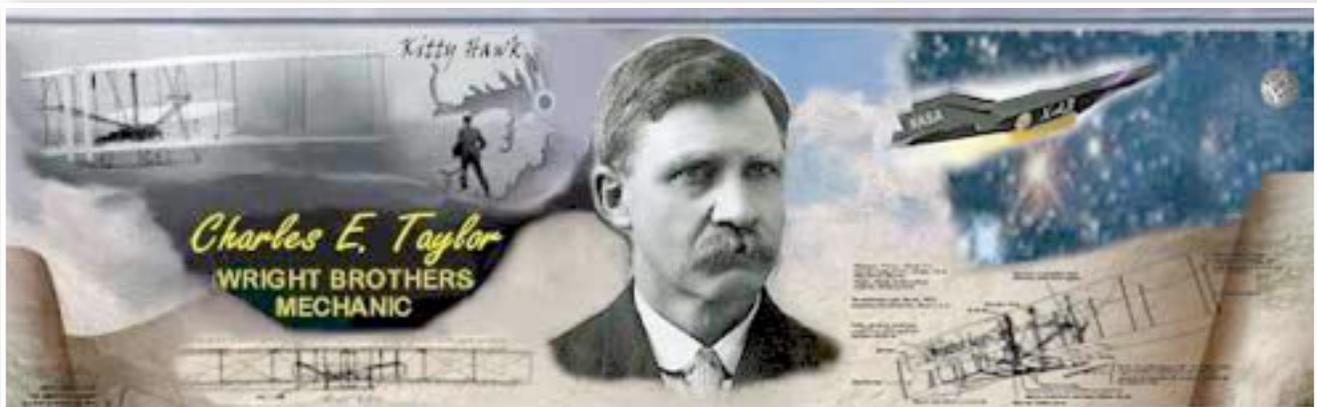


Aviation Human Factors Industry News

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

Hello all,

To subscribe send an email to: rhughes@humanfactorsedu.com

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

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★**Survivor of 1987 plane crash shares story for film**

★**Indonesian Investigation Shows Human Error Contributed to Russian Jet Crash**

★**Pilot's cellphone use may have been partial cause of fatal plane crash in B.C.**

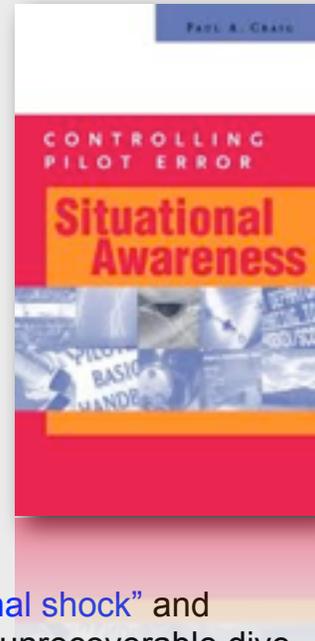
★**ICAO Releases Phraseology Study Results**

★**Alleged Conspiracy To Falsify Aircraft Inspections**

★**And Much More**

Air France 447 – Human Factors Overload

The crash of Air France 447 on the 1st of June 2009 in the Mid-Atlantic Ocean was a mystery and only after an extensive search program did the facts surrounding the crash come to light, the final report not being released until the cockpit voice recorder(CVR) and flight data recorder (FDR) were recovered some two years after the accident. The Bureau d'Enquêtes et d'Analyses pour la sécurité de l'aviation civile (BEA), the French civil aviation investigation authority, released its report on the 9th of July 2012, David Learmount, Safety Editor for Flight International, reviews the findings (Learmount, 2012): From a **human factors perspective** this accident highlights issues of cognition, stress and sensory overload and the interaction between man and machine. The BEA report finds that the flight deck crew to be in a state of “**emotional shock**” and subsequent incorrect actions pushed the aircraft into an unrecoverable dive (Kaminski-Morrow, 2012).



