AIRBORNE LAW ENFORCEMENT ASSOCIATION

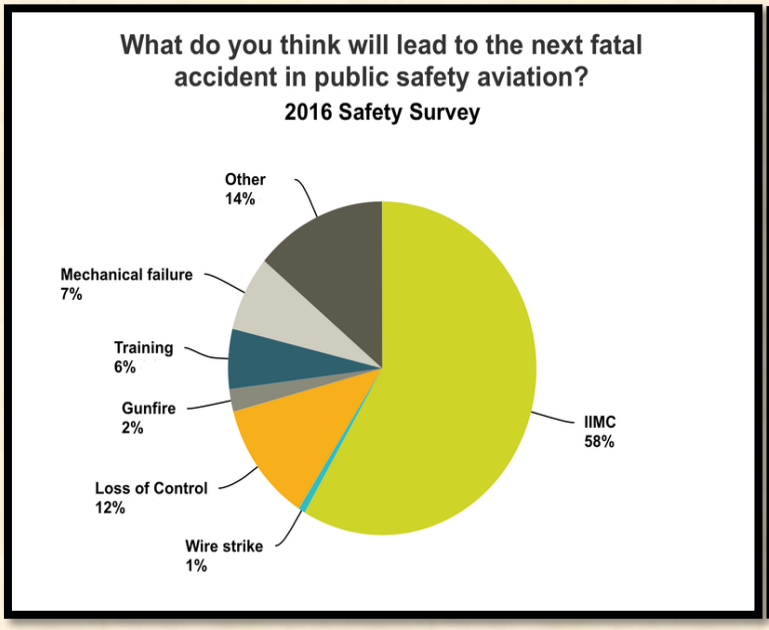
The Safety Wire

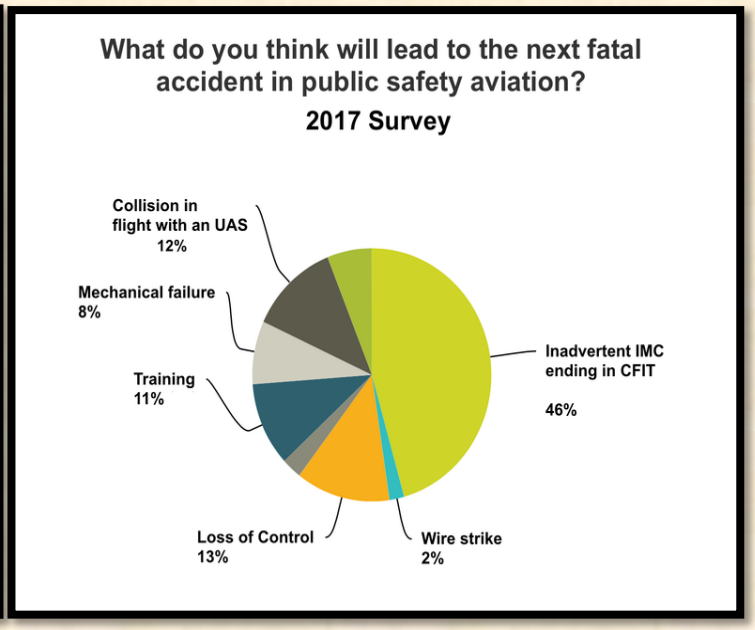
March 2017

How are we doing? It is beneficial to take a look at the industry as a whole from time to time so we can all check the health of our own operations. What improvements have been made? Where are we now? What's next? To answer these questions, ALEA has conducted an annual safety survey the last two years. Here are some of the results from the latest survey. Some spaces in the 2016 column are blank because the question was not asked until this year. Green highlighted results show a positive trend in the results.

