

# AIRBORNE PUBLIC SAFETY ASSOCIATION



The

Safety

Wire

March 2020

***RISK MANAGEMENT REQUIRES RELIABLE DATA.*** Without accurate information, we are left with inefficient guesswork. Our world gives us endless examples of people making huge decisions based on unreliable or incomplete data. We cannot follow society's poor examples when we have a better option.

What constitutes 'good' information? In elementary school my kids are taught the difference between primary and secondary sources of information. Primary sources are the original source of information. They are usually straightforward, black and white types of documents. Primary sources contain raw data, transcripts and recordings. While not the most exciting of resources, and not beyond some bias from the authors, they are the most authoritative. These resources also take time to read, require some analytical thought to understand, and are typically rather bland in their delivery.



Secondary sources of information take primary sources and interpret them. The secondary source often repackages the information for various purposes such as: entertainment, sales of goods or services, or furtherance of political goals. They are more interesting and easier to digest but are always influenced by the motivations of the author. Just like the old telephone game, the accuracy of the information in secondary sources is compromised by each interpretation. Our Safety Management Systems work best when we use primary sources of information.

Fortunately, we have a primary source of reliable data on safety trends in our industry. Below are the results from the most recent APSA Safety Survey. Thank you to all who participated.

1. Have a Safety Management System (SMS)	77%
2. Use a Flight Risk Assessment Tool (FRAT):	79%
3. Have a Safety Officer:	81%
4. Safety Officer received training:	51%
5. Received annual refresher training on SMS:	58%
6. Have an Emergency Response Plan (ERP):	83%
7. Have tool control system in place:	53%
8. Maintenance personnel involved in the SMS:	51%
9. Use TFO or TFO trained 2 <sup>nd</sup> pilot	79%
10. Have a formal TFO training program:	74%
11. Reported safety concern/hazard/incident this year:	47%
12. Received a response to that safety report:	43%
13. SMS includes a Just Culture policy:	52%
14. Have instrument rating:	75%
15. Conduct IIMC training for pilots:	86%
16. Conduct IIMC training for other aircrew:	67%
17. Inadvertently entered into (IIMC) – last 3 years:	15%
18. Inadvertently entered into (IIMC) – last 10 years:	14%
19. At least one bird strike in the last 3 years:	50%
20. Debris from bird strike entered cockpit:	16%
21. Wire strike within last 3 years:	2%
22. Wire strike within last 10 years:	3%
23. Hit by gunfire - last 10 years:	3%
24. UAS mid-air close call	34%

What do you think will lead to the next fatal accident in public safety aviation?

1. Inadvertent IMC ending in CFIT:	43%
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2. Collision in flight with an UAS:	16%
3. Loss of aircraft control:	13%
4. Training:	9%
5. Mechanical failure:	8%
6. Other:	6%
7. Wire strike:	3%
8. Collision in flight with a manned aircraft:	2%

*"The aeroplane will never fly."*

*~Lord Haldane*

*British Minister of War*

*1907...four years after the Wright Brothers first flew.*

## **Resources**

**Where to get primary flight safety information? Try these resources:**

International Helicopter Safety Foundation

<http://ihsf.aero>

AOPA Nall Report

<https://www.aopa.org/training-and-safety/air-safety-institute/accident-analysis/joseph-t-nall-report>

NTSB Accident Database

<https://www.nts.gov/layouts/ntsb.aviation/Index.aspx>

APSA Public Safety Accident Database

<https://publicsafetyaviation.org/alea-accident>

UK Air Accidents Investigation Branch

<https://www.gov.uk/aaib-reports>

EASA 2019 Air Safety Report

<https://cdn.aviation-safety.net/airlinesafety/industry/reports/EASA-Annual-safety-review-2019.pdf>

Australian Transport Safety Board  
<http://www.atsb.gov.au/aviation/aviation-safety/>

Transport Canada  
<https://www.tsb.gc.ca/eng/index.html>

List of transportation safety resources by country/region  
<https://aviation-safety.net/investigation/aaibs.php>

## **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.

**Imminent wire strike. A wire is seen directly in your flight path.**

## **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](mailto:safety@publicsafetyaviation.org)

The schedule for upcoming APSA online meetings is as follows.



