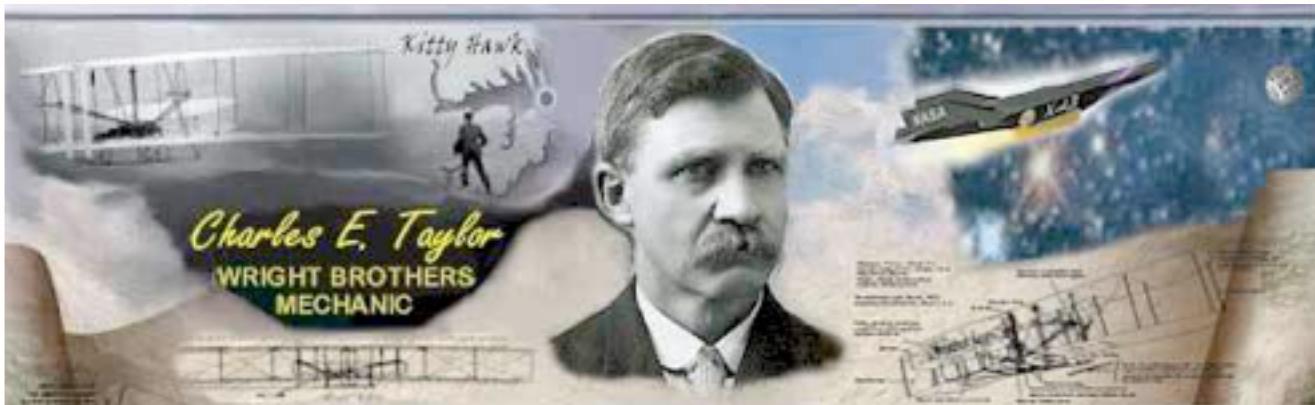


Aviation Human Factors Industry News

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From the sands of Kitty Hawk, the tradition lives on.

Hello all,

To subscribe send an email to: rjhughes@humanfactoresedu.com

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

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New Release of MX Fatigue Newsletter

From the FAA Aircraft Maintenance Human Factors Web Portal

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A MANAGEMENT VIEW OF FATIGUE CHALLENGES

by Doc Garrett

About the Author: Doc Garrett has been with Continental Airlines since 1984 and is currently the Manager of Maintenance Human Factors with responsibilities of development and implementation of Maintenance Threat Error Management, Human Factors, and Fatigue Risk Management programs in the Technical Operations Division. Doc is an FAA Licensed A&P Technician and Pilot.

Major air carriers are responsible for providing the flying public safe flight and a safe working environment for their employees. This large task involves many factors that come together to create a complex safety equation. The human factor, as the old saying goes: "Too err is human," further complicates an already complex equation.

Let's look at the human factor of this safety equation. When we, as humans, perform our jobs, whether it be in the cockpit, office, or hangar floor, we bring to our work environment certain human factors; one of which is fatigue. Fatigue is a feeling of tiredness, exhaustion, or lack of energy. Fatigue is listed as one of "The Dirty Dozen." Gordon Dupont, who introduced the Dirty Dozen, claims that fatigue is the root cause of many of the other most common causes of human error. We will never eliminate the Dirty Dozen in our work environment no matter how hard we try. However, if we learn to recognize, these threats, we can mitigate their impact thus reducing the possibility of the threat leading to an error.

Fatigue in the work place has been around since man started working at tasks. It is not something new and until recently has never really gotten the attention it deserves. Fatigue Risk Management System (FRMS) is a new concept emerging in many industries, including aviation. FRMS is a system that involves awareness, training, management, and fatigue

research to minimize the effect of fatigue in the work place. Everyone – from the individual, to management, to labor, to the regulator – has a piece of this Fatigue equation.

Let's look at the current regulatory requirements for aviation maintenance technicians (AMT's).

Title 14, Code of Federal Regulations
Sec. 121.377 - Maintenance and preventive maintenance personnel duty time limitations.

