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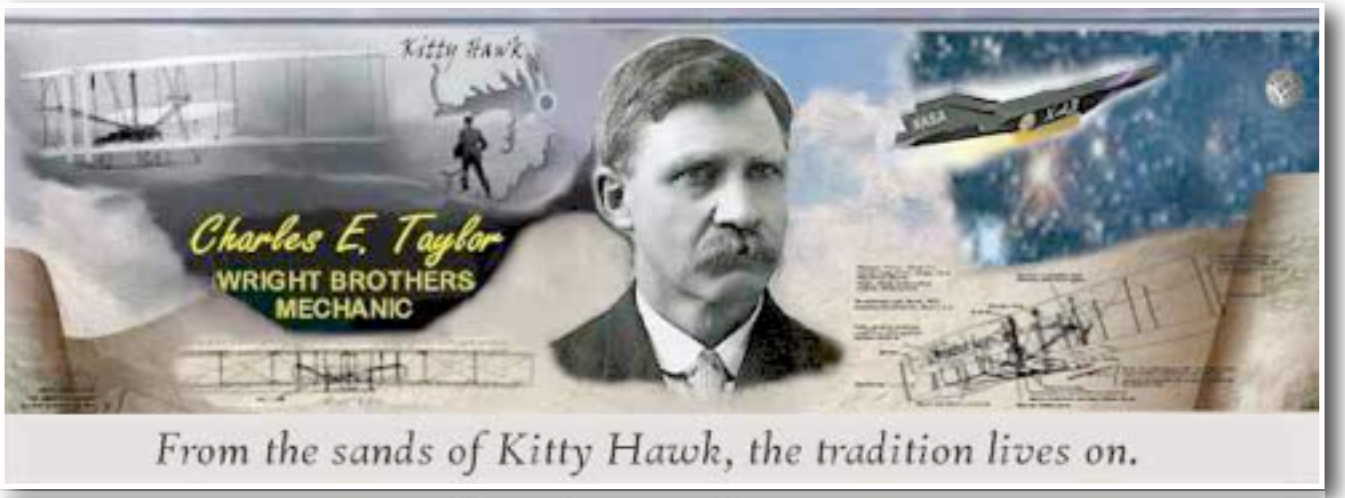

Hello all,

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

English Skills a Concern as Global Aviation Grows

"Please, where is ahhty-ahm?" he asked. At least, that's what I heard, even when he slowly repeated the question. I was flummoxed until he took a bank card out of his wallet and made the motion of inserting it into an imaginary slot.
"Oh, A.T.M.!" I said, and pointed the way to the nearest one. As he thanked me, the man seemed to speak English well enough. But his question had been incomprehensible to me because of his pronunciation - a short rather than long A, an accent on the first rather than last syllable of "A.T.M."
The exchange was inconsequential. But consider similar misunderstandings involving greater complexity in exchanges that are crucial indeed, like those, say, between airline pilots and air traffic controllers who do not share the same native language.

Confusion often occurs. Sometimes it's just amusing, like a 2006 recording of exchanges between an Air China pilot and an air traffic controller at Kennedy Airport in New York. The controller becomes increasingly exasperated by the pilot's hapless English, to the point where you can almost hear the steam coming out of his ears. That recording, on YouTube as Air China 981, is a favorite among air traffic controllers and pilots who have their own stories of language misunderstanding in global aviation.

"It's the most beautiful example of the problem," said Paul Musselman, the chief executive of Carnegie Speech, a language education company that offers training on how to communicate more clearly in English to people who are not native speakers but need to use English on the job.

The Air China example is beautiful because it is simply funny and no one got hurt through miscommunication. On the other hand, the list of aviation catastrophes around the world that were caused primarily by language misunderstandings between air and ground is long and tragic.

In 1977, for example, two Boeing 747s collided on a runway at Tenerife, in the Canary Islands. The disaster, in which 583 people died, occurred in a dense fog.

But complicating the situation were misunderstandings of orders and acknowledgments between the aircraft on the runway and the air traffic controllers. International aviation authorities later drafted more strict requirements for the use of standard, clear common English phrases in aviation operations.

