

AIRBORNE PUBLIC SAFETY ASSOCIATION



The

Safety

Wire

February 2020

WEATHER DISCUSSIONS ARE VERY DIFFERENT FOR

AVIATORS. Those who live in the air deal with the possible deadly impact of weather on a daily basis. Even mundane weather can lead to injury if not properly handled, and respected. When we discuss weather, we are discussing the very survival of our business, and ourselves. On one hand, it makes a professional aviator an expert on weather. However, we can sometimes get too used to living with this potentially deadly threat, developing a dangerous tolerance to the ever-present risk.



The rest of the world talks about weather in terms of convenience. Rain may change when the lawn needs to be watered. Snow could require leaving the house earlier than usual. The air temperature may be too hot or cold for outdoor plans. When the weather gets rough enough to threaten safety, the non-aviation public generally decays into chaos and panic.

Sometimes, our two weather worlds connect, and its rarely a good thing. An aviator's weather-related no-go decision is processed by a land lover as a decision about inconvenience rather than the life or death assessment it really is. We try to pull them into our world so they can see it from our point of view. It is difficult and rarely 100% effective. If the non-aviator has enough power, they can pull us further into their world, letting their perspective influence our decision. That is when people get hurt.

In public safety aviation, we are familiar with agency leaders, ranking supervisors and even politicians trying to make weather decisions for us from their non-aviator point of view. We can see the same lethal situation with VIP transportation.

One of most important guitarists of the 20th Century, Stevie Ray Vaughan, died in a helicopter crash on August 27, 1990, leaving a concert along with several members of Eric Clapton's staff. The helicopter pilot was instrument rated, however, they were in flying in a Bell 206 in dense fog, at night. Otis Redding was famous for Motown hits like, "Sittin' on the Dock of the Bay" (yes, the song in Top Gun), which was recorded three days before he and his band were killed in a Beechcraft H18. Patsy Cline, 'Cowboy' Copas and Hawkshaw Hawkins of Grand Ole Opry fame died in a Piper PA-24 Comanche leaving a benefit concert for another artist who had been killed. Of course, there was the 'The Day the Music Died' when Buddy Holly, J.P. Richardson (the Big Bopper) and Ritchie Valens were killed in a Bonanza. All of these



crashes were attributed to inclement weather. One of the main case studies still used to discuss spatial disorientation is John F Kennedy Jr.'s 1999 crash in his Piper Saratoga. National media coverage and public outcry followed each one of these accidents as non-aviators tried to understand aviation weather decision making and pass judgement on a profession they know very little about.

A study from the University of Illinois showed that the frequency of IIMC accidents is 54% higher with passengers onboard and that 76% of VFR-IMC accidents appeared to involve intentional flight into adverse weather. As we try to understand these tragic events, it is important to remember that it is unlikely that the pilot did not possess the knowledge needed to analyze the risk associated with the flight. They probably had reasonable weather information and understood the inherent inaccuracy of even the best weather reports. Many IIMC accident pilots had an instrument rating. Something occurred that prevented the pilot's training and knowledge from being properly applied at the right time. This is not a problem that will be resolved by telling aviators to 'be careful' and that 'weather is dangerous.' If anything, it might help to tell the general

public that, especially those who are a source of pressure on us to fly. For aviators, we need to focus on how external pressures, risk tolerance, decision making errors and similar issues can strip us of our protection against the very threats we have trained for. We also need to ensure we have training for IIMC and not just IMC...but that is a conversation for another day.

“A superior pilot uses his superior judgment to avoid situations which require the use of his superior skill.”

*~Frank Borman
NASA Astronaut*

APSA Maintenance Staffing Survey

APSA conducted our third maintenance staffing survey. Thank you to everyone who took the time to complete the survey.

Note: Staffing – full time mechanic = 1, part time = .5

Survey Question	Previous Survey	Current Survey
Average number of maintenance staff per aircraft.	0.8 per aircraft	0.7 per aircraft
Average flight hours per maintenance staff.	702	518
Average number aircraft per IA certified staff member.	2.7	3.0
Feel maintenance staff is adequate	63%	64%
Average times entire fleet grounded due to maintenance (AOG)	2.0	1.8
Reason for AOG – Not enough maintenance staff	47%	45%
Reason for AOG – Parts availability	40%	10%
Reason for AOG – Not enough aircraft	13%	45%
Average hours per staff member for AOG 1x or less/year	633	720

Average hours per staff member for AOG 2x or more/year	815	790
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Recognizing the forecast shortage of trained aviation maintenance technicians in the industry, we also asked if respondents planned on hiring mechanics in the next three years. Almost 60% of you said you would need to hire additional staff.

Number of additional staff to be hired	Responses
0	39%
1	32%
2	15%
3	7%

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.

Complete loss of electrical power...at night.

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, March 6, 2020
1:00 PM - 2:00 PM EST (1800 UTC)

Maintenance:

Wednesday, March 18, 2020
1:00 PM - 2:00 PM EDT (1700 UTC)

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)



*"Before you attempt to beat the odds,
Be sure you could survive the odds beating you."*

~Larry Kersten

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-1
Injuries: 3 Fatal
NTSB#: CEN10FA509

<https://app.nts.gov/pdfgenerator/ReportGeneratorFile.ashx?EventID=20100831X75841&AKey=1&RType=Final&IType=FA>

The air ambulance positioning flight was enroute to a landing zone to pick up a patient for transfer. One witness in the accident area described a helicopter circling overhead, and another witness reported that they heard the sound of crashing metal or the impact of the helicopter with the ground.

