

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

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NTSB Issues Five New General Aviation Safety Alerts

Focus On Seat Restraints, ELTs, Carb Ice, Securing Cargo, And Self-Locking Nuts

As the year drew to a close, the NTSB issued five new [Safety Alerts](#) that provide general aviation (GA) pilots with mitigating strategies for preventing accidents. These Safety Alerts follow five that were issued in March at a Board Meeting that focused on the most frequent types of general aviation accidents. "Knowing these accidents, which sometimes include entire families, can be prevented is why 'General Aviation Safety' is on our Most Wanted List of transportation safety improvements," said NTSB Chairman Deborah A.P. Hersman. "At a time when many people are putting together their list of resolutions for the coming year, these five Safety Alerts [remind pilots, mechanics and passengers](#) of basic safety precautions to add to their checklists to ensure a safe flight for all on board."

The five new Safety Alerts are:

- Check Your Restraints
- Engine Power Loss Due to Carburetor Icing
- "Armed" for Safety: Emergency Locator Transmitters
- All Secure, All Clear (securing items in the aircraft cabin)
- Proper Use of Fiber or Nylon Self-Locking Nuts

A Safety Alert is a brief information sheet that pinpoints a particular safety hazard and offers practical remedies to address the issue. The NTSB says that each year, about 475 pilots and passengers are killed and hundreds more are seriously injured in GA accidents in the United States. The board has issued 30 such Safety Alerts since 2004.



http://www.nts.gov/doclib/safetyalerts/SA_030.pdf

http://www.nts.gov/doclib/safetyalerts/SA_028.pdf

http://www.nts.gov/doclib/safetyalerts/SA_027.pdf

http://www.nts.gov/doclib/safetyalerts/SA_022.pdf

found on http://www.nts.gov/safety/safety_alerts.html

Flying got much safer in 2013

The year 2013 was a very safe year for commercial aviation, Aviation Safety Network data show. By far the safest year by number of fatalities and the second safest year by number of accidents.

Over the year 2013 the Aviation Safety Network [recorded a total of 29 fatal airliner accidents, resulting in a record low 265 fatalities](#). Consequently, the number of fatalities is significantly lower than the ten-year average of 720 fatalities. The worst accident last year happened on November 17 when a Tatarstan Airlines Boeing 737 crashed while on [approach](#) to Kazan, Russia, killing 50.



The number of accidents involving passenger flights was just below average with sixteen accidents as compared to the ten-year average of 17,4 accidents.

The low number of accidents comes as no surprise, according to ASN President Harro Ranter: "Since 1997 the average number of airliner accidents has shown a steady and persistent decline, probably for a great deal [thanks to the continuing safety-driven efforts by international aviation organizations](#) such as ICAO, IATA, Flight Safety Foundation and the aviation industry."

Three out of 29 accident airplanes (10%) were operated by airlines on the E.U. "black list" as opposed to three out of 23 (13%) the year before.

Africa still is the [least safe continent](#), accounting for one-fifth of all fatal airliner accidents while the continent only accounts for approximately three percent of all world aircraft departures.

This is also reflected by the fact that, on average, African nations score 4.6 on a scale of 10 in aviation safety audits performed by the International Civil Aviation Organization (ICAO). Additionally, the airlines of fourteen African nations are not allowed to fly into the E.U. Three countries are banned in the U.S.

Statistics are based on a selection of worldwide fatal accidents involving civil aircraft with a minimum capacity of 14 passengers.

ALPA Supports Same Flight And Duty Rules For All Airline Pilots

Union Advocates For One Level Of Safety On All-Cargo And Passenger Flights
The Air Line Pilots Association, Int'l (ALPA) issued a statement regarding the implementation by the FAA and DOT of FAR 117, the [new science-based flight-time/duty-time \(FTDT\) regulation](#) that goes into effect January 4, 2014.

“ALPA applauds the FAA and DOT for their continued efforts to ensure that the U.S. airline industry remains the safest in the world. The new science-based flight- and duty-time rules are a significant victory for safety and the traveling public here in the United States because they represent a [long-overdue overhaul](#) of decades-old flight and duty regulations.” Unfortunately, the regulations have one critical shortfall because they exclude cargo airline pilots. ALPA was fully engaged in the FAA’s Aviation Rulemaking Committee regarding [pilot fatigue](#), and has long maintained that the new flight- and duty-time limits and minimum rest requirements must cover all airline pilots. It is clear from the science that [all airline pilots experience fatigue in the same ways](#), regardless of whether they are transporting passengers or cargo. Cargo airline pilots fly the same aircraft types over the same routes, into and out of the same airports, as passenger airline pilots. This is why ALPA supports H.R. 182/S. 1692—the Safe Skies Act, which would require that cargo pilots be included in these regulations in order to increase safety for the public. We urge every U.S. senator and representative to support this important aviation safety legislation for all who rely on air transportation.