In the case of AF447 the accident was in the middle of the night at time that is usually quiet on the flight deck, so issues of arousal and **situational awareness** comes into focus as do issues such as external visual reference, of which there would be none, and vestibular sensors which would have been disorientated (Robson, 2008). Added to the confusion is understanding how the aircraft computer was reacting to the environment and the sudden disengagement of the autopilot. The “emotional shock” would no doubt be caused by the **mental overload** brought to bear with all the various factors.

The BEA not only finds shortcomings in training associated with long haul and high altitude flying (BEA, 2012), suggesting that training concentrates on take-off and landing scenarios and **does not** consider fully high altitude situations or atmospheric conditions or recovery from a system failure, but also the human computer interaction (HCI) (Salas & Maurino, 2010). In aviation HCI must consider visual, auditory and touch cues and provide data that is easily interpreted. In the case of AF447 there was a loss of visual display, multiple auditory warnings and no “shaker stick” action, hence confusion and a lack of situational awareness.

This accident adds to our understanding of the **limitations of human cognition and processing** and the limitations that HCI system design can have.

Read the final BEA report here: [<http://www.bea.aero/en/enquetes/flight.af.447/flight.af.447.php>]

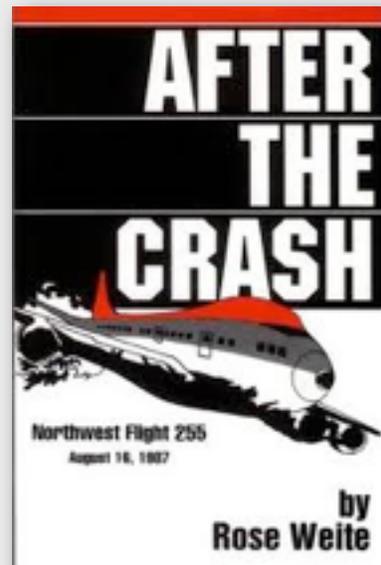
http://www.youtube.com/watch?v=AlrAOoq-Nnk&feature=player_embedded

25 Years Later

Flight 255: The NTSB points out important lessons that must be heeded

Originally ran 5/12/1988) The Federal investigation of last August's crash of Northwest Flight 255 near Detroit Metro Airport, the second-worst disaster in the history of U.S. commercial aviation, suggests a truth both simple and subtle: **The most sophisticated technology or design cannot overcome the importance of human performance.** At the very least, the findings of the National Transportation Safety Board should reinforce among airlines, pilots and safety inspectors the need to **maintain cockpit discipline** and to follow pre-flight checklists scrupulously -- and to resist any impulse to cut corners on safety, for any reason.

The NTSB attributes the crash **to the failure** of the doomed flight's crew to ensure that the MD80 jetliner's wing flaps and slats were properly extended for takeoff. It notes that the pilots were **preoccupied** with meeting their schedule, worrying about possible wind shear, responding to an airport order to use a different runway, and chatting with a flight attendant, all when they should have been performing the safety checklist.



Once airborne, the report said, the crew still had time to recover but apparently did not recognize the cause of the problem. The Air Line Pilots Association, defending the crew, suggests that the flaps may have malfunctioned.

The NTSB report **did not determine why** an automatic alarm failed to warn the pilots of the flaps' improper setting. The jet's manufacturer contends that the crew deliberately pulled the system's circuit-breaker to prevent false alarms. The pilots' union argues that the system's circuit-breaker is prone to failure. Federal investigators suggested a temporary power surge may have caused the disruption. Whatever the case, the NTSB makes valid proposals to investigate the reliability of the circuit breakers and to require the alarm system's warning light to indicate power loss. That didn't happen on Flight 255.

Mechanical malfunctions and obvious **human errors** both appear to have contributed to the crash of Flight 255. The cause or causes probably matter little now to many of the families and loved ones of the disaster's 156 victims. Still, the tragedy has helped galvanize the Federal Aviation Administration into drawing up the first new rules for pilot training in two decades. That is an appropriate start. Flying always will entail a risk, but **nothing should be allowed** to increase that risk.

