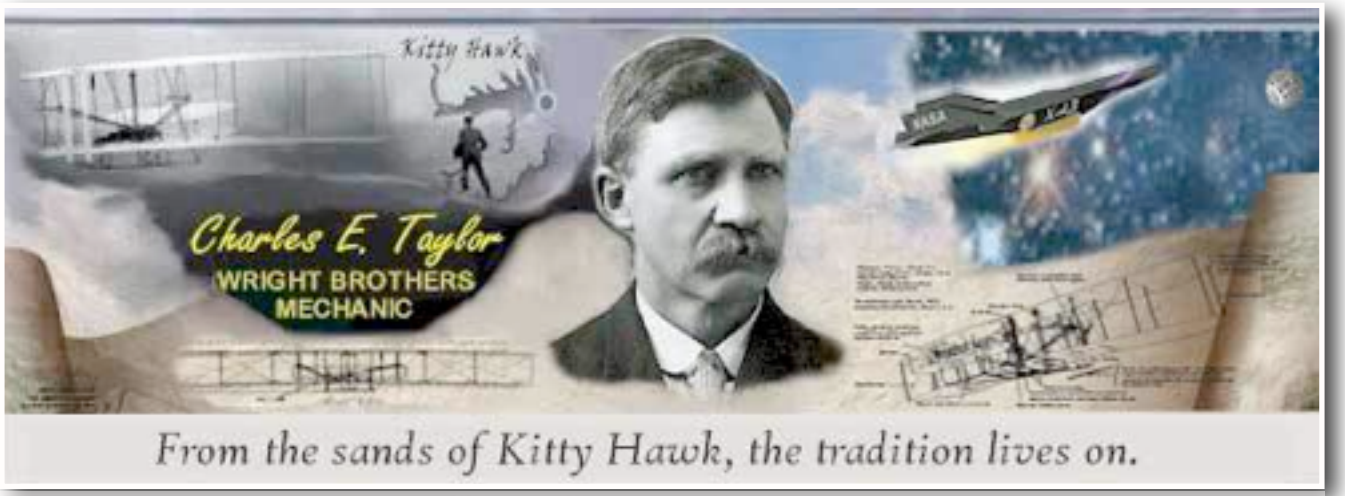
Aviation Human Factors Industry News

Volume XI. Issue 07, April 04,2015



Hello all,

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

FAA's Aviation MX Human Factors Quarterly Newsletter: March 2015, Vol 3, Issue 1

Aviation MX
HUMAN FACTORS
QUARTERLY

MARCH 2015
Vol 3, Issue 1

TWO COUNTRIES APPLY TRUSTED HUMAN FACTORS MODEL TO MANAGE SAFETY
GARETH MCGRAW AND BILL JOHNSON

About the Authors: *Dr. William Johnson is the FAA Chief Scientific and Technical Advisor for Human Factors in Aircraft Maintenance Systems. His comments are based on nearly 50 years of combined experience as a pilot/mechanic, airline engineering and MRO consultant, professor, and FAA scientific executive.*

Gareth McGraw is a Human Factors Advisor with Australia's Civil Aviation Safety Authority. He is an Aviation Maintenance Technician with 27 years' experience in both civil and military aviation, including two and a half years as a qualified Air Safety Investigator.

INSIDE THIS ISSUE:

