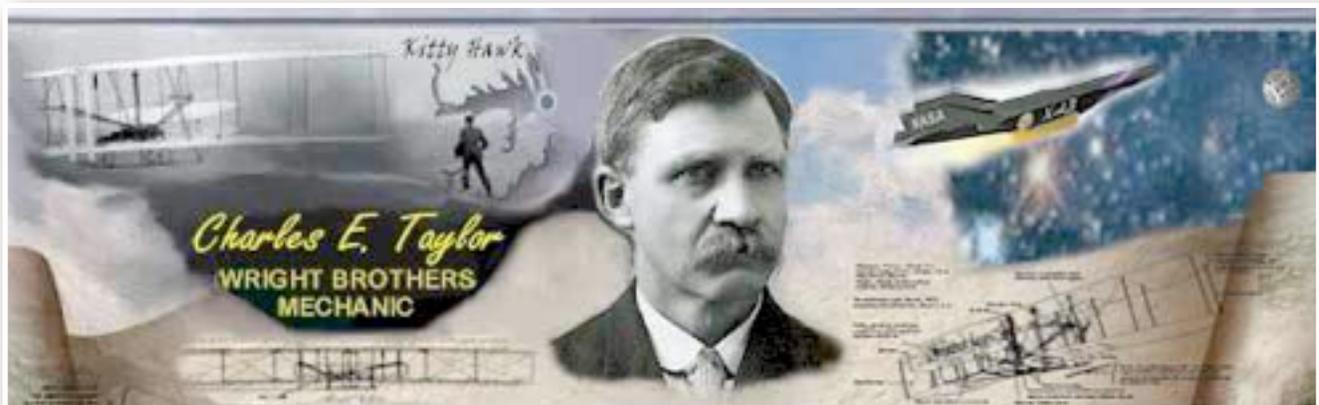


Aviation Human Factors Industry News

Volume IX. Issue 04, February 24, 2013



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:

★No Greater Burden

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★Nigeria: Dana Air Plane Crash Blamed On Human Error

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★Ergonomics

★Five Mistakes Companies Make with Ergonomics

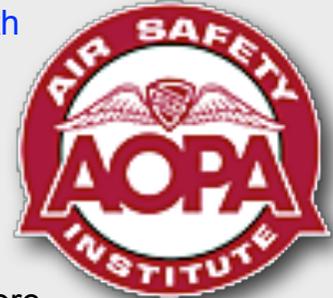
★And Much More

No Greater Burden

Events in our daily lives can lead to a relatively **small error with grave consequences**. In this special video presentation, we take a sobering look at one pilot's personal tragedy, the devastation it wrought, and the lessons all of us can take from it. (approx. 30 mins.)

Much research has been done on the negative effects of stress on our physical and psychological well-being. The more stress we experience, whether we know it or not, the more inclined we are to lose concentration, forget things, and perform poorly on tasks that should be familiar and easy for us. More often than not, those effects have little impact upon our day-to-day life. Such effects while flying, however, could lead to a disastrous outcome.

We've included an assessment tool below to help identify stressors in your life, and how much of a factor they may play in how well you are performing.



<http://www.aopa.org/asf/video/no-greater-burden.html>

Japanese Investigators Find ANA Dreamliner Battery Mis-wired

Transport Ministry Says More Analysis Is Still Needed To Determine Cause Of Battery Fire
The Japanese Transport Ministry said Wednesday that a battery in the auxiliary power unit (APU) aboard an ANA Dreamliner which was forced to make an emergency landing January 16 **was incorrectly connected to the main battery** that overheated.



But they have not said definitely that the miswiring was the cause of the failure. Investigators said that the plane's flickering wing and tail lights after landing, coupled with the fact that the battery was switched off, **led them to conclude** that mis-wiring was allowing current to travel from the APU to the battery in an irregular way. The Associated Press reports that the JTSC said that it still needs to conduct further tests before it is ready to say why the main battery overheated and start smoldering, prompting the emergency landing.

The Board said that a protective valve could have prevented the irregular current flow. They indicated that they have made Boeing aware of their findings.

Nigeria: Dana Air Plane Crash Blamed On Human Error

Investigations have confirmed that **the inability** of the pilot to turn on the fuel pumps of the ill-fated Dana Air flight that crashed at a Lagos suburb on June 3, 2012, killing about 160 people, led to the failure of the two engines and the eventual crash.