Survivor of 1987 plane crash shares story for film

In a Oct. 9, 1987 file photo, Cecilia Cichan sits on her hospital bed before her release from the University of Michigan Medical Center in Ann Arbor, Mich. Cichan was the lone survivor on board the Northwest Airlines flight 255 that crashed Aug. 16, 1987 at Detroit Metropolitan Airport. Cichan discussed the crash for 'Sole Survivor,' an upcoming documentary featuring stories of plane crash survivors. Thursday, Aug. 16, 2012 marks 25 years since the crash in the Detroit suburb of Romulus killed 154 people on board, including Cecilia's parents and brother. A memorial event was scheduled for Thursday in Romulus, The Detroit News reported.



The only person who survived a plane crash near Detroit Metropolitan Airport a quarter of a century ago said [she thinks about the wreck every day](#).

Cecelia Cichan discussed the crash for "Sole Survivor," an upcoming documentary featuring stories of plane crash survivors. "I think about the accident every day. It's kind of hard not to think about it when I look in the mirror," she said in a clip from the film that was broadcast by WDIV-TV in Detroit.

An image shows Cichan with a tattoo of an airplane on her wrist.

August 16th marked 25 years since Northwest Airlines Flight 255 crashed in the Detroit suburb of Romulus, killing 154 people on board. Two people also died on the ground.

The Phoenix-bound plane was just clearing the runway at 8:46 p.m. when it tilted slightly. The left wing clipped a light pole, and the damaged airliner sheared the top off a rental car building. The McDonnell Douglas MD80 left a half-mile trail of bodies, charred wreckage, magazines and trays of food along Middle Belt Road when it crashed on Aug. 16, 1987.

The National Transportation Safety Board concluded the plane's crew failed to set the wing flaps properly for takeoff. The agency also said a cockpit warning system did not alert the crew to the problem.

Cichan was 4 at the time. Her parents and brother were killed. She is now married, and her name is Cecelia Crocker.

Romulus fire Lt. John Thiede, who played an important role in removing Cichan from the wreckage so she could receive medical attention for the [severe burns she suffered](#), has kept in touch with her, talking on the phone and meeting in person on Cichan's wedding day.

Indonesian Investigation Shows Human Error Contributed to Russian Jet Crash

Indonesia's preliminary report on the Russian jet crash that killed 45 people in May suggests **human error** caused the accident, which killed everyone on board the demonstration flight. A preliminary report from the National Transportation Safety Committee said the Sukhoi Superjet 100 slammed into the side of a dormant volcano after its Russian pilot requested permission to descend to 6,000 feet and was given approval by air traffic control, even though the minimum safe altitude for the airspace the Superjet was flying through was 6,900 feet.

While the report that was released earlier this month is just a quick outline of what the committee has figured out so far and a final report isn't due out for months, it has no indications of mechanical problems with the new Sukhoi passenger plane, which Russia had hoped would restart the country's civilian aerospace industry.

The report recommended that the Indonesian directorate general of civil aviation ensure that even demonstration flights **respect published minimum safe flight altitudes**. It also recommended Sukhoi "arrange additional training for flight crews who will conduct demonstration flights, especially in mountainous regions." The initial findings are relatively good news for Sukhoi, as there are no indications so far that there was a problem with its jet, analysts said.

"They (Sukhoi) would be quite happy if (the final report) shows there is not a mechanical issue with the aircraft, but we don't know for sure yet," said Siva Govindasamy, Asia managing editor for Flight Global, an aviation industry publication. "They have not specifically ruled it out yet so we won't be sure until the final report comes out."

Some of Sukhoi's customers are already convinced that the company's aircraft are safe. Indonesian airline Sky Aviation says it will take delivery of and start using Russian Sukhoi Superjets this year, even though investigations have yet to be completed.



Many companies within Indonesia's low-cost airline industry were interested in the Sukhoi passenger planes, which can carry around 100 people and are inexpensive to run and maintain, analysts say. Most of those killed in the flight were representatives of Indonesian airlines.