The pilot who steered 173 AI passengers to safety in nil visibility

An Air India pilot on last Sunday made a '[blind landing](#)' in Jaipur in zero visibility, saving the lives of 173 passengers on board.

The Air India flight 890 from Guwahati was scheduled to land in Delhi, but was diverted to Jaipur as the Indira Gandhi Airport was shut due to heavy fog.

Unfortunately for pilot Captain Jalal Vats, who had by then been [flying for more than 12 hours](#), visibility at Jaipur's Sanganer Airport was also zero.

Suspecting he may not have enough fuel for any more detours, Captain Vats decided to land the flight using the Instrument Landing System, which helps with landing in low visibility.



As the Airbus 320 type aircraft landed off the centre line of the runway, it careened onto unpaved surface. As the pilot tried to correct course, the left wing hit an unidentified object.

On inspection, ground officials found that the aircraft [had run out of fuel](#), which turned out to be blessing in disguise. Directorate General of Civil Aviation officials said since the aircraft had been airborne for over 5 hours, it had run out of fuel by the time of landing, preventing it from exploding on impact.

"Captain Vats saved our lives," said Aastha Patel, a passenger. "The way we were thrown about during landing told us it was a very bad landing. But only when we alighted did we realize the extent of the damage."

While Captain Vats's maneuver helped save 173 lives, officials said the damage suffered by the plane - its landing gear and tires were wrecked and half of its left wing was ripped off - meant that it will never fly again. The plane, commissioned in 1991, was Air India's oldest serving aircraft. DGCA has ordered an investigation and has de-rostered Captain Vats till the probe is over.

"Prima facie, we have concluded that the aircraft landed almost into a nearby drain, damaging the wheel in the process," said a DGCA official. "The aircraft also hit some object which ripped off the wings making it unserviceable. The aircraft will have to be written off."

According to DGCA sources Capt Vats and his crew [began the day at 10:45 am, and landed in Jaipur at 11 pm](#). "The crew were at the end of a very long duty period," said an airline official. "They operated Delhi-Guwahati-Imphal-Guwahati-Delhi, where they were number 12 in the landing sequence. As the visibility dropped to less than 50m in Delhi, they were diverted to Jaipur."

The weather in Jaipur also dropped to zero and the stress factor on the pilots would have been very high."

Advisory Committee member Capt. Mohan Ranganathan said [several factors](#) may have contributed to the accident.

"There is [fatigue](#), [stress](#) due to zero visibility and the [knowledge](#) of being low on fuel," said Ranganathan. "Under these conditions, the heart rate of the pilot would have been extremely high and the body would have experienced [sugar depletion, resulting in momentary disorientation](#)."

He did not rule out a system error. He said if the pilot was on ILS and was following a localizer (an instrument that provides runway guidance), and there was a signal error, the pilot may have gotten wrong directions.

"If a multi path error had happened, the pilot could be pushed out of alignment to the centerline," he said. "A multi path error is caused by large reflecting objects, like other aircraft parked nearby, which can cause interference to the ILS signal. These disturbances can cause the ILS signal to deviate from its nominal position and thus cause deviation to an aircraft in approach that it becomes unacceptable. While the investigation should bring out the facts, the pilot did his assigned job. [He had to do it.](#)"

DA: Man's death on Logan tarmac was an accident

The death on December 31, 2013 of a 59-year-old worker on the tarmac of Logan International Airport appears to have been an accident, authorities said.

The victim, a Melrose resident, [was standing behind](#) a modified Ford F-350 near a stationary 737 when the truck, traveling in reverse, struck him about [7:30 p.m.](#), according to a spokesman for Suffolk District Attorney Daniel F. Conley. State police said last night the victim was guiding the lavatory-waste truck to an aircraft.



The victim was pronounced dead at the scene. The driver, a 47-year-old co-worker, "was overwhelmed in the aftermath of the collision" and was transported to Massachusetts General Hospital for stress and physical injuries that are not life-threatening," DA's office spokesman Jake Wark said.