The captain of the aircraft, Peter Waxtan, an American, who was already due for holiday on the day of the crash and who had his flight ticket to travel to the United States on the day of the crash, **was making his last flight** to Lagos from Abuja when the plane crashed, killing all on board and a few people on the ground.



Reports indicated that 17 minutes into the flight, Waxtan noticed problems with one of the engines of the aircraft and a little later, the second engine of the McDonnell Douglas MD-83 aircraft went off and it lost attitude before it crashed a few minutes to landing at the Murtala Muhammed Airport, Lagos.

The MD-83, operated by Dana Air, lost power from both engines while approaching the Lagos airport last June and slammed into an apartment building, killing at least six more people on the ground.

Although investigations into the accident is still ongoing, a report published in The Wall Street Journal showed that the accident was likely caused by the [crew's failure to properly monitor fuel flow and turn on certain fuel pumps](#), according to people familiar with the joint investigation by the US and Nigerian officials.

That would result in both engines shutting down almost simultaneously from lack of fuel. No other significant problems were discovered with the engines or other systems of the aircraft, the officials said, and the 22-year-old plane had plenty of fuel on board to reach the airport.

Partly fed by that fuel, the crash sparked an intense fire that raged for nearly a day and compromised the flight-data recorder. So investigators had less data to rely on than is usual in modern jetliner crashes and are still working on the final wording of the report.

The preliminary focus on pilot error could be toned down, according to two people familiar with the details.

The cockpit voice recorder, which survived intact, showed the pilots spent the last 25 seconds unsuccessfully trying to restart the engines.

A preliminary report issued last year by Nigeria's Accident Investigation Bureau did not say why the engines shut down.

From the transcript of the conversation between the air traffic controllers and Waxtan, the aircraft lost power from both engines while approaching the Lagos airport and crashed into the residential building at Iju/Ishaga.

Reacting to the latest development, the Director General of the Nigeria Civil Aviation Authority (NCAA), Dr. Harold Demuren, confirmed that it was a human error that caused the crash, adding that about 80 per cent of air accidents are caused by human error.

"We believe the truth is coming out. We know it is human error. It has been confirmed that it was not engine failure; it was not maintenance issue or oversight issue, or airspace problem but human error. The captain did not follow standard procedure. He did not open the pumps. It is called flame out and that was why he reported that there was no response from the throttle...[he forgot to open the fuel pump](#)," Demuren said in an interview with THISDAY.

The Commissioner of Accident Investigation Bureau (AIB), Captain Usman Murkter, who told THISDAY that he did not wish to comment on the report, explained that accident investigation is scientific and would not depend on such reports, adding that the pilot would not want to kill himself.

"We shall appreciate anytime you have this kind of report you let us know. I cannot react to hearsay. We are interested in protecting our airspace. I will not comment on this but the pilot did not want to die," Murkter said.

"We have nothing to hide," said Dana spokesman, Tony Usidamen, who declined to comment on the crash's cause until the report is completed. "We hope that the government will take the decision to make the report public... It may or may not affect how the average traveller views the industry."

Few weeks after the tragic incident, a seasoned Nigerian pilot, Captain Tito Omaghiomi, blamed the pilot for the accident and alleged that he did not follow his checklist in response to the emergency that resulted from the failure of the two engines.

Omaghiomi, who has operated flights for more than 30 years in Nigeria, observed that [it was wrong to have allowed Waxton who was going on leave and was excited about it](#), to operate the aircraft, adding that it was his errors that caused the crash.

"Emergency don't kill, [it is the action or inaction](#) of the pilot that causes most plane crashes. In fact, what they did, as far as I am concerned, in the Dana plane crash is a cowboy operation. They did not do their job the way they should have done it. So it is their fault," he had said.

Batteries in the Headlines by John Goglia

For a while this month, the Boeing Dreamliner's nightmare problems with batteries dominated all the media headlines – whether TV, cable, print or internet – the battery fires and then the entire 787 fleet's grounding were everywhere. And while the headlines themselves have receded somewhat, the Boeing 787's battery problems will continue to be in news reports until the FAA the batteries to be safe for flight.



[Which brings me to a question I know a number of you have asked about](#) – why did the FAA’s Emergency A.D. require the airlines to prove the batteries safe? Wouldn’t that normally be the role of the aircraft manufacturer? But I digress.