Two Countries Apply Trusted Human Factors Model to Manage Safety

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Summary

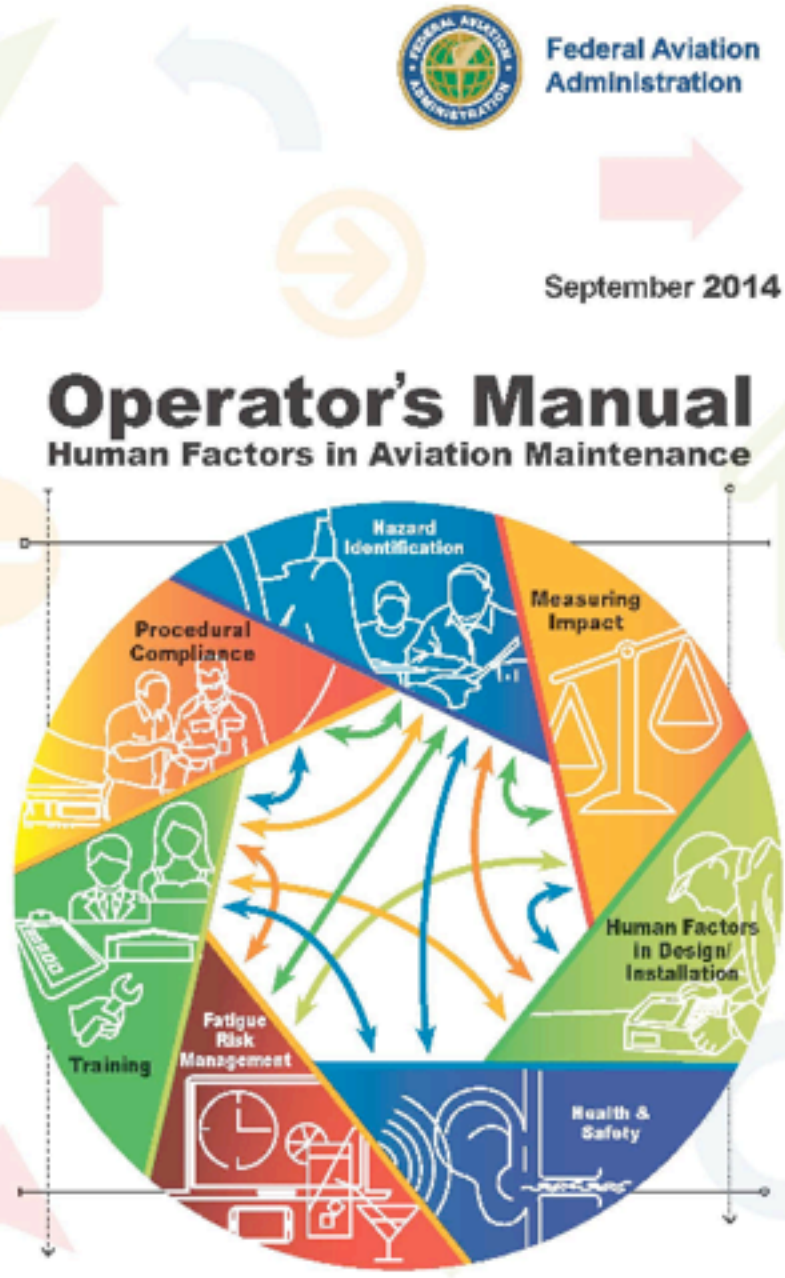
Today's maintenance personnel have a reasonable understanding of the human factors challenges in their lives and work environments. They hardly need a basic course. Instead, they require ways to identify and report human factors and other hazards before they become serious threats to workers and to flight safety. Bill Johnson (FAA) and Gareth McGraw (Civil Aviation Safety Authority of Australia, (CASA)) review the focus on People, Environment, Action, and Resources (PEAR). Because of its simplicity, this time tested method of understanding maintenance human factors continues to evolve and be applied worldwide.

PEAR History

In the mid-nineties, there was considerable attention applied to developing methods to introduce human factors to maintenance personnel. The most popular model was SHEL/SHELL, which was the HF learning tool for most pilot crew resource management courses. Other excellent tools were introduced, mostly with a focus on human error. That includes James Reason's Swiss Cheese Model and Gordon Dupont's Dirty Dozen. While reduction and mitigation of human error was an important focus of HF familiarization, Drs. Mike Maddox and Bill Johnson wanted something that extended beyond error. Their specification was for a tool, or memory jogger, that could encompass all aspects of maintenance work. Their solution, while often called a model, was really a pneumonic that captured a way to consider maintenance human factors. Maddox and Johnson decided that human factors programs must consider people, the environment in which they work (physical and social), the actions that must be performed, and the resources necessary to complete the job in a safe and efficient manner. Those four elements created PEAR.

Written by maintenance human factors professionals dedicated to identifying and optimizing the factors that affect human performance in maintenance and inspection. Past newsletters @ humanfactorsinfo.com

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



The latest Ops Manual for Human Factors in Aviation Maintenance is now available in the Maintenance Human Factors library:

http://www.faa.gov/about/initiatives/maintenance_hf/library/documents/media/human_factors_maintenance/hf_ops_manual_2014.pdf

Unreliable humans are the last major problem of aviation security

Submitted by an airline pilot:

When pilots hear that one of their very own has deliberately crashed an aircraft and murdered all passengers and crew under his care, it makes us very angry. This anger is caused by the betrayal of our community and our professionalism.

But the industry's response to any accident has never been a knee jerk one and it shouldn't be so in the case of the Germanwings crash. We will learn from it.

To begin with, there has always existed a relationship between accidents and "life changes". These alterations, officially termed Life Change Units, are measurable. The higher the LCU count the more unreliable or irrational the behavior. LCU accumulated up to six months prior to an accident should be considered causative human factors.

The death of a spouse, problems with wife, parents, kids, girlfriends; illnesses, financial difficulties; religious radicalization, count as high point LCU. A co-relation exists between a pilot-error accident and the LCU accumulated in the 6 months prior to the incident.

