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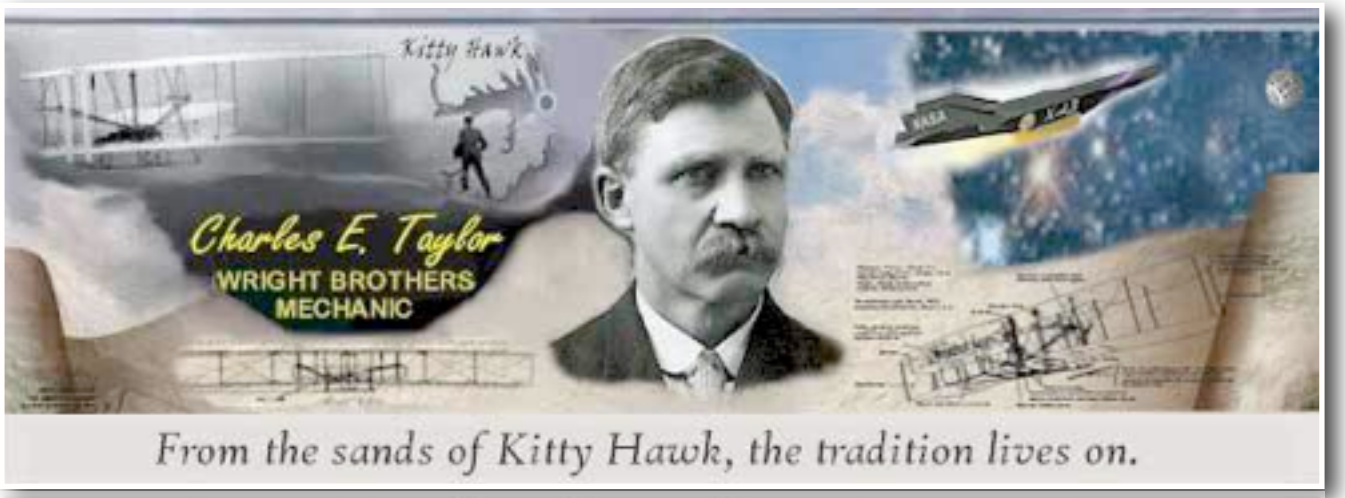

Hello all,

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In this weeks edition of *Aviation Human Factors Industry News* you will read the following stories:

Maintenance work blamed for El Al 777 landing gear failure

Israeli investigators have blamed overhaul work performed in Singapore for the 23 May "severe structural failure" of the main landing gear on a Boeing 777 operated by El Al.
A 20 June statement from Israeli accident investigators said they were focusing on the MRO work as the likely cause of the incident.

The latest report, produced by Yitzhak Raz, the Israeli ministry of transport's chief accident investigator, said that laboratory tests prove that the failure followed surface grinding of components in the MRO centre.

It recommends that the US Federal Aviation Agency issues a warning on similar processing of the metal involved.

Raz said that the data collected so far cannot rule out similar failures being produced by other MRO operations. Non-destructive tests on landing gear overhauled in the same MRO centre in Singapore and in other facilities over the last two years are therefore recommended.

The aircraft, with 279 passengers, departed Tel Aviv's Ben Gurion airport for Newark, New Jersey, on 23 May but turned back after the left main gear failed to retract. The aircraft's crew dumped fuel over the Mediterranean and an Israeli Defense Force Lockheed Martin F-16 fighter conducted an air-to-air inspection of the landing gear before the airliner eventually landed safely.

NTSB releases Ludington plane crash photos, documents; Fuel system debris is focus of much of the probe

In a 2003 photograph, Jerry Freed, left, and Earl Davidson stand by Freed's Cessna 206. Davidson and three others died last July.

Fuel system debris is the focus of investigators probing the plane crash that killed four local residents near Ludington a year ago.
Alma pilot Jerry Freed reported engine misfiring and eventual failure before his Cessna 206 crashed into Lake Michigan on a medical rescue flight last July 23.

Significant debris has been found on the plane's fuel filter and fuel servo inlet, according to documents released by the National Transportation Safety Board in recent days.

Freed and copilot Earl Davidson of Riverdale were taking seriously ill Alma School Superintendent Don Pavlik to the Mayo Clinic in Rochester, Minn., for cancer treatment.

Also on board were Pavlik's wife, Irene, and Dr. James Hall of Alma.