Investigators tested the driver for drugs and alcohol and seized his cell phone but said they have no immediate reason to suspect he was impaired or distracted.

Authorities have not released the names of the driver or victim because there is no evidence of foul play. The accident remains under investigation.

Sound Resolution

Careless State of Mind

No one would disagree that watching and thinking about what you're doing is vital to safety on the job but keeping eyes and mind on task is far easier said than done. A significant number of all injuries at work, on the road, and at home are caused by **four states of mind** that cause or contribute to four errors.

The four states are **rushing, frustration, fatigue and complacency**. The errors they lead to are failure to keep eyes on task, failure to keep the mind on the task, moving into or being in the line of fire, and somehow losing balance, traction or grip. Many people overestimate the attention they pay to safety, believing they are experienced and competent enough to avoid making a careless injury causing mistake.

One of the most frustrating things about working safely is trying to get workers to do things properly, but they have been doing things improperly for so long and getting away with it that they are not likely to change. The truth is, we almost always hurt ourselves and our fellow workers as a result of our careless actions.

The Importance of Using the Manual

Over the past several years, company efforts to improve compliance with written procedures continue to evolve. For example: 1) critical notes have been placed in maintenance manuals and work cards denoting Required Inspection Items (RII).



**QUICK
TIPS**

The RII tasks have also been clarified to include the exact steps that the inspector is required to inspect. 2) limiting the temporary RII authorizations, 3) the requirement to reference the AMM for the task being accomplished. Why are these sound operating principles? Failure to follow written procedures is one of the most prevalent areas of non-compliance at many companies, and indeed, within the aircraft maintenance industry.

Every week, aircraft are grounded unnecessarily, family vacation plans or business trips ruined or disrupted, just so missed RII's can be accomplished [because individuals did not read the AMM](#), wrong parts are installed or a host of other issues directly related to not using required documentation. In short, there is a direct cost to the any company, and thus, their profitability. It goes without saying there is a safety issue when written instructions are not followed. Please, take time to look up the AMM procedure for performing your task. Be sure you understand the steps in the procedure. If the procedure is not clear, or, if you do not understand the procedure, be sure to get clarification before you perform the task.

Don't Bother Me with the Facts! - FAA Safety Team

Notice Number: NOTC5112

AKA...Confirmation Bias

An Aviation Maintenance Technician (AMT) hears their radio crackle. Maintenance Control wants them to evaluate damage to an aileron the crew of a departing aircraft detected. After reporting the extent of the damage to Maintenance Control they conclude the aileron damage is allowable, and the AMT defers it according to the company's procedures. The aircraft departs on time. Later the AMT [takes a second look](#) at the structural repair manual, and learns the focus had only been on the allowable damage table. The team had not noticed the damage was, in fact, [in a critical area](#) that required them to consult the aircraft manufacturer. The AMT then realized they had inadvertently released the aircraft to fly with a potentially dangerous flaw. This was a team of very responsible, experienced, people. [How can professionals make such a mistake?](#)



Well, when the plan is to get an airplane out on time human beings will use every tool at their disposal, including [mental shortcuts](#). Mental shortcuts are not bad. They lead to success nearly all the time, the key word here being “nearly”. In this case the people making the decision relied on good judgment, but did not consider a mental bias called [Confirmation Bias](#).

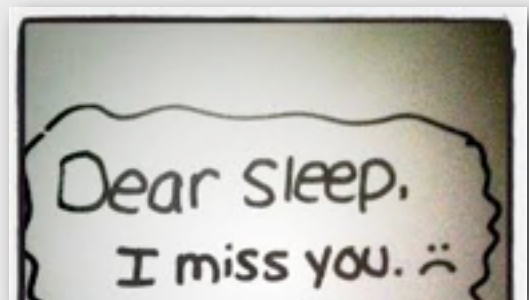
Confirmation Bias refers to a type of mental shortcut whereby an AMT, or any human, may tend to notice facts supporting their decision rather than information contradicting it. People are less likely to accept facts not lining up nicely with what is already “known” or “believed”. As the [strength of our mental model increases](#), we tend to ignore, or undervalue the relevance of facts contradicting our established beliefs.

