Aviation Human Factors Industry News

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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:

NTSB concludes investigation into 2008 Obama plane mishap

Federal accident investigators closed the books on the mysterious and deployment of an evacuation chute aboard a Barack Obama campaign plane in the summer of 2008. The chute deployed because it wasn't properly fastened to the floor and it shifted when the plane made a steeper-than-normal takeoff, the National Transportation Safety Board said.

But investigators weren't able to determine why the chute container wasn't properly secured to the floor in the first place.

The board's report gives two possible explanations, but indicates neither could be established as the cause.

One potentially embarrassing explanation is that Secret Service agents conducting a pre-flight security check could have loosened the container fasteners to peek inside. But, the report says, "an internal (Secret Service) investigation revealed that no (Secret Service) personnel … interfered with or altered" the evacuation slide systems.

As to whether transportation safety board investigators independently interviewed the Secret Service agent or agents who inspected the plane, the board said only that they "corroborated with the Secret Service regarding their preflight security survey activities." It declined to be more specific.

Nor does the report implicate maintenance personnel. It says an airline inspector conducted a visual inspection one month before the incident and did not note any anomalies. That inspection would have included a check of the tie-down straps that secure the evacuation slide cover to the floor, but "there would be no reason for the mechanic to touch the strap during this inspection," the report says.

"It could not be determined why the slide's cover was not secured," the report says. "In normal circumstances, the cover is secured by the mechanic who installs it and should remain secured until it is removed from the airplane."

Then-candidate Obama was on the MD-81 charter aircraft at the time of the July 7, 2008, incident, accompanied by his staff, Secret Service personnel, reporters and the plane's crew. An airline mechanic was also on board and was seated in the rear of the aircraft, not far from the evacuation slide in what is referred to as the plane's tailcone.

Neither the flight crew nor the mechanic heard the chute deploy shortly after the plane took off from Chicago Midway Airport.

The pilot first noticed that something was amiss when the plane's nose-up pitch continued to increase even without his input, the transportation safety board said. The pilot regained control using the control column and stabilizer pitch trim inputs.

The plane diverted to Lambert-St. Louis International Airport and made an uneventful landing.

The evacuation chute mechanism on the McDonnell Douglas plane is unlike those found on many commercial planes. The chute is deployed when the plane's tailcone is jettisoned. As the tailcone falls away from the plane, an attached lanyard pulls open the cover over the evacuation chute, the board's report said. This in turn rotates the slide pack and a second lanyard then triggers an inflation cylinder that inflates the slide.

Investigators said flight recorder data shows the plane took off at a steeper-than-usual angle, and that there was sufficient inertia to allow the unsecured slide cover to rotate and inflate the slide.

After the mishap, Midwest Airlines, operator of the charter, released a maintenance bulletin adding an additional check to ensure the security of the slide cover tie-down straps.

NATA: Database Updates Are Maintenance Tasks

Maintenance and Modifications, Avionics and ATC

The National Air Transportation Association (NATA), responding to recent requests, issued a statement that clarifies FAA regulations that to updates of navigational databases used on modern avionics. The FAA changed the Part 43 Appendix A regulations in 1996, according to NATA, and classified database updates as preventive maintenance instead of maintenance.

This change allowed pilots operating under Part 91 regulations to perform database updates, but as NATA noted, "for aircraft maintained under Part 135, the tasks must be completed by a technician. Many operators find this surprising, as typically navigational updates are very simple to accomplish using a memory flash drive or similar device.

And even though installing a database update seems like a simple task, because it is classified as a maintenance task the person performing the update must make a proper entry in the maintenance records, NATA noted. Preventive maintenance items listed in Part 43 Appendix A count as maintenance whether a pilot operating under Part 91 or an FAA-certified technician is performing the task.

Pilots, Airlines Push For Nap Time

The practice of catching a nap while serving on the flight deck is not approved by the FAA, but citing supporting evidence, pilot unions and airlines say it may be time for the FAA to embrace the idea. British, Qantas and others have for some years allowed one pilot to sleep during the cruise

portion of some flights and some studies indicate it makes crew more alert during critical phases of flight. "It may seem counterintuitive to folks in the back of the plane, but it's the right thing to do," Bill Voss, president of the Flight Safety Foundation, told The Wall Street Journal. Besides, pilots do nap en route, according to a recent survey of commuter pilots referenced by the Journal, which also stated simply that "pilots say naps not only make sense, but that they also already take them." And fatigue has long been among the top concerns of aviation safety authorities, having been cited as a contributing factor in more than 250 aviation fatalities since 1990.