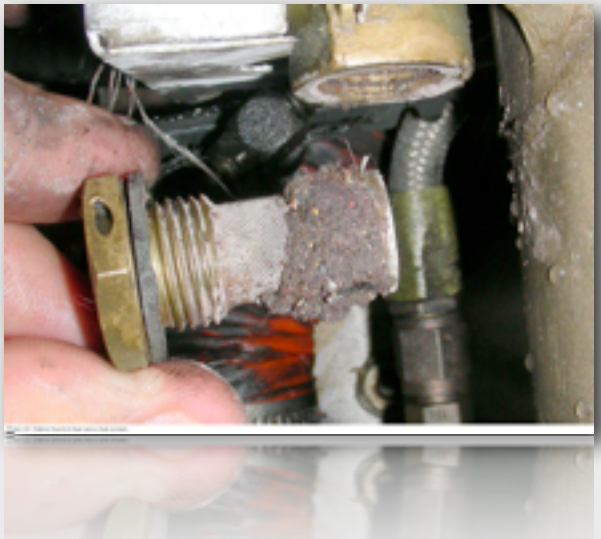
Freed survived; the four others perished.

Their bodies, along with the plane and engine, were recovered in the days after the crash by state police divers.

A final report is yet to be filed, but newly released documents and photos confirm the original suspicion that fuel system problems would be the focus of what caused the engine failure.

Freed was about midway across Lake Michigan when the sputtering began and made the decision, in consultation with air traffic controllers, to turn back, taking the aid of a tailwind.

The Cessna crashed and cartwheeled on the water before quickly sinking about six miles from land.



Scientific analysis of the fuel system debris identified a small amount as rutile, a mineral often found in paint. Other debris in the fuel system was termed organic in nature but could not be positively identified.

Trace Laboratories of Maryland used a spectrometer to analyze the debris.

Besides rutile, the rest was described as cellulose material similar to wood or sawdust, thin metallic shavings, white flakes similar to paint, granular material like sand or dirt and fabric or glass fibers.

Nothing contained in any of the documents speculates on how the material entered the fuel system.

Both fuel tanks were filled to capacity the evening before departure.

Freed's Cessna was properly maintained and had its last annual inspection eight months before it crashed, according to the plane's engine log.

At that inspection, mechanics looked at fuel injection lines and fittings and checked the fuel servo connections, according to the log.

Ironically, Freed had failed to locate his plane's life vests the day before the flight, which they knew would take them over Lake Michigan, and had borrowed those of his co-pilot, Davidson.

Freed and Davidson flew frequent medical flights to the Mayo Clinic for local residents, always for free, and traded off using each other's planes.

In addition to scientific reports and fuel system photos, the NTSB has released photos of the recovered plane, engine and life vests.

Additional documents include the official sheriff's department report, an NTSB report, an supplemental interview with Freed and transcripts of radio traffic between air traffic controllers and Freed.

Jeju Air criticized for pilot error

Jeju Air, Korea's country's largest budget carrier, is facing a public relations disaster after one of its pilots did not turn on a pressurization device after takeoff, causing severe pain to some passengers. Jeju Air flight 107, bound for Jeju Island, took off from Gimpo International Airport in western Seoul at 9:00 a.m., Thursday carrying 190 passengers and crew. But the captain of the airplane forgot to switch on a pressurization device, which increases pressure inside the cabin so that those on the plane feel like they are flying at a lower altitude.

Five minutes after takeoff, passengers sitting in the rear end of the plane began complaining about severe pain in their ears. The pilot turned the device on only after being notified by flight attendants of the situation.

However, some 20 passengers continued to suffer the pain in their eardrums throughout the flight, which lasted for nearly an hour.

After the airplane landed at Jeju International Airport, five passengers were taken to a nearby hospital for treatment. Some 20 passengers demanded the airline return airfares for the incident.

The airline said it was a simple error on the part of the pilot, stressing that there was nothing wrong with the aircraft. "It is unfortunate that some passengers experienced discomfort as the plane's pressurization device was turned on later than it should have been," a Jeju Air spokesman said.

He said the pilot has been banned from taking control of the cockpit following the incident, and the company will take further disciplinary action against him.

CALLBACK

From NASA's Aviation Safety Reporting System

ASRS

The First Half of the Story

Situation #1: Flat Out Right...or Wrong

(Experimental Aircraft Pilot's Report)

■ [After landing], I realized that I had a flat left main tire. However, due to the strong winds, I was able to apply right aileron, lift the left main and taxi to the FBO on the right main and tail wheel. I…applied "Fix-a-Flat" to the tire [but it] failed to stop the leak. Because the aircraft uses "unusual" wheels, obtaining a replacement tire from the FBO was not an option. Ordering a replacement would have taken a week or so. My options were to fly the airplane home or leave the airplane at the FBO and get a replacement tire.