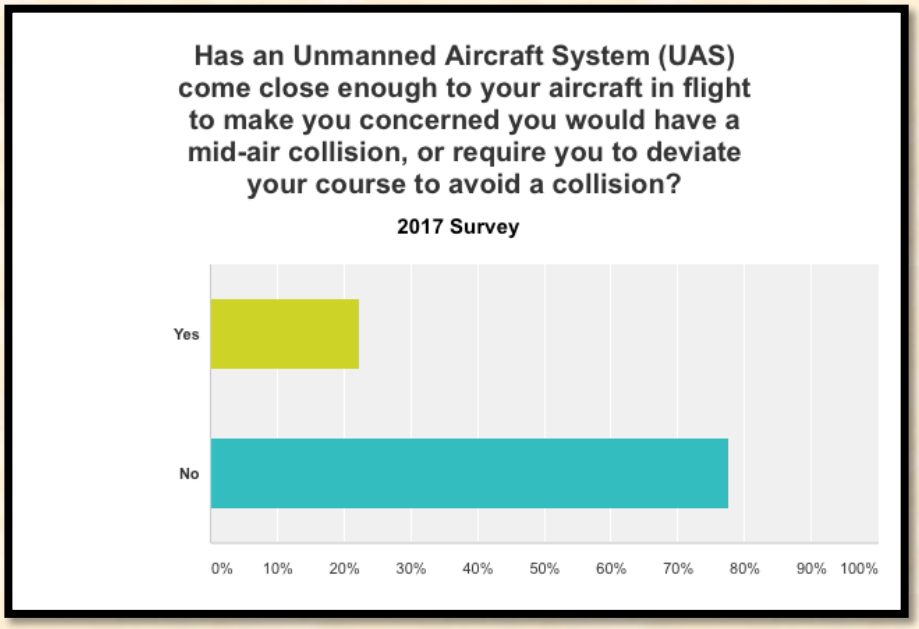
	2016	2017
• Have a Safety Management System (SMS)	63%	67%
• Use a Flight Risk Assessment Tool (FRAT):	58%	68%
• Have a Safety Officer:	85%	75%
• Safety Officer received training:	57%	47%
• Received annual refresher training on SMS:	43%	52%
• Have an Emergency Response Plan (ERP):	78%	79%

- Have tool control system in place: 45% 47%
- Maintenance personnel involved in the SMS: 48% 54%

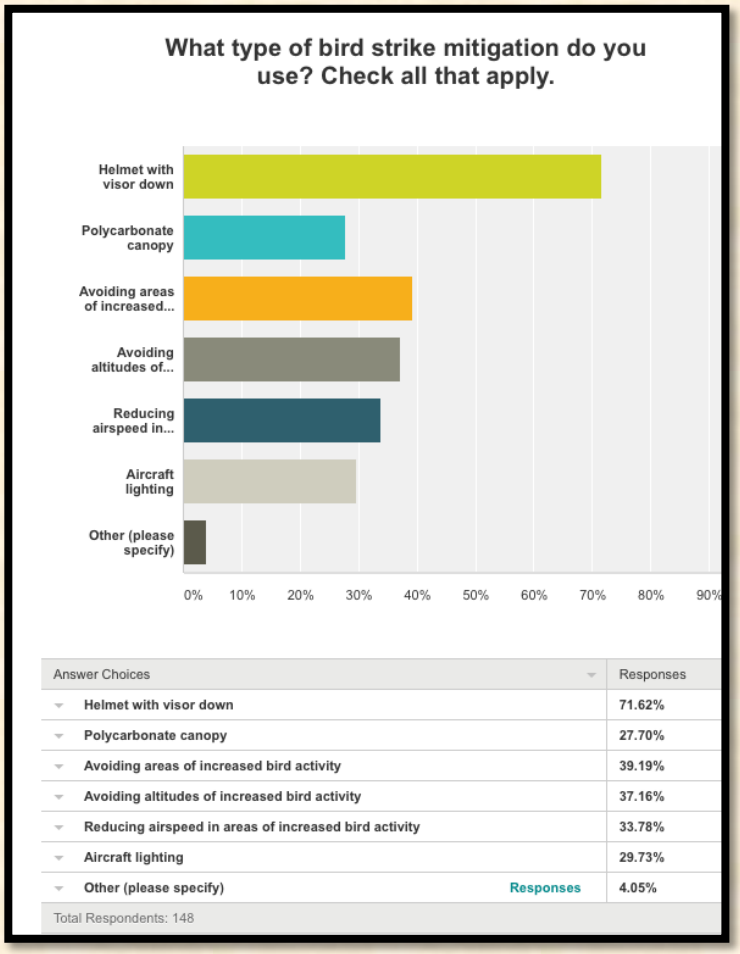




- Use TFO or TFO trained 2nd pilot 85%
- Have a formal TFO training program: 66% 73%
- Reported safety concern/hazard/incident this year: 47% 47%
- Received a response to that safety report: 38% 42%
- SMS includes a Just Culture policy: 46% Yes 51% Yes
  29% Not sure 27% Not sure
- Have instrument rating: 51% 59%



- At least one bird strike in the last three years: 54% 55%
- 1 Bird Strike per year or more: 12%
- Debris from bird strike entered cockpit: 15%