To counter this, airlines must bring "human" back into "human being". They need to understand their pilots. Carriers must set up non-punitive counseling centers where a pilot can seek help assured of confidentiality. If the pilot has accumulated high LCU, the airline must provide him the necessary support and understanding so that LCU are not responsible for subsequent irrational behavior.

As for the aircraft itself, the cockpit door is the last line of defense against a hijacker trying to take control of the aircraft.

The current design evolved after 9/11.

The door is armored, has an electronic lock and can normally only be opened from the inside. It has a camera that permits the crew to view the area behind and to the sides of the entrance. To enter, one buzzes the cockpit. The crew check the video display and after identification press the unlock button.

The system has the provision to open the door from the outside by punching in a secret emergency code. However, the crew inside the cockpit can still deny entry by permanently locking the door to keep it secure.

Airplanes are built so they can be operated by two pilots and each can independently fly and manage the aircraft from his own seat so that if one pilot is incapacitated the other can land the plane. No pilot is permitted to leave the cockpit during any "critical phase of flight" - from the moment the engine starts to top-of-climb and from top-of-descent till it comes to a stop at the end of the flight. In cruise a pilot may leave only for physiological reasons: to go to the bathroom, for instance.

The FAA requires that there must be at least two people in the cockpit at all times. All airlines in India follow this rule.

Can a screening process prevent a pilot from going rogue? The selection procedure employed is quite robust and has adequate safeguards. Airlines recruit pilots with skill, knowledge, motivation, personality and the correct mental balance. I don't see the need for the large scale psychological and psychiatric assessment that the media has demanded.

The typical selection process starts with experience, legality and validity cross check of licenses and rating and experience validation. There are also modules to check IQ, reasoning and problem solving skills. Following other standard assessment procedures, a final interview is conducted - some airlines retain the services of a psychologist at this stage.

In the man-machine mix, it's man who is more unreliable, more unpredictable and more prone to error. The industry constantly endeavors to adapt technology to suit humans rather than the other way around. Human unreliability is the last major problem of aviation safety.

Also, aviation is inherently risky. It is an industry that can never be without risk. The industry's aim is to ensure that risk is kept at a minimum acceptable level by managing risk. This risk management consists of risk identification, risk evaluation and finally risk mitigation to acceptable levels.

This is the crux of air safety.

FAA Needs to Focus On Maintenance Issues Raised by Mechanics

by John Goglia

I'm really glad the FAA finally released the NPRM on small unmanned aircraft, those weighing 55 pounds or less. The U.S. has to move forward and catch up with many other countries—such as Canada and Japan—on providing a path for unmanned aircraft to fly commercially. I'm also hoping that getting the NPRM out will allow the FAA to focus on some other significant problems swirling around aviation that may have a much bigger impact on the flying public. It seems to me from conversations with people inside the FAA that the intense focus on UAS was sometimes too single-minded. Because of the media swirl around UAS, fed in part by some of the misleading data given by the FAA on UAS incident reports, it seems other issues more important from a safety perspective might have gotten short shrift.One such issue is maintenance, particularly maintenance issues raised by mechanics and their unions at major airlines. One notably public dispute has gotten so contentious that a mechanics' union actually sued American Airlines, requesting that a federal judge enjoin the company from pressuring its mechanics to violate safety rules. While unions and airlines frequently have disputes, it is extremely rare for a maintenance union to sue an airline in federal court. Another troubling maintenance issue involves the settlement of a whistleblower complaint against Southwest Airlines by a mechanic who claimed he was disciplined for reporting cracks in a 737 that were significant enough for the aircraft to be withdrawn from service for repair.

The lawsuit by American's mechanics and union local in Chicago alleges that "to improperly keep airplanes in revenue service, aviation maintenance technicians [mechanics] at stations throughout the AA system have been subject to ongoing pressure from AA management representatives to commit maintenance fraud, disregard maintenance discrepancies, deviate from federally mandated maintenance procedures, abstain from lightning strike and bird strike inspections, and otherwise violate federal aviation standards." The lawsuit further alleges threats and intimidation against mechanics by the airline. American denies the allegations.

But American's response to the lawsuit was somewhat curious. According to a written statement by an American spokesperson, the FAA had not alerted the carrier to any issues: "Our communication with the FAA is ongoing and frequent, and their oversight team has not alerted us to any current critical issues or concerns." Since when is the FAA responsible for alerting an airline to critical issues that it should be aware of from its own workforce? It is disturbing to me that these allegations resulted in a lawsuit.

Whistleblower Taken to Task

The Southwest case involves a mechanic who performed an inspection of a 737. The task card required a walk-around visual inspection of the aircraft. During the walk-around, the mechanic discovered two cracks in the fuselage and wrote them up. The cracks were significant enough that the aircraft was taken out of service for repair.