A mental bias can lead to unconscious behavior, and it is difficult to prevent what you don’t intend to do. So, work as a team. Two heads are better than one, and many better than two. Try to disprove the decision. No one likes a contrary person, but they are happy to have someone keep them from making a big mistake. Listen to the new guy. They have not had the opportunity to become familiar with the operation “[Norms](#)”, and might be able to point out problems more experienced people won’t notice. Adhere to a plan to strictly follow procedures. This will help you avoid [cherry picking data](#) to support a risky plan.

National FAA Safety Team

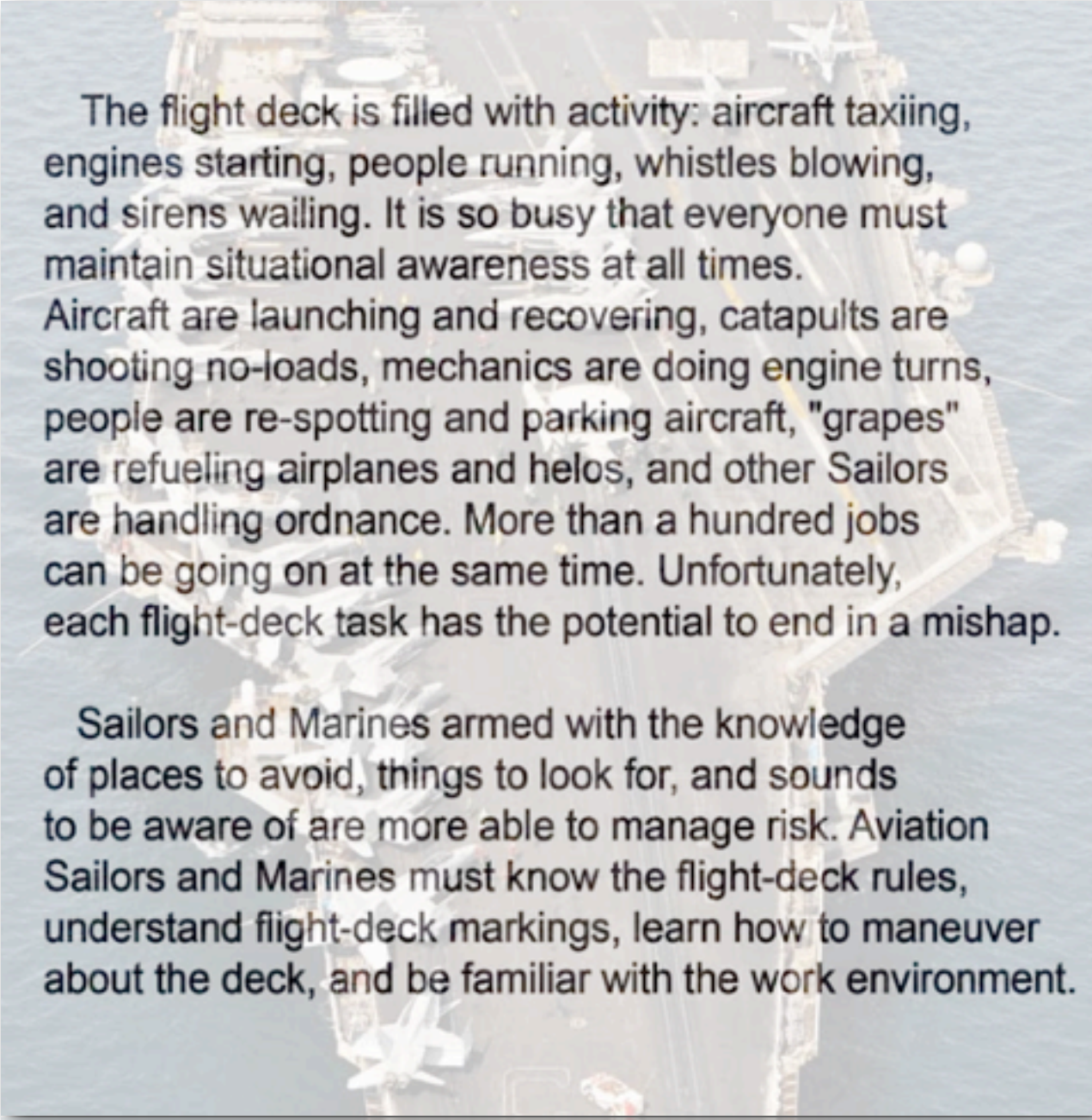
Gallup: Americans Average 6.8 Hours of Sleep Per Night