I began seriously considering flying the airplane home. My thought process was as follows: This is a tail wheel aircraft well known for its ability to takeoff and land at very slow airspeeds in very short distances. With a touch of flap and lightly loaded, it can lift off at approximately 20 knots. I had 20 knots of wind directly on my nose. I would be airborne with a ground speed of less than 5 knots. Takeoff would not be a problem, even with the flat. My home airport was reporting winds of over 25 knots down the runway so landing would also be a slow ground-speed event…. Having already landed with the flat, I knew that landing and ground handling was not an issue. I elected to fly the airplane home.

I…was cleared to taxi…. Ground asked me if I was aware that I had a flat left main tire…. I said…I was OK with departing if he was OK with letting me go.

Upon contacting Tower, I was told, “Enter the runway at your own risk.” I asked if I was cleared for takeoff. Tower said, “No takeoff clearance will be granted. Enter the runway at your own risk.” I said, “I don’t want to enter the runway if someone else is on final. Am I cleared?” Tower said, “No traffic is observed in the area. Enter the runway at your own risk.”

The Rest of the Story - The Reporters' Actions

Situation #1: Flat Out Right...or Wrong

■ I asked the controller straight out, “Are you going to issue me a takeoff clearance?” He replied, “No.” I was not about to cross the hold-short line without a clearance. “Enter the runway at your own risk” was not a clearance in my mind. So I decided that this flight was now over.

In the end, I am glad that the Tower Controller did not clear me onto the runway and I am also glad that I elected not to cross the hold-short line without a clearance. Ultimately, not taking off and putting the airplane back in the hangar was the right decision. There is just no sense in increasing risk and, while I was sure that both the airplane and I could handle the situation, there is no question that the risk of taking off and landing with a flat tire is higher than without a flat tire.

“I Ain’t Gonna Do This Stuff”

In my years of teaching the ‘Human Performance in Maintenance’ (HPIM) course, says Gordon Dupont of *System Safety Services,* I have witnessed many student reactions but none matched ‘Jim” who sat in the front row with his arms crossed began the class by defiantly announcing to me and the entire class, “I ain’t gonna do this stuff.”

A tough beginning to a class which can be difficult to teach because the subject of human factors covers a wide spectrum and conjures up different images in all of us. The HPIM course is a two day course developed by Transport Canada and for more than two years has been offered to the aviation industry. The workshop covers what we call the “Dirty Dozen” causes of judgment interference which lead to maintenance errors. These causes, depicted on a set of posters which are given out as part of the workshop are: Lack of Communication, Complacency, Lack of Knowledge, Distraction, Lack of Teamwork, Fatigue, Lack of Resources, Pressure, Lack of Assertiveness, Stress, Lack of Awareness and Norms.

The intent of this course is to offer useful human factors information which can be applied by the individual mechanic or by an entire airline. I have found that useful human factors training gives the person the reasons why he made the mistake and more importantly, provides tools to prevent making future mistakes. At times this has been misconstrued as ‘making excuses for that jerk!” Nothing could be further from the truth. This training is simply one way of teaching us to look beyond the easy answer – the mechanic who screwed up – and delve further into contributing factors. Not to exonerate the mechanic, rather to gather the information necessary to ensure the mistake doesn’t happen again.

In my experience as an aviation accident investigator, the saddest thing I would see, outside of the grieving relatives of the deceased, was the sadness of an aircraft maintenance engineer (AME) who has realized that his actions had resulted in the loss of lives. He’d look right at me and say in all honesty, “I did the best I knew how and I don’t know why, but I screwed up” or, “I made a terrible mistake – I knew better – I don’t know why this happened.” These destroyed looks on the faces of the mechanics are what I keep in mind while teaching this course and dealing with the ‘Jims’ in my classes. Because: “There but for the grace of God go I”.

I have yet to meet the person who deliberately sets out to make an error. Through many examples (some personal), case studies, and team interactions in the HPIM course, it is always exciting to see people begin to understand why the ‘jerk’ made an error. Some will confess that they have made errors and discuss them. Often they realize that, but for the safety net, they could have been the ‘jerk’ who caused an accident.

But what of our ‘Jims” who had ‘been there, done that’, many times and “Ain’t gonna do this stuff.” Each person will get out of the class only what he is willing to put into it. Thus, it is very important that the facilitators have similar experiences and firmly believe in what they are teaching.

The participant has to come to realize for himself that good intentions and a high professional standard are no guarantee against errors. But, knowledge of what causes often the hardest working person with high ethics; to make an error can enable him to avoid the same mistake. By not fully participating in the workshop these 'Jims' soon realize they are letting down their workshop team. (Peer pressure at its subtle best.)

