

AIRBORNE PUBLIC SAFETY ASSOCIATION



The

Safety

Wire

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MAINTENANCE WILL MAKE OR BREAK YOU

Most of us in the industry know that no matter how good the aircrews or equipment are, without good maintenance we simply will not be able to do our work.

However, when it comes to taking care of our maintenance staff, we often fall short of what needs to be done. Usually it is not intentional neglect, we just don't know what we should be doing to help that portion of our operation. I am not an aviation technician, but I am

lucky enough to spend time with some of the best during our APSA maintenance online meetings. Recently, that group updated an informational brochure with some tips for us to remember.



First, human factors are just as important on the maintenance floor as they are in the cockpit. They are also just as difficult to monitor in the hangar as they are in the air. Fatigue, stress, and physical limits from heat, cold or noise will sneak up on even the most professional technician, just as they would on a pilot, crew chief or TFO. Self-awareness and self-monitoring are a good start; however, they will both fail eventually. Our maintenance staff need the same protections from human limitations that we give our aircrews, such as maximum duty day limits and minimum rest time between shifts.

We have sterile cockpit procedures for certain times during flight for the same good reason there should be a distractions policy in place to limit disruptions when

maintenance staff are working on aircraft. I am personally guilty of violating this rule. Sometimes when a question comes up, it seems like it would be harmless to walk out and ask one of the technicians for a quick answer while they are working. In reality, the question can usually wait, and even a small distraction can be disastrous. If the question is truly time sensitive, part of a distractions policy includes what the maintenance staff should do if interrupted. Going back two steps in the procedure they were working on is the bare minimum.



In the aircraft, we preach the concept of Crew Resource Management (CRM) to minimize human error. CRM can be used on the maintenance floor for the exact same reason. One place this comes into play is during post maintenance inspections. If your maintenance department is a one-person show, an aircrew member can be used as part of the maintenance 'crew' to check the work and look for tools or equipment mistakenly left behind.

One of the best CRM tools available to us is a Flight Risk Assessment Tool (FRAT). If used correctly, a FRAT lets the entire aircrew know where everyone is at on the human performance scale for the upcoming flight, and what performance will be required on that flight. The application to maintenance is obvious.

Finally, many agencies have a Safety Management System (SMS) but do not include maintenance. This not only robs maintenance from an opportunity to bring up and address their concerns, but it prevents a major portion of the organization from being included in the effort to reduce overall risk. There is nothing to gain and everything to lose by not making maintenance a core aspect of your SMS. The little problem you fail to catch in the hangar usually waits until the aircraft is in the air before turning into a big problem.

"I think a good mechanic is much better than a lucky charm."

~Amelia Earhart

APSA 2019 Manned Aircraft Maintenance Staffing Survey

APSA invites all members to participate in our third Manned Aircraft Maintenance Staffing Survey. Please take a few minutes to answer our short survey so we can better understand the present status, and future needs, for public safety aircraft maintenance. All entries are kept strictly confidential and a summary of the results will be presented in a future newsletter. Thank you for your time and assistance.

[TAKE SURVEY](#)

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.

The schedule for upcoming APSA online meetings is as follows.

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



Maintenance:

Wednesday, November 6, 2019
12:00 PM - 1:00 PM EST (1600 UTC)

Safety Officers:

Friday, November 8, 2019
1:00 PM - 2:00 PM EST (1700 UTC)

UAS:

Wednesday, December 18, 2019
1:00 PM - 2:00 PM EST (1700 UTC)

SAR:

Tuesday, January 7, 2019
1:00 PM – 2:00 PM EST (1700 UTC)

“People have always asked me if I was afraid. I wasn’t.
Constructive apprehension is more like it”

~John Glenn

RESOURCES

US Helicopter Safety Team Safety Bulletin – Vortex Ring State:

http://www.ihst.org/LinkClick.aspx?fileticket=o13w9B8oy8k%3D&tabid=3240&language=en-US&fbclid=IwAR1DQqcCxS4QnIBx3NHpEknkvqV89BdqmqXk_prsT56hw9hV1uOg6kVlhRw

US Helicopter Safety Team Safety Bulletin – Power Available Limitations:

http://www.ihst.org/LinkClick.aspx?fileticket=jeVVILG69Wg%3D&tabid=3240&language=en-US&fbclid=IwAR16_g2mtU6aiKkvCnM2ZDIVmEOk7TQmEMIDorQ68-HjeH8ZvCbXGUzxb54

Report on UAS vs Manned Aircraft midair collision risk:

<https://publications.parliament.uk/pa/cm201719/cmselect/cmsctech/2021/202107.htm#footnote-115>

FAA UAS Sightings Reports:

https://www.faa.gov/uas/resources/public_records/uas_sightings_report/

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.

Aircrew or passenger hit by gunfire

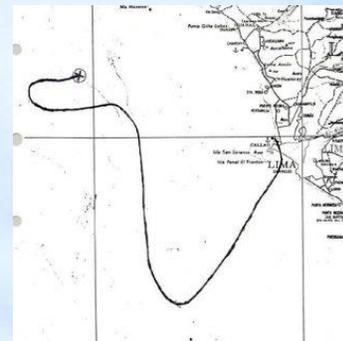
Reality Check...