Answer Choices	Responses
Helmet with visor down	71.62%
Polycarbonate canopy	27.70%
Avoiding areas of increased bird activity	39.19%
Avoiding altitudes of increased bird activity	37.16%
Reducing airspeed in areas of increased bird activity	33.78%
Aircraft lighting	29.73%
Other (please specify) Responses	4.05%

Total Respondents: 148

- Wire strike within last 3 years: 2%
- Wire strike within last 10 years: 6%
- Conduct IIMC training for pilots: 74% 76%
- Conduct IIMC training for other aircrew: 52%
- Inadvertently entered into instrument meteorological conditions (IIMC) –
  - In the last three years: 10% 13%
  - In the last ten years: 30% 30%
- Hit by gunfire while flying a public safety mission in the last ten years: 4% 5%

"Man's mind and spirit grow with the space in which they are allowed to operate."

~ Kraft Ehricke
Rocket pioneer

Practical SMS

In the safety survey this year we asked again what SMS components were in place. The responses did not change much. There was a significant increase in the use of FRATs. If you are looking to improve your safety program, the ALEA SMS Installation Guide addresses each of these items.

2016 Survey

	Yes	No
Means of reporting safety concerns (hazards)	84.40% 119	13.48% 19
System for estimating risk in identified hazards	67.86% 95	28.57% 40
System for developing risk controls (mitigations)	64.03% 89	30.94% 43
A Safety Committee	50.36% 69	48.18% 66
A Flight Risk Assessment Tool (FRAT)	57.86% 81	38.57% 54
A Safety Bulletin Board	66.91% 93	30.94% 43
A Safety Library	50.00% 69	42.03% 58
Feedback on safety concerns that you report	67.86% 95	27.14% 38
Reports that show status/performance of safety program	33.09% 46	58.27% 81

2017 Survey

	Yes	No
Means of reporting safety concerns (hazards)	83.23% 129	12.26% 19
System for estimating risk in identified hazards	70.32% 109	24.52% 38
System for developing risk controls (mitigations)	69.03% 107	27.10% 42
Safety Committee	49.68% 77	49.68% 77
Flight Risk Assessment Tool (FRAT)	65.81% 102	32.90% 51
Safety Bulletin Board	64.52% 100	33.55% 52
Safety Library	54.84% 85	38.06% 59
Feedback on safety concerns that you report	72.90% 113	21.29% 33
Reports that show status/performance of safety program	34.42% 53	57.79% 89

Resources

US Helicopter Safety Team – *30 Seconds for Safety*
https://www.youtube.com/watch?v=SRwlMFyNDco

NTSB Safety Alert Video – Loss of Tail Rotor Effectiveness
https://www.youtube.com/watch?v=9l27-i-CWyI&feature=youtu.be

Police Aviation News
http://policeaviationnews.com/Acrobat/251March2017.pdf

NASA Callback
https://asrs.arc.nasa.gov/publications/callback/cb_446.html

ALEA Online Meetings

The schedule for upcoming ALEA online meetings is below. Meetings are conducted through an online conference call you can join using your computer or phone. They are open to any ALEA member. Contract maintenance providers to ALEA members are welcome on the maintenance meeting.

UAS:
Wednesday, April 12, 2017
1:00 PM - 2:00 PM EDT (1700 UTC)

Safety Officers:
Wednesday, April 19, 2017
1:00 PM - 2:00 PM EDT (1700 UTC)

Maintenance:
Tuesday, April 25, 2017
1:00 PM - 2:00 PM EDT (1700 UTC)

"Aeronautics was neither an industry nor a science. It was a miracle."

~ Igor Sikorsky

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.*

News story covering medical helicopter close encounter with a UAS:
http://www.nbcdfw.com/news/local/CareFlite-Helicopter-Comes-Very-Close-to-Drone-414922323.html

SAR helicopter crash in Japan – 9 fatalities:
http://www.beloitdailynews.com/article/20170306/AP/303069982

SAR helicopter crash in Ireland – 4 fatalities:
http://www.telegraph.co.uk/news/2017/03/14/irish-coast-guard-helicopter-goes-missing-county-mayo-four-crew/

Police helicopter crash in Mexico – 4 fatalities:
https://www.youtube.com/watch?v=euRNdKaricU

https://www.usnews.com/news/best-states/california/articles/2017-03-14/4-killed-in-mexico-helicopter-crash-during-hiker-recovery