Within the United States, each certificate holder (or person performing maintenance or preventive maintenance functions for it) shall relieve each person performing maintenance or preventive maintenance from duty for a period of at least 24 consecutive hours during any seven consecutive days, or the equivalent thereof within any one calendar month.

When you look at this regulation, it is vague regarding how many hours a day and how many consecutive days an AMT can work. Based on this rule, it would be difficult for a company to design safe shift schedules. With overtime, trade days, commuting hours, and normal work schedules, this could build up into a tremendous fatigue threat.

In the absence of a clear regulation, what can be done to address the risks of fatigue in the maintenance workplace?

<https://hfskyway.faa.gov/HFSkyway/FatigueNewsletter.aspx>

Open hatch forces emergency landing

An Air New Zealand Eagle aircraft is undergoing maintenance after its **cargo door flew open** as it took off. The 19-seat Beech 1900D aircraft had nine passengers and two pilots on board when the hatch flew open as it took off from Auckland Airport last Friday morning.



Aviation photographer William Bradley was at the site at the time and rushed to get his camera.

"I saw the plane, as normal - normal height, normal everything. But I just noticed the **door was wide open**," he said.

"By the time it went past me, the door was wide open ... just as it left the ground."

An investigation by the Transport Accident Investigation Commission was carried out after the incident.

The aircraft was given the all-clear to make a trip to Hamilton the next day.

Air New Zealand spokeswoman Tracy Mills said the plane - which had taken off on a flight to Whangarei - had to turn back and make an emergency landing after the open door was spotted.

She said the aircraft was now being looked at as part of a maintenance program.

According to the Eagle Airways website, Eagle Air is a wholly owned subsidiary of Air New Zealand and operates 18 Beech 1900D airliners on the Air New Zealand domestic route network.

Engine cover is 3rd to fall off a plane since 2007

An engine cover that fell off a plane departing Newark Liberty International Airport is the third such incident involving an Airbus jet since 2007, according to federal aviation records. An FAA spokeswoman said the Airbus A320 operated by JetBlue left Newark for Fort Lauderdale at 6:15 a.m. but had to return 10 minutes later because the engine cover, called a cowling, fell off the plane and onto a runway shortly after takeoff.



There were no injuries, and the runway was cleared about an hour later, spokeswoman Arlene Salac said.

Three similar incidents involving Airbus planes have occurred since 2000, including two in the past three years, according to incident reports filed by the National Transportation Safety Board.

In January 2008, a passenger on an Airbus A319 operated by Northwest Airlines from New York to Detroit reported seeing a cowling flapping shortly after takeoff.

The flight continued, and, according to the NTSB report, half of the cowling fell off as the plane made its final approach to Detroit Wayne County Metropolitan Airport.

The other half fell off during landing and was contacted by another arriving plane, though the report didn't say whether the second plane was damaged.

In April 2007, another Airbus A319 operated by Frontier Airlines lost an engine cowling while taking off from Atlanta's Hartsfield-Jackson International Airport and had to return to the airport.

On an AmericaWest flight from Las Vegas to Columbus, Ohio, in June 2000, a cowling fell off the Airbus A319 on takeoff, prompting several passengers to alert flight attendants. The plane returned to the airport without incident.

All three times, the NTSB faulted mechanics and maintenance personnel for failing to secure the cowlings after routine preflight inspection.

American Airlines jet gets towed, gets broken

What we got here is a **failure to communicate**.

Did you ever wonder what would happen if you towed a big airplane by its nose gear when **its brakes were still set?**

Apparently, some American Airlines employees delivered the answer last week at Dallas/Fort Worth International Airport: The **landing gear collapses**. The mechanic in the cockpit hadn't released the brakes. Kerplunk seems to be the result.



Tim Wagner of American says that pretty much sums things up. The **ramp employee and the mechanic didn't communicate properly and failed to follow standard operating procedure**, he said.