**UAS:**

Wednesday, April 15, 2020  
1:00 PM - 2:00 PM EDT (1700 UTC)

**SAR:**

Thursday, April 16, 2020  
1:00 PM – 2:00 PM EDT (1700 UTC)

**Safety Officers:**

Friday, April 17 2020  
1:00 PM - 2:00 PM EDT (1700 UTC)

**Maintenance:**

Wednesday, May 6, 2020  
1:00 PM - 2:00 PM EDT (1700 UTC)

*"If you're in a fair fight, You didn't plan it properly."*

*~Nick Lappos  
Sikorsky Aircraft*

## **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.*

<b>Aircraft:</b>	<b>DJI Phantom 4</b>
<b>Injuries:</b>	<b>None</b>
<b>AAIB#:</b>	<b>3/2020</b>

[https://assets.publishing.service.gov.uk/media/5e429c00ed915d0935baa7eb/DJI\\_Phantom\\_4\\_PRO\\_Reg\\_na\\_150919\\_03-20.pdf](https://assets.publishing.service.gov.uk/media/5e429c00ed915d0935baa7eb/DJI_Phantom_4_PRO_Reg_na_150919_03-20.pdf)

The UAS was flown in order to capture cinematic shots for a television series. The electronic flight log showed that the UAS was travelling at 6.5 mph at the last recorded data point. Whilst the UAS was being flown near to the sea stack, it either drifted or was

flown too close to the feature before it struck the sea stack and then fell into the sea below it.

The UAS pilot stated that the accident happened very quickly. He and the observer did not know exactly what had happened, but the last recorded images showed the sea stack coming into view before the image recording ended, with the UAS flying sideways towards it. The flight log did not show any errors and there was no suggestion of a technical failure. The obstacle avoidance system did not detect the stack, give warning of an imminent impact or automatically avoid the stack. Prior to impact, the UAS had been holding its position adequately in the air in wind speeds of up to 8 m/s (15.5 kt). The UAS was not recovered so the cause could not be determined.

*Footnote - A sea stack is a geological landform consisting of a steep and often vertical column of rock in the sea near a coast, formed by wave erosion.*

<b>Aircraft:</b>	<b>Cessna 208B Caravan</b>
<b>Injuries:</b>	<b>7 Minor</b>
<b>TSB Canada#:</b>	<b>A19C0016</b>

<https://www.tsb.gc.ca/eng/rapports-reports/aviation/2019/a19c0016/a19c0016.html>

A Cessna 208B Caravan aircraft departed Winnipeg/St. Andrews Airport (CYAV), Manitoba, for a visual flight rules (VFR) flight to Little Grand Rapids Airport (CZGR), Manitoba, with 1 pilot and 6 passengers on board.

Throughout the 133 nautical mile (nm) flight, the aircraft encountered a number of snow squalls, which reduced the flight visibility to approximately 3 nm. The pilot elected to continue the flight through these areas of snow squalls. In the areas not affected by snow squalls, the weather was reported to be good visibility and clear skies.

As the aircraft approached CZGR from the south, the pilot had the airport environment in sight and manoeuvred the aircraft to join a 3 nm final approach and descent for Runway 36. When the aircraft was approximately 1.75 nm from the threshold of Runway 36, it encountered another snow squall, which reduced the flight visibility to less than 1 nm. The aircraft continued the descent in reduced visibility over the snow-covered frozen surface of Family Lake.



At approximately 1414, the pilot made the decision to initiate a go-around; however, as power was being applied, the aircraft collided with the frozen surface of Family Lake, 0.75 nm from the threshold of Runway 36 (Figure 1). The aircraft remained upright and slid to a stop on the snow. The pilot and 6 passengers received minor injuries and were able to egress from the aircraft. They were rescued by passersby on the nearby ice road. The aircraft was substantially damaged.

Records indicate that the pilot was certified and qualified for the VFR flight in accordance with existing regulations. He held an airline transport pilot licence and a valid Category 1 medical certificate. The pilot had accumulated over 12 000 hours total flying time, with 1100 hours on the aircraft type. He held an instrument rating and had accumulated approximately 4000 hours of instrument flight. However, the validity of his instrument proficiency check had expired on 01 September 2017; therefore, he did not meet the recency requirements to exercise the privileges of the instrument rating.

<b>Aircraft:</b>	<b>DJI Matrice 210</b>
<b>Injuries:</b>	<b>None</b>
<b>AAIB#:</b>	<b>1/2020</b>

<https://www.gov.uk/aaib-reports/aaib-investigation-to-dji-matrice-210-uas-registration-n-a-3-march-2019>

The DJI Matrice 210 quadcopter small unmanned aircraft (SUA) was being operated by the Police as part of a training exercise. The pilot had checked the weather as part of his preparations and although rain was forecast, it was considered the conditions were suitable as the aircraft had an IP43 rating.

After lift-off and control checks were completed satisfactorily, the aircraft was ascended to 90 m (300 ft) to maintain safe separation from nearby buildings. It was still raining but as the flight progressed the rain eased to drizzle.

After approximately five minutes and whilst the aircraft was being repositioned, it suddenly started to spin rapidly and fell to the ground. The pilot attempted to warn people by shouting “look out, move”. It took an estimated five seconds for the aircraft to fall to the ground, where it was destroyed on impact. No person was injured.

Examination of the recorded data showed that a MOTOR BLOCKED warning message had been activated and the No 3 (rear left) motor had failed.