As global aviation grows, concerns are rising about English-language proficiency among foreign pilots and air traffic controllers. In October, for example, the International Civil Aviation Organization, an agency of the United Nations that promotes international air travel safety and development, issued new recommendations to improve English-language training, "in response to fatal accidents in which the lack of proficiency in English was identified as a contributing factor."

English was mandated as the language of international flying in the years after World War II, as commercial aviation expanded worldwide. While common sense dictates that aviation needs a lingua franca, a language as rich in vocabulary and nuance as English presents some challenges in aviation operations, where communication is supposed to be terse and unambiguous.

Still, aviation is now inextricably locked into English, and the need for better English communication skills is clear as more countries become major players in commercial aviation. Mr. Musselman's company, for example, offers English-language classes in a program called Climb Level 4 to bring international pilots up to the so-called Level 4 standard set for English by the International Civil Aviation Organization.

That is defined as a level where vocabulary and grammar are good, but also where "pronunciation, stress, rhythm and intonation" are adequate to communicate clearly and quickly in English. Carnegie Speech has a partnership with Pan Am International Flight Academy to offer its proficiency courses for international pilots at the company's flight training centers in the United States and abroad. "We're in the business of teaching someone how to speak English so they can be understood," Mr. Musselman said. The program's software is customized for each person, "so we can assess your English in terms of your speech, word stress, fluency, grammar and pronunciation," he said.

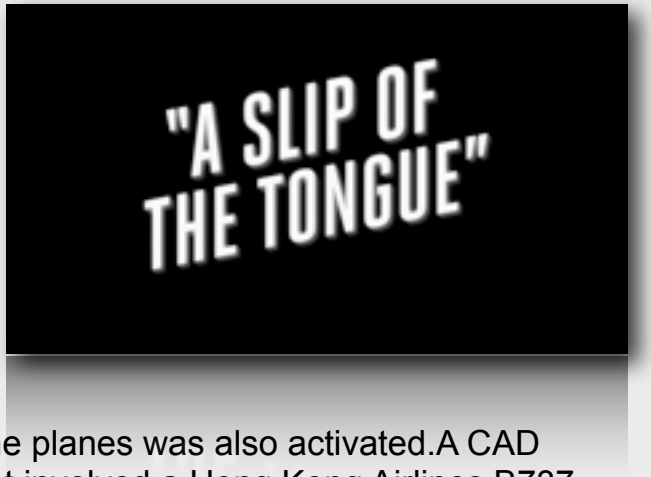
And English, as we all know, can be very tricky, not just in sound and meaning but in idiomatic forms we native English speakers take for granted. I remember a pre-theater dinner with my wife some years ago, at a restaurant in Times Square where the waiter, newly arrived from Milan, was clearly proud of his excellent English. When I asked for the check, however, I carelessly told him, "We need to make a curtain at 8 o'clock."

He looked crestfallen, with an expression that said, "Why does this man tell me he needs to sew draperies at 8 o'clock?"

Mr. Musselman had a linguistic example more apropos to aviation. "I was in the Army, a Green Beret for 11 years," he said. At parachute jump school, soldiers were required to say "Not clear" to respond negatively to any question, rather than simply "No."

"The reason is because 'No' sounds dangerously close to 'Go,' " he said. And for a parachutist waiting by the aircraft door for the order to jump, he explained, the crucial command is "Go!"
Clear?

'Slip' spins drama in the skies



A "slip of the tongue" placed two passenger planes carrying about 600 people on a collision course in Hong Kong airspace two weeks ago, an investigation by The Standard reveals.Instead of instructing an aircraft to descend to 36,000 feet, the controller ordered the pilot to drop to 26,000 feet, according to the Civil Aviation Department. But the error was rectified in time, just as the collision avoidance system of one of the planes was also activated.A CAD spokeswoman said the May 14 incident involved a Hong Kong Airlines B737 bound for the SAR from Denpasar, Bali, and a Jeju Air B737 flying through Hong Kong to Bangkok from South Korea.

The controller, understood to be a non-local, intended to instruct the Hong Kong Airlines plane to drop to 36,000 feet but, due to a "slip of the tongue," said 26,000 feet. The Jeju Air plane was at 34,000 feet at that time.