Still, the reports leaves some important questions unanswered, analysts said, including why did the pilot request to descend, why he was given approval and [why didn't on-board warning systems](#) let him know they were headed into a mountain.

The National Transportation Safety Committee said it is still investigating and needs to coordinate with Russian investigators before it will have all the answers.

"It's still a preliminary report and too early to draw a conclusion from the investigations," said Tatang Kurniadi, chairman of the National Transportation Safety Committee. "We may still need two to three months before we can issue a final report."

Pilot's cellphone use may have been partial cause of fatal plane crash in B.C.

The pilot in the fatal crash of a small plane may have set the [stage for his own death](#) by paying too much attention to his cellular phone and not enough to his flight. A Transportation Safety Board report released Monday said the crash near the airport in Fort St. John, B.C., last November could have been partly caused because the pilot [wasn't concentrating](#) on his flying.



The TSB report said the pilot received three text messages and spent 28 minutes on his cell phone during what would have been a 65-minute flight from Peace River, Alta., to Fort St. John, B.C.

The pilot received his last text message 11 minutes before the crash.

"The aircraft had experienced **several large altitude deviations** while the pilot was using his cellphone," the report stated. "This **distraction** was prevalent throughout the flight and in conjunction with the night conditions encountered, may have contributed to the (crash)."

A graph in the report shows the altitude on the Cessna 185 E, operated by Treck Aerial Surveys, dipped from a low of 3,500 feet to a high of 4,600 feet three times during the flight.

"Cellphone use can distract operators from essential operation tasks.

"There have been no comprehensive studies regarding the use of cellphones as a distraction in an aviation context. The phenomenon has, however, been extensively studied in the automotive sector."

Using a cellphone while driving is illegal in every province and territory except Nunavut.

The report found there **were also other pressures** against the pilot including that he needed to be back to the Fort St. John airport before nightfall.

The commercial pilot was operating on night visual flight rules, but it was dark as he neared the Fort St. John airport.

The company the pilot was working for, Treck Aerial Survey's - which provides aircraft and equipment for aerial surveillance and photography - is limited to vision flight rules during the day.

The report said there was no indication of an aircraft system malfunction or that the pilot was unwell. There were no drastic changes in the aircraft's flight path and no emergency calls from the pilot to indicate that there was an inflight emergency.

Instead, the report said the pilot **may have lost situational awareness**, known as the "black-hole effect."

"A black-hole approach typically occurs during a visual approach conducted on a moonless or overcast night over water or over dark, featureless terrain where the only visual stimuli are lights on or near the airport."

Without visual reference, the report said, the pilot's depth perception may be off, causing the illusion that the airport is closer than it actually is.

The plane's wing clipped a tree and then slammed into the ground about 20 kilometers from the airport, killing the only person aboard.

The TSB has recommended that pilots limited to visual flight rules be restricted to flying during the day and that cellphone use by pilots during a flight be prohibited unless there's an emergency.

"Pilots who engage in non-essential text and voice cell phone communications while conducting flight operations may be distracted from flying the aircraft, placing crew and passengers at risk," the report concluded.

ICAO Releases Phraseology Study Results

The International Civil Aviation Organization has concluded that **ambiguous or confusing ATC phraseology** "is a frequent contributor to aircraft accidents and incidents." In the recently released results of a phraseology study that it conducted, ICAO maintains that "a **miscommunication** could potentially lead to a dangerous situation without any of the involved stakeholders being aware," especially in regions where English is not the native language. The study information from 2,070 pilots and 568 controllers all over the globe. Fifty-four percent of respondents reported there were specific issues created by **non-standard phraseology** they identified as threats such as number and word confusions such as "two" and "to," or "Turn to heading zero four zero" rather than "turn heading zero four zero." Forty-four percent of pilots said they experience nonstandard phraseology at least once per flight. Thirty-eight percent said once in every 10 flights and 12 percent once per 100 flights.