Americans currently average 6.8 hours of sleep at night, [down more than an hour from 1942](#), according to a recent Gallup poll. Americans aged 65 and older report getting the most sleep, with 67% getting 7 or more hours per night. Each younger age group gets less sleep, down to 54% of 18- to 29-year-olds who report getting 7 or more hours, according to Gallup. [Nearly half of 18- to 29-year-olds get less than the recommended amount of sleep.](#)



http://www.gallup.com/poll/166553/less-recommended-amount-sleep.aspx?utm_source=alert&utm_medium=email&utm_campaign=syndication&utm_content=morelink&utm_term=USA%20-%20Well-Being

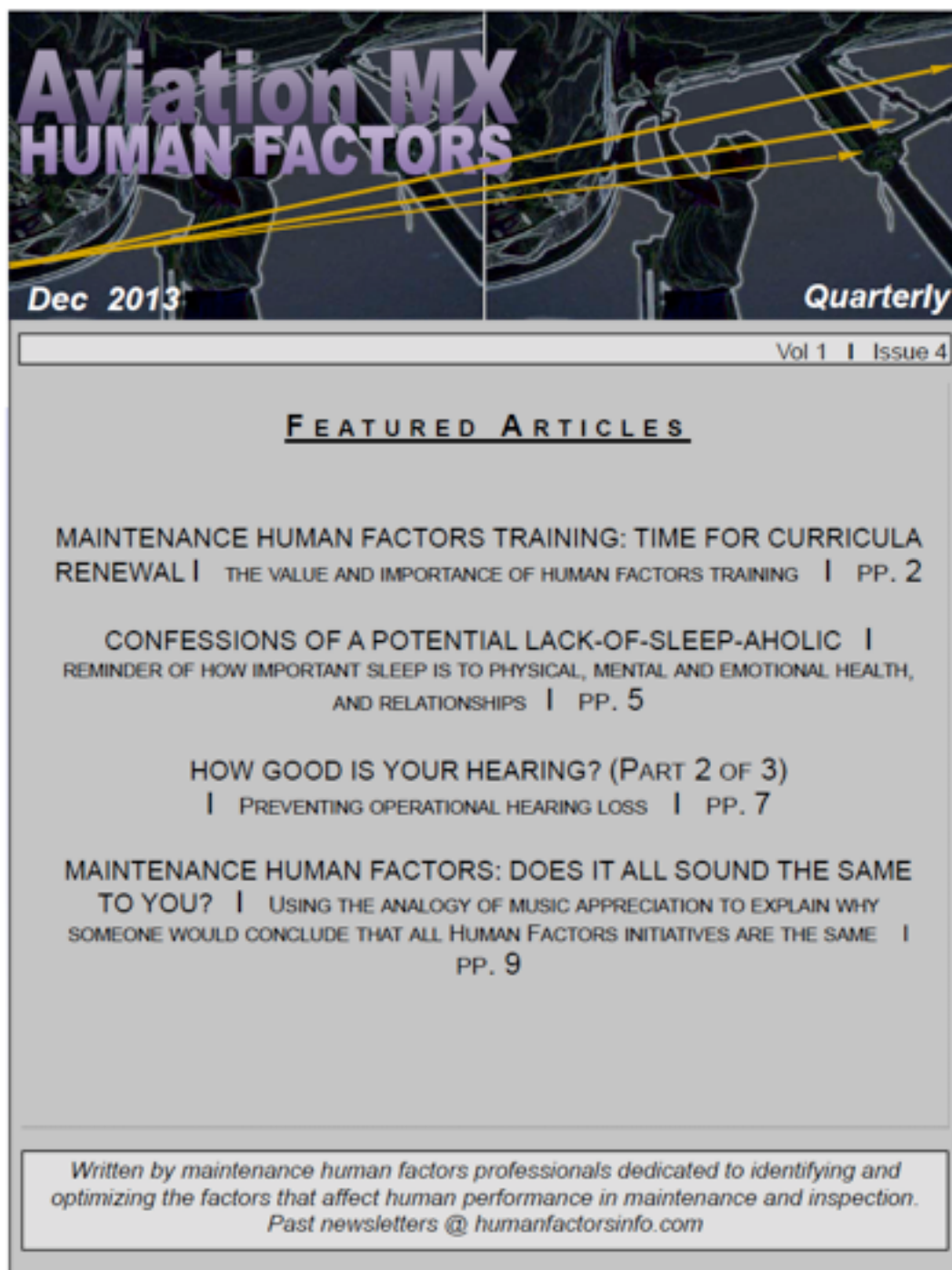
A/C Carrier Flight Deck and Airport Ramp Similarities!