The good news is no damage was done to the jet's airframe. The plane was quickly repaired at American's maintenance base there and put back into service the next day, Wagner said.

And it **became a teaching moment**. Wagner said American is using the incident to remind all employees that standard operating procedures are standard for **good reason**.

As you might remember, one of American's Boeing 767s last year collapsed on its nose after someone apparently retracted the nose gear. A pin was supposed to be in place to prevent that; it wasn't. The incident caused major damage to that airplane. It was repaired and has returned to passenger service.

Maintenance oversight grounds Air France premium A319s

Air France has admitted temporarily grounding seven of its premium service Airbus A319ERs after **realizing wheel-brake systems** had exceeded the number of permitted cycles without inspection. The small 'Dedicate' fleet serves oil-industry destinations in Africa and the Arabian peninsula, their cabins equipped to high-end business-class standards.

Air France says three of the A319s were at base, and four at outstations when the oversight was noticed by the engineering base at Paris Charles de Gaulle.

The latter four jets underwent emergency brake system inspections at African outstations and were then returned to service, says the airline.



Poor maintenance started accident chain that resulted in Learjet high-speed runway departure

A chartered business jet crashed at a South Carolina airport 18 months ago because of the operators **inadequate maintenance of the airplanes tires** and decision by the captain to attempt a high-speed rejected takeoff, which went against standard operating procedures and training, the NTSB determined.

On September 19, 2008, at 23:53, a Learjet 60 (N999LJ) operated by Global Exec Aviation and destined for Van Nuys, California, overran runway 11 during a



rejected takeoff at Columbia Metropolitan Airport. After the airplane left the departure end of runway 11, it struck airport lights, crashed through a perimeter fence, crossed a roadway and came to rest on a berm. The captain, the first officer, and two passengers were killed; two other passengers were seriously injured.

The investigation revealed that prior to the accident the aircraft was operated while the main landing gear tires were severely under inflated because of Global Exec Aviations inadequate maintenance. The under inflation compromised the integrity of the tires, which led to the failure of all four of the airplanes main landing gear tires during the takeoff roll.

Shortly after the first tire failed, which occurred about 1.5 seconds after the airplane passed the maximum speed at which the takeoff attempt could be safely aborted, the first officer indicated that the takeoff should be continued but the captain decided to reject the takeoff and deployed the airplanes thrust reversers. Pilots are trained to avoid attempting to reject a takeoff at high-speed unless the pilot concludes that the airplane is unable to fly; the investigation found no evidence that the accident airplane was uncontrollable or unable to become airborne.

The tire failure during the takeoff roll damaged a sensor, which caused the airplanes thrust reversers to return to the stowed position. While the captain was trying to stop the airplane by commanding reverse thrust, forward thrust was being provided at near-takeoff power because the thrust reversers were stowed. The Safety Board determined that the inadvertent forward thrust contributed to the severity of the accident.

The Safety Board also found that neither the Federal Aviation Administration nor Learjet adequately reviewed the Airplanes design after a similar uncommanded forward thrust accident that occurred during landing in [Alabama in 2001](#). While the modifications put into place after the Alabama accident provided additional protection against uncommanded forward thrust upon landing, no such protection was provided for a rejected takeoff.

The safety recommendations that the NTSB made to the Federal Aviation Administration as a result of this investigation are:

- provide pilots and maintenance personnel with information on the hazards associated with tire under inflation, including the required intervals for tire pressure checks, and allow pilots to perform pressure checks in air taxi operations to ensure that tires remain safely inflated at all times;
- require tire pressure monitoring systems for all transport category airplanes;
- identify and correct deficiencies in both Learjets thrust reverser system safety analysis and the FAAs design certification process to ensure that hazards encountered in all phases of flight are mitigated;
- require that simulator training for pilots who conduct turbojet operations include opportunities to practice responding to events other than engine failures near takeoff speeds;
- require that pilots who fly air taxi turbojet operations have a minimum level of pilot operating experience in an airplane type before acting as pilot-in-command in that type; and require that airplane tire testing criteria reflect the loads that may be imposed on tires both during normal operating conditions and after the loss of one tire.