Six percent reported no experiences with non-standard phraseology. Of 526 pilots who reported operating primarily in North America, 27 percent reported cases of non-standard phraseology, more than any other region.

Of 435 European-based pilots, 22 percent reported that region as where the most problems with phraseology occurred.

Two hundred and one Asia-Pacific-based pilots reported occurrences in that region only 10 percent of the time. Paris Charles De Gaulle Airport was most often identified as a location where the threat of confusion existed, but in almost all cases it was because of the use of both [English and a local language in pilot communication](#) and not specifically for non-standard phraseology.

<http://www.skybrary.aero/bookshelf/books/1746.pdf>

It's Not Always Easy to Just Say No by John Goglia

We all have – or have had – bosses who want us to do things we don't want to do. If we want to keep our jobs, we usually have to just go ahead and do whatever they want, even if those things don't always make sense to us. After all, that's the prerogative of being a boss. And saying no to the boss is usually not a good career move.

But then there are the situations that come up from time to time it seems in maintenance where the boss wants us to do something that's not exactly, shall we say, kosher. Of course when they're asking us to do something [that's contrary to the rules](#) – especially the FARs -then saying no can become a matter of safety for passengers – and the safety and security of our A&P license, if the FAA gets wind of it and takes enforcement action. (When I was on the NTSB handling appeals of FAA suspensions and revocations, I saw quite a few cases where mechanics had just done as they were told, even if doing so put them in violation of the FARs.)

One particular situation I was faced with still stands out in my mind. It was the afternoon rush at Logan which followed a morning from hell –seemed every aircraft had a maintenance delay.



We had a full MD-80 aircraft ready to push back from the gate when the captain calls us with an instrument warning light on. Maintenance needed to check it out.

So a mechanic is sent up to check out the problem. He can't resolve it so he comes back to the line maintenance and calls the main stock room some 2 plus miles down the road for some parts to start troubleshooting. The item – I can't remember exactly what the problem was - couldn't be MEL'd so that meant it was a no go item. The aircraft needed to be fixed or it couldn't legally be released.

At this point the aircraft is past its scheduled departure time and the manager is notified of the delay. After all the morning delays, he knows the suits in Pittsburgh won't be happy. So he goes out with the mechanic to check on the problem. Sure enough, it's just as the mechanic said. A no go item is malfunctioning and it will take time to properly troubleshoot and repair. But the manager, feeling the expected heat from all the earlier delay's, has other plans.

Soon enough the mechanic, unhappy with the boss's decision, seeks me out as the union safety rep and reports that the manager wants him to release the aircraft without doing the proper repair. Clearly ,the wrong thing to do. What to do?

At that time, we all carried radios that broadcast over a channel that could be heard by anyone carrying a radio – maintenance, operations, even the ticket agents. Almost without thinking, I pick up the radio and call the manager on the open channel [“Are you sure you want to do that?”](#) No answer.

But, after a pause, the next thing we hear over the radio is the manager calling operations to inform them the aircraft was taking a delay. The aircraft would be fixed after all.

Moral of the Story: Open channels of communication are important to doing the right thing!

Alleged Conspiracy To Falsify Aircraft Inspections

Flying Tigers, Inc. Of Marietta, PA Charged With Fraud And Obstruction Of Justice

A federal indictment was unsealed Tuesday charging a former airplane mechanical repair business in Marietta, PA, its president and two others in a fraud scheme [involving aircraft inspections](#), announced United States Attorney Zane David Memeger. Jay Stout, 53, the president of Flying Tigers, Inc., Joel Stout, 31, both of Elizabethtown, PA, and Howard Gunter, 76, of New Bloomfield, PA, are charged with 29 counts including conspiracy, fraud involving aircraft parts, mail and wire fraud and obstruction of justice. The indictment alleges that between October 2006 and October 2009, the defendants conspired to commit fraud by charging customers of Flying Tigers, Inc. for annual inspections of their aircraft that [were not performed by FAA certified mechanics or, on some occasions, were not performed at all](#). Joel Stout was employed as the airplane mechanic. Howard Gunter, a retired FAA examiner, [falsely certified the inspections](#). According to the indictment, Jay and Joel Stout conspired to prepare fraudulent certifications of annual inspections, and, on multiple occasions, Howard Gunter certified annual inspections for Flying Tigers, even though he had not actually performed those inspections. On other occasions, it is alleged that Jay Stout created fraudulent certifications containing the forged signature of a certified inspector who had not performed the annual inspection, or certified an annual inspection himself, although [he was not authorized to do so](#).