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: Boeing 757
Injuries: 70 Fatal

<https://aviation-safety.net/database/record.php?id=19961002-0>

Flight 603 took off from Lima runway 15 at 12:42 am for a flight to Santiago. Five minutes after takeoff the crew reported problems with their instruments and stated they wanted to return to the airport. During the initial climb, the airspeed and altitude indications were too low. In calm winds, the windshear warning suddenly sounded. The aircraft climbed to FL130, before a return to Lima was initiated. While returning, the captain's airspeed and altitude indications were too high, causing an overspeed warning. At the same time, the co-pilot's airspeed indications were too low, triggering the stick shaker. The aircraft kept descending and impacted the water with the left wing and no. 1 engine at a 10 degrees angle, at a speed of 260 knots. The aircraft pulled up to about 200 feet and crashed inverted. The captain's airspeed indicated 450 knots and altitude 9500 feet. Investigation results showed that the aircraft's three static ports on the left side were obstructed by masking tape. The tape had been applied before washing and polishing of the aircraft prior to the accident flight.



Probable Cause:

ERROR OF THE MAINTENANCE STAFF INCLUDING THE CREW

It can be deduced from the investigation carried out that the maintenance staff did not remove the protective adhesive tape from the static ports. This tape was not detected during the various phases of the aircraft's release to the line mechanic, its transfer to the passenger boarding apron and, lastly, the inspection by the crew responsible for the flight (the walk-around or pre-flight check), which was carried out by the pilot-in-command, [name], according to the mechanic responsible for the aircraft on the day of the accident.

CONTRIBUTING CAUSES

1) PERSONAL ERROR OF THE CREW

The pilot-in-command made a personal error by not complying with the procedure for GPWS alarms and not noticing the readings of the radio altimeters

in order to discard everything which he believed to be fictitious.

2) PERSONAL ERROR INCLUDING THE CREW

The co-pilot made a personal error by not being more insistent, assertive and convincing in alerting the pilot-in-command much more emphatically to the ground proximity alarms.

Aircraft: Cessna 172P
Injuries: 2 Serious
NTSB#: MIA03TA175

https://www.nts.gov/ layouts/ntsb.aviation/brief2.aspx?ev_id=20030909X01493&ntsbno=MIA03TA175&akey=1

A Cessna 172P owned and operated by the Santa Rosa County Sheriff's Department, impacted with trees while maneuvering, near Jay, Florida. The commercial-rated pilot and one passenger/observer reported serious injuries. The flight had originated from Milton Airport, about 1015 earlier that day, with a stop at the airport in Jay, Florida, to pick up the passenger/observer.

According to the pilot, he was performing aerial observation work, in a left hand circular pattern, at an altitude of 500 to 550 feet. He flew through an area of turbulence which he perceived to be prop wash from the previous circle. He rolled wings level and added full power to climb out of the turbulence, the engine did not respond to the power setting. The aircraft "settled" and went down in an area of pine trees.

The passenger/observer seated in the back seat stated he looked up front to see the pilot "fighting with the controls", shortly after this the airplane descended into the tree tops and impacted the ground. After the crash, he said he "could smell the fuel leaking from the plane" and voiced his concern to the pilot about the fire hazard. Rescue personnel that responded to the accident stated that there was no odor of fuel or any other unusual smell present at the accident site. The fuel selector was found in the both position and rescue personnel turned it off for safety reasons.

The Federal Aviation Administration inspector's report included a statement from the pilot that during the left bank maneuver he had a flap setting of 10 to 20 degrees. At the time of full power advancement, there was an indicated air speed of 55 to 58 knots and with the engine reading 2,000 rpm when the engine did not respond. The airplane impacted trees at the 40 foot level and had an energy path of approximately 240 degrees. The pilot reported to the FAA inspector that the right fuel quantity gage had been inoperative for some time.

The airplane manufacturer's report stated that control cable continuity was established between all control surfaces. The inspection of the fuel system revealed small amounts of fuel in the fuel line to the carburetor, in the carburetor, and in the gascolator. This fuel was blue in color and an on-site test found it to be

free of water. The gascolator, engine fuel filter screens, and left and right fuel tank screens were found to be clear of debris. Fuel line continuity was established for both wings and both fuel tank pickups. Both the left and right fuel tanks were found to be intact with no breaches observed. The fuel vent continuity was also established between the left and right fuel tank inner connect fuel lines.

The engine manufacturer's report stated that control cable continuity was established between the engine and the cockpit. No signs of fuel leakage were present on the ground surrounding the crash site or on the fuel system lines or hoses. Photographs of the wreckage taken by the Santa Rosa County Sheriff's Department about 3 hours after the accident showed a large blue fuel stain on the right-wing surface beginning at the vented fuel tank filler cap and extending to the wing leading edge.

The airplane was flown for 4.1 hours on August 25, 2003, and not refueled. Records indicated that the airplane's fuel tanks were topped off with 32.71 gallons on August 29. The airplane was flown a total of 2 hours on August 29 and was refueled with 15.93 gallons the same day. This was the last recorded fueling. On September 3, the airplane was flown a total of 2.2 hours before the accident. According to the Cessna 172 Pilot Information Manual, the airplane has a fuel capacity of 43 gallons, of which 40 gallons are usable. A review of the airplane's flight indicated that the airplane had an average fuel burn of 7.98 gallons per hour.

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

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

Safe hunting,

Bryan 'MaGu' Smith

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