



The

Safety

Wire

March 2021

Survey says...

Thank you to everyone who participated in the 2021 APSA Safety Survey. This was the fifth safety survey I've conducted and we are still seeing a positive trend overall. This year was interesting in that 37% of respondents operate UAS, many of them in addition to operating manned aircraft. The number of people reporting that they used a Safety Management System was slightly lower than previous years but remained at 69% for rotorcraft operators and 67% for fixed-wing. It was great to see that 62% of UAS operators also reported using an SMS in their operation. The use of a Flight Risk Assessment Tool (FRAT) was 65% for UAS respondents, and 70% for manned aircraft.



One of the big leaps in both safety and operational effectiveness was that 91% of units said they are using trained Tactical Flight Officers (TFOs). On the UAS side, 88% of operators reported that they used a Visual Observer (VO) during unmanned aircraft missions, with 51% stating a VO was utilized over 90% of the time.

In our constant fight with Inadvertent Instrument Meteorological Conditions (IIMC), we still see that there is a significant risk in our industry as 16% reported an IIMC encounter in the last

three years. However, 76% indicated that they have an instrument rating, 83% do IIMC training for pilots and 71% for other aircrew members.

The number of people reporting being hit by gunfire doubled and was up to 7%. Those reporting a bird strike in the last three years was 43%, 10% of which actually had the bird penetrate the cockpit somehow and expose the crew to debris. Thankfully, there

were zero reports of wire strikes, though 32% reported an encounter with a UAS so close they had to take evasive measures to avoid a mid-air collision. Interestingly, 21% of the people reporting a close call with a UAS were other UAS operators.

There is still quite a bit of data to sift through and I will be passing on more information in future newsletters. Some of the highlights are below. Sure, we would like to see every number closer to 100 for safety or training programs, or zero for incidents. What we are seeing, though, is very positive and well above industry trends outside of public safety. Thank you again for all of your hard work in making our public safety aviation world so professional.



“Instrument flying is when your mind gets a grip on the fact that there is vision beyond sight.”

*~ US Navy Approach magazine
WWII*

Annual Safety Survey

	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2020</u>	<u>2021</u>
• Have a Safety Officer:	85%	75%	90%	81%	79%
• Safety Officer received training:	57%	47%	64%	51%	59%
• Received annual refresher training on SMS:	43%	52%	58%	58%	33%
• Have an Emergency Response Plan (ERP):	78%	79%	85%	83%	75%
• Have tool control system in place:	45%	47%	48%	53%	47%
• Maintenance personnel involved in the SMS:	48%	54%	50%	51%	45%
• Use TFO or TFO trained 2 nd pilot:		85%	78%	79%	91%
• Have a formal TFO training program:	66%	73%	80%	74%	69%
• Reported safety concern/hazard/incident:	47%	47%	59%	47%	47%
• SMS includes a Just Culture policy:					
Yes	46%	51%	54%	52%	53%
Not sure	29%	27%	28%	30%	23%

• Have instrument rating:	51%	59%	79%	75%	76%
• Conduct IIMC training for pilots:	74%	76%	82%	86%	83%
• Conduct IIMC training for other aircrew:	52%	61%	67%		71%
• Inadvertently entered into (IIMC) –					
In the last three years:	10%	13%	12%	15%	16%
In the last ten years:	30%	30%	10%	14%	17%
• At least one bird strike in the last three years:	54%	55%	52%	50%	43%
• Debris from bird strike entered cockpit:	15%	12%	16%		10%
• Wire strike within last 3 years:		2%	2%	2%	0%
• Wire strike within last 10 years:		6%	5%	2.5%	0%
• Hit by gunfire - last ten years:	4%	5%	2%	3%	7%
• UAS mid-air close call:	22%	33%	34%		32%

EMERGENCY PROCEDURE OF THE MONTH

In each monthly emergency situation, discuss what you would do, as a crew, to respond to the following emergency. If the EP does not apply to your specific aircraft, think of something similar.

Jammed aircraft controls.

ONLINE MEETINGS

APSA conducts regularly scheduled online meetings for safety officers, maintenance technicians, SAR personnel, and UAS operators via a conference call you can join using your computer, mobile device or phone. Online meetings are open to any APSA

member. Contract maintenance providers to APSA members are welcome to participate in the maintenance meeting as well. If you would like to join, send an email to: safety@publicsafetyaviation.org

The schedule for upcoming APSA online meetings is as follows.