Aircraft: **Cessna T206H**
Injuries: **1 fatal**
NTSB#: **CHI04GA130**
https://app.ntsb.gov/pdfgenerator/ReportGeneratorFile.ashx?EventID=20040608X00756&AKey=1&RType=Final&IType=GA

The 1999 Cessna T206H was operated as a public aircraft when the pilot reported a loss of engine power during cruise flight about 1,150 feet above ground level. Spectrum analysis of air traffic control transmissions indicate that a propeller speed of 1,669 revolutions per minute was present following the loss of engine power. Witnesses reported that they heard several attempted engine restarts while the airplane was being positioned for a forced landing on a 500-foot long fallow agricultural field north of a house. A witness reported that black smoke would emanate from the airplane during each start attempt. The airplane's wing and horizontal stabilizer contacted trees near the house resulting in a steep descent into the garage adjacent to the house. A post crash fire/explosion then ensued. The coroner's report stated that the pilot died of thermal injuries due to airplane fire.

In 1994, the National Transportation Safety Board issued recommendation A-94-081 relating to emergency procedures for turbocharger failures to be included in airplane pilot operating handbooks (POHs) and airplane flight manuals. The Cessna T206H POH does not list emergency procedures for turbocharger failures. The Cessna T206H POH states, under emergency procedures, to advance the mixture control to the rich position if restart does not occur. The manufacturer's airplane pilot safety supplement, which was reissued in 1998 to incorporate turbocharger failures, states, "If a turbocharger failure results in a loss of power, it may be further complicated by an overly rich mixture." A review of the emergency exit procedures in Cessna 206 models shows that with the flaps lowered, the forward portion of the cargo door can only be opened approximately 4 inches to allow the aft portion of the cargo door to be opened during

emergency egress. The distance between the cabin roof and seat back was measured to be approximately 11 inches.

On June 30, 2004, the FAA issued an ACS applicable to turbocharged Cessna airplanes: T182, T-R182, T206, T207, P210, T210, T303, T310, 320, T337, 340, 401, 402, 411, 414, 421. The ACS states that engine power loss or engine stoppage can be exacerbated due to the fuel mixture becoming excessively rich following the failure of the turbocharger system. The ACS states that the POH may not contain adequate instructions to cope with in-flight turbocharger system failure. Additionally, the aircraft maintenance instructions may not adequately address the turbocharger system performance in order to detect an impending failure.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The seized turbocharger, the altitude/clearance not maintained/obtained during approach to a forced landing on an agricultural field, and the unsuitable landing area encountered by the pilot. Contributing factors were the inadequate emergency procedures by the manufacturer, the trees, and the residential area.

Aircraft: **Cessna 210E**
Injuries: **1 fatal**
NTSB#: **CEN14GA135**
https://app.ntsb.gov/pdfgenerator/ReportGeneratorFile.ashx?EventID=20140211X41001&AKey=1&RType=Final&IType=GA

The commercial pilot departed on a fire detection flight for a state fire commission using a predetermined flight route. The pilot was receiving flight-following services from the dispatch center and was reporting his flight progress to a dispatcher. The pilot reported entering the eastern boundary of the forest district and then turning north toward the next checkpoint. Five minutes later, the pilot reported that he was turning back due to low cloud ceilings. About 14 minutes later, the airplane impacted trees on a ridgeline, which had an elevation of 1,473 ft. Ground and aerial searches were made for the missing airplane, but weather conditions over the next 11 days hampered the search effort.


Photo 9 – View of the engine and propeller at main wreckage site

A postaccident examination of the airframe and engine revealed no evidence of mechanical malfunctions or failures that would have precluded normal operation. Examination of the propeller revealed damage consistent with a medium-to-high power setting at impact. Although the airplane was equipped and certificated for flight in instrument meteorological conditions, the instruments required for instrument flight were not maintained to those standards; therefore, the airplane was limited to flight in visual flight rules conditions only. Surface weather reports indicated low cloud ceilings of 700 to 1,100 ft above ground

level along most of the route of flight. Wave clouds and associated turbulence also existed in the area about the time of the accident. A surface weather reporting station located 21 nautical miles west of the accident site and within the planned route of flight was reporting clouds overcast at 500 ft at the time of the accident. The fire commission's aviation department did not use flight risk assessments. No record was found indicating that the pilot received a preflight weather briefing; however, it could not be determined if the pilot obtained weather information using other sources.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's improper decision to fly into an area with reported marginal meteorological conditions in an airplane not maintained for instrument flight and his subsequent failure to maintain clearance from trees and terrain.