No, Southwest did not commend the mechanic for finding and writing up the cracks, as it should have. This was especially remiss of the airline when you consider that the airwaves in July 2009 were filled with the image of Flight 2294, a Southwest 737 that made an emergency landing after cracks in the skin of the fuselage caused a structural failure and rapid decompression. Instead, the mechanic was handed a Letter of Instruction citing him for working outside the scope of work of the task card. I guess the mechanic was supposed to do the visual check on the walk-around blindfolded so he didn't spot anything amiss. (As you can tell, as a former airline mechanic and long-time safety advocate, I find this type of case infuriating.)

To make matters worse, the original letter also warned the mechanic that future violations could lead to disciplinary action. When the mechanic protested that this letter constituted a violation of the AIR-21 statutory protections for airline employees who report safety issues, the airline fought him, making various claims, including one that the letter did not constitute prohibited conduct under the statute. In the end, the administrative judge reviewing the case found that the mechanic engaged in activities protected by the whistleblower statute and that Southwest was aware of it. Before a decision was reached on the actual merits of the case, Southwest settled, removing the Letter of Instruction from the mechanic's file and paying him $35,000 for attorney fees.

These two cases got me interested in finding out what the Aviation Safety Reporting System (ASRS, also known as "NASA reports" because that agency maintains the database) records would show on mechanics reporting intimidation. I requested the information from NASA for the past two years and promptly received the data.

In less than a week, NASA was able to search the database for the keywords I had asked for related to mechanic reports of intimidation and threats and email me the information. (A far cry from other government aviation agencies that take much longer to respond, if they respond at all. Yes, FAA, that's you I'm referring to.) As you all know, the data is compiled from voluntary safety reports from pilots, mechanics, controllers and other aviation users. I received 76 separate reports and more than 200 pages of information related to those reports, which include airline mechanics reporting intimidation and threats from supervisors for reporting safety issues.

I am going through those reports now and will let you know what they indicate. While the information is de-identified—you can't tell who wrote the report, the airline involved or even the airport—the reports do indicate if the mechanic worked for an airline and the make and model of aircraft. While NASA gives many caveats about drawing conclusions from the data because they are voluntarily submitted reports that are not vetted for accuracy, one caveat stood out for me: "One thing that can be known from ASRS data is that the number of reports received concerning specific event types represents the lower measure [emphasis in original] of the true number of such events that are occurring." This means, if anything, that the incidence of intimidation of mechanics is greater than the data shows here. And that is very troubling indeed.

Improper rigging brings down experimental aircraft

The BD-5, an experimental amateur-built airplane equipped with an automobile engine, was never certified as airworthy, therefore, it was never issued an airworthiness certificate. The pilot reported that he intended to perform a fly-by before landing at the airport in Mount Airy, N.C.As he approached the runway about 50 feet above ground level, and advanced the throttle to full, the engine quit. The pilot pitched the airplane up and to the right, then turned to the left.

The airspeed decreased to 100 mph, and the airplane started to vibrate, so the pilot quickly leveled the wings and pitched downward to prevent the plane from entering a stall. The pilot continued to fly a wings-level descent until the airplane hit the ground, seriously injuring the pilot.

Examination of the airplane revealed that the engine choke cable was rigged backwards. Therefore, pulling the choke knob out opened the choke valve and pushing it in closed it.

The choke knob, which was located directly behind the pilot's head, was found pushed in during the post-accident examination.

Investigators determined that it was likely that the pilot's head contacted the choke while he was responding to the loss of engine power, which resulted in a closed choke and a corresponding total loss of engine power.

The NTSB determined the probable cause of the accident as a total loss of engine power due to the pilot's inadvertent closing of the engine choke. Contributing to the accident was the improper rigging of the engine choke cable.

NTSB Identification: ERA13LA167

This March 2013 accident report is provided by the National Transportation Safety Board. Published as an educational tool, it is intended to help pilots learn from the misfortunes of others.

Contaminated fuel blamed for Maule crash

The passenger reported that he could not remember if the pilot of the Maule M5 checked the fuel before the flight, which originated from Woodinville, Wash. The passenger told investigators that it took several tries to get the engine to start. About 30 minutes into the flight, the engine started to sputter, then stopped.

The pilot was unable to restart the engine, and the airplane began to lose altitude. The passenger recalled seeing the stall warning light illuminate as the airplane was in a turn, but he did not recall the impact.The airplane hit a home about 16 nautical miles northeast of the airport. The pilot was killed in the crash.

GPS data revealed that the airplane made several course heading changes at varying altitudes and airspeeds during the flight. During the last 16 seconds of the flight track, the airplane turned left, which was likely indicative of the pilot attempting to make a forced landing to a nearby pond. The last GPS data showed the airplane at an altitude of 650 feet MSL and a groundspeed of 40 knots.