Natural Resource Officers:

Wednesday, Mar 31, 2021

1:00 PM – 2:00 PM EDT (1700 UTC)

Maintenance:

Wednesday, April 7, 2021

1:00 PM - 2:00 PM EDT (1700 UTC)

SAR:

Wednesday, April 28, 2021

1:00 PM – 2:00 PM EDT (1700 UTC)

UAS:

Wednesday, May 12, 2021

1:00 PM - 2:00 PM EDT (1700 UTC)

Safety Officers:

Friday, May 28, 2021

1:00 PM – 2:00 PM EDT (1700 UTC)

"I have never seen an airplane yet that can read the type ratings on your pilot's license."

~ Chuck Boedecker

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: Bell 206L-3
Injuries: 3 Fatal
NTSB#: NYC08FA071

<https://app.nts.gov/pdfgenerator/ReportGeneratorFile.ashx?EventID=20080109X00032&AKey=1&RTtype=HTML&IType=FA>

The helicopter was maintaining a searchlight on a lost hunter as ground personnel attempted to execute a rescue. During the maneuver, the pilot was flying in an out-of-ground-effect hover, or very slow flight below effective translational lift, about 100 to 150 feet above the trees. The maneuver was contrary to the operations manual, which required a minimum altitude of 500 feet above ground level for night searches. It was also contrary to the operations manual as the maneuver fell inside the height-velocity diagram curve, published in the make and model rotorcraft flight manual (RFM). In addition, a company flight data analyst in the communications center was attempting to persuade the pilot to terminate the search due to safety concerns as the helicopter was flying low and slow. The helicopter began to spin right and descend into trees, consistent with loss of tail rotor effectiveness (LTE). During the spin, witnesses reported an engine noise increase and "fireball" coming from the exhaust, most likely as a result of an over-speed/over-temperature condition as the pilot increased engine power attempting to recover from the spin. Review of the RFM did not reveal any information on LTE; however, the operator maintained an LTE training program, which the pilot had completed. Additionally, the Federal Aviation Administration had previously published Advisory Circular (AC) 90-95, which stated that LTE is not related to a maintenance malfunction and may occur in varying degrees in all single main rotor helicopters at airspeeds less than 30 knots. The AC further stated that flight operations at low altitude and low airspeed are particularly susceptible to LTE, with greater susceptibility in right turns. Examination of the wreckage did not reveal any pre-impact mechanical malfunctions.

Aircraft: Piper PA-28
Injuries: 2 Fatal
NTSB#: LAX04GA051

<https://app.nts.gov/pdfgenerator/ReportGeneratorFile.ashx?EventID=20031201X01970&AKey=1&RTtype=HTML&IType=GA>

While flying on a moonless night in mountainous terrain to an airport in a mountain valley, the aircraft encountered mountain wave conditions and downdrafts in the 500 to 1,000 foot-per-minute range, which resulted in a collision with mountainous terrain. The two-man aircrew participated in a Civil Air Patrol (CAP) search and rescue training exercise (SAREX) being held over the weekend, and had flown from the mountain valley airport along the accident route of flight that morning. The CAP group was informed that high winds were expected the following day and flying operations might be cancelled. The aircrew decided to return to their home base in a small mountain town (elev: 6,748 feet) instead of staying at the SAREX base for the night. The aircrew had commented to the CAP Incident Commander that they had experienced some moderate

turbulence on the flight out of the mountains severe enough to have their heads hit the cockpit canopy and toss a cell phone out of the passenger's shirt pocket. They departed the SAREX base at night and there was no moon illumination at the time they approached the 8,000-9,000 foot mountain ridgeline. The airplane approached the mountains at 10,300 feet, and shortly thereafter entered a mountain wave, and experienced turbulence and downdrafts. Radar data showed that the airplane steadily descended through 8,000 feet during the last 4 minutes of the flight. The airplane impacted the side of the mountain at the 6,970 foot elevation with low energy, in a very steep left turn; left wing down. Analysis of the weather conditions established that mountain wave conditions existed at 9,000 feet with a wavelength of 2.79 miles, amplitude of 717 feet, and a maximum vertical velocity of 1,185 fpm. This wave had a potential for moderate to severe turbulence. There is no record that the pilot requested or received a weather briefing. At the cruise altitude of the airplane, the performance charts show that it had a maximum climb capability of about 400 feet per minute.

*There are no new ways to crash an aircraft...
...but there are new ways to keep them from crashing.*

Bryan 'MaGu' Smith

Safety@PublicSafetyAviation.org
407-222-8644

