

AIRBORNE PUBLIC SAFETY ASSOCIATION



The

Safety

Wire

June 2019

SEMINARS SAVED ME more than once. Next month, APSA will host the 2019 Airborne Public Safety Conference (APSCON) in Omaha, Nebraska. Many of us will be there. Some will arrive only after long and difficult battles with their administration to get there. Others will not make it for the same reason. It is a shame that it is so difficult for so many to get agency support to attend events such as this Expo. There are numerous reasons to go. As the safety guy, I tend to put a lot of focus on the various opportunities for us to improve safety in our industry.

Safety education is a huge part of APSCON and every other gathering APSA organizes for the membership. Recently, I was reminded of the impact these educational events have had on my life. Many years ago, I listened to a presentation given by Sgt. Bill Proberts of the East Bay Regional Park District Police Department in California about an engine failure he experienced. Later I took the lessons from that class to design aircrew training given to TFOs I flew with and pilots I trained. Nearly 10 years after first listening to Bill's class, I had occasion to make an emergency landing in a helicopter on a city street. The



lessons I learned a decade earlier in a seminar made all the difference in the successful outcome of that incident. This month, I was able to listen to Bill's class again. Even after years of reading his article and discussing the incident, I still left with new notes on how to improve my own flying habits as well as the training I provide.

This is only one example, out of many, in the career of just one association member. The impact of these events on all of the attendees over the years is impossible to measure, but undeniably significant. I owe a great deal of gratitude to the people who spend so much time and effort putting together all of these events over the years.

I wish that it was not so difficult for so many of you to attend because I know that a little more can be accomplished with each additional person who attends. If you will be at APSCON 2019, I look forward to seeing you. Please come and join us for the Safety Symposium on Thursday at 1530 hrs in room 212. We will have a panel of experts to help lead a group discussion on safety within the context of the tactics and techniques we use during missions.



Previous experience has always shown that there is a way to remove seemingly insuperable barriers when the proper time comes.

~Clarence "Kelly" Johnson
Lockheed 'Skunkworks'

ONLINE MEETINGS

APSA conducts regularly scheduled online meetings for safety officers, maintenance technicians, UAS operators and those involved in SAR 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.

The schedule for upcoming APSA online meetings is as follows.

If you would like to join, send an email to: bsmith@publicsafetyaviation.org



Safety Officers:

Friday, July 12, 2019

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

UAS:

Wednesday, August 14, 2019

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

SAR:

Wednesday, August 21, 2019

1:00 PM – 2:00 PM EDT (1700 UTC)

Maintenance:

Thursday, August 22, 2019

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

RESOURCES

FAA Safety Briefing

https://www.faa.gov/news/safety_briefing/2019/media/MayJun2019.pdf

Training materials and IIMC Survival Videos from USHST:

<http://www.ushst.org/VISIBILITY-AND-LOSS-OF-CONTROL>

The difference between stupidity and genius
is that genius has limits.

~Albert Einstein

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.

Low Oil Pressure – scenarios with or without change in oil temp

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: Cessna 310H
Injuries: 3 Fatal
NTSB#: ERA13FA133

https://www.nts.gov/about/employment/ layouts/ntsb.aviation/brief.aspx?ev_id=20130215X10538&key=1

The noninstrument-rated pilot, copilot, and the passenger were attempting to return from the Bahamas to Florida; a weather front was passing over Florida at the time. The copilot had contacted flight service before the initial flight and learned of thunderstorms in the area; the flight had to divert from its planned destination. The copilot contacted flight service before a second flight, and the flight service specialist advised that visual flight rules flight was not recommended due to low cloud ceilings and visibility. The pilot decided to land at an airport closer to his destination. At that airport, the copilot again contacted flight service and remarked that he was trying to figure out how to "scud run" to get home. He also spoke to his wife, who told him that the weather "was bad" at their final destination, and she reported that she thought they would delay their flight until the next day. Even though his calls to the weather briefer and his wife indicated adverse weather along the route of flight and at the destination, the copilot likely advised the pilot to continue the flight. About 20 minutes into the flight, the copilot contacted the Orlando approach controller and reported that they had inadvertently entered instrument meteorological conditions (IMC). The controller instructed him to set the transponder code to 0311 so that she could locate the airplane and then to contact Miami Center; however, no further communications were received from the copilot.