The strategies supported by the airlines and unions are referred to as controlled napping, and are seen as fatigue-mitigation strategies. Public perception is cited as the biggest obstacle in implementing those strategies. The balance of safety, profitability and work rules makes the issue complex. The FAA is expected to review crew rest rules, and napping is expected to be part of the conversation if not the final regulations.

Human Factors: Beyond the "Dirty Dozen" - Part IV

U.S. Regulatory Horizon

Although FAA has led the way in maintenance HF research, the United — unlike Europe and Canada — has no legal requirement for maintenance human factors training at this time. Thanks to the European regulations, however, the more than 1,200 U.S. repair stations with European approvals have HF programs. That's a long way from saying the U.S. government isn't doing anything. There is a lot of advisory material, and regulatory action is expected in the future. Advisory Circular (AC) 145-10, for example, states: "Training in maintenance human factors is an essential part of an FAA-approved training program. The repair station's submitted training program and any revision thereto must include human factors elements." The AC goes on to "suggest" the elements that should be included in a repair station's program. "As with everything, once the FAA identifies something as a 'best practice' or even a 'good idea," industry usually takes it on," said Sarah MacLeod, executive director of the Aeronautical Repair Station Association (ARSA).

Considering the amount of guidance material that is available and the

number of U.S. airlines and MROs that have voluntarily adopted HF programs, "I don't lose sleep at night because there's not a rule," Johnson said. "Would I like a rule — yes. But do we have a situation that's precarious — absolutely not."

Beginning in 2007, FAA also has stepped up the maintenance HF training for its own airworthiness inspectors, Johnson said. About half of the inspectors have now been through a new three-day course.

Johnson thinks that people also are adopting HF training because of International Civil Aviation Organization (ICAO) requirements for safety management systems (SMS), which eventually will become an FAA requirement as well. "You couldn't possibly satisfy what you do for a safety management system without having a human factors program," he asserted.

HF Research

Much research has been conducted in the area of fatigue, one of the chief culprits in the dirty dozen. One study Johnson participated in before he joined the FAA collected 50,000 hours' worth of "actiwatch" sleep data via accelerometers that mechanics wore 24 hours a day. The study, which was conducted over 18 months, through all seasons of the year and in the north, southeast and west of the country, found that mechanics get an average of about five hours and five minutes of sleep, which is below average for normal North Americans, Johnson said. The finding didn't really vary by age, part of the country or time of year. Nor were there significant differences, based on which shift was worked.

A recent NASA study, "Maintenance Personnel Fatigue Related Incidents," suggests that maintenance errors tend to be more common in the wee hours. The study, which looked at more than 100 ASRS reports filed from 1990 to the present, indicated that 30.5 percent of the incidents occurred from 1 to 6 a.m. in the morning, 20 percent from 6 p.m. to midnight, and only 14.3 percent between 6 a.m. and noon local time. About one-fifth of the reports (21 percent) did not state a time.

Johnson maintains that there are so many scientific solutions to some of the fatigue issues that it's more important, at this time, to distribute the data rather than collect more of it. To that end, FAA has started a project to take the scientific data that exists and "get it out in a way that normal users can apply it — airlines, MROs and individual employees."

Another new program involves adapting peer-to-peer safety audits that have proved useful in operational settings to the maintenance world. The

program will encompass line, base and ramp operations.

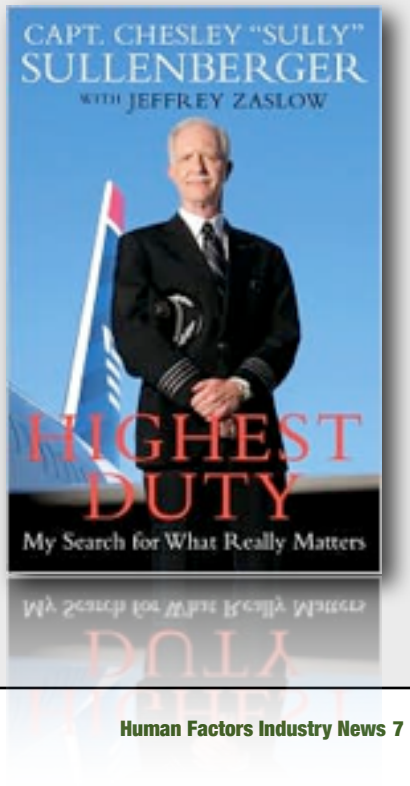
The audit program will cast a wide net. It will look at the way maintenance projects are planned, the disposition of tools, procedures, final inspections and preparations to sign off aircraft, Johnson said. One of the challenges is going from a 30-page, single-spaced compilation of checklists to an operational form that mechanics can use in a quick audit.

