

AIRBORNE PUBLIC SAFETY ASSOCIATION



The

Safety

Wire

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WHERE TO START? There are plenty of hazards in public safety aviation to be concerned with. If we try to address them all at once, we will quickly run out of time and resources. Efforts may be so spread out that no single issue will receive the energy needed to create effective change. Or we may find



ourselves randomly picking issues to attack, which may not be the hazards impacting our safety the most. Safety Management Systems are designed to collect as much information as possible. The next phase, however, is to process that information to determine which hazards carry the most risk so we can focus our time and efforts on the most significant problems. So...where do you start?

First, your operation should take steps to collect hazard information specific to your operation. Second, look for resources that will help you determine what the leading hazards are in your industry. Hopefully, you have not had a bunch of

accidents recently, so looking at the problems others are having can be helpful in proactive risk management work.

For rotorcraft operations, very few sources are as helpful as the International Helicopter Safety Team. The chapter in the United States (USHST) has identified three major focus areas that all public safety helicopter operations should consider. These focus areas are based on extensive work the group has done analyzing accidents. The top three are: Loss of Control (LOC), Strikes (wires, objects, etc) and Visibility related accidents.

LOC - Loss of Control	DR - Dynamic Rollover	2
	LTE - Loss of T/R Authority	2
	OL - Exceeding Operating Limits	8
	PM - Performance Management	10
	UNK - Unknown	13
LOC - Loss of Control Total		35
Strike	HTOL - Takeoff or Landing	5
	LALT/M - Low Altitude Mission	14
	OBJ - Object Strike	10
Strike Total		29
VIS - Visibility	FG - Fog/Glare	6
	IIMC - Inadvertent IMC	18
	N - Night/Darkness	5
VIS - Visibility Total		29

Source: US Helicopter Safety Team

For fixed-wing operations, public safety operations vary somewhat from general aviation. The APSA aircraft accident database shows that the top concerns also include LOC and Visibility related accidents. The fixed-wing LOC accidents mainly involve stalls and spins during mission-related operations. You may practice stalls during training, but how well are your training scenarios tied into your real-world operations? It may surprise some to hear that visibility related accidents are a leading cause of public safety airplane accidents because most airplanes we fly are instrument certified. It is important to remember that planned IFR and inadvertent IMC are two fundamentally different scenarios.



Identifying the main causes for accidents with UAS operators is a little more complex. There is not a central database of accidents maintained by the government and we do not yet have decades of data to work with like we do with the manned aircraft. Fortunately, most UAS accidents do not create the media attention that manned aircraft accidents do, so they can be challenging to

track. In 2017, NASA released a paper on hazard identification and analysis for sUAS operations. They collected information on 396 UAS accidents and incidents and pulled 100 that were specifically sUAS, meaning less than 55lbs. The four mishaps classified as accidents included serious injuries or fatalities.

The top category is labeled 'Flight Controls' and indicates that the sUAS suffered a mechanical failure of some kind. The second group, "Flight Crew," includes loss of control due to improper handling of the aircraft, loss of situational awareness, or simply incorrect technique.

Table 1. Small UAS Mishaps Summarized by Primary Cause

Primary Cause	Incidents	Accidents	Fatal Accidents	Total
Flight Controls	15			15
Flight Crew	11	2	1	14
Propulsion	9			9
Lost Link	8			8
Software	6			6
Sensors	2			2
Remote Control	2			2
Wind Shear	2			2
Other	10			10
Undetermined	31		1	32
Total	96	2	2	100

Training is key for whatever the category of aircraft you are flying. It is key to making sure the asset is used effectively and the objective is completed without damage or injury so it can be used again for the next call. With the limitless number of hazards we face, and the very limited resources available to us, it is important that we maintain a systematic approach to training to ensure we are making the biggest and most efficient impact possible. Consider the topics listed above when developing your annual training plan.

"The safety of the operator is more important than any other point.
Greater prudence is needed rather than greater skill."

~Wilbur Wright

ONLINE MEETINGS

Beginning in March, we are changing the frequency of our Online Meetings. We believe this will boost participation and productivity. Safety Officer Meetings and UAS Meetings will be conducted in odd-numbered months (March, May, July, September, November); Maintenance Meetings will be conducted in even-numbered months (April, June, August, October, December). SAR Meetings, new for 2019, will be conducted quarterly beginning in April, followed by August and November.