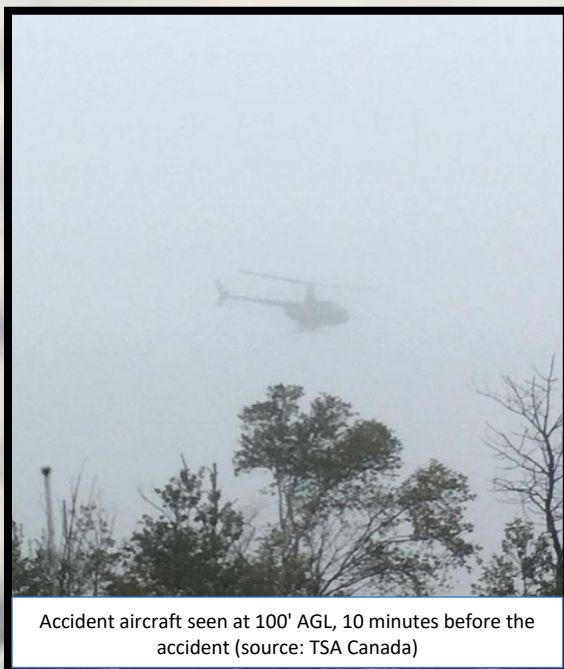
Refer to report on DJI Matrice 210 - EW/C2019/03/02 in this AAIB Bulletin 1/2020 for information on other accidents involving the DJI Matrice 210 and Safety Recommendations concerning the safe operation of a UAS near to people and congested areas.

**Aircraft:** Robinson R44  
**Injuries:** 1 Fatal  
**TSB Canada #:** A1800134

<https://www.tsb.gc.ca/eng/rapports-reports/aviation/2018/A1800134/A1800134.html>

A Robinson R44 Raven II helicopter departed North Bay Airport (CYYB), Ontario, at about 1141 on a visual flight rules (VFR) flight to Toronto/Buttonville Municipal Airport (CYKZ), Ontario, with only the pilot on board. The purpose of the flight was to reposition the helicopter for a series of survey flights scheduled to begin the next day.

The weather at CYYB at the time of departure was 30 statute miles (sm) visibility and overcast ceilings at 600 feet above ground level (AGL). For the majority of the flight, the helicopter flew at altitudes of less than 1000 feet AGL and at an average ground speed of about 75 knots.



At about 1335, when the aircraft was 16 nautical miles (nm) from CYKZ, the pilot contacted the tower controller to report his position and that he was inbound for the airport. At the time, the helicopter's altitude was about 300 feet AGL, and its ground speed was about 65 knots. As the helicopter continued toward CYKZ, its altitude varied, the lowest being about 100 feet AGL, and its ground speed gradually decreased to less than 10 knots.

At 1350, when the helicopter was 6 nm from CYKZ and flying over a residential area at approximately 200 feet AGL, it slowed to a ground speed of about 6 knots. At about the same time, the pilot contacted the tower and informed the controller that he was in zero visibility conditions and was turning around.

The controller stated that the ceiling at CYKZ was overcast at 500 feet AGL. The elevation of the terrain over which the helicopter was flying at the time was 300 to 400 feet higher than the elevation of the airport.

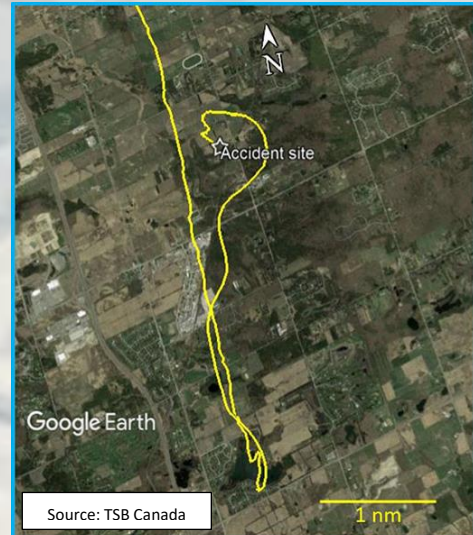
Immediately after the helicopter turned around, its ground speed increased rapidly to more than 80 knots. Over the next several minutes, the helicopter's altitude, ground



speed, and direction continued to vary as it flew north. During this time, the controller continued to communicate with the pilot, informing him of landmarks to the west that might assist him in navigating.

The helicopter started to turn toward the west and continued turning toward the south, over mostly cleared farming fields. The helicopter's altitude varied between 200 and 300 feet AGL, and its ground speed varied between 5 and 40 knots. At no time did the pilot indicate that he was experiencing any difficulties. The last communication between the controller and the pilot was at about 1354. At 1355, the helicopter struck trees. The pilot was fatally injured. The helicopter was destroyed, and a post-impact fire ensued.

The pilot had accumulated approximately 7355 hours total flight time in helicopters, of which 1550 hours were on the Robinson R44. He held a Class 2 instructor rating and, in the past 2 years, held positions as assistant chief flying instructor and chief flying instructor at Essential Helicopters.



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

*Bryan 'MuGu' Smith*

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