Another initiative in the pre-award stage is the Future of the Aviation Maintenance Technician. The three- to five-year program will address long-term issues such as demographics and technology evolution, Johnson said. FAA is also working on a 2010 "fatigue calendar," focusing on a different aspect of fatigue each month. An earlier calendar on the dirty dozen was wildly successful, Johnson said, shipping 160,000 copies in 2008.

Another successful project was the Maintenance Human Factors Presentation System, an information package that includes around 170 Powerpoint presentations, 11 videos produced by FAA and 40 animation files. It's free of charge and can be customized by individual users. So far, more than 15,000 DVDs have been distributed worldwide.

Highest Duty

On January 15, 2009, the world witnessed one of the most amazing landings in history when Captain Chesley "Sully" Sullenberger glided US Airways Flight 1549 onto the surface of the Hudson River, saving the lives of all 155 passengers and crew aboard. In Highest Duty, and Jeffrey Zaslow (co-author of The Last Lecture) chart Sully's extraordinary life story, from his love of planes as a young boy in Texas to his years at the U.S. Air Force Academy to his 40-year career as a professional pilot to the harrowing moments aboard Flight 1549 that would make him a hero and inspiration worldwide. At its heart, Highest Duty is a story of how one man's remarkable life story can inspire hope and preparedness in us all.



ReliefBand - Electronic Band For Motion Sickness Relief

The phenomenal ReliefBand® offers the most effective and predictable relief available for the nausea and vomiting associated with motion of any remedy we've tested, and does it with none of the adverse side effects (drowsiness, pupil dilation, etc.) normally associated with anti-nausea drugs. This wristwatch-sized electronic device straps to the inside of the wrist and stimulates the median nerve, blocking the nervous impulses that produce nausea and vomiting. The ReliefBand has been tested extensively in both clinical and field trials, and is FDA cleared for relief of motion sickness.

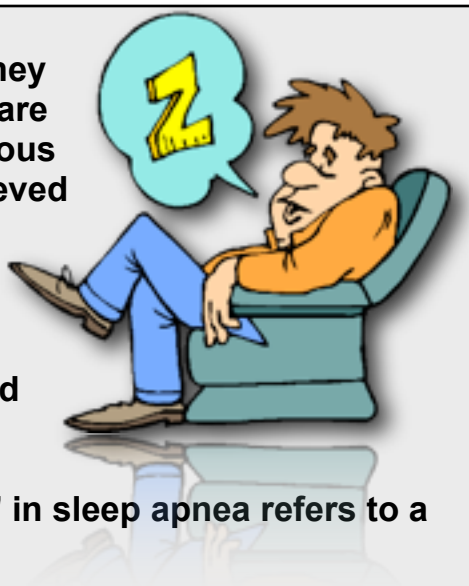
Because it produces no side effects, the ReliefBand is fully FAA-legal for pilot use, and is ideal for student pilots and aerobatic pilots who need relief from motion sickness. This band is also perfect for pilots who have difficulty coaxing spouses and children to fly with them. The Relief Band is equally effective in preventing seasickness, car sickness, morning sickness and any other situation that causes nausea or vomiting.

The non-prescription Relief Band features a water-resistant case and replaceable batteries. The easy-to-change batteries last for about 144 hours (at medium intensity setting).

