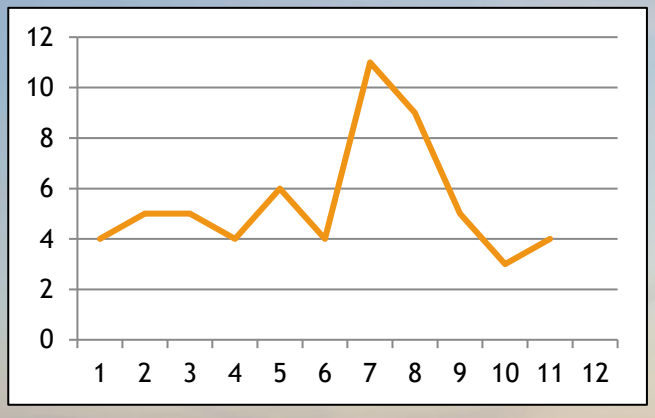
The Safety Wire

October 2021

Monthly Trends

was a topic we looked at back in 2015. At the time, I took the known accidents in public safety aviation and recorded in which month each occurred. The data showed two major spikes, one in early spring and one in late autumn. While the accidents involved in those time frames were not all associated with a single cause, they generally seemed to be connected to the various changes that take place during those months. We have spent more than five years trying to address these seasonal hazards.



This month, I decided to go back and check on the same monthly trend. I was surprised to see a much different picture. The last five years show an opposite trend, with most of the accidents occurring around July and August. Furthermore, the total number of accidents per year has decreased, meaning the summer spike isn't a result of the combined early spring and late autumn accidents shifting to summer. The chart is showing what is left after the numbers in the

other categories have been reduced. While it's impossible to claim a complete correlation, I think it is safe to say the efforts in our industry to attack those seasonal risks have played a huge part in this promising result.

So, it is time again for us to continue the assault on seasonal risks. Please consider the following topics in your personal or organizational training:

1. Changes at home: Kids' schools can influence our personal schedules, in turn creating fatigue, stress, etc.
2. Weather: Seasonal changes such as temperature, snow, winds, and fog, as well as related changes in aircraft configuration (doors, winter cowlings, heaters, etc.).
3. Budget: Many of us are stretching our budgets until funding from the new fiscal year becomes available. Once the funds are in, there may be an increased pace in maintenance or training.
4. Holidays: The numerous holidays in the fall can cause changes in schedule, workload, fatigue, and stress.
5. Illness: Seasonal weather changes sometimes bring increases in illness and the use of medications that have a negative effect on our work performance.
6. Bird Strikes: Seasonal migration of birds can increase the risk of an in-flight strike.

"Deftly they opened the brain of a child,
and it was full of flying dreams."

~ Stanley Kunitz
Poet

SAFETY MANAGEMENT SYSTEMS

For a safety manager to make a positive impact on their operation, they must be able to think past the surface level dos and don'ts of daily activity. Safety management is more than a set of rules. Below is an example of something to look out for that lurks beneath the surface, in our blind spots. It can be especially troublesome in the busy holiday season.

Schedule compression means reducing time without reducing number of required tasks. When looking at the situations throughout our day that are rushed because we do not have enough time, the thought of adding anything to it seems counterintuitive. A simple checklist can make sure important items do not slowly slip into a blind spot over time. Done right, a checklist can help speed things up. Often, we waste time trying to remember if we did everything, or repeating tasks because we don't remember if we did them. Other times, we use our precious time on things that have very low risk and forget about high-risk items because we are randomly picking them.

In addition to the traditional checklists we use in the cockpit, consider daily or mission briefing checklists (into which a flight risk assessment tool, or FRAT, can be incorporated), daily preflight checklists for the pilot and TFO, and low altitude checklists (to be completed before the crew decides they need to descend below a certain altitude for a mission).

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.

Smoke in the cockpit

ONLINE MEETINGS

APSA conducts regularly scheduled online meetings for safety officers, maintenance technicians, SAR personnel, UAS operators and natural resource personnel 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.

SAR:
Wednesday, November 3, 2021
1:00 PM – 2:00 PM EDT (1700 UTC)

UAS:
Wednesday, Nov 10, 2021
1:00 PM - 2:00 PM EST (1800 UTC)

Safety Officers:
Friday, Nov 19, 2021
1:00 PM – 2:00 PM EST (1800 UTC)

Maintenance:
Wednesday, December 1, 2021
1:00 PM - 2:00 PM EST (1800 UTC)

Natural Resources:
Wednesday, Dec 15, 2021
1:00 PM – 2:00 PM EST (1800 UTC)

"Always keep an 'out' in your hip pocket."