Investigators learned the airplane's previous flight occurred 102 days before the accident. During this period of inactivity, the airplane remained parked outside on an airport ramp exposed to inclement weather conditions conducive to the formation of condensation in the partially filled fuel tanks. No records were found indicating that the airplane had been refueled before the accident flight.

Fuel was recovered from the airplane at the accident site. Analysis of a fuel sample revealed the presence of water. Investigators determined that fuel contamination likely resulted in the loss of engine power and the pilot's inability to restart the engine after the power loss. The pilot likely failed to maintain adequate airspeed following the loss of engine power.

The NTSB determined the probable causes of this accident as the pilot's failure to maintain adequate airspeed following a total loss of engine power due to fuel contamination, which resulted in a stall/spin and subsequent impact with terrain.

NTSB Identification: WPR13FA141

This March 2013 accident report is provided by the National Transportation Safety Board. Published as an educational tool, it is intended to help pilots learn from the misfortunes of others.

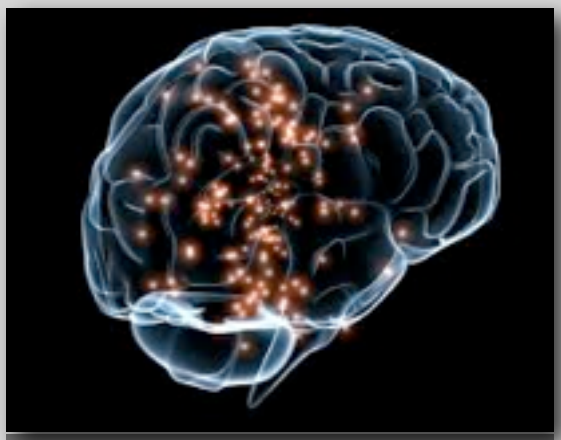
What happens when pilots lose the plot?

When a pilot ignores an audio alert, why does it happen?

It could be a ground proximity alert, or a warning that the cabin pressure is rising, or that the gear is still up while the aircraft is on final approach.

So it matters.

But what's going on in the pilot's brain that makes him act as if the alert doesn't exist?



A group of French scientists at the Institut Supérieur de l'Aéronautique et de l'Espace in Toulouse is researching pilot physiological and neurological reactions to stress, with the objective of recognizing the signals that precede potential error in order to understand and prevent it.
Backed by the AXA Research Fund, the ISAE is working to identify the patterns of neurological activity that occur when pilots become confused, overloaded, or focused on non-critical inputs to the exclusion of critical ones.

This confusion can result in illogical actions, leading to accidents like controlled flight into terrain or loss of control.

Tools used to monitor pilot reactions during flight simulator exercises - and real flights also - include eye-tracking, measurement of pupil dilation, observing deep brain activity via electro-encephalogram readings, and surface brain areas via infrared sensors. Heart rate also indicates the levels of stress and workload.

For example, pilots will not be surprised to learn that a take-off in a simulator does not raise the heart rate to the degree it does in a real aircraft!

Prof Frederic Dehais, who holds the AXA chair of neuroergonomics for flight safety at ISAE SUPAERO, says even factors such as "emotional bias" can be recognized. This can be caused, for example, by pilot perception of commercial pressure to land when a go-around would be wiser.

They have tested pilots by offering them a financial benefit to land versus a small financial penalty for a go-around, and then observed in their brain a greater degree of neurological stress during the decision-making process.

As wired-up pilots are given progressively higher workload tests, neurologists can watch as the rational part of the brain deactivates. This is the state in which pilots, for example, ignore loud alert chimes.

Knowing, as neurologists now do, which parts of the brain control specific functions, the ISAE scientists can predict which tasks the pilot will no longer be able to perform as the stress increases.

Of course there are traditional ways of helping pilots deal with stress. Good training and high levels of knowledge in a pilot mean that he or she is less stressed by any given situation than a pilot with poor training and knowledge. But the ISAE is looking beyond the traditional to what else will be effective.

This new level of "neuro-ergonomic" understanding promises to enable manufacturers to eliminate alerts and other stimuli that do not work, and develop completely new systems for attracting the attention of pilots whose cognitive capacity has been swamped.

Such as a window appearing on the navigation display showing an animation of a pilot carrying out the required action. Neurologists know that, when all else fails, they can invoke the imitative function - the one that makes you yawn when someone else yawns.

The potential of this study is totally fascinating. Where could it lead, and what effect could it have on the industry?

It could affect everything from pilot selection to monitoring the effectiveness of training techniques, or the effectiveness of different cockpit designs.