The flight deck is filled with activity: aircraft taxiing, engines starting, people running, whistles blowing, and sirens wailing. It is so busy that everyone must maintain situational awareness at all times. Aircraft are launching and recovering, catapults are shooting no-loads, mechanics are doing engine turns, people are re-spotting and parking aircraft, "grapes" are refueling airplanes and helos, and other Sailors are handling ordnance. More than a hundred jobs can be going on at the same time. Unfortunately, each flight-deck task has the potential to end in a mishap.

Sailors and Marines armed with the knowledge of places to avoid, things to look for, and sounds to be aware of are more able to manage risk. Aviation Sailors and Marines must know the flight-deck rules, understand flight-deck markings, learn how to maneuver about the deck, and be familiar with the work environment.

December 2013 Issue!



http://www.faa.gov/about/initiatives/maintenance_hf/fatigue/publications/

Working Group Outlines Recommendations for Human-automation Interaction

Humans' attempts to interact with cockpit automation have provided fodder for pilot anecdotes for years, and the recently released Operational Use of Flight Path Management Systems offers a precise roadmap for where the industry needs to focus.

The 34-member research team responsible for compiling the report comprises members of the Performance-based Aviation Rulemaking Committee's (PARC) flight-deck automation working group, which evolved not long after the 1995 American Airlines accident in Cali, Colombia. The flight-deck automation working group [identified 29 separate issues](#) affecting automation management on a modern transport flight deck and generated 18 distinct recommendations. The report should be considered a must read for anyone involved in aircraft operations, automation design or pilot training.

As the Asiana Flight 214 accident at SFO demonstrated recently, cockpit automation is [merely a tool](#) to help achieve a safe flight, not the ultimate solution. Even the most advanced computers still need pilots not only to watch over them but also to fully understand precisely what the automation is actually doing at any given juncture. In fact, the 2005 Circuit City Citation loss-of-control accident at Pueblo, Colo. taught a similar lesson in a much less automated aircraft.

Despite commercial aviation's stellar safety record of late, the working group remains relevant for its efforts to study both the safety and efficiency of flight-path management on modern glass-cockpit aircraft, including energy-state management, for both current and future operational use. The FAA last addressed this issue in 1996, the early days of automated airplanes, when it published [Human Factors for Flight Deck Design](#). The authors of the new document reference the 17-year-old document a number of times as both a vehicle for checking off items rectified since 1996, and as a means of flagging issues unresolved as yet.



The working group's research efforts gathered and reviewed information from the Aviation Safety Reporting System (ASRS), Line Oriented Safety Audits (LOSA) and accident and incident reports from around the world. The group interviewed 11 operators, six aircraft manufacturers and one training organization. The research items were coded for review using a number of broad categories covering the information reporting methodology, automated system design, operational and training issues, a variety of threats and errors, and undesired aircraft states. While the working group believed it was important [to look beyond pilot errors](#) and dig into the good behavior for the 99 times out of a hundred when pilots did everything correctly, it noted that that kind of data collection system does not exist yet.

Before the Boeing 757, the first glass-cockpit aircraft, was certified in 1982, errors resulting from poor manipulation of the flight controls, or from poor communications among crewmembers (often three pilots) or ATC, suggested that the people in the cockpit [were not acting as a team](#). When trouble appeared, the training fallback was “aviate, navigate, communicate.” This report makes it clear that now, with usually no more than two humans in the cockpit at any one time, it's time to acknowledge the idiosyncrasies of the third pilot, [the one that happens not to be human](#). Despite the sophistication of current-generation automation, people and machines still do not always speak a common language. Today when trouble appears, pilots think “aviate, navigate, communicate”; they need to add “[automate](#)” in there somewhere, the working group emphasizes.

Manual Flying Skills Still Needed

The 29 key findings were broken down into operational experience categories such as risk mitigation, manual flight operations, pilot use of automation, autoflight mode confusion, communication between crewmembers and ATC, flight-crew procedures, task/workload management, pilot knowledge and skills, equipment design, air traffic and airspace considerations, regulator's knowledge and data collection issues.