It is further alleged that Jay and Joel Stout would fraudulently bill customers for annual inspections by FAA certified mechanics, but [failed to make the required entries in the airframe and engine log books](#) of those aircraft. Throughout this period, the defendants allegedly committed mail and wire fraud by mailing invoices containing charges for these fraudulently performed inspections, and receiving payments from customers. It is further alleged that after learning about the federal investigation, Jay Stout obstructed justice by [altering airplane log books](#) in order to conceal the fraudulent certifications.

If convicted, the defendants face substantial terms of imprisonment and criminal fines, three years supervised release and mandatory restitution.

The case was investigated by the United States Department of Transportation Office of Inspector General and is being prosecuted by Assistant United States Attorney Arlene Fisk.

Just for you—What is a "Just Culture"?

Do the three guys in the photo above remind you of anyone in your organization?

In many workplaces people are [hesitant to take notice of](#), or speak up, about conditions that cry out for improvement. People are especially reluctant to report errors made by others. Don't even think about someone reporting his or her own error. In recent generations our society has taken on a ["blame culture"](#) that always wants to point the finger at someone else. When someone is found to be responsible for a condition that should not exist, blame and retribution follow. In that environment people do not want to single out their friends and coworkers, much less themselves. Thus, the ["See no evil, hear no evil, speak no evil"](#) approach to personal and work relationships is widely practiced.



Although the blame culture is antithetical to a strong safety culture, it continues to exist even at organizations that have implemented a [Safety Management System](#). The SMS relies on reporting errors and conditions to detect hazards, assess the associated risks, and devise policies or procedures to mitigate those risks. Certainly errors and conditions exist that deserve to be reported so they may not be repeated, but reports are [unlikely to come](#) in if blame and retribution will be the result.

Enter the concept of ["Just Culture."](#) A just culture is one in which personnel feel free to report errors and conditions — even their own errors — without fear of the bounce back upon themselves or their coworkers. In a just culture such reports would be met with, "Thanks for your input. Tell me a little more so we can be sure we come up with the right solution." Reports are solicited as a way to continuously improve the Safety Management System.

A just culture enhances and strengthens the SMS. Yet, while training organizations around the world, frequently find many that [do not have a policy to promote](#) just culture, much less practice it. Most people are not even familiar with the term. It is not mentioned in the IS-BAO audit protocol, nor directly referenced in supporting material. This must change, as the concept is a critical facet of SMS.

While the submission of safety reports is an obvious application of just culture, the concept impacts the use of all of the tools in the [safety toolbox](#). It encourages complete and accurate reporting of findings on internal audits, policy waiver procedures, and change management. I frequently talk to people who fill out an incomplete risk assessment form because they ["don't want to ring the bell."](#) But that's what the SMS is all about! Report accurately, and then deal with the consequences. It is the condition itself that is important, not what you have to say about it.

If you are thinking that Just Culture is equivalent to a No Blame Culture, think again. We do hold people accountable for their actions and their decisions. But rather than assigning blame, we are seeking to identify shortcomings in the system that led to or enabled mistaken action.

Furthermore, Just Culture is NOT a ["get out of jail free"](#) card. It should not and will not absolve the person who engages in a willfully unsafe or illegal act, nor the individual who repeatedly shows disregard for established procedures. Such people do need to be dealt with severely.

If this is a new idea to you, talk it up with your management. They must fully support the concept. If a blame culture has existed in your organization, it will take time for managers and employees alike to trust the new system. But it won't be long before [Just Culture is part of your organization's nervous system](#).

