



The

Safety

Wire

January 2021

Well, that was unexpected...

Preparing for this newsletter, I looked back at the January 2020 edition to see where we were twelve months ago. I don't think many of us were prepared for the journey we had unknowingly already started at that time. I am left to wonder, what does 2021 have in store for us? The only thing I can be certain of is that fact that there will again be challenges that we will not expect. For the safety professional, that is a tough spot to be in. How can we prepare our people to deal with hazards we haven't even thought of?

The name of this newsletter is the same as a small, but simple, safety device that specifically protects us from the unknown. Most fittings that safety wire is attached to have no real reason to come loose unexpectedly. To be honest, it is rather rare for the wire to prevent an actual failure. When it does happen, the occurrence is usually categorized as 'weird' because the fitting it is attached to shouldn't come loose in the first place.



We prepare for unexpected safety challenges by putting safety wire on our operations wherever we can. We do it because we know we cannot predict everything. We also



have to do it because those first lines of defense we do put in place are never 100% effective. We train crews to avoid flying into weather conditions that are dangerous, and then we prepare them to survive flight

into those conditions if they fail to avoid them. We teach our personnel about human factors limitations, such as fatigue, and how to make safe decisions. Then we put in resources such as FRATs and policies like fatigue management guidelines for when that decision making process is weakened. Our maintenance operations have distractions policies in place for when they are working on aircraft, and tool control systems as backup.

What is in store for us in 2021? I have no idea. What I do know is that we all need to make our operations as strong as possible by applying safety wire through our training, policies and procedures, and equipment. When gremlins attack us in unexpected places, they may temporarily compromise the first layer of defense, but our safety wire will be there to prevent catastrophe. Never stop working on your program.

“The Wright brothers flew through the smoke screen of impossibility.”

~ Dorothea Brande



2020 PUBLIC SAFETY AIRCRAFT ACCIDENTS

Below is a list of the known public safety accidents in 2020. The investigations for most of them are still ongoing.

1. Quebec National Police – Bell 206LT, 1 injury.
2. Fukushima Prefectural Police – AW139. 4 serious injuries, 3 minor.
3. Malaysian Police - AW139. Possible utility pole strike. 6 injuries.
4. Houston Police – MD500. 1 fatality, 1 serious injury.
5. St Louis Police – OH-6A. Training flight. No injuries.
6. Texas Natural Resources – Bell 206B. Wildlife survey. 3 fatalities.
7. Royal Canadian Mounted Police – H125 and SkyRanger R60 UAS mid-air collision. No injuries.
8. Brazilian National Fire Forces – AS350B2. Firefighting. 3 injuries.
9. Turkish Police – Beech 300 King Air. CFIT in mountains during surveillance. 7 fatalities.
10. Sao Paulo Police – AS350B2. Fall during fast rope training. 1 fatality.
11. Philippine National Police – Bell 429. Wire strike. 8 injuries.

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.



Safety Officers:

Friday, Jan 29, 2021

1:00 PM – 2:00 PM EST (1800 UTC)

SAR:

Wednesday, Feb 10, 2021

1:00 PM – 2:00 PM EST (1800 UTC)

Maintenance:

Wednesday, Feb 24, 2021

1:00 PM - 2:00 PM EST (1800 UTC)

UAS:

Wednesday, Mar 3, 2021

1:00 PM - 2:00 PM EST (1800 UTC)

Natural Resources:

Wednesday, Mar 31, 2021

1:00 PM – 2:00 PM EST (1800 UTC)

"Ability will never catch up with the demand for it."

~Confucius

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.

Rudder (airplane) or anti-torque pedals (rotorcraft) are stuck

RESOURCES

2021 National Wildfire Aviation handbook

https://www.nifc.gov/policies/pol_ref_redbook.html

NASA ASRS Safety Newsletter

https://asrs.arc.nasa.gov/publications/callback/cb_492.html

Transport Canada Aviation Safety Newsletter

<https://tc.canada.ca/sites/default/files/2020-12/asl-4-2020.pdf>



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:	Cirrus SR22
Injuries:	1 Fatal
NTSB#:	WPR15FA082

The noninstrument-rated pilot departed during the late afternoon and flew over the southern portion of the Great Salt Lake. According to data recovered from the airplane's avionics system, which did not capture altitude, the duration of the flight was about 9 minutes. During the final minute of the flight, the airplane conducted a gradual left turn at an engine power setting of about 2,200 rpm. Shortly thereafter, the airplane impacted the lake. Postaccident examination of the airplane revealed no evidence of mechanical malfunctions or failures that would have precluded normal operation.

Local meteorological observations indicated that restricted visibility and fog were forecast throughout the area about the time of the accident. It is likely that the pilot encountered these conditions in flight and lost visual reference to the ground and/or horizon. Given the pilot's lack of an instrument rating and of recent instrument flight experience, the loss of visual reference likely resulted in spatial disorientation.

Toxicological testing on the pilot revealed the presence of bupropion, an antidepressant; hydrocodone, an opioid analgesic; and diphenhydramine, a sedating antihistamine. The investigation was unable to determine if the use of bupropion or the cognitive effects of any underlying depression contributed to the accident. Because the hydrocodone was found in the urine but not the blood, it no longer caused systemic effects and played no role in the accident. However, it is likely that the effects of diphenhydramine impaired

the pilot's cognitive and psychomotor performance at the time of the accident, and contributed to his spatial disorientation.

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The non-instrument rated pilot's decision to depart into low visibility conditions, which resulted in spatial disorientation and a loss of control. Contributing to the accident was the pilot's impaired performance due to his use of the sedating antihistamine, diphenhydramine.