A look at just one category—manual flying skills—highlights the methodology the group used to dig deeply for insights. They first identified the insufficiency of pilot knowledge and skill at operating the aircraft when the technology becomes unavailable for any reason. At the back of most safety experts' minds is the recent Boeing study conclusion that between 2003-2012, more aircraft fatalities worldwide were attributable [to flight crews' losing control of their aircraft](#) than to any other cause. Loss of control is still listed as the most critical threat to aviation safety today.

The working group found that “more than 60 percent of the accident reports reviewed identified [a manual handling error as a factor in the accident](#).” The group qualified a number of handling errors into topic areas, including incorrect upset recovery, inappropriate control inputs and a lack of correct manual

handling after autopilot or autothrottle/autothrust disconnection. Also identified was a failure to recognize those disconnects that resulted in poor monitoring of energy and speeds and included the mismanagement of autothrottle/autothrust.

The group also learned that a number of factors regularly coexist with manual flight input errors, such as difficulties in transitioning between autoflight and manual control, crew coordination, poor cross-checking and verification, as well as inadequate training in fully understanding the automation itself. Interestingly, although almost every person interviewed admitted to concerns about the decline of manual flying skills, few were able to agree on precisely which flying skills would be the most needed to keep a pilot's skill level high. They also couldn't agree on how these skills might decay and what could be done to retain them.

Consider crew interaction with the automation during an all-engine go-around, especially (but not only) when initiated before decision altitude. Pilots expressed concern that high power, low weight, low-altitude level-off and autoflight logic combine to create a challenging maneuver to be performed while reconfiguring the aircraft. LOSA data showed that "87 percent of unstabilized approaches resulted in safe landings within all parameters, while 10 percent of those approaches resulted in injury-free landings that exceeded some parameter, such as going off the end of the runway." The other 3 percent conducted a go-around, but in 98 percent of those go-arounds the pilots exceeded some parameter such as maximum flap speed.

Another unexpected insight the group uncovered related to training. Some training professionals noted that pilots sometimes learn to use the automated systems by "[watching things happen](#)" in [fixed-base trainers](#). So it should be no surprise that when pilots have to hand fly, they are accustomed to watching things happen and essentially forget to shift gears, reacting instead of flying proactively.

These manual flying issues were a concern in the [1996 FAA human factors report](#). The situation could well be getting worse since accidents that involve these skill vulnerabilities continue to happen. Future flight operations based on more precise navigation functions such as performance-based navigation (PBN) are expected to be even more demanding for humans, because the need to control the aircraft manually is not going to disappear anytime soon. "Specifically addressing the development and maintenance of pilots' manual flight operations knowledge and skills is critically important," according to the working group.

While the group developed a considerable number of valuable insights, some of the recommendations lacked specificity.

The report's recommendation related to the issue of manual flying skills, for example, was to "Develop and implement standards and guidance for maintaining and improving knowledge and skills for manual flight operations that include providing pilots with opportunities to refine knowledge and practice skills," adding that "training and checking should directly correlate."

The report did not include a timeline for implementation of its recommendations. The future value of the study itself then seems to depend upon someone—a team at the FAA working with industry, most likely—translating the elements of this document into action. This is a significant challenge, since the FAA is already struggling to figure out which portions of the decade-old NextGen program will be sacrificed on the altar of sequestration.

The working group noted the current high level of safety in commercial aviation and attributed much of that record to technology already in use. Most important in the brief conclusion was the mention of "[vulnerabilities within the aviation system](#) relating to the operational use, equipment design and management and training of flight path management systems ..." Both the short- and long-term recommendations in the report address the [system's] immediate vulnerabilities, and the working group "believes implementing these recommendations is necessary to make improvements in safety and operational effectiveness."

The 1998 Commercial Aviation Safety Team (Cast) made a bold commitment to the industry to reduce commercial aviation's accident rate 80 percent by 2007. [The group actually achieved an 83-percent reduction](#). Today, the question is whether or not this current flight-path management study will spur the FAA and the industry to seek the greatness in aviation safety that the Cast team began in 1998.

<http://www.ainonline.com/aviation-news/aviation-international-news/2007-04-30/final-report-circuit-city-crash-released>

Nutrition Influences Metabolism Through Circadian Rhythms

A [high-fat diet](#) affects the molecular mechanism controlling the internal body clock that regulates metabolic functions in the liver, UC Irvine scientists have found. [Disruption of these circadian rhythms](#) may contribute to metabolic distress ailments, such as diabetes, obesity, and high blood pressure.