All this talk of batteries has, of course, got me thinking about aircraft batteries in general. And as we know, batteries have often times been a headache for mechanics. Clearly, the Dreamliner’s lithium ion batteries are proving to be a bigger problem than nickel cadmium ones – and I am not downplaying the potential for disaster from a fire caused by these batteries. In the 787, one battery fire started on the ground with an aircraft parked at the terminal at Boston’s Logan International Airport. But even on the ground, an aircraft fire could have caused injuries and even death if the cleaners who smelled smoke hadn’t immediately sounded the alarm. And the pilot of the All Nippon Airways flight who immediately landed after smelling an unusual odor in the cockpit – which some people believe may have been the smell of the electrolyte overheating - [did the exactly right thing](#) in declaring an emergency and landing as soon as possible. The air is no place to troubleshoot a potentially serious aircraft problem.

But we’ve all had our share of run-ins with batteries. Work on aircraft long enough and of course, you’re bound to. What the general public is unaware of – and I know from talking to a number of reporters on the subject of batteries that reporters are no different – aircraft batteries are not like batteries for your car. Most people’s experience of batteries is when they go pick one up at their local car service center, the mechanic picks one up, connects it to the car and off you go. Rarely do they fail.

But that’s not true with aircraft batteries – whether lithium ion or Ni-Cad – [which are more temperamental](#). I can’t count the number of times we would go to replace a battery with one that had been sitting on a charger and after installing the newly charged battery, it still wouldn’t work. We never knew why but for some reason the batteries didn’t take a charge. Finally, management at USAir took most of the batteries out of line maintenance and put them at the main base in Pittsburgh where there was a full battery shop available. When an aircraft needed a battery at a line station, one would have to be requisitioned from Pittsburgh.

[Moral of the Story](#): Nothing is simple in an aircraft. Even a battery can cause an entire fleet to be grounded.

Aviation Safety: 2012 Was The Safest Year For Airlines Globally Since 1945

Flying on a commercial jetliner has never been safer.

It will be four years in February since the last fatal crash in the United States, a record unmatched since propeller planes gave way to the jet age more than half a century ago. Globally, last year was the safest since 1945, with 23 deadly accidents and 475 fatalities, according to the Aviation Safety Network, an accident researcher. That was less than half the 1,147 deaths, in 42 crashes, in 2000. In the last five years, the death risk for passengers in the United States has been [one in 45 million flights](#), according to Arnold Barnett, a professor of statistics at M.I.T. In other words, flying has become so reliable that a traveler could fly every day for an average of 123,000 years before being in a fatal crash, he said.



[Read the whole story at www.nytimes.com](http://www.nytimes.com)

Sacred Ground: Walking the Path of Potential

By Tony Kern, Ed.D

I recently spoke at an annual safety stand down, held by an aeromedical evacuation company on the anniversary of a tragic fatal mishap they experienced a few years back. I opened by thanking them for allowing me and the other speakers to tread on the [hallowed ground of remembrance](#), and I honored them for their recommitment to safe operations. But, after I had burned the required incense at the altar of the fallen, I turned to my real subject. The true sacred ground, I argued, is not in the past.



Rather, [it is the ground that we stand on today](#), the path between who we are and who we could become: the path of potential.

Why is it, I wondered, that so many of us never achieve our full potential? Why are we not as prepared for the inevitable opportunities and challenges more inherent in our industry than in any other? [Why do so many of us settle for the status quo?](#) Are we, as individual professionals, being shaped by corporate cultures of malaise and indifference; or are we, in fact, the creators of those cultures?

These questions are every bit as important as other high priority issues in our industry, such as safety management systems and technological advances. I maintain that [the greatest untapped resource in our industry today](#) is the gap between our current level of performance and our level of capability.

Of course, if I knew the answers to these questions, I would be a heavy hitter on the motivational speakers circuit and dining in five-star restaurants, instead of laboring to write books and grabbing late night grub from the nearest fast food joint. But three decades of chasing these elusive questions has brought a few observations to the forefront.

The first relates to the critical roles of [passion and curiosity](#). I know it's not cool to be a starry-eyed dreamer in today's world; but remember, our industry was founded by starry-eyed dreamers like the Wrights, Sikorsky, Bleriot, Curtiss, Doolittle, Lindbergh and Earhart. They dreamed of new horizons and cared enough to pursue them. Without their passion and curiosity would we even have an industry in which to work? If we could talk to their ghosts, what would they have to say about the malaise and negativity that has infected their birth child?