After noticing the Hong Kong Airlines plane was passing through 36,000 feet on its descent, the controller immediately corrected the situation. The plane then ascended to the correct level.

During the process, the traffic collision avoidance system on the Jeju Air plane was activated, moving it to a lower level.

The distance between the two aircraft was 4.6 kilometers horizontally and 700 feet vertically - against the standard safe horizontal distance of 9.25km and a vertical distance of 1,000 feet.

But the CAD spokeswoman stressed there was "no risk of collision." She also ruled out fatigue as a reason for the incident.

"The controller had been off duty for 14 hours and had just commenced duty when the minor incident occurred," she said, adding the controller has been serving in the CAD for more than 13 years.

Former CAD chief Peter Lok Kung-nam said the two aircraft should have been within visual contact of each other.

"The danger was higher than usual but there wasn't any immediate risk of collision as they were not flying toward each other," Lok said.

This latest near-crash incident happened eight months after The Standard revealed that a Cathay Pacific plane and a Dragonair plane came within six seconds of a head-on collision, prompting the CAD to review its operation system.

A senior Dragonair pilot said yesterday the situation in the air traffic control tower "is only getting worse" since August, and that some of his fellow pilots are expecting an accident to happen soon.

The pilot said it is due to poor CAD management and the fact that many local controllers, instead of experienced foreign controllers, are hired.

However, Hong Kong Air Traffic Control Association chairman Ivan Chan Pui-kit said the situation has improved since August to what he calls a "satisfactory" level.

He also agreed the latest incident was merely a "slip of tongue."

2 Ways to Die Flying Airplanes

Here are 2 stories about pilots who didn't learn, maybe didn't care and didn't survive.

1. **November 14, 2009 – Woodbine, NJ**

   A 53 year old pilot and his 12 year old son perished in a Piper PA-28R-200, N4499T while attempting a flight from Woodbine, NJ to Monroe County Airport in Bloomington, IN.

The plan was for the father and son to depart on November 12th, but inclement weather forced a delay in departure. Another attempt to depart was made on November 13th, again forcing yet another delay in departure.

However, on November 14th the forecast called for conditions to improve as the day progressed. At the time the Woodbine airport was reporting a ceiling of 300 feet between 10:00am and noon, below the published minimums for an instrument approach.

The pilot, held a Private Pilots certificate with an airplane single engine land rating which he obtained in 2004. He was not instrument rated. His total time was 395 hours, including 308 hours in the Piper Arrow.

The pilot departed the airport at approximately 10:40am and climbed into the overcast between the end of runway 31 and railroad tracks about 1/3 of a mile past the end of the runway.

The ensuing flight lasted approximately 10 minutes resulting in a fatal crash 3,500 feet SSW of the threshold of runway 01, leaving a debris path 1,100 feet long and a 2 foot deep impact crater.

2. **January 2, 2009 – Staffordshire, Great Britain**

   Another pilot, age 59, took a young couple up for an airplane ride in his Piper Cherokee. A friend had arranged for a co-worker, to take his wife for an airplane ride as a surprise for her birthday.

   The pilot kept his aircraft at the Sittles Flying Club near Litchfield, and members of the club said the pilot had a penchant for giving his passengers a thrill and “throw it about a bit”, referring to his aircraft.

   On this day witnesses saw the plane doing wing overs and stall turns when the aircraft was seen plummeting nose first into the ground, resulting in fatal injuries to all three on board.

   Upon further investigation it was discovered that the pilot of some 19 years experience, should not even have been in the air. His license had lapsed, he had no current medical and his aircraft’s maintenance records were incomplete.

   The couple left behind two children ages 10 and 18 months

No one who flies wants to crash, nor have anyone die in an aircraft accident. But it is important to remember that flying airplanes is a serious business, and that any lack of attention, poor attitude or lack of judgment can quickly kill you.