For a more comprehensive report on Just Culture check out http://flightsafety.org/files/just_culture.pdf.

Australian Pilot's Book Details Qantas Flight QF32

Richard de Crespigny Was The Captain Of The A380 Which Suffered An Uncontained Engine Failure

In Australia, he's often referred to as "[Captain Fantastic](#)", but his book detailing the account of Qantas flight QF32 is having difficulty reaching an audience beyond the shores of the continent nation.

"Captain Fantastic" is Richard de Crespigny, who is described as that country's version of Capt. "Sully" Sullenberger. He was the captain of the Qantas Airbus A380 which suffered an uncontained engine failure shortly after takeoff from Changi Airport in Singapore. One of the Rolls Royce Trent 900 engines on the plane sent shards of metal through the airplane's left wing when it failed. Describing the landing in the book, de Crespigny writes:

"We were going to be coming in too fast and landing an aircraft that was way too heavy, out of balance, with damaged wings, little rolling capacity and broken wheel brakes, speed brakes and an inoperative engine reverser. Perhaps all these failures would add up to be an impossible mix."

Fortunately, as we all know, the flight landed safely, but that was not a forgone conclusion as the airplane returned to Singapore. The Huffington Post describes the book as [one that deserves to be read](#) not only by aviation safety professionals and pilots, but the general public as well.



Lack of Sleep Hurts Performance

A team of researchers at Brigham and Women's Hospital (BWH) have discovered that **regardless of how tired you perceive yourself to be**, that lack of sleep can influence the way you perform certain tasks. This findings is published in the July 26, 2012 online edition of The Journal of Vision.

"Our team decided to look at how sleep might affect complex visual search tasks, because they are common in safety-sensitive activities, such as air-traffic control, baggage screening, and monitoring power plant operations,"

explained Jeanne F. Duffy, PhD, MBA, senior author on this study and associate neuroscientist at BWH. "These types of jobs involve processes that require repeated, **quick memory encoding and retrieval** of visual information, in combination with decision making about the information." Researchers collected and analyzed data on visual search tasks from 12 participants over a 1-month study. In the first week, all participants were scheduled to sleep 10 to 12 hours per night to make sure they were well-rested. For the following 3 weeks, the participants were scheduled to sleep the equivalent of 5.6 hours per night, and also had their sleep times scheduled on a 28-hour cycle, **mirroring chronic jet lag**. The research team gave the participants computer tests that involved visual search tasks and recorded how quickly the participants could find important information, and also how accurate they were in identifying it.

The researchers report that the longer the participants were awake, the more slowly they identified the important information in the test. Additionally, during the biological night time, **12 am to 6 am**, participants (who were unaware of the time throughout the study) also performed the tasks more slowly than they did during the daytime.

"This research provides valuable information for workers, and their employers, who perform these types of visual search tasks during the **night shift**, because they will do it much more slowly than when they are working during the day," said Duffy. "The longer someone is awake, the more the ability to perform a task, in this case a visual search, is hindered, and this impact of being awake is even stronger at night."



<http://www.journalofvision.org/content/12/7/14.abstract>

Aviation safety to benefit heart patients

Situational Awareness: Gain/Keep/Manage

Aviation safety systems can be used to [help prevent complications](#) after surgery. UK researchers said they are developing a real-time patient monitoring and risk prediction system similar to those used by pilots to monitor the safety of their aircraft.

A team of researchers from the Academic Surgery Unit at University Hospital of South Manchester is collaborating with Lancaster University to develop a [real-time patient monitoring and risk prediction system](#) for use in operating theaters and intensive care units.



Among other benefits, researchers outlined the real-time analysis and prediction of multiple physiological parameters and the ability to change parameters ranges and alert thresholds for individual patients. The system also gives the ability to incorporate multiple clinical predictions.

