

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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The **Human** Relay: Fully Energized

A lesson learned from U.S. Naval Aviation.

It **seemed** like just another routine avionics maintenance task: Aircraft 501, an EA-6B Prowler, required a new left DC hold-relay. The old one had been cannibalized from another aircraft. An AE2 and an AE3 checked out their tools and manuals, placed a MAF in work, and proceeded to the hangar to install the new relay.

They ensured power was secured and then completed the installation in accordance with the MIM. With the hard part out of the way, it was time to

ensure everything was operational. The MIM calls for an electrical power test-set (AN/ ASM-439). This, however, requires a low-power turn, which **wasn't feasible** because 501 was in the hangar for a special inspection. Instead, the two AEs opted to manually energize the relay and check the connections. This procedure **isn't in the manual**, and therefore is not an authorized method of testing the relay.



They applied ground power to the jet. Then, with meter in hand, the AE3 began reading for power at all the relay terminals. Unfortunately for him, this meant sticking his hand next to a **nest of wires and terminal lugs**. As he reached into the panel to read for power, he brushed up against a live wire, which jolted him immediately with a painful shock. The two secured power quickly and went back to the shop.

He felt okay at first, but after a mere ten minutes, his arms felt numb and he developed a severe headache. He was taken to medical and given an EKG, medication, and a day of SIQ.

This incident was minor, but the consequences easily could have been far worse: he could have been knocked unconscious by the shock and thrown from the top of the aircraft. Since the incident, the AE3 has educated the squadron on electrical safety, ORM, and the importance of **strict adherence to maintenance procedures**. As a result of this incident, the squadron implemented an additional control, **wearing insulated gloves**, when working around live electrical components.

Airplane Maintenance Crews Weather Long Nights, Elements

Airplanes are delicate machines designed for durability, and while **most of us are sleeping**, the technicians inside of the Republic Airways maintenance hangar at Port Columbus International Airport handle the nightly duties of getting aircraft ready for the skies. Columbus is the heavy maintenance base for the region, and the folks at Republic Airways are a **skilled and dedicated group**. "We pride ourselves on, 'Bring it here, let's fix it here,'" said base manager James Stewart. "Because we know we're going to fix it right."



Each night, some of the 60 mechanics on duty huddle for the plan of attack. All of them agree that in their line of work, only one thing is for certain.

"It never, ever goes as planned," said shift supervisor Tim Petree.

As deadlines loom, early morning departures are the finish line. By about 3 a.m., after several hours of work, supervisors need to know which airplanes are going to be ready to fly.

During one recent night, more than a dozen aircraft waited for repairs. **Working quickly, accurately and safely are all job mandates.** Other **conditions** are just part of the job.

"An airport is the coldest place you'll find in winter," Petree said. "And the hottest place you'll find in the summer."

One of the planes undergoing routine maintenance, aircraft No. 564, is found to have an oxygen leak in the cockpit. That problem will ground the airplane if it is not corrected.

In addition to fixing the leak, crews replace generator batteries, repair a power cable in the cabin and make countless other routine checks, Hogan reported.

After 3 a.m., aircraft No. 564 is finished, and the plane is sent out, ready for 50 of the 1 million Republic Airways passengers who are delivered to their destinations each month.

"That's the end result, right there," Stewart said. "Plane is leaving, going to the gate on time."

I'm a New Supervisor, Now What! - Lessons Learned from John Goglia

Maybe things are better today, although not by much from what I'm told. Mechanics still go from being mechanics responsible for their own work to being first-line supervisors responsible for a dozen or more mechanics with not much more than a change in title. And maybe a few dollars more in their

paychecks. **Training is scant to non-**

existent, especially when it comes to managing people and their abilities – or in some cases, managing their inabilities.



Now – after a few decades in the business - I know how significant a jump in responsibility that first supervisory position is. But when I was young and eager to move up the chain, I didn't think much about it. Until that day, shortly after my promotion, when all of a sudden the fate of an airliner hung in the balance. That may sound melodramatic, but hear my story and be the judge.

