 1,480 feet. The final three GPS positions were recorded between 1622:55 and 1622:59. During that time the GPS altitude decreased from 1,481 feet, to 1,423 feet, and finally to 1,297 feet, with a calculated descent rate between the three points of 1,740 feet per minute and 3,780 feet per minute. During that time period the track also turned from generally northwest to east, at an average turn rate of 11 degrees per second.

The National Transportation Safety Board determines the probable cause(s) of this accident to be: An inadvertent encounter with localized instrument meteorological conditions, which resulted in spatial disorientation and a loss of control

Aircraft: **Bell OH-58C**
Injuries: **2 minor injuries**
NTSB#: **LAX00GA114**

http://www.ntsb.gov/about/employment/_layouts/ntsb.aviation/brief2.aspx?ev_id=20001212X20663&ntsbno=LAX00GA114&akey=1

The helicopter hit a trailer and the ground during an autorotation precipitated by pilot perceived malfunctions in the electrical and hydraulic systems during cruise. A city police department operated the helicopter for law enforcement patrol missions. After exiting an orbit around a ground situation, the crew saw the low rotor rpm warning light flash on, then back off, then on again. Normal rotor and engine rpm was shown on the tach. They were only 3 miles from their airport base and the pilot decided to return there. The low rotor warning light began to flash on and off, with an increasing frequency until it was steady. Suddenly all the cockpit warning and caution lights illuminated, both on the eyebrow panel and center pedestal panel. The hydraulic system also turned off and the pilot had to resort to manual force on the flight controls. The pilot checked the engine and rotor gages and noted that the rotor needle was pointing off scale high; however, neither crewmember heard any change in the engine and rotor sounds. The observer reported that he believed they lost their radios and exterior lights at this time and also said that the engine and rotor tach needles were married together at 100 percent until the autorotation.

The pilot was on an extended final approach to the runway and helicopter control was becoming difficult. Suddenly, an airplane appeared on base leg to the runway and the pilot had to maneuver to avoid a collision. With the control difficulties and uncertainty about what was happening to the helicopter, the pilot decided to autorotate to a clear area in a schoolyard. The night sun spotlight failed during the autorotation and the pilot cleared a building but could not avoid a parked trailer that he had not seen before. The helicopter collided with the trailer, then the ground, and rolled over. The hydraulic system solenoid valve is electrically operated and it takes electrical power to close the valve and turn off the hydraulics; the valve fails to the open position when electrical power is lost. Post accident testing of the hydraulic system found normal operation. The complete electrical system wiring was traced from the generator and battery to the ground points on each circuit, with no discrepancies found. The main rotor tach drive and the cockpit gauge were functionally tested. No like events were found during searches of the historical records for the US Army, Bell Helicopters, or in the FAA SDR database. Bell Helicopter opined that an almost complete electrical system voltage spike/surge simultaneously in a large number of circuits would be required to replicate the event as described by the crew.

The National Transportation Safety Board determines the probable cause(s) of this accident as follows: An undetermined electrical system voltage surge.


There are no new ways to crash an aircraft…
…but there are new ways to keep them from crashing.
Safe hunting,
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