The schedule for upcoming APSA online meetings is as follows.
If you would like to join, send an email to: Safety@PublicSafetyAviation.org



Safety Officers:

Thursday, March 21, 2019
1:00 PM - 2:00 PM EDT (1700 UTC)

UAS:

Wednesday, March 27, 2019
1:00 PM - 2:00 PM EDT (1700 UTC)

Maintenance:

Wednesday, April 17, 2019
1:00 PM - 2:00 PM EDT (1700 UTC)

RESOURCES

NASA Study on sUAS Hazard Identification and Analysis:

https://utm.arc.nasa.gov/docs/2017-Belcastro_Aviation_2017-3269_ATIO.pdf

NASA Callback: Runway Incursions:

https://asrs.arc.nasa.gov/publications/callback/cb_469.html

FAA Webinar ‘Drone Safety’ and legal matters:

<https://www.eventbrite.com/e/drone-safety-its-the-law-tickets-57127622256>

Mountain Flying Fact Sheet:

https://www.faa.gov/news/safety_briefing/2017/media/SE_Topic_17_04.pdf

Human Factors Newsletter:

<https://www.decodinghumanfactors.com>

Never interrupt someone doing what you said couldn't be done.

~Amelia Earhart

EMERGENCY PROCEDURE OF THE MONTH

I'd like to bring back the EP of the Month. In each of these situations, discuss what you would do, as a crew, to respond to the following emergency. If the EP does not apply to your specific aircraft, discuss something similar.

Partial Power Failure – Unable (or barely able) to maintain altitude

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: Airbus AS 350B2

Injuries: 4 Fatal

NTSB#: ERA16FA140

https://www.ntsb.gov/layers/ntsb.aviation/brief2.aspx?ev_id=20160326X80544&ntsbno=ERA16FA140&akey=1

On March 26, 2016 about 0018 central daylight time, a Eurocopter AS 350 B2 impacted trees and terrain near Enterprise, Alabama. The airline transport pilot, flight nurse, flight paramedic, and patient being transported, were fatally injured. Night instrument meteorological conditions (IMC) prevailed for the flight, which operated on a company visual flight rules (VFR) flight plan.

According to communications records, the call from the deputies was received by Haynes Life Flight Dispatch at 23:19:10. The pilot of "Life Flight 2," which was based at the

Troy Regional Medical Center, Troy Alabama was notified at 23:20:38. The helicopter departed Troy at 23:26:57 and arrived at the landing zone (LZ) in a farm field adjacent to County Road 606 at 23:53:15.

According to witnesses, after touchdown, the pilot remained in the helicopter with the engine running. Once the patient had been loaded, the flight nurse and flight paramedic boarded, and at 00:16:45 the helicopter lifted off and turned north towards AL11.

Fog, mist, and reduced visibility existed at the LZ at the time of the helicopter's arrival. Witnesses also observed that these same conditions were still present when the helicopter lifted off approximately 23 minutes later. The helicopter climbed vertically into cloud layer that was approximately 150 feet above ground level and disappeared when it turned left in a northbound direction toward AL11. Review of the recorded weather at Enterprise Municipal Airport (EDN), Enterprise, Alabama, located 4 nautical miles east of the accident site, at 0015, included winds from 120 degrees at 4 knots, 3 statute miles visibility in drizzle, overcast clouds at 300 feet, temperature 17 degrees C, dew point 17 degrees C, and an altimeter setting of 29.97 inches of mercury.

According to Haynes Life Flight, the on-board Skyconnect satellite tracking system provided position updates for the helicopter every 3 minutes. Additionally, the pilot was supposed to contact them every 15 minutes via radio. After the helicopter departed on the accident flight, Haynes Life Flight did not receive the pilot's normal 15-minute check-in, and when they checked the satellite tracking system, it showed that the helicopter was still at the LZ, though they knew it had lifted off. Haynes Life Flight then began to notify authorities that the helicopter was missing. After an extensive search by authorities, at approximately 0700, and around the area of County Road 615 and 616, search parties began to smell what they believed was jet fuel. The helicopter wreckage was eventually located in a swampy, heavily wooded area.