It was another midnight shift at Logan, except now I was the newly-minted, **lead mechanic** which meant I was responsible for a crew of 11 mechanics plus myself. That night, I handed out assignments and got involved in the every day details of repairing aircraft. With seven or eight aircraft a night, that meant keeping track of – or trying to keep track of – people scattered around the ramp.

One of the assignments handed out that night appeared deceptively simple. A pilot write-up involving the anti-skid system malfunctioning on a DC-9. Usually this meant identifying and replacing one of the transducers, a job that did not require a lot of finesse. I assigned this to a mechanic I had worked with for many years who was certainly a good mechanic but also had a reputation on the ramp as a bull in a china shop. You didn't want him anywhere near delicate work. But this wasn't delicate work, so I was comfortable assigning it to him and moving on. Not such a great idea, as it turned out.

While I was busy attending to other maintenance issues, the simple problem I had assigned turned into a much more delicate one involving trouble-shooting the wiring in the wheel-well area. Anyone who has worked on aircraft landing gear knows how brittle that wiring in that area can become. One wrong move and you've got a broken wire that you don't even know is broken. That is until the flight crew runs its checks the next morning and something isn't working. **Delaying a flight the next day is not something you want to be responsible for.**

As word travelled that this mechanic was working in the wheel well area, I broke into a sweat as it dawned on me that I was responsible. I immediately dropped what I was doing and hoofed it to the DC9 in question. As I approached the aircraft, I could see from the mechanic's feet and body position that he was indeed in the area I had feared. I don't deny that my heart was beating quickly. I had to get this one guy out of the wheel well and replace him with someone with a lighter touch, and do this **diplomatically** so as not to hurt feelings and destroy morale. Most importantly, I needed to make sure that the aircraft was not damaged on my watch!

In the end, I caught a lucky break on this. No damage was done, the aircraft was fixed by the right person and no feelings were hurt. But I can say I gained some much needed perspective on my supervisory responsibilities.

Moral of the Story: People are not born supervisors. They need to be trained on managing people and their skills, as well as on keeping an eye on the big picture.

AEA: FAA To Restrict A & P Recognition

But FAA Employees Are Apparently Exempt

The FAA has issued a policy which is intended to clarify the definition of **"Actively Engaged"** for purposes of issuing and renewing the **A & P Inspector Authorization**. "Actively engaged" means exercising the privileges of an airframe and powerplant mechanic certificate in the maintenance of civil aircraft. Applicants who are **employed full-time** in inspecting, overhauling, repairing, preserving, or replacing parts on aircraft are considered to be actively engaged.

Applicants who are employed or participate in inspecting, overhauling, repairing, preserving, or replacing parts on aircraft on a **part-time or basis** will be evaluated by the ASI to determine whether the applicant is actively engaged. The ASI will evaluate the scope of part-time or occasional activity based on the type of maintenance activity, including any special expertise required, and the quantity of maintenance activity performed. To evaluate the scope of the part-time or occasional maintenance activity, the ASI will use **evidence or documentation** provided by the applicant showing inspection, overhauling, repairing, preserving, or replacing parts on aircraft.



The AEA has issued a statement saying it is "disappointed" with the initiative.

"For decades, the FAA, as well as industry, has been frustrated by the lack of career recognition of the Airframe and Powerplant mechanic. And now, the FAA proposes to remove this recognition from those who are in **senior management positions** with corporate flight departments, repair stations and air carriers who are not exercising their A & P privileges to "inspect, overhaul, repair, preserve, or replace parts on aircraft," the statement reads. "In an unprecedented addition, the FAA, while minimizing the recognition of publicly employed A & P mechanics, has exempted its own employees from this flawed policy.