[“There are a lot of parallels between flying an aircraft and observing a critically ill patient.](#) Both the surgeon and the pilot are dealing with a [lot of information](#) coming from a variety of sensors. They both need to know not only what is happening now but what might happen in the future and safety is absolutely critical,” commented Lancaster University Aviation Security expert Professor Garik Makarian.

He added: “During a flight a pilot has to make decisions based on complex information coming from up to 1,000 sensors in the plane. He or she needs to know, not only what is happening to the aircraft right at this moment, [but what is likely to happen in the future.](#)”

Pursuing the parallel between aviation and health, Makarian explained that, when a patient is critically ill or recovering from surgery, doctors monitor the patient’s blood pressure, temperature, pulse and other vital signs very closely but have to rely on their experience to predict what is likely to happen next.

Pilots have the additional benefit of tools to help them do that.

The system under development has the potential to give doctors an [extra layer](#) of intelligence to draw upon, Makarian claimed.

In a discussion with EETimes, Prof. Makarian indicated that the system is a software package which could be integrated with more or less any existing system in the hospital environment.

The current model uses four patient physiological measurements: Systolic blood pressure (SBP), heart rate (HR), respiration rate (RR), and peripheral oxygen saturation (SpO₂). It calculates IRIS score real-time, predicts individual physiological measurements and predicts IRIS score, researchers said.

He specified that the research team has just completed feasibility study and proof-of-concept, which provided promising results. "We are now in the process of putting applications for research funding."

Prof. Makarian continued: "We already have a prototype which we are using for testing and verification on the existing data base. We are waiting for ethical clearance from the hospital in order to go for real trials."

Once the system is up and running, researchers said they expect it will find applications in various healthcare settings.

Leaders communicate, and communicators lead

[From CEOs to supervisors and everything in between](#), these leaders have a few common communication habits that any of us can take to persuade, inform and encourage teams to be more successful. I'd like to share them with you. [Share an inspiring vision of the future](#). Leaders who do this build a sense of shared purpose by painting a compelling vision of the future. They answer these questions: Where are we going, what does it look like, what are the benefits, what role do I play in the success? The differentiator is consistency. The best leaders know they need to paint this vision over and over.



At every opportunity, they share the vision of what's ahead. Eloquence isn't a requirement. Have a clear picture of the end goal, be consistent in how you describe it and create opportunities to engage with the influencers who can make or break success.

1. **Listen.** Real leadership requires listening. Leaders want to know what people think. They ask questions, create opportunities for dialogue. They make it OK for employees and stakeholders to share their candid opinions. They show compassion and humanity to make people feel heard. Listening with patience and attention will win respect.
2. **Commit to "no surprises."** Leaders who are successful over the long haul are honest. They demonstrate in word and deed that they are transparent about changes or vision. These leaders earn the respect of their teams and often their loyalty. For example, if a shared-services function may be relocated to another region, employees deserve to know probably sooner than later. As plans progress, employees should understand what their role may or may not be in the future; they need time to plan. Employees may not like everything you have to say, but they will respect you and perform when you communicate early and often.
3. **Widen the circle of involvement.** Strong leaders start with a small group and, bit by bit, like water rippling in concentric circles, widen the circle of people who are aware of and involved in the vision. Leaders who continually engage and involve more people in the vision find that support grows organically and naturally. As you listen and engage with others, you will better understand the barriers and accelerators of success.
4. **Match your message with your audience.** Not everyone is motivated the same way. Some embrace data; others rely on feelings and intuition. Some like visuals; some want to be told. A good leader uses all of these to create a message that resonates with more people. It shows respect for learning styles and diversity. This is as simple as using video to convey the message in a heartfelt manner and backing that up with data and charts that helps the left-brained employees. Let people talk in small groups, and use larger group meetings to inform a bigger audience. Use traditional media. Use social media.

In the end, there's no magic formula for great communications. But I've seen time and again that the leaders who communicate using these methods are more effective than those who don't. And I've seen very effective communicators become great leaders.

BEWARE DOWNWASH



Royal Air Force INSPECTORATE of FLIGHT SAFETY Poster 96023