~ Bevo Howard
Airshow pilot

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: Britten-Norman Islander BN2T
Injuries: None
AAIB Identification: 27032
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1019528/AAIB_Bulletin_10-2021.pdf

The plan was to depart and route to an operating area, climbing to an altitude of approximately 10,000 ft amsl. The crew consisted of the pilot and two observer passengers. Before flight the crew conducted a briefing in which the meteorological information was an area of particular concern as a cold front was approaching the operating area bringing extensive cloud and reducing temperatures. The pilot was conscious of the risks of airframe icing and during the brief decided to operate the aircraft below the 0°C isotherm.

During the transit the pilot decided to stop the climb at approximately 7,000 ft amsl to remain below the 0°C isotherm. At 7,000 ft he recalled that the air temperature was +1°C. During the transit the aircraft entered cloud and as it did so the pilot recalled selecting the engine anti-icing on. After around five minutes on task the pilot noticed that the torque indications for both propellers were reducing, with a related decrease in airspeed. He therefore increased power to restore both torque and airspeed. A short time later the pilot again noticed a drop in both torque and airspeed. The aircraft needed "more and more power" to maintain the required performance and the pilot became concerned that something was amiss. He then noticed that the turbine gas temperature (TGT) on both engines had reached the limit of 927°C.

At this point the pilot reduced power to keep the TGT within limits. He informed the rest of the crew that there was a technical issue with the aircraft and that his intention was to return to [the airport]. The pilot recalled that during the subsequent left turn the right engine failed, stating, "I was so startled I did not do any immediate drills but

concentrated on maintaining control of the aircraft." Given the already evident engine issues he was now concerned that the second engine would also fail. He recalled that as he thought this, the left engine failed.

The aircraft's topographical moving map display is role equipment and requires electrical supply from the generators and so was lost when the engines stopped. The pilot had an iPad with a mapping application but this also was not working. The observers also had iPads with mapping applications and one of them went to the cockpit to assist.

During the descent the pilot attempted to restart the engines and 1 minute 30 secs after the second engine failure he was able to restart the right engine at approximately 2,100 ft amsl. At approximately 1,500 ft amsl he then attempted a restart of the left engine. The first attempt was unsuccessful, which he attributed to not having selected the left engine igniters on. On the second attempt the left engine also restarted.

It is likely the engine anti-icing system was not selected on before entry into cloud with an outside air temperature less than 5°C. A build-up of ice in the engine ducts probably caused the engine symptoms noted by the pilot and the subsequent rollbacks and flameouts.

Aircraft: EC 130 B4
Injuries: 1 Uninjured
NTSB Identification: WPR14LA084
https://data.ntsb.gov/carol-repgen/api/Aviation/ReportMain/GenerateNewestReport/88613/pdf

A Eurocopter EC 130 landed hard during an autorotation while on short final. The commercial pilot was the sole person on board and was not injured. The helicopter came to rest on its right side and sustained substantial damage to the fuselage and tail boom.

The pilot reported that she completed the post-maintenance operational check flight and was on short final, about 200 feet above the ground with an airspeed of 40 to 50 knots. Shortly thereafter, the fuel pressure indicator light illuminated and the engine "flamed out". The pilot stated that she lowered the collective to initiate an autorotation, but did not have the airspeed to successfully complete it.

The helicopter's tailboom impacted the ground first during the accident sequence, followed by the hard landing. The helicopter's skids separated, and the fuselage sustained substantial damage.

During a postaccident examination of the wreckage, a main fuel supply line B-nut fitting was found without the safety wire, and the nut was loose when turned by hand. Before the accident flight, the line had been disconnected during a task to replace the bidirectional suspension cross-bar assembly, and the accident flight was the first flight since the task was performed. According to the noncertificated maintenance technician who performed the task, the line was removed to defuel the fuel tank, which was contrary to manufacturer's maintenance manual instructions. Based on the evidence, it is likely that the B-nut fitting was not properly tightened and safety-wired during reassembly, which allowed it to back off due to normal engine vibration and resulted in the interruption of the fuel flow during flight.

Aircraft: Piper L-21
Injuries: 2 Fatal
NTSB Identification: MIA95GA178
https://data.ntsb.gov/carol-repgen/api/Aviation/ReportMain/GenerateNewestReport/37673/pdf

A Piper L-21 operated by a Sheriff's Office crashed while on a public-use law enforcement flight. The airplane was destroyed and the pilot and aerial observer received fatal injuries. The flight had originated about 20 minutes earlier.

The airplane was flying low over trees attempting to spot a suspect escaping on foot. Witnesses on the ground observed the airplane bank rapidly to the right, pitch down and strike trees. The airplane then hit a tree and the ground near the suspect. Some of the witnesses stated they heard the engine noise decrease just prior to impact. Examination of the airplane and the engine revealed no evidence of pre-accident failure nor malfunction.

The NTSB determines the probable cause(s) of this accident to be: The pilot's failure to maintain airspeed while his attention was diverted.

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