James Polehinke, Sole Survivor

On August 27, 2006, Comair Flight 5191 crashed during an attempted takeoff from the wrong runway at Lexington's Blue Grass Airport, killing all 49 aboard save the co-pilot, James Polehinke, who has now become the subject of a documentary. A Chicago filmmaker will feature Polehinke in the movie "Sole," which creates accounts of the lives of people who became sole of commuter aircraft crashes. It will be released this fall. Polehinke was at the controls of Comair's CRJ-100 as it sped into the grass off the end of the airport's shorter, narrower Runway 26. It had been cleared for the twice-as-wide and twice-as-long Runway 22. Polehinke awoke from a coma after the crash to learn he had facial fractures, a complex fracture of the pelvis, two fractures of the spine, and broken bones in his left leg, right foot and right hand. The film may show that wasn't the worst of it.

Polehinke had been handed the controls by the captain, who had taxied the jet into position. He says his memory of the early morning flight stops after checklist completion. He ultimately lost his left leg as a result of his injuries. NTSB Chairman Deborah Hersman once said of the crash, "There would be no moment when we could point to one thing and say 'Aha, that is what caused this accident.'" The NTSB ultimately found "the flight crewmembers' failure to use available cues and aids to identify the airplane's location on the airport surface" as the probable cause of the accident. The NTSB also found other complicating factors. In an interview associated with the documentary, Polehinke's wife, Ida, said, "He would have rather died. His conviction as a pilot was so great that he'd rather gone down with the ship." When asked by a local news station about Polehinke's condition, the filmmaker who had worked with Polehinke for more than a year said candidly, "Oh yeah, yeah ... I think Jim is in his own living hell."

http://www.ntsb.gov/investigations/Summary/AAR0705.html

CDC Study Finds 30% of American Workers Sleep Less Than Six Hours a Night

A new CDC study shows that overall, 30.0% of workers responding to the 2010 National Health Interview Survey reported short sleep duration (≤6 hours per day). The prevalence of short sleep duration varied by industry of employment a significantly higher rate among workers in manufacturing compared with all workers combined. Among all workers, those who usually worked the night shift had a much higher prevalence than those who worked the day shift. An high prevalence of short sleep duration was reported by night shift workers in the transportation and warehousing and health-care and social assistance industries. Targeted interventions, such as shift systems that maximize sleep opportunities and training programs on sleep for managers and employees, should be implemented to protect the health and safety of workers and the public.

http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6116a2.htm

A GREAT APP FOR HELPING YOU WAKE UP AT THE RIGHT TIME

Waking up at the right time is just as important as getting enough sleep. Most of the time your alarm will go off and you are expected to rise and shine no matter what state of sleep you were in. Wouldn't it be nice to have an alarm that your state of sleep and wakes you up at just the right time. Well now is, this app is called Sleep Cycle. It does this by monitoring your movement during sleep using the extremely sensitive accelerometer in your Iphone (sorry this is the only phone that offers this app). Check it out and get the full story on how this great app works.

http://itunes.apple.com/us/app/sleep-cycle-alarm-clock/id320606217?mt=8

Caffeinated gum keeps Israeli pilots, commandos alert

The Israeli army is supplying aviators and special operations forces a caffeine-charged chewing gum that dramatically enhances their ability to cope with fatigue on long missions, the Yediot Aharonot daily reported.

The "Stay Alert" gum, a food supplement, was developed by the Walter Reed Army Institute of Research in conjunction with the Wrigley's company, as part of ongoing efforts to curb fatigue-related injuries and deaths, said Xinhua. The US military in recent years integrated the gum into the "First Strike Rations" it issued to field units on high-intensity combat operations in Iraq and Afghanistan, alongside other foodstuffs designed to increase vigilance and endurance.

Prior to the gum's introduction, soldiers made it a habit to chew on freeze-dried coffee to stay awake during night operations.

Ever since the Israelis started chewing it a year ago, the gum has been regularly issued to pilots and members of elite units tasked with missions that last more than 48 consecutive hours, according to Yediot.

A standard pack holds five cinnamon-flavored pieces that contain 100 milligram of caffeine each, an amount equivalent to a tall espresso cup, though the gum version absorbs in the circulatory system five times faster.

"There are no side effects, except for the disgusting taste. It improves the soldiers' alertness and their cognitive performance. The pilots are amazed to discover that it simply works," a senior Israel Air Force officer told Yediot.