Review of radar data revealed that, shortly after contacting Orlando Approach control, while the controller was attempting to locate the airplane, it descended in three left circuits from 8,900 feet mean sea level (msl) to 1,800 feet msl. It subsequently made a right circuit, descended to 900 feet msl, and continued to proceed toward the destination airport, eventually descending to 200 feet msl. The last 3 minutes of radar data showed

the airplane flying at an altitude between 100 and 200 feet msl. The final radar target was recorded while the airplane was in a left circuit at 200 feet, about 1/8 mile southwest of the accident site. The wreckage was located the following day in a heavily wooded, deep water, swamp area, and no debris path was observed. Given the radar data and the existence of marginal visual conditions, moderate rain, and the pilot not being instrument rated, it is likely that the pilot experienced spatial disorientation.

Two toxicological tests revealed measurements of diphenhydramine in the pilot's blood at levels within or well above the therapeutic range indicating that the pilot likely took the drug about 2 to 3 hours before the accident. Diphenhydramine causes marked sedation and is also classed as a depressant and used as a sleep aid. Altered mood and impaired cognitive and psychomotor performance may also be observed. Therefore, it is very likely that cognitive and psychomotor impairment caused by diphenhydramine contributed to the pilot's poor judgment about flying in marginal weather conditions and may have further impaired his ability to appropriately cope with relatively unfamiliar flying conditions when he flew into IMC.

The National Transportation Safety Board determines the probable cause(s) of this accident as follows: The noninstrument-rated pilot's improper decision to continue visual flight rules flight into instrument meteorological conditions and his subsequent spatial disorientation. Contributing to the accident was the copilot's improper evaluation of the weather conditions after receiving several weather briefings for the flight. Also contributing to the accident was the pilot-in-command's cognitive and psychomotor impairment due to recent use of an overthecounter sedating antihistamine and the pilots' personal pressure to get home.

**Note: The following medication contain Diphenhydramine: Excedrin PM Triple Action, Benadryl, ZzzQuil, Banophen, Tylenol PM, Mucinex Fast-Max Night Time Cold & Flu, Tylenol Allergy Complete NightTime, and others.*

Aircraft: MD 369E
Injuries: 2 Uninjured
NTSB#: WPR14TA236

https://www.nts.gov/ layouts/ntsb.aviation/brief.aspx?ev_id=20140608X15119&key=1

A MD 369E landed hard following a loss of engine power during cruise flight. The helicopter was operated as a public aircraft flight. The commercial pilot and commercial pilot rated tactical flight officer were not injured. The local flight departed at 2315 the night prior. Night visual meteorological conditions prevailed.

The flight was a routine patrol, and about 1.4 hours after departure, the pilot performed a series of flight checks in the vicinity of the airport. Once complete, they flew to the north and a short time later while travelling 60-70 knots, and about 700 feet above ground level, the pilot heard an uncharacteristic change in engine tone accompanied by a decrease in rotor speed. The pilot began to diagnose the problem, and a series of caution warning lights illuminated followed by the engine-out tone.

The pilot immediately initiated an autorotation, aiming for a tree-lined alfalfa field to the north. The helicopter cleared the trees, and prior to initiating the flare the pilot realized he needed to turn on the landing lights in order to properly see the ground. He was unable to turn them on in time, and he initiated the flare, landing the helicopter hard and level on

the skids. The main rotor blades subsequently struck and severed the tailboom just aft of the tailboom mounting bolt access doors.

According to maintenance records, at the time of the accident the engine had accumulated 15,349.7 hours total time, and a Phase 4 (150 hour) inspection had been performed 8.5 hours prior.

Post-accident examination of the engine revealed excessive wear in the turbine-to-compressor coupling components. Specifically, the turbine-to-compressor coupling had moved, causing its forward splines to come into contact with the spur adapter gear shoulder and its rear splines to disengage from the turbine splined adapter. The disengagement caused a decouple of the turbine section from the compressor section, and subsequent loss of engine power.

Analysis revealed that the excessive wear was the result of a misalignment of the engines centerline shafting components. Two areas of misalignment were discovered, neither of which on their own were likely significant, however, cumulatively they produced enough misalignment to cause the wear. The first misalignment was caused by the incorrect placement of two shims at the interface between the rear diffuser and gearbox. These shims were placed during the last compressor section overhaul, about 2 years and 1,432.1 flight hours prior to the accident. The second discrepancy was between the forward and rear pilot diameter bores of the exhaust collector assembly, which exhibited excessive runout when compared to engineering drawings. The exhaust collector assembly was reworked in accordance with the manufacturer's maintenance manual, which did not call for a runout check of the forward to rear pilot diameters, but rather a runout check of both pilot diameters independently with reference to the bearing bore. At the time of rework the runout-to-bearing-bore values were within tolerance. Therefore it is likely that the discrepancy was latent, predating the accident by a long period of time, having not been significant enough to cause previous shafting misalignment.

There are no new ways to crash an aircraft...

...but there are new ways to keep them from crashing.

Safe hunting,

Bryan 'MacGy' Smith

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