"According to this proposal, because other FAA policy limits the type of maintenance that ASIs can perform (they may only exercise their IA on their personal, non-commercial aircraft), the FAA employees are exempt from this new policy, and "an ASI may renew an IA regardless of volume of maintenance work performed."

AEA encourages every member who may be affected by this policy to send comments to the FAA. Comments on docket number FAA-2010-1060 are due on or before December 6th

FMI: www.aea.net, www.regulations.gov, www.faa.gov

Air India plane crash: 'Sleepy' pilot blamed

A **dozing pilot** was to blame for a plane crash in May in southern India which killed 158 people, an official investigation has reportedly found.

According to details of the report leaked to media, the Air India Express plane approached Mangalore at the wrong height and angle. The Serbian pilot, Zlatko Glusica, was **"disorientated" having been asleep for much of the three-hour flight.**



There was no immediate comment from the airline. Data recorders captured the **sound of snoring**, according to the Hindustan Times. Glusica is said to have been affected by **"sleep inertia"** after his nap. Co-pilot H S Ahluwalia was reportedly heard making repeated warnings to the Serb to abort landing and try again. 'No runway left'

Seconds before the plane erupted into a fireball, voice recordings picked up the co-pilot saying: "We don't have runway left".

The Boeing 737 overshot, plunged into a steep gorge and burst into flames. Only eight people survived. Most of the passengers on the low-cost flight from Dubai to Mangalore were Indian migrant workers returning from the Gulf. India's Civil Aviation Minister Praful Patel told reporters his ministry had received the report on Tuesday and the government would study it before taking any action.

A government official who did not want to be named told the Associated Press news agency that Indian media reports about the findings were accurate. But the investigation would only be made public once it had been presented to parliament. Mr Glusica was said in the aftermath of the tragedy to have had **10,000 hours of flying time**, including experience of Mangalore's airport. The civil aviation minister noted at the time that Mangalore had a short landing strip which meant that there was limited space to accommodate planes that overshot. The airliner missed its landing threshold by about 2,000 ft (600m). In June 2008, Air India denied reports that two of its pilots had been caught napping on the job.

A flight from Dubai allegedly passed its destination of Mumbai because both pilots were fast asleep in the cockpit. Mumbai air traffic controllers had to use a special buzzer to rouse the pair, but by then the flight was halfway to Goa, according to the Times of India newspaper.

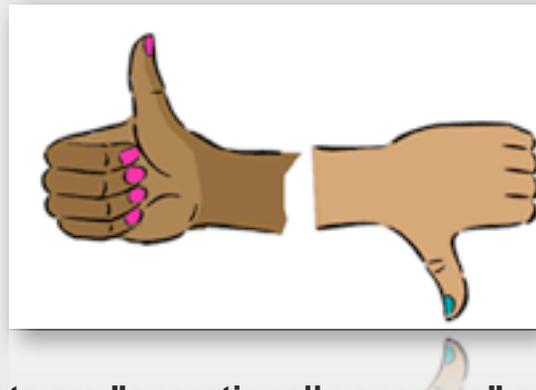
Once awakened, the pilots turned the aircraft around and made a safe landing. India's air safety record has been good in the past decade, despite a rapid increase in the number of private airlines and air travel in the country.

The tragedy was the country's first major air crash since one in the eastern city of Patna killed at least 50 people in July 2000. Mangalore's disaster was the deadliest since a mid-air collision in November 1996 between a Saudi airliner and a Kazakh cargo plane near Delhi, in which 349 people died.

Source: <http://www.bbc.co.uk/news/world-11772562>

Airlines Criticize Proposed Pilot-Fatigue Rules

The major U.S. airline industry association on Monday criticized efforts to revamp pilot-fatigue rules, calling the government's proposals overly restrictive, politically motivated and scientifically flawed. In formal comments filed with the FAA, the Air Transport Association, whose members account for 90% of the country's cargo and passenger traffic, said the proposals' core elements are "operationally onerous" and would "impose unprecedented costs" **without providing significant safety benefits.**



The critical tone is bound to make it politically harder for the Federal Aviation Administration to push ahead with its current regulatory package. By opting to update decades-old rules controlling pilot work hours and rest periods, the agency sought to fashion a **compromise proposal** based on the latest sleep research while offering some attractive elements to both labor and management.