It could eliminate speculation about whether pilots who work for airlines that require them to be self-employed and paid by the hour are under more stress than pilots who are real employees. Indeed the accuracy of these neurological observations is such that they might be predictive of the kind of mistakes these pilots are more likely to make.

It could identify the cumulative effects of bleed air fume events on a pilot's brain functions which, backed up with blood tests, could help eliminate many of the unknowns about this disputed condition.

This may be a mischievous thought, but could this study end up by causing cockpits, as an in-flight emergency develops, to default into the aviation equivalent of a nursery, with all the cues presented, Disney-like, to stimulate imitation by pilots who have lost the plot?

Whatever the ISAE discovers, this research project has incredible potential to advance mankind's understanding of aviation human factors.

Pilot's DSLR Jammed Airliner Joystick and Caused it to Plummet, Investigation Finds

American and European regulations generally prohibit pilots from taking pictures while flying planes, and for good reason: sometimes the camera does get in the way of safe flight - literally.
An investigation in the UK has found that a military airliner took a terrifying 4,400 foot nosedive last year after the pilot's DSLR got stuck next to the plane's joystick.

The Daily Mail reports that Military Aviation Authority has just released a report on the February 9th, 2014, incident that involved a RAF Airbus A330 transport jet carrying 198 people.

After examining the evidence, the investigators concluded that on the way to Afghanistan, the captain had shot a total of 77 photos of the flight deck from his seat. Just three minutes after taking a picture, he moved his seat forward, causing the Nikon camera to fall into the space between his armrest and joystick and become wedged.

The plane then took a nosedive for 27 seconds, losing 4,400 feet during that span and causing injuries to 33 of the passengers and crew. The report concludes that the case was a "near-miss" that had "realistic potential for the loss of the aircraft and 198 of our people."

Although the military pilot was not prohibited from using his camera during the flight - and in fact the photography may have helped him be alert during times of boredom - this incident will soon lead to new rules that prohibit things from being placed between the armrest and joystick.

DGCA takes action against pilots coming late

India's aviation safety regulator has begun cracking the whip on pilots reporting late on duty even by few minutes citing suspected lapse of pre-flight cockpit checks.

According to the officials from the Directorate General of Civil Aviation (DGCA), about 60 pilots across domestic airlines were given show cause notices following surprise checks conducted over the past two weeks. While officials refused to divulge airline-wise breakup of the crackdown sources said that two full service domestic carriers accounted for most of the offenders. "We have increased the number of spot checks to eliminate pilots' laxity over pre-flight cockpit checks," said a senior DGCA official requesting anonymity. One such show cause notice that HT accessed was issued on March 13 to an Air India (AI) pilot for turning up late by just a minute. The AI spokesperson did not respond to HT's calls and a query sent via email on the show cause notice.

According to sources in DGCA, the punitive actions on the pilots could be in preparation or the International Civil Aviation Organization (ICAO) safety audit scheduled later this year. The global policy maker on air safety would be reviewing the country's air safety administration. This audit will be crucial as India had ended up in a category of 13 countries with the most dismal air safety monitoring records following its previous audit in 2012.

Industry insiders suspect that the DGCA's curtailed tolerance on safety lapses could have something to do

Make Your Human Factors Recurrent Course Shine!

Dr. Bob Baron is the President and Chief Consultant of The Aviation Consulting Group (TACG).

As the company Human Factors (HF) instructor, you have given all of the employees their Initial HF training. In what seems like a month, a year passes by,

and all of a sudden you realize it's time to present a Recurrent HF course and you are completely unprepared. In a fit of haste you decide to recycle some material from your Initial HF course and just present it again. Did someone say "uh oh, missed opportunity!!" Recurrent training should not simply be a rehash of the Initial course. In fact, it's your opportunity to take HF training to a higher level! I personally like developing and facilitating Recurrent courses for that very reason; I can be really creative with how I **develop** and **facilitate** the course.

Here are a few helpful tips for you to do the same with **your** Recurrent HF course:

Do not simply rehash Initial training material

This does nothing to expand knowledge and/or increase critical thinking skills. In fact, if the Recurrent course is the same exact material as the Initial course, you are going to have a hard time maintaining the attendees' attention.

Make it real-world (practical)

Stay away from theory. Use external and internal incidents, accidents and occurrences. Use practical examples of HF events that have happened fairly recently (either at other operators or internally within your own operation).

Consider making the course case-based

I've developed Recurrent courses that used just one case study and then built around the case with the application of various HF models such as SHELL, HFACS, and Swiss cheese. The Dirty Dozen can also be applied by having the attendees identify the various Dirty Dozen that may have contributed to the case.

Try to facilitate more than instruct

Whereas the Initial course may have required more one-way instructing, the Recurrent course is the perfect opportunity to facilitate rather than instruct. This encourages much more interaction.