The second key insight I have witnessed in self-made high achievers is that they view their talent differently. Those who stagnate view talent as something that must be demonstrated to others, to prove they can meet standards and have what it takes. Those who climb the highest view their talent as something that [must be continuously developed](#), no matter what their current level of proficiency or who is watching. Those who will come closest to reaching their full potential see their ability as the result of [endless self-critique and constant effort](#) – and they enjoy it. Those who believe they are already good enough always seem to find a way to measure themselves against lesser talented peers. You can see the difference clearly when observing yourself or others. Some people want to show off and others just want to get better. Ironically, it is the latter group that ultimately earns the greater respect of his or her peers.

When it comes to honoring the sacred ground that is your path to full potential, there is little value in dwelling too long on the past, worrying too much about the future, or measuring yourself against anything other than your best.

Performance lives in the present and is measured in small clicks of the progress wheel. Those who bring passion to their work, look for new ways to improve, and who take responsibility for their own improvement will own the future of our industry.

In closing, remember that excellence is a life skill first, and a job skill second; so practice precision in everything you do.

Most Memorable Aviation Records of 2012

The National Aeronautic Association has presented its annual list detailing the Most Memorable Aviation Records of the previous year.

As the official record keeper for United States aviation, NAA tracks dozens of world and national record attempts. New U.S. records are certified and those qualifying as world records are then ratified with the Fédération Aéronautique Internationale (FAI).

At the end of each year, under the direction of the Contest and Records Department, records certified for that year are reviewed and a list of the "most memorable" is created:

Vertical Distance of Freefall: 119,431 feet

record for parachuting (performance record, general category)

After ascending in a balloon for more than 2-1/2 hours, Felix Baumgartner leapt from the Red Bull capsule at 127,852 feet above Roswell, New Mexico. Over the next 4 minutes, 20 seconds, he reached a top speed of 843 mph and fell 119,431 feet before deploying his parachute. His jump on October 14 beat the previous record of 80,380 feet set in 1962.



Transcontinental Speed, West to East: 599 mph

record for airplanes (jet engine, weighing 19,842 < 26,455 lbs)

Departing Santa Ana airport in California on January 22, Gulfstream G150 pilots Timothy McClelland and Brian Erickson flew non-stop to the Hilton Head International airport in Georgia. The 3-hour, 26-minute flight averaged 599 mph along the route, establishing a record for Transcontinental Speed, West to East.

Speed Over a 15 Kilometer Course: 381 mph

record for airplanes (piston engine, weighing 3,858 < 6,614 lbs)

Making two passes along a straight stretch of highway over Interstate 505, west of Sacramento, California, Will Whiteside flew an average speed of 381 mph in his Russian Yakovlev Yak-3. His flight from Yolo County Airport on April 23 beat the previous record of 290 mph set in 1987.

Distance Goal and Return: 35 miles

record for model aircraft (radio-controlled glider)

After using a winch to launch their nearly identical 13-foot wingspan, kit-built MXC model gliders, John Elias and Dean Gradwell jumped into waiting cars where they would fly their aircraft by remote control to a pre-determined point more than 17 miles away. After reaching the point, they reversed course and flew back to land in the same spot where they took off, covering a total distance of 35 miles. Their simultaneous flights from California City, California, on September 28, beat the previous record of 18 miles set in 2005.

Duration: 1 minute 5.1 seconds

record for human-powered rotorcraft

With lessons learned from the previous year's flights and a much lighter airframe, Colin Gore pedaled the University of Maryland's "Gamera II" aloft for 1 minute, 5.1 seconds. The flight took place indoors at the Prince George's Sports & Learning Complex in Landover, Maryland on August 28, beating the previous record of 49.9 seconds set earlier in the year.

Straight Distance: 474 miles

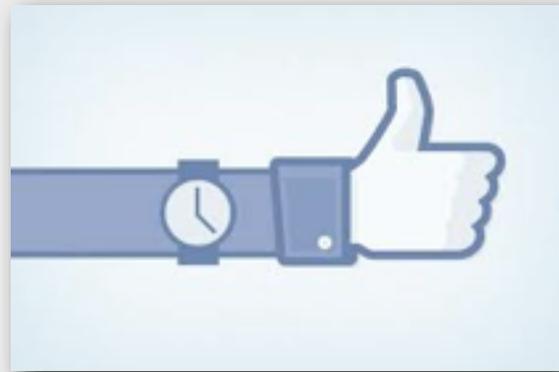
record for hang gliders (rigid wing, weight-shift)

Launching on the 3rd of July from Zapata, Texas, Dustin Martin flew his Wills Wing T2C hang glider to the north over the Edwards Plateau, landing some 11 hours later near Lubbock. His 474-mile flight broke the previous record of 435 miles set in 2001.