Replacement batteries are available from Aeromedix, your local Radio Shack, or virtually anywhere wristwatch batteries are sold.

http://www.aeromedix.com/product-exec/parent_id/22/category_id/29/product_id/1198/nm/ReliefBand_Electronic_Band_For_Motion_Sickness_Relief

Sleep Myths and the Truth: Snoring



We've all heard myths about sleep. Sometimes they can be characterized old wives' tales," but there are other times the incorrect information can be serious and even dangerous. For example, it's often believed that snoring is common, and it's often portrayed in movies and television shows in a comical manner. However, snoring can be a symptom of a life-threatening sleep disorder called sleep apnea, especially if it is accompanied by severe daytime sleepiness. Sleep apnea is a disorder in which breathing is briefly and repeatedly interrupted during sleep. The "apnea" in sleep apnea refers to a breathing pause that lasts at least ten seconds.

If you sound like this http://www.sleepfoundation.org/alert/npr-piece-examines-snoring-sleep-apnea when you snore, you should take it seriously.

Top 5 Causes of Motor Vehicle Crashes

1. Multitasking while driving is the number one cause of motor vehicle crashes. When you are on the road keep your mind on driving. The freeway is no place to scarf down a burger, reset your car's clock or shave

2. Following too closely is the second most common cause of car wrecks, according to an insurance company report. You should always leave at least a two-second gap (count "one thousand one, one thousand two") between an object passed by the vehicle ahead and passed by your vehicle. That gap should be increased in poor driving conditions.

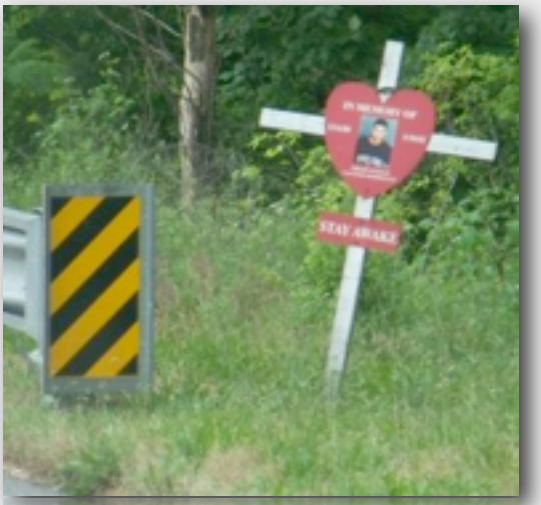
3. Failure to yield the right-of-way on a left-hand turn: Many drivers are so focused on making a turn during a gap in traffic that they don't notice that a pedestrian is crossing or that traffic has stopped on the street

they are entering. Making a move without checking to see that your path is clear can be disastrous.

4. Incorrect merging. Some drivers don't really know how to merge into traffic so they will slam on the brakes and wait for the lane they wish to merge into to be clear. The correct procedure is to accelerate on the on-ramp to the same speed as approaching traffic, look over your shoulder, use your turn signal and move into the traffic lane when it is safe to do so.

5. Backing up: Objects in the mirror really are closer than they appear, so if you are using a mirror while backing a vehicle, it's easy to misjudge and cause a fender bender. Safe backing requires looking over your shoulder.

Drowsy Driving Prevention Week™(Nov. 2-8) fast approaching



This year marks the National Sleep Foundation's third annual Drowsy Driving Prevention Week™, a national campaign to educate drivers about the dangers of driving while sleepy. Drowsy Driving Prevention Week™ (DDPW), November 2-8, 2009, is a public awareness campaign designed to educate young drivers (and everyone on the road!) about the dangers of driving while sleepy. This Toolkit provides resources to inform your community about healthy sleep and drowsy driving prevention during DDPW and beyond. Get involved today. Simply download these press materials, print PSAs, fact sheets, quizzes, mini-posters and PowerPoint presentations and use them to spread the word in your community.

http://drowsydriving.org/resources/drowsy-driving-prevention-week-toolkit/

Struck by stupidity

Of the 648 people killed by lightning in the U.S. in recent years, more than 80 percent were men. Do males perhaps contain more lightning -attracting iron? Does their slight height advantage make them more attractive? Alas, no, it's just that men are stupid. Whether through ignorance, denial, or bravado, men seem less willing to interrupt their outdoor activities when dark clouds begin to gather, "Men take more risks in lightning storms," John Jensenius of the National Weather Service tells *Popular Science* .

Behavioral psychologist Peter Todd ascribes the problem to the male evolutionary mandate to appear bold in the face of danger. Apparently Zeus is unimpressed; this year's casualties so far include men killed while fishing, playing baseball, and mowing the lawn.