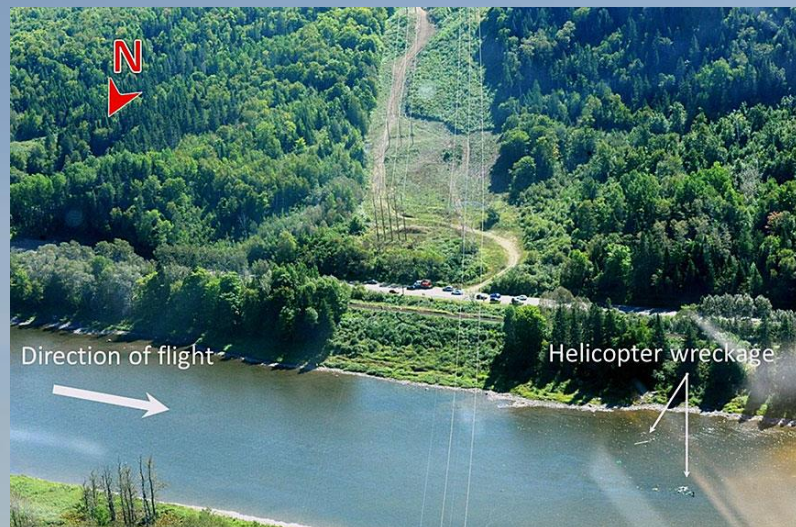
Aircraft: Bell 206B
Injuries: 2 Fatal, 1 Serious
TSB Canada#: A16A0084

The owner of a privately operated Bell 206B helicopter lent it to a business colleague to attend a private function. The owner also provided the pilot for the trip. During the fuel stop at Charlo Airport, the helicopter was refueled to capacity. The group learned that the Restigouche River was a scenic area, popular with tourists for fishing, and would be close to their return route home.

At 1534, the helicopter departed Charlo Airport, then flew at low level along the Restigouche River and valley, past Campbellton, New Brunswick, westbound toward Flatlands, New Brunswick. There are several islands, including Long Island, as well as a campground and the community of Tide Head on the stretch of river between Campbellton and Flatlands.

The helicopter was flown at tree-top level and at cruise speed around the islands.

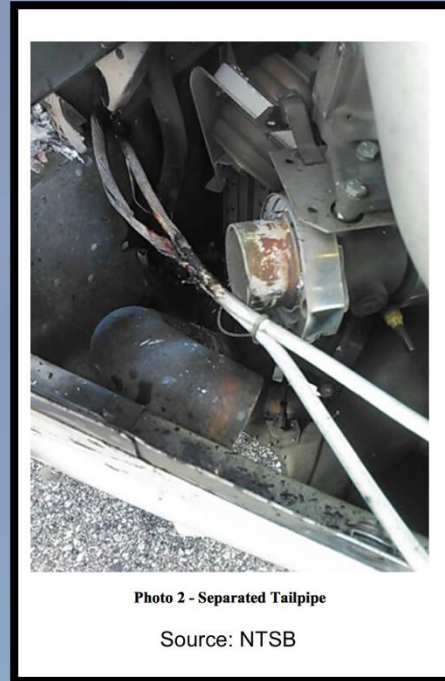
At 1547, the helicopter flew into and severed 4 conductor cables of the 230 kV power transmission lines at 58 feet above the Restigouche River on the south side of Long Island. The helicopter was not equipped with a wire strike protection system.



Aircraft:
Injuries:
NTSB#:

Cessna T206H
2 Minor
WPR15IA263

During the initial climb, the pilot retracted the flaps, and having reached about 200 ft above ground level the passenger began to see smoke. The pilot initiated a turn to the crosswind leg, and smoke rapidly filled the cabin. The passenger opened the side window, and concerned that it may fan the source of the smoke, the pilot asked him to close it. The pilot then put on his oxygen cannula but it did not provide relief, and by now he was having trouble breathing due to the smoke density. The smoke was now obscuring the instrument panel, but he could partially see the runway and immediately turned the airplane towards it. He opened his side window and put his head outside for a better view, however, the force of the wind made breathing difficult. The pilot then pushed the airplane's nose down, initiating a steep dive to the runway. He could not recall the final stages of the landing, but as soon as the airplane touched the ground, he applied full brake action, locking up the wheels. Once they had come to a stop, the pilot shut off the fuel mixture control and they rapidly egressed.



Examination revealed that the airplane experienced an in-flight fire due to the separation of the engine's turbocharger wastegate overboard exhaust tailpipe from the turbocharger housing. The hot gases from the exhaust system subsequently burned through the battery's electrical cable insulation, which resulted in arcing, a short circuit, and fire. The airplane manufacturer had issued a service bulletin (SB) 16 years before the incident, which recommended installing a tailpipe lanyard to prevent the separation of the tailpipe.



Photo 3 - Battery
Source: NTSB

About 6 months before the incident, the airplane experienced a similar separation of the tailpipe. The damage was less severe, and it was limited to the battery and its electrical cables. After that event, the tailpipe clamp and gaskets were replaced, but the owner did not comply with the SB. No lanyard was found on the airplane, and no record was found indicating that the owner had complied with the SB at any time. However, the airplane was operating under the provisions of 14 Code of Federal Regulations Part 91; therefore, compliance with the SB was not mandatory. Although complying with the SB was not mandatory for this airplane's operations, the owner should have complied with the SB to ensure the continued safe operation of the airplane.

The National Transportation Safety Board determines the probable cause(s) of this incident to be: An in-flight fire during initial climb due to the separation of the engine's turbocharger wastegate overboard exhaust tailpipe. Contributing to the accident was the owner's decision to not comply with a service bulletin that addressed the tailpipe separation.

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

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