Radar and global positioning system data depicted the accident helicopter reversing course multiple times just prior to the accident. The flight path of the helicopter prior to the accident was consistent with spatial disorientation and subsequent loss of control due to an inadvertent encounter with instrument meteorological conditions.

The wreckage was located in forested terrain approximately 3.5 miles south of the intended destination. The wreckage distribution was consistent with an in-flight separation of the main rotor and tail boom. An examination of the helicopter airframe, engine, and related systems revealed no pre-impact anomalies. Both the main rotor assembly and tail boom separated in overload. The main rotor tie down strap found wrapped around the blade was a result of the accident sequence and did not contribute to the accident.



Weather information indicated a moist stable environment from the surface to approximately 2,500 feet, which supported low clouds and stratus below 2,500 feet. In addition, an AIRMET had been issued for instrument meteorological conditions (IMC) due to low ceilings and poor visibility. The Area Forecast advised of marginal visual meteorological conditions in the state of Arkansas. Witnesses in the area described the weather as hazy or foggy, with overcast skies. One witness

stated that it was very dark and no moon could be seen. The investigation was unable to determine what information the pilot had or method he used to obtain weather information prior to the flight.

The pilot held a commercial pilot certificate and an instrument rating. He had received instrument training, including inadvertent flight into IMC; however, the company did not operate in IMC. The pilot was trained and had recent experience in the use of night vision goggles. The investigation was unable to determine if the pilot was using the night vision goggles at the time of the accident.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's loss of aircraft control, due to spatial disorientation, resulting in the in-flight separation of the main rotor and tail boom.

Aircraft:
Injuries:
NTSB#:

Piper PA-32 Saratoga II
3 Fatal
NYC99MA178

https://www.nts.gov/about/employment/_layouts/ntsb.aviation/brief2.aspx?ev_id=20001212X19354&ntsbno=NYC99MA178&akey=1

On July 16, 1999, about 2141 eastern daylight time, a Piper PA-32R-301, Saratoga II, N9253N, was destroyed when it crashed into the Atlantic Ocean approximately 7 1/2 miles southwest of Gay Head, Martha's Vineyard, Massachusetts. The certificated private pilot and two passengers received fatal injuries. Night visual meteorological conditions (VMC) prevailed, and no flight plan had been filed for the personal flight conducted under the provisions of 14 Code of Federal Regulations (CFR) Part 91. The flight originated from Essex County Airport (CDW), Caldwell, New Jersey, and was destined for Barnstable Municipal-Boardman/Polando Field (HYA), Hyannis, Massachusetts, with a scheduled stop at Martha's Vineyard Airport (MVY), Vineyard Haven, Massachusetts.

During interviews, witnesses stated that the purpose of the flight was to fly to Martha's Vineyard to drop off one passenger and then continue to HYA. An employee of a fixed-base operator (FBO) at CDW stated that he had called the pilot about 1300 on the day of the accident to verify that the pilot intended to fly the airplane, N9253N, over the weekend. The pilot informed the employee that he did plan to fly the airplane and that he would arrive at the airport between 1730 and 1800. The employee informed the pilot that he would have the airplane parked outside of the hangar.

Witnesses who were at CDW on the night of the accident stated that they saw the pilot and a female near the accident airplane. The witnesses also reported that they saw the pilot using crutches and loading luggage into the airplane. One witness stated that he watched the pilot perform an engine run-up and then take off about 2040. The witness further stated that "takeoff and right downwind departure seem[ed] normal."

According to radar data, at 2040:59, a target transmitting a visual flight rules (VFR) code was observed about 1 mile southwest of CDW at an altitude of 1,300 feet. The target proceeded to the northeast, on a course of about 55 degrees, remaining below 2,000 feet. The target was at 1,400 feet when it reached the Hudson River. When the target was about 8 miles northwest of the Westchester County Airport (HPN), White Plains, New York, it turned north over the river and began to climb. After proceeding north about 6 miles, the target turned eastward to a course of about 100 degrees. The target continued to climb and reached 5,500 feet about 6 miles northeast of HPN. When the target's course was plotted on a New York VFR navigational map, the extended course line crossed the island of Martha's Vineyard.

The target continued eastward at 5,500 feet, passing just north of Bridgeport, Connecticut, and crossed the shoreline between Bridgeport and New Haven, Connecticut. The target ground track continued on the 100-degree course, just south and parallel to the Connecticut and Rhode Island coastlines. After passing Point Judith, Rhode Island, the target continued over the Rhode Island Sound.

A performance study of the radar data revealed that the target began a descent from 5,500 feet about 34 miles west of MVY. The speed during the descent was calculated to be about 160 knots indicated airspeed (KIAS), and the rate of descent was calculated to have varied between 400 and 800 feet per minute (fpm). About 2138, the target began a right turn in a southerly direction. About 30 seconds later, the target stopped its descent at 2,200 feet and began a climb that lasted another 30 seconds. During this period of time, the target stopped the turn, and the airspeed decreased to about 153 KIAS. About 2139, the target leveled off at 2,500 feet and flew in a southeasterly direction. About 50 seconds later, the target entered a left turn and climbed to 2,600 feet. As the target continued in the left turn, it began a descent that reached a rate of about 900 fpm. When the target reached an easterly direction, it stopped turning; its rate of descent remained about 900 fpm. At 2140:15, while still in the descent, the target entered a right turn. As the target's turn rate increased, its descent rate and airspeed also increased. The target's descent rate eventually exceeded 4,700 fpm. The target's last radar position was recorded at 2140:34 at an altitude of 1,100 feet.

On July 20, 1999, about 2240, the airplane's wreckage was located in 120 feet of water, about 1/4 mile north of the target's last recorded radar position.

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

Bryan 'MaGu' Smith

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