But that balancing act appears to have failed. Pilot-union leaders are split over whether to support the FAA's proposal, with some arguing that it gives airlines too much leeway to schedule pilots for 10 hours of daily flying.

Now, representatives of the nation's biggest carriers have come out squarely against the package for unduly restricting duty periods and mandating more stringent flight-time limits on those routes that tend to have delays.

Facing Congressional pressure to move quickly, agency officials will **take months** to analyze and respond to the comments, before deciding what to do.

Airline safety struggling in 2010

The number of serious airline accidents so far this year is "average", but if there are any more before January it will slip below the global average, according to the [Flight Safety Foundation](#). Speaking at the foundation's International Aviation Safety Seminar in Milan, FSF director of technical programs Jim Burin showed that all the indicators confirm that **airline safety has stagnated**. The five-year running annual average for serious accidents involving Western-built jets bottomed in 2006. Since then it has been rising slowly.

So far in 2010 the FSF says there have been **17 serious airline jet accidents globally, of which 14 occurred during approach and landing**. This reverses a gradual improvement in statistics for this phase of flight since the FSF began its approach and landing accident reduction programme in the 1990s.



There have also been two controlled flight into terrain accidents, two loss of control crashes, and five major runway excursion accidents.

But Buring notes that it has been a safe year for turboprop operators, for the first time recording fewer major accidents (15) than did jets in airline service.

Goodyear Emphasizes Importance Of Aircraft Tire Pressure Checks

Most people are familiar with the cliché "too much of a good thing," but there is no such thing as excess when it comes to **checking aircraft tire pressure**. Aviation tires' design and construction differ from automobile tires, and though it is important to maintain the correct pressure in car tires, proper aircraft tire pressure is **the most important factor** in aircraft preventive maintenance. As a result, pilots and maintenance personnel must resist the temptation to follow the same schedule they would use in checking their cars' tires to determine that their aircraft tire pressure is correct.



That's the advice from Goodyear Aviation's Robert Robson. He is Goodyear's Product Support Manager and regularly teaches aviation industry authorized inspection classes. Robson brings 10 years of aviation tire experience to the table, and his counsel is widely respected.

"Aircraft tire pressure **should never be taken for granted**," Robson said. "High pressures, high loads, and the different designs of aircraft tires and wheels often cause assemblies to lose pressure faster than those for cars." He said problems caused by incorrect aircraft tire pressure can be serious.

Overinflated tires can suffer uneven tread wear, reduced braking traction, increased susceptibility to cutting, in addition to causing greater stress on

wheels and landing gear. **Underinflated** tires also can wear unevenly and will experience increased stress and flex heating, which shortens tire life and can lead to tire failure.

Robson advises daily aircraft tire pressure checks, preferably before first flight. "**Check pressures when the tires are at ambient temperatures,**" he said. "Tire temperatures can increase 200°F during aircraft operation, and every increase of 5°F results in approximately a 1% pressure change." Therefore aircraft tire pressure should never be reduced when the tires are still hot.

Robson said tires should not be placed in service until they have been inflated for **at least 12 hours after mounting**. "All tires, particularly bias, grow after their initial mounting. The larger volume of the tire results in a pressure drop, and thus the tire must be checked and re-inflated if necessary," he said.

After completing the 12-hour stretch, it is highly recommended to perform a **24-hour diffusion check** to ensure the tire/wheel assembly is holding pressure within the limits of 5% per day, since there are numerous potential sources of pressure loss within the assembly. Both of these steps are important to help ensure the tires are not underinflated before entering service.