The HPIM course delves into some psychology because to understand human factors you have to come to understand a little bit about yourself and why you think and do the things you do. This understanding is at the heart of why we make "honest" mistakes. The workshop uses a simplified version of the transactional analysis model to introduce the subconscious and its influences on our judgment. We call this model the "Dupont" model which states: Our decision making mind is divided into two parts: the rational (adult) and emotional (child). When we are born we have only the emotional or child but as we grow the child slowly moves to the subconscious as the rational or adult develops. But the child is always there to influence any decision made. This model is then developed to show how it influences a person's judgment while at work.

It is a very simple but effective model. The reaction of all participants and the industry has been rewarding to me and to the other volunteer facilitators. We have satisfied training requests from major Canadian and U.S. airlines as well as overhaul shops, helicopter companies and small operators.

So what of 'Jim' who made the headline statement? He got the most of anyone out of the class and on his evaluation he wrote, "I learned how not to screw up and control my inner child." He did admit though that "It was going to be damn hard to babysit his child." At least he now had an awareness of what caused him to make an error and how to avoid making future errors. Don't you wish all AMEs had this knowledge?

2010 Review Shows EU Runway Incursions Climbing

The report says better reporting by member states and a change in ICAO's definition of runway incursion caused the a 25 percent increase in major incursions, according to preliminary 2010 data. The 2010 European Aviation Safety Agency review includes a specific chapter on air traffic management for the first time, including safety data obtained from EUROCONTROL. EASA's mandate was extended to include air traffic management and airports this year, so the Safety Analysis team provided information and statistics on ATM-related occurrences.

This Chapter 7 shows that serious runway incursions rose sharply in 2010, by about 25 percent, according to preliminary data.

But the review says two factors caused this increase -- better reporting by member states and a change in ICAO's definition of runway incursion -- not a sudden spike in serious incidents. However, runway incursions overall have risen from about 50 per million aircraft movements in 2005 to about 110 per million in 2010, it shows.

2010 was the only year in this century's first decade without a fatal commercial air transport accident reported in Europe, either in airplane or helicopter operations, the review states. There were 129 fatal accidents involving light and general aviation aircraft during the year, of which 45 percent involved aircraft engaged in firefighting operations and 14 percent involved flight training. EASA said some member states did not report all accidents in this category, however.

EUROCONTROL, the European Organization for the Safety of Air Navigation, is a civil/military organization working to deliver air traffic management excellence across a Single European Sky platform throughout Europe.

U.S. Chamber Opposes FAA Rest Rule

The organization's senior vice president of labor law, immigration & employee benefits sent a letter to OIRA's Cass Sunstein asking him "to ensure that the FAA develops a more narrowly focused and flexible rule. "The U.S. Chamber of Commerce has taken aim at the Federal Aviation Administration's proposed rule to further limit flight crew members' duty time, with the organization's senior vice president of labor, immigration & employee benefits, Randel K. Johnson, sending a letter to OIRA's Cass Sunstein asking him "to ensure that the FAA develops a more narrowly focused and flexible rule."

The proposed rule would be much more costly than FAA has estimated and is "precisely the kind of rule that the Obama Administration is targeting for reform: a rule that renders a vital industry unnecessarily inefficient and uncompetitive but produces little or no benefit in the bargain," Johnson wrote.

OIRA, the Office of Information and Regulatory Affairs, is part of the federal Office of Management and Budget. Sunstein is the administrator of OIRA, which is a gatekeeper for proposed federal regulations.

Mike Eastman, executive director of labor law policy for the U.S. Chamber, wrote about the flight crew rest rule in a blog post in which he said, "what is so shocking about the FAA's proposal is that it is a one-size fits all solution and ignores the important distinctions among many different types of operations in the air transport operation. As an example, consider the many distinctions between the traditional hub and spoke model used by many large passenger airlines as distinguished from cargo airlines, perhaps carrying military cargo into conflict areas. There's no second flight crew waiting in the conflict zone—you need to bring everyone with you. In addition to proposing a one-size fits all option, the rulemaking record makes it clear that the FAA did not even seriously consider alternative proposals that were raised in the rulemaking process. We filed comments with the FAA last year emphasizing this point.

Johnson's letter cites three "overriding defects" with the proposed regulation: There is no scientific support for the claim it will meaningfully improve safety, it will impose "dramatically increased costs on the U.S. airline industry, with severe downstream consequences for U.S. businesses and our nation's still-struggling economy," and it will negate technological advances in new equipment now being built into commercial airplanes.