These amazing records and record setters will be honored at NAA's Spring Awards Ceremony and Luncheon which will be held at the Crystal Gateway Marriott, Arlington, VA on March 12, 2013.

Optimizing Aircraft maintenance

On 13 February 1955, a Sabena Douglas DC-6 plane crashed while on an approach to Rome, Italy. All 29 passengers and crew aboard were killed. These incidents always attract global horror. What happened? Unfortunately human error remains the largest contributor to aircraft accidents. The second element, however, is [maintenance error](#).



Almost 12% of all reported aircraft accidents are due to a maintenance error. These errors impose a significant financial burden on airlines, as they are also a major cause of flight delays and cancellations. Regardless of the class or type of aircraft, surveys consistently indicate that maintenance costs can range from between 10 and 45 percent of total yearly operating expenses.

Computer engineer Susana Ferreiro, together with Dr. Basilio Sierra-Araujo (Head of the Department of Robotics and Autonomous Systems of the Computing Faculty in Donostia-San Sebastian), has produced a thesis entitled '[Contributions towards the diagnosis and prognosis of industrial problems by means of Supervised Classification Techniques](#)'. The aim of her research has been to apply artificial intelligence techniques, data mining and machine learning to problems linked to the aeronautics industry and in particular the issue of maintenance. "These are algorithms and classifying models that extract information from large volumes of data and infer knowledge on the basis of these data," explains Ferreiro.

The study looked into three specific aspects of aeronautics where maintenance is a major issue. The first issue is the degradation of aircraft brakes, the second is the appearance of burrs created during the drilling process in the manufacture of components while the third is the basicity number (BN) of oil on the basis of spectroscopic data. The BN of oil is used to estimate what condition it is in, and if it needs to be replaced.

In terms of aircraft brake wear, the study looked into how to cut the costs of aircraft line maintenance - in other words, maintenance carried out after landing between one flight and the next take off - by deferring it to a more convenient time and place.

The study also sought to reduce waiting times between flights to ensure punctuality by eliminating delays caused by corrective maintenance.

"A series of components of the aircraft are usually checked between one flight and the next. Sometimes an unanticipated problem arises, so the aim is to have an estimate of the wear of certain components to anticipate all the resources that are going to be necessary," says Ferreiro. "The aim is also to optimize airline routes because sometimes there is an interest in having the maintenance done in a specific country, and what is needed for this is the forward planning of the state of the aircraft." This line of research was also carried out under a European project called TATEM.

Drilling burrs occur during the manufacturing process. When the components are manufactured, a check needs to be done to make sure that the burr - the notch that has come away during the drilling - does not exceed 127 microns, as specified by the aeronautics industry. "We have developed a process using the internal signals of the machine which detects in real time when the limit has been exceeded," explains Ferreiro. Normally, after drilling, a process is always applied to eliminate the remaining burr, but thanks to this research, the process would be applied only when the limit is exceeded. This part of the research was started in another EU project called ARKUNE.

Oil lubricating properties can deplete over time, which in turn can affect various elements in an airplane. The study looked into prediction of the basicity number (BN) of the oil on the basis of spectroscopic data. "The basicity number (BN) is used to estimate what state it is in i.e. whether it is satisfactory, or whether it needs to be monitored because it has started to degrade, or whether it needs to be replaced," says the author.

The aim of the study was to establish a model for detecting the extent of oil degradation without having to run a laboratory test, which can be a very expensive task. The idea developed in this thesis is to replace this method of analysis by near infrared FTIR spectrometry. With this method, "it is possible to develop a sensor and incorporate it into the machine and in what is being monitored without having to run a lab test," explained Ferreiro.

The results of the study should help cut maintenance costs and improve airline safety in the long run, making tragic accidents like the Rome crash in February 1955 increasingly a thing of the past.

For more information, please visit:

http://www.basqueresearch.com/berria_irakurri.asp?Berri_Kod=4310&hizk=I#.URtTmWdyJid

Ergonomics

Lifting and Back Injuries by the Numbers

Odds of winning the lottery **1 in 135,145,920** (multi-state, mega-millions jackpot)

Your odds of being put out of commission by a back injury within the next year: **50 out of 100**. (Prevention.com) There are **2** factors that can increase a worker's risk for injury while performing lifting tasks: **heat and humidity**, both of which accelerate **fatