

Aviation Human Factors Industry News

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

Hello all,

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Technical Report - Aviation Maintenance:

The Office of Aviation Medicine has published a technical report titled [Fatigue Risk Management in Aviation Maintenance: Current Best Practices and Potential Future Countermeasures](#). The unregulated hours and frequent night work of maintenance can produce significant levels of employee fatigue, with a resultant risk of maintenance error. Fatigue Risk Management Systems (FRMS) are widely used to manage fatigue among flight crew and drivers of commercial vehicles, but comprehensive approaches to fatigue risk management are still uncommon within maintenance organizations. In the wider transport industry, the objective of most FRMS has been to reduce fatigue to an acceptable level. Two additional objectives can be identified for FRMS in the maintenance environment: [reducing or capturing fatigue-related errors](#), and [minimizing the harm caused by fatigue-related errors](#). A range of countermeasures can help to achieve these three objectives in aviation maintenance. Some of these countermeasures are currently being applied within the industry, while others may become feasible in the future. The data available on best practices for fatigue risk management in aviation maintenance are continually evolving.



For a copy of this report, please visit:

<http://www.faa.gov/library/reports/medical/oamtechreports/2010s/media/201110.pdf>

This research supports the Administrator's Flight Plan Goals for Increased Safety.

Report: FAA Should Address Pilot Commutes

A report released by the National Research Council found that commuting practices among airline pilots "[could potentially contribute to their fatigue](#)," and since fatigue can reduce performance, pilots, airlines, and the FAA should take steps to reduce the chance that commuting will pose a safety risk. The report stopped short of recommending new regulations, and said a [lack of data hampered the analysis](#).

"Some commutes have the potential to contribute to fatigue in pilots, and fatigue can pose a safety risk, but at this point we simply don't know very much about actual pilots' commuting practices," said Clint Oster, chair of the research committee. "Airlines and FAA should gather more information on pilots' commutes, and also work with pilots to lower the likelihood that fatigue from commuting will be a safety risk." The report also [offers suggestions to commuting pilots about best practices that could help to minimize fatigue](#). Pilots should plan their off-duty activities so they are awake no more than about [16 hours](#) at the end of their duty shift, the report suggests. Also, they should try to sleep for at least six hours before reporting for duty. Airlines should consider enacting policies that would help pilots plan more predictable, less tiring commutes. The report was requested by Congress due to concerns that arose about commuting and fatigue during the investigation of the Colgan Air crash in Buffalo, N.Y., in 2009.



The complete report can be read online -- go to the National Academies [website](#), and scroll down to find the Table of Contents.

FAA, air traffic controllers union agree to fatigue recommendations

The Federal Aviation Administration and the National Air Traffic Controllers Association (NATCA) reached an agreement on how to respond to the spate of sleeping controllers that made headlines earlier this year, the organizations said last week. Under the agreement, controllers [would be allowed to request leave](#) if they feel they are not alert enough to guide airplanes. They would [not be allowed](#) to take naps on the job or on breaks, which some scientists suggested would vastly improve alertness in flight towers.



Each side said the agreement would reduce incidents like the the ones that resulted in multiple air traffic controllers being fired as a series of reports emerged involving them either sleeping or being inattentive and making errors on the job. In one case, a controller was discovered to be watching a movie when the audio of the film was distributed over radio airways to the pilot of a military plane.

“The American public must have confidence that our nation’s air traffic controllers are rested and ready to work,” Transportation Secretary Ray LaHood said of the agreement in a written statement. “We have the safest air transportation system in the world but we needed to make changes and we are doing that.”

“We are pleased that the efforts of the [joint NATCA-FAA fatigue workgroup](#) that produced these science-based recommendations have resulted in an agreement and their implementation into the schedules and work environments of our nation's dedicated and highly professional air traffic controller workforce,” NATCA President Paul Rinaldi said, also in a written statement.

“We supported the FAA's action to enhance aviation safety by eliminating single staffing on the midnight shift and we fully support these recommendations that address fatigue,” Rinaldi continued. “They are common sense solutions to a safety problem that NATCA and fatigue experts have consistently raised for many years.”

The groups said they would continue to work to develop new work schedules for air traffic controllers. Currently, [controllers have to be given at least 9 hours off between shifts](#).

NTSB reports on flight from Chicago's emergency landing

Mechanical failure and a [confusing flight manual](#) contributed to an emergency landing involving a United flight from Chicago. It happened in January of last year. The plane touched down in Newark, New Jersey with part of its landing gear not fully extended.



The National Transportation Safety Board found that a door on the plane did not open far enough for the landing gear to extend, and the [flight manual contained an incorrect reference](#) in a checklist dealing with the landing gear.

A United Airlines flight from Chicago, carrying 48 passengers and five crew members, landed at Newark with part of its landing gear not fully extended on Jan. 10, 2010.

The plane's belly struck the runway and its right wing suffered damage. Passengers and crew evacuated safely and no one was injured.

[Dutch query RTO training after Ryanair post-V1 abort](#)

Dutch investigators have queried whether rejected take-off decision-making and procedures ought to be re-examined after inquiring into a [late aborted lift-off](#) by a Ryanair Boeing 737-800 at Eindhoven.

The take-off was rejected at 152kt, [beyond the 141kt V1 decision speed](#), with the aircraft already rotating and its nose-wheel having lifted from the runway 2s beforehand.



A Dutch Safety Board inquiry into the 4 June 2010 [incident found](#) that the first officer, who was flying, had trouble keeping the aircraft on the Runway 04 centerline at low speed and interpreted the problem as engine thrust asymmetry.

But a cross-check by the captain did not reveal any difference in engine indications, and no such problem subsequently showed on the flight-data recorder.

"The collected information shows that during the take-off roll the aircraft experienced an undetermined atmospheric disturbance," said the inquiry. "The first officer felt and interpreted this disturbance as an unsafe condition to continue the take-off."

Despite the carrier's procedures giving only the captain authorization to abort, the first officer rejected the take-off and the aircraft halted about 500m from the end of the 3,000m runway. The board stresses that the aircraft was not damaged and none of the occupants was injured.

But it refers to a Dutch study into rejected take-offs, conducted last year, which compared decision-making before and after the introduction of the Take-off Safety Training Aid tool in 1994, which aimed to cut the number of aborts. The study said the "correctness" of the decision to abort had "not increased" since 1994.

It added that a review showed that pilot training has focused on rejected take-off due to engine failure, but that this accounts for less than 25% of aborts. "With the current state of technology and human factors theories available, a re-evaluation of the rejected take-off concept and procedures may be useful and warranted," it said.

NTSB faults pilot in 2009 fatal crash. Pilatus PC-12/45, N128CM. Butte, Montana,

The National Transportation Safety Board said today in a press release that the pilot of a small plane that crashed and killed him and 13 others in Butte in 2009 cut safety corners and did not take the appropriate action after discovering a problem with the plane's fuel system. The NTSB Board concluded that ice clogged the Pilatus PC-12/45's fuel system and created an imbalance before the crash.

Investigators told the board Tuesday in Washington D.C. that pilot Buddy Summerfield did not add deicer to the plane's fuel as required in freezing temperatures. Additionally, they say the pilot should have diverted earlier. "The pilot's pattern of poor decision making set in motion a series of events that culminated in the deadly crash," said NTSB Chairman Deborah A. P. Hersman. "Humans will make mistakes, but that is why following procedures, using checklists and always ensuring that a safety margin exists are so essential - aviation is not forgiving when it comes to errors."



The board adopted the findings as the probable cause of the crash and recommended that guidance placards be placed on planes that require the use of ice inhibitors.

The pilot failed to ensure that a fuel system icing inhibitor (FSII), commonly referenced by the brand name "Prist", was added to the fuel prior to the accident flight. The pilot also failed to take appropriate remedial actions, including diverting to a suitable airport, after the airplane warning systems indicated a low fuel pressure state that ultimately resulted in a significant lateral fuel imbalance. And, the pilot lost control while maneuvering the left-wing-heavy airplane near the approach end of the runway.

American Airlines Pays Tribute to Elite Mechanics

American, FAA Celebrate AMTs with 50 Years of Service

American Airlines is honoring a special group of Aviation Maintenance Technicians (AMTs) for their lifetime achievement of serving five or more decades in the airline industry. At American's maintenance facilities in Tulsa, Okla., Kansas City, Mo., and Tampa, Fla., the airline paid homage to eight AMTs with the FAA's prestigious Charles E. Taylor "Master Mechanic" Award, which recognizes the lifetime accomplishments of senior mechanics. The award is named in honor of Charles E. Taylor, who worked for the Wright Brothers and was the first aviation mechanic in powered flight. To be eligible for the award, a recipient must have served 50 years as an accredited aviation mechanic and have been an FAA-certified mechanic for a minimum of 30 years.



"American Airlines AMTs are the best of the best, and these gentlemen exemplify our high standards. We commend them for their excellent service over the years," said Jim Ream, American's Senior Vice President – Maintenance & Engineering. "For 50 years, our Master Mechanics have worked tirelessly behind the scenes to ensure the safety of our customers, employees and fleet. They have set a very high bar for future generations of AMTs."

The honorees include:

- William Hindle (AMT, retired) – Kansas City
- Larry Olsen (AMT Crew Chief, retired) – Kansas City
- Gerald Beebe (AMT Inspector, retired) – Kansas City
- John Mulholl (AMT Crew Chief) – Tampa
- Ron Wolfe (AMT) – Tampa
- Ralph Grunhof (Manager – Production, retired) – Tulsa
- Prince Street (Supervisor – Aircraft Maintenance) – Tulsa
- Jim Roddy (AMT) – Tulsa

American Airlines has three overhaul maintenance bases located in Tulsa, Okla., Fort Worth, Texas, and Dallas/Fort Worth International Airport, along with line stations located throughout its domestic and international network. American employs more than 8,400 AMTs, who repair and maintain American's fleet of more than 600 aircraft.

Criminal Prosecution for Falsification of Aircraft Maintenance Records

In past *Director Of Maintenance* (D.O.M.) articles, we've talked about FAA enforcement cases in which the FAA alleges that a mechanic has falsified maintenance records. You know from those discussions that revocation of all airman certificates (mechanic, pilot and medical) is the FAA's policy and standard response in such cases. In other words, if the FAA proves its case successfully then the mechanic's certificates are revoked and he or she has to wait for a minimum of a year before reapplying for any of the certificates. [Unfortunately, reapplying means the individual has to retake both knowledge tests and practical tests.](#) Is revocation the worst consequence a mechanic can face in a falsification case? Sadly, it is not. [Criminal prosecution](#) (and its more severe consequences) is becoming more frequent.



The FAA, FBI and other local and federal law enforcement agencies are investigating falsification cases and, where appropriate, cases are being referred to state and federal attorneys for [prosecution](#). Several cases stand out and serve as examples of the serious trouble a mechanic can face in a criminal falsification case.

In one case reported by the Department of Transportation Office of Inspector General (“OIG”), an Alabama court sentenced an aircraft mechanic to [five years probation](#) and prohibited the mechanic from working in the aviation industry during that period of time. The sentence corresponded to the aircraft mechanic’s guilty plea to charges of [providing false information regarding his licensing and certifications](#). The aircraft mechanic was originally indicted on three counts of possessing and using false aircraft maintenance certificates.

The OIG determined that the aircraft mechanic obtained employment as a contract sheet metal mechanic at a repair station by providing a false Designated Mechanic Examiner’s certification. He also claimed that he had a valid Airframe and Powerplant certificate with an Inspection Authorization license, even though these certificates/ratings [had previously been revoked by the FAA](#). Unfortunately for the employer, it was required to re-inspect the repairs made by the aircraft mechanic to ensure that they were performed properly and did not pose a safety risk.

It is hard to imagine what the aircraft mechanic’s excuse or defense was to the charge. Now the aircraft mechanic is stuck trying to find employment in another industry (not that he wasn’t already effectively in that position with the certificate revocations). This case is a good example of why it is prudent for an employer to confirm an employee’s certifications and qualifications prior to hire, rather than simply taking the employee on his or her word. In this situation, not only did the employer end up with bad press, it also incurred what was likely substantial expense in cooperating in the investigation and performing the re-inspections. In another case, an Oklahoma aircraft mechanic was sentenced to 90 days house arrest, five years probation and fined \$57,500.00 for his role in [concealing and making false statements in connection with repairs to Lycoming engines using unapproved parts](#). When the FAA inspected the engines, some engine parts were not airworthy. The FAA had also issued notifications on suspected unapproved parts. This particular case was investigated by the Defense Criminal Investigative Service (DCIS, the inspector general for the Department of Defense), FBI and the FAA.