Make the course active

By facilitating rather than instructing, there should naturally be a lot of interaction. You can also try to incorporate a few group activities or even have the attendees make their own short presentations on a particular topic. But whatever you do, just like the Initial course, DON'T just read slides to the attendees for hours at a time! You will be wasting their time and yours!

Be sure to include countermeasures

Whereas the Initial course may have been more of an "awareness" course, the Recurrent course should put more emphasis on human error countermeasures and prevention. Incorporating threat and management (TEM) principles is not a bad idea either.

If you would like additional help with Human Factors Initial or Recurrent course development and facilitation methods, please visit The Aviation Consulting Group's website at www.tacgworldwide.com/humanfactorstraining.htm

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FAA Taking Applications for Air Traffic Controllers

Administrator Michael Huerta said the agency plans to hire and train more than 6,000 new air traffic control specialists during the next five years.

The Federal Aviation Administration on Monday began accepting applications for new air traffic controllers to fill positions across the United States, and it will accept them through at least March 28. "The Air Traffic Control Specialist's job isn't just any other day in the office. It's a career where you'll have the chance to save lives through proactive approaches to aviation safety. You'll also operate new procedures that enhance efficiency and emissions, which help protect our environment," the agency's announcement stated.It says this is "the most exciting time in FAA's history.

We operate the busiest and most complex airspace system in the world. . . . Every day of the year, and especially on holidays, more than 15,000 federal controllers at 315 FAA air traffic facilities are on the job, guiding more than 87,000 flights every day across our national airspace system. Do you have what it takes to help us control the skies?"

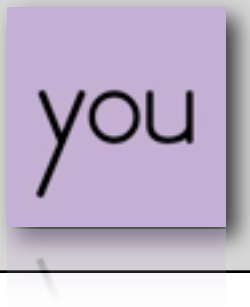
The job's minimum requirements are:

- Being a United States citizen
- Starting at the FAA Academy no later than your 31st birthday
- Passing a medical examination
- Passing a security investigation
- Having three years of progressively responsible work experience, or a bachelor's degree, or a combination of post-secondary education and work experience that totals three years
- Passing the FAA air traffic pre-employment tests
- Speaking English clearly enough to be understood over communications equipment

No previous air traffic controller experience or a specialized technical degree is require. "The FAA will provide rigorous, specialized training to ensure that qualified candidates are ready to perform capably and responsibly. Be sure to read the requirements for consideration. If you don't meet the minimum education or experience requirements at this time, know that we plan to hire and train more than *6,000* new air traffic control specialists during the next five years," FAA Administrator Michael Huerta wrote, adding that FAA recruiters will host a virtual career fair on March 25.

Managing a Crew of Just You

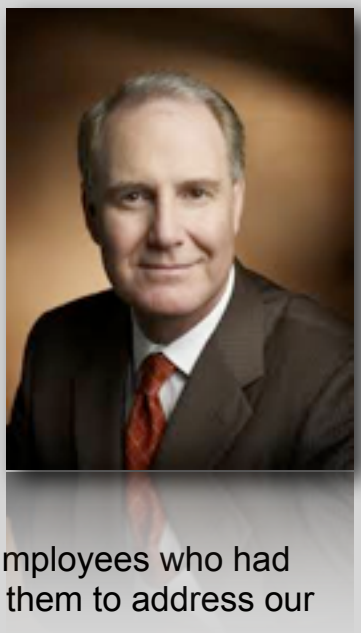
There is no one right answer in aeronautical decision-making. Each pilot is expected to analyze each situation in light of experience level, personal, and current physical and mental readiness, and make his or her own decision. That's where single-pilot resource management (SRM) comes into play.



Get the fact sheet about SRM and the "5P" approach at http://1.usa.gov/1Gu5fvz.

Why leadership is only ever about people

Author: Gary Kelly is a Chairman, President, & CEO at Southwest Airlines.



I was recently asked to give a speech to a group of Deans and Assistant Deans who had gathered for a Symposium at my alma mater, the University of Texas at Austin, where I had a chance to talk about one of my favorite topics—Leadership. I shared five principles that I have found to be essential in order to be an effective leader, which I have outlined below.

Leaders Must Care

Leadership is about people.

Period. Great leadership is about inspiring people, serving people, caring for people, and caring about people. You have to tell them you care.

A few years ago, we assembled a panel of Southwest Employees who had heroically served our country in the Iraq War and asked them to address our leadership team.

We asked them to describe what great leadership looked like to them. No one told tales of how smart their leaders were. No one cared where their leader was from, or what was on their leader's resume. To a soldier, their heroes were the ones who cared about them—as human beings, as soldiers. Their leaders worked them hard, disciplined them when necessary, and sent them into battle! Yet, these soldiers knew, without a doubt, that their leaders cared for each soldier's total well-being.