<http://ntsb.gov/Publictn/2010/AAR1002.htm>

Flight attendant sues airline over lung damage

Airlines worldwide risk a rash of negligence claims after a former flight attendant successfully sued in a NSW Court for lung damage after toxic smoke filled the cabin of a BAe 146 commuter jet. Three judges, sitting as the Court of Appeal, late last week ruled unanimously that a maintenance issue was not properly addressed by the former Ansett subsidiary East-West Airlines.



At the time a **cracked carbon seal** on a compressor unit caused smoke to flood the cabin of a BAe146 on a flight from Sydney to Brisbane.

Aviation expert Peter Marosszky told BusinessDaily yesterday that the world-first decision turned on the fact that airlines **must comply with the maintenance instructions** set by the manufacturer of an aircraft.

A licensed engineer and now visiting research fellow with the University of NSW, Mr Marosszky said a precedent now existed where flight crew and airline passengers could claim for illnesses from onboard incidents.

A total of 387 of the small four-engine jetliners were built by British Aerospace Systems between 1997 and 2002 and entered service with 31 airlines and four air forces.

Eleven are still flying in Australia with Adelaide-based charter operator Cobham.

Last week the three judges upheld an earlier judgment by the Dust Diseases Tribunal that East-West Airlines **was negligent for not following recommended maintenance procedures** when it serviced a BAe 146 that flew from Sydney to Brisbane on March 4, 1992.

Joanne Turner, a flight attendant aboard the aircraft, later complained of a burning throat, sore eyes and a headache and has since suffered a permanent cough after 1.75 litres of synthetic oil leaked from an auxiliary power unit.

Mrs Turner, then 25 weeks pregnant, alleged that on the approach to Brisbane thick clouds of grey smoke flooded the cabin for 20 minutes.

Two medical specialists said that ultra-small particles of carbon would have been present in the smoke.

Mrs Turner, from Old Bar on the NSW North Coast, was awarded \$138,757.20 damages and costs.

Tanya Segelov, who appeared for Mrs Turner, said it was the first time an airline **had been held to account "for the well-documented problems with air quality on a BAe 146 aircraft"**.

-- FAASafety.gov

Safe Taxi Tips and Preventing Wrong Runway Departures

Notice Number: NOTC2090

The Commercial Aviation Safety Team (CAST) strategy is to significantly increase public safety by adopting an integrated, data-driven strategy to the fatality risk in commercial air travel. The CAST model: Identifies the top safety areas through the analysis of accident and incident data. Charters joint teams of experts to develop methods to fully understand the **chain of events** leading to accidents. Identifies and implements high-leverage **interventions or safety enhancements** to reduce the fatality rate in these areas. One of the focus areas for CAST Safety Enhancements (SE) is **runway safety**. Recently updates to runway safety programs were added to the CAST website, which include information on PREVENTING Wrong Runway Departures and global **Best Practices for REDUCING risks while taxiing**. Uploaded here is a nice brochure put out by the FAA on Preventing Wrong Runway Departures, and the Supplemental Implementation Plan (SIP) for CAST Safety Enhancement 60, "Commonly Used Safe Operating Practices for Taxi Safety. "More information on runway safety can also be found at these websites:



ATA Runway Safety <http://www.airlines.org/operationsandsafety/safety/Runway+Safety.htm> CAST-Org http://www.cast-safety.org/runway_safety.cfm FAA Office of Runway Safety http://www.faa.gov/airports/runway_safety/ Signal Charlie <http://www.signalcharlie.net/Runway+SafetyPoint>

Of Contact: Kent B. Lewis, FAATeam Lead Rep, Ft Worth FSDO, (817) 692-1971, kent.lewis@gmail.com

Picture This!



An extension cord would have been better. You think?