Review of preliminary radar data provided by the United States Army from the approach control radar site at Cairns Army Airfield (OZR), Fort Rucker, Alabama, located 13 nautical miles east of the accident site, indicated that after takeoff the helicopter had entered a left turn, and climbed to 1,000 feet above mean sea level. At 00:18:04, the rate of turn began to increase. At 00:18:18 the rate of turn continued to increase and the helicopter reached a peak altitude of 1,100 feet. It remained at this altitude until approximately 00:18:28 when the helicopter began a rapid descent. Five seconds later, that helicopter had descended through 600 feet. Moments later, radar contact was lost when the helicopter descended below the floor of the radar coverage area.

The accident helicopter was manufactured in 1998. It was equipped with a three-blade main rotor system, a two-blade tail rotor system, and was powered by a Turbomeca Arriel 1D1 engine rated at 641 shaft horsepower. The helicopter was equipped with skid-type landing gear, Night vision goggles (NVG) and NVG-compatible lighting, a helicopter terrain avoidance warning system, and an autopilot. The helicopter was not certificated for flight in IMC conditions.

According to FAA records, the pilot held an airline transport pilot certificate with a rating for helicopter and type ratings for the AB-139 and AW-139. He also held a flight instructor certificate with ratings for helicopter and instrument helicopter. According to the operator, he had been employed by them for approximately 6 months and had 90 hours of flight experience in the accident helicopter make and model since he was hired. His total flight experience was 5,301 hours, 5,265 of which was as pilot in command, 474 hours of which was at night, and 265 of which were in actual instrument meteorological conditions. His flight experience during the 90 days prior to the accident was 47 hours, including 20 hours in the 30 days prior to the accident.

Aircraft: Cessna 206
Injuries: 3 Fatal, 1 Serious
NTSB#: ANC16FA017

https://www.nts.gov/ layouts/ntsb.aviation/brief2.aspx?ev_id=20160409X10944&ntsbno=ANC16FA017&akey=1

An amphibious float-equipped Cessna 206 airplane sustained substantial damage after impacting snow-covered, rising terrain about 17 miles southeast of the Angoon Airport, Angoon, Alaska. Of the four people on board, the commercial pilot and two passengers sustained fatal injuries, and one passenger sustained serious injuries. Visual meteorological conditions (VMC) prevailed at the time of departure.

As part of their company flight following procedures, Sunrise Aviation incorporates Spidertracks, which provides company management personnel with a real-time, moving map display of the airplane's progress. In addition, the accident airplane was equipped with a digital, 406 MHz ELT that instantly transmits a distress signal to search and rescue satellites, thereby alerting rescue personnel within minutes of the location of the crash.

During an interview with the NTSB IIC on April 12, the operator's director of operations stated that while flying another company airplane, he spoke with the accident pilot on a company radio frequency. The accident pilot commented to the director of operations that while en route to Angoon, he was unable to make it through Pybus Bay due to low clouds and reduced visibility, and that he was going to try an alternate route that had a lower terrain elevation. The director of operations added that about 15-20 minutes after speaking with the accident pilot, he landed in Wrangell and noticed the Spidertracks signal was stationary, in an area of mountainous terrain. He then called personnel at the Angoon airport and was told the flight had not arrived, and attempts to contact the accident pilot on his cell phone and aircraft radio were unsuccessful. Shortly thereafter, he received a phone call from the Alaska Rescue Coordination Center notifying him of a broadcasting 406 Mhz emergency locator transmitter (ELT) signal assigned to the accident airplane.

About 1117, the crew of a U.S. Coast Guard HH-60 helicopter located the airplane's wreckage in an area of steep mountainous, snow-covered terrain. However, due to hazardous weather and terrain conditions, the helicopter crew was unable to lower a rescue swimmer to the site, and the crew returned to Sitka to pick up rescue personnel from Sitka Mountain Rescue.

About 1355, the HH-60 helicopter returned to the accident site and landed on an adjacent ridgeline, and members of Sitka Mountain Rescue and the Coast Guard hiked to the accident site. Once on scene, they discovered that three of the airplane's occupants died at the scene, and one had survived the crash. The sole survivor was hoisted aboard the Coast Guard HH-60 helicopter, and then transported to Juneau.

There are no new ways to crash an aircraft...

...but there are new ways to keep them from crashing.

Safe hunting,

Bryan 'Mug' Smith

Safety@PublicSafetyAviation.org

407-222-8644