The OIG also reported that a pilot in Virginia was recently [convicted of falsifying aircraft maintenance records](#). The pilot was then sentenced to 30 days in jail followed by a 12-month period of supervised release. Apparently the pilot, or an aircraft sales and management company owned by the pilot, sold an aircraft to a

buyer and represented to the buyer that the aircraft had received an annual inspection per FAR § 91.409.

However, when the aircraft was delivered, it did not contain any logbook entries or records reflecting the completed annual inspection. [The pilot then instructed his company's director of maintenance to create false maintenance record entries showing that the annual inspection was completed by one of the company's former mechanics.](#) The pilot then delivered the fraudulent maintenance records to the buyer. This case is interesting because the pilot wasn't the person who actually created the false maintenance records. Granted, he authorized the DOM to create the records and then passed them off as originals to the buyer. I suspect that the FAA probably revoked the DOM's airman certificates since his or her conduct violated FAR § 43.12. I would expect that the DOM was also prosecuted since he or she was the person who actually made the false entries. Unfortunately, the OIG's summary doesn't say anything about prosecution of the DOM.

Finally, a Florida mechanic was sentenced to three years probation and a \$300 special assessment [for falsifying the overhaul of a Bell Helicopter main rotor hub assembly and for falsifying the 100-hour inspections on two Bell Helicopters.](#) The A&P mechanic apparently signed off that he overhauled a main rotor hub assembly, a compressor assembly, a turbine assembly and a gearbox assembly with new parts when the parts he used were [removed from a crashed helicopter.](#) During the course of the OIG's investigation, the mechanic also admitted that he [signed off on two 100-hour inspections](#) when he hadn't completed proper inspections of either helicopter.

In order to avoid a criminal trial that could have resulted in a conviction and some significant prison time, the mechanic agreed to plead guilty to the falsification charge and accept the sentence. However, as a condition of the plea and sentence, the mechanic also agreed to permanently surrender and forfeit his mechanic certificate and to not reapply for a mechanic certificate upon completion of his sentence.

Although permanent surrender seems like a severe condition, it is hard to say based upon the minimal facts that are provided in the OIG's summary. Perhaps the case involved aggravating circumstances (e.g. an accident involving the helicopter that resulted in injuries or fatalities). Also, the mechanic may have preferred a permanent bar from the industry to serving time in jail or prison. [These cases certainly are not the norm.](#) However, they should provide a healthy reminder that paperwork violations are serious and falsification of aircraft documentation can expose aircraft mechanics to significant risk beyond revocation of their A&P certificates.

Criminal liability is possible and a change in profession could be required. In the end, [it just isn't worth it.](#)

New FAA Safety Briefing Available

The new issue of FAA Safety Briefing, available on the FAA Web site at www.faa.gov/news/safety_briefing/, presents ideas for enhancing mentoring and professionalism in general aviation. Articles highlight the importance of the [attitudes, skills, and knowledge](#) needed to take you to the top of your flying game. On page 28 you'll find profiles of some of GA's top mentors and professionals - the 2011 General Aviation Awards National Winners - who will also be honored at this year's EAA AirVenture in Oshkosh, WI. "Beyond the Air Show," found on page 4, also highlights the many educational opportunities available at AirVenture, along with a forum schedule for events at the FAA's Aviation Safety Center.



In addition, the issue's [Nuts, Bolts, and Electrons](#) department covers professionalism in maintenance, and Angle of Attack takes a look at the helpful role type clubs play in enhancing aviation safety. To learn more, download the July/August issue of FAA Safety Briefing at www.faa.gov/news/safety_briefing/

FAA Safety Briefing is the safety policy voice for the non-commercial general aviation community. The magazine's objective is to improve safety by:

- *making the community aware of FAA resources
- *helping readers understand safety and regulatory issues, and
- *encouraging continued training

http://www.faa.gov/news/safety_briefing/