Despite their satisfaction with the gum's performance, the Israelis are not taking a chance. Troops sent on 72-hour missions are issued Modafinil, a prescription drug for treating an assortment of sleep disorders.

While the gum was originally developed for military applications, it has since made its way into the civilian market, and is particularly popular among athletes, club-goers and people working graveyard shifts.

Tales of Mishaps Beyond Aviation

$2.2 Million Sub Mishap Was 'Avoidable,' Report Says

The crew heard the sound as soon as they rolled the propulsion shaft -Whump! Whump! Whump! - but rather than shut it down, they kept the shaft spinning at various speeds for days trying to figure out the problem.

Their "catastrophic" mistakes, a new Navy report concludes, sidelined the guided-missile submarine Georgia for three months, locking it up in the shipyard for repairs when it should have deployed for operations against Libya in early 2011. It also cost an officer and a senior sailor in
engineering their jobs, and three crew members went to mast for dereliction of duty; three others earned non-punitive letters of caution.
All because of a single bolt worth a few dollars or less.

Ignoring standard operating procedures and common sense, the crew kept turning the engines and shaft at varying speeds over the next two days in a vain effort to find the cause.

According to the command investigation, obtained by Navy Times through a Freedom of Information Act request and signed by Vice Adm. John Richardson, head of Submarine Forces, the bolt was accidentally left in Georgia's gear housing during a routine inspection in December as a result of inadequate preps and oversight for the annual reduction gear inspection.

"This was an avoidable mishap," Richardson wrote in his July 19 letter closing the investigation into the first known instance of main reduction gear damage on a submarine in three years. "Had watch-standing principles of integrity, formality, procedural compliance, level of knowledge, questioning attitude and forceful backup been responsibly adhered to and executed, this incident would not have occurred and the ship would have deployed on time."

The continued rotation of the shafts and gears after the noise was heard likely made the damage more severe, Richardson noted.

Failing to deploy was critical because the NATO mission against Libya needed missile-launching capability. Georgia's sister sub, Florida, fired more than 90 Tomahawks in the operation - the first by a guided-missile sub.

Richardson discussed the incident last summer at a call for all Kings Bay-based commanding officers, executive officers, chiefs of the boat, department heads and engineering department master chiefs.

"The submarine force must recognize important lessons when they present themselves," Richardson noted.

Navy officials would not release the names of those disciplined, citing privacy concerns.

The last instance of MRG damage in the submarine force was in 2008 on the Los Angeles-class attack sub San Juan, when a foreign object was believed to have fallen into the reduction gears without technicians' knowledge, the investigation noted.

These inspections are nothing new. All of the Navy's 283 ships and submarines conduct periodic inspections inside their main reduction gear

assemblies to check the critical machinery for signs of wear and tear. Procedures are strict, and the steps are briefed: Leaders must oversee the opening of the casing. A tent is put up around the opening so overhead objects can't fall in, and a security watch is set up. A log tracks all items brought in and out. Tools hang on lanyards. Crew, engineers and technicians tape down their coveralls and remove all personal items, like rings, pens and watches.

But when Georgia was preparing for its Dec. 28, 2010, inspection, none of the technicians or supervisors reviewed the maintenance procedures in detail prior to starting, the report said.

Other findings: Oversight was insufficient, the inspection was performed without a sense of urgency, and participants had not been trained for the procedure.

Capt. Tracy Howard, then-commodore of Submarine Squadron 16, wrote in his review of the investigation: "I conclude the ship demonstrated inadequate sensitivity to the risks inherent with a MRG inspection, as manifested by the inadequate preparations, supervisory presence and imprecise execution, which directly resulted in foreign material introduction."

The sub's remedy - continuing to turn the shafts after an abnormal noise was heard - made the situation worse.

A former submarine captain, after being told key findings from the report, agreed.

"How could you think that that's not going to do additional damage?" he wondered. "If bombs weren't coming down on Kings Bay, Ga. - and I expect they weren't - what do you have to lose by taking the conservative path, tripping out the main engines, locking the shaft and calling for help?"

A second retired officer, who like the first asked for anonymity in order to comment, said: "That just shocks me. It's difficult to see how people could be desensitized to something like opening up the reduction gear."