The researchers also discovered that returning to a balanced, low-fat diet normalized the rhythms.

This study reveals that the circadian clock is able to reprogram itself depending on a diet's nutritional content, which could lead to the identification of novel pharmacological targets for controlled diets.

UC Irvine's Paolo Sassone-Corsi, the Donald Bren Professor of Biological Chemistry and one of the world's leading researchers on the genetics of circadian rhythms, led the study, [which appears in Cell](#). The circadian clocks are intrinsic time-tracking systems in our bodies that anticipate environmental changes and adapt themselves to the appropriate time of day. [Up to 15 percent of people's genes are regulated](#) by the day-night pattern of circadian rhythms, including those involved with metabolic pathways in the liver.

A high-fat diet reprograms the liver clock through two main mechanisms. One blocks normal cycles by impeding the clock regulator genes called CLOCK:BMAL1. The other initiates a new program of oscillations by activating genes that normally do not oscillate, principally through a factor called PPAR-gamma. Previously implicated in inflammatory responses and the formation of fatty tissue, this factor oscillates with a high-fat diet.

It's noteworthy, Sassone-Corsi says, that this reprogramming takes place independent of the state of obesity; rather, it's solely dependent upon [caloric intake](#)—showing the remarkable adaptability of the circadian clock.



<http://www.cell.com/abstract/S0092-8674%2813%2901485-2>

Top Foods for Better Digestion

Five choices that will soothe stomach issues

It's easy to think of foods that cause indigestion. Spicy chili, acidic fruits and coffee can all make you reach for antacid. But what if you want to improve digestion the natural way? It's easy to do if you incorporate foods in your diet that include two things: probiotics and fiber.

Probiotics are the "good" bacteria that keep the microflora, or organisms, in your intestines balanced.

It's not uncommon for your microflora to get off-kilter, particularly if you've taken antibiotics, which can't differentiate between good bacteria and the bacteria that are making you sick. Certain foods contain probiotics, such as lactic acid bacteria and yeast. Dietary fiber consists of the parts of plant foods that the body can't digest. Your body takes the carbohydrates, protein and fat from the food you eat, and the fiber passes through your digestive system mostly intact. Eating fiber-rich foods — fruits, veggies, legumes and whole grains — helps to prevent constipation. And, according to the Mayo Clinic, eating fiber can also help you maintain a healthy weight.



Probiotics and fiber can help you stave off stomach problems, so in which foods can you find them? Here are five choices to include in your diet.

Yogurt

Everyone has seen the commercials promoting the "good" bacteria in yogurt, and although you can purchase yogurts specially designed to aid with digestion, it's not necessary. According to WebMD.com, any yogurt that lists "live and active cultures" should aid with digestion because it contains *Lactobacillus acidophilus*.

Whole grains

Swap your white bread for whole wheat and your white rice for brown, and you'll be doing your digestive system a favor. In addition to extra fiber, you'll be ingesting prebiotics, the indigestible carbohydrates that probiotics depend upon to survive.

Bananas

It's true: Bananas are higher in carbs than most fruits, so you don't want to go overboard eating them — but they are also high in fiber. And don't discount their ability to help your system get back to normal after a bout with diarrhea. Bananas are filled with the electrolytes and potassium your body loses during a gastrointestinal illness.

Sauerkraut

Unpasteurized sauerkraut (as well as Korean kimchi) contains many probiotics, according to WebMD.com: *leuconostoc*, *pediococcus* and *lactobacillus*. Just be sure to buy unpasteurized sauerkraut, as pasteurization is designed to kill off

both good and bad bacteria. (And remember that eating your sauerkraut on top of a Polish sausage will likely outweigh any potential health benefits.)

Miso soup

Start your sushi dinner off with a miso soup starter, and your stomach will thank you. It's estimated that miso — a fermented soybean paste — contains an incredible 160-plus bacteria strains. The paste can be added to soup or spread on crackers, toast or corn on the cob. It's pretty salty, so a little goes a long way. If you can't ingest enough probiotics or fiber through food to improve your digestion, consider talking to your doctor about including probiotic and fiber supplements in your diet.

Inspiration

Chopper crash survivor helps others heal



<http://www.cnn.com/video/data/2.0/video/health/2012/09/05/hf-gupta-laura-sharpe.cnn.html>