Somehow, some way, you have to convince people you care about them. And in turn, your people will be ready to help you win great battles.

Leaders must communicate

Not communicating well is one of the great mistakes a leader can make. When leaders don't communicate well, the consequence is Employees don't feel valued or important. For that reason, I can't think of anything more important in leadership than communication. Ask people's opinion. Communicate about everything.

By definition, leadership involves a group of people. To get any group to work together, you have to encourage and foster teamwork. How?

You have to communicate. But, you have to communicate in the right way. It's a matter of respect—truly, genuinely respecting others' opinions.

Any time you work with a group, you should expect disagreement. That's okay. You should embrace dissent. Our great country was founded on the principle that it is more than just okay to dissent—it is expected. Teamwork isn't about "going along." It's about hearing all views honestly, admitting mistakes vulnerably, and sharing risks and rewards jointly.

Leaders must have character

To be a great leader or a great team member, you have to have character: honesty, integrity, respect for others, and selflessness. "You have to be not just willing, but eager to work harder than anyone else"—words from the great UCLA basketball coach, John Wooden. I'll add one more: There's an old saying that adversity doesn't create character, it reveals it.

Leaders must be competent

To be a leader, of course, you have to know your stuff. You must be competent. Under promise and over prepare. I've found that various technical aspects of a profession are the easier parts of the job. It's the human relationship side that is the most challenging—you can't underestimate it!

Leaders must have courage

Finally, I think it goes without saying, leaders must have courage. It's very hard to be a leader. It's a lot easier to be a follower. It's a lot easier to let someone else own the problem or make the decision. It's a lot harder to stand up, speak up and be accountable.

Can't sleep? Have rice for dinner: High GI foods can help you nod off (but noodles have the opposite effect)

High rice intake or high GI intake associated with good sleep, study found
But eating a lot of noodles or pasta led to a bad night's sleep
Bread consumption had no effect on slumber, said Japanese researchers
Foods with high GI release sugar into the blood more quickly
Also help more sleep-inducing tryptophan and melatonin enter the brain

If you can't sleep at night then it might be worth changing what you have for.

Scientists have discovered that eating lots of rice can trigger a deep slumber, while pasta and noodles can actually hinder sleep. The Japanese researchers also found eating bread products - including white bread, pancakes and pizza - had no effect on the quality of sleep.

They say eating food high on the glycaemic index (GI) - such as rice - was found to be associated with good quality sleep.

Foods with a high GI release sugar in the blood more quickly, leading to spikes in blood sugar levels that can last for a longer time.

Low GI foods, on the other hand, tend to cause small blood sugar rises that don't last as long.

A high GI diet may affect sleep quality because of the effects of tryptophan, an amino acid known for its tranquilizing effects and link to the sleep-inducing hormone melatonin.

This backs up previous research which found eating a meal high in carbohydrate - with a high GI - increased the amount of tryptophan being transported into the brain compared with other amino acids.

In the brain, tryptophan is converted into serotonin and then to melatonin, which induces sleep.

According to the study, people in Japan consume up to ten times more rice than those in Europe and North America.

Rice accounts for approximately 28 per cent of the Japanese people's daily energy intake.

The study analyzed data from the annual health examinations of 1,848 factory workers (1,164 men and 684 women).

The Industrial Health and Safety Law in Japan requires that employers offer annual health examinations to all of their employees, so this data could be used by researchers.

The participants also answered a questionnaire in 2003 and a year later in 2004 on health-related behaviors such as their diet, whether they smoked and how much exercise they took.

To assess the participants' sleep quality, researchers used the Japanese version of the Pittsburgh Sleep Quality Index, which assesses a person's quality of sleep.

This looked at sleep quality; the amount of time it took to fall asleep after the lights were turned off, duration, efficiency, disturbances, use of medication and how the workers felt and performed during the day.

Those with a higher rice intake and higher GI intake scored much better on the sleep scale - i.e. they slept well.

The researchers also found a higher rice and GI intake were linked with better sleep duration.

Higher noodle intake, however, was associated with a more frequent sleep disturbance, higher levels of daytime dysfunction, increased use of sleep medication, poorer subjective sleep quality, and taking longer to get to sleep, they found.

Bread consumption was not found to be linked to sleep quality.

Writing in the study, the researchers said: 'The present study indicates that high consumption of rice and a high dietary GI are associated with good sleep, especially good sleep duration.

'Meanwhile, higher noodle consumption is associated with poor sleep quality. The effects of starchy foods on sleep may differ according to their GI values.

'Diets with a high-GI, especially those with high rice intake, may contribute to good sleep.'

The research was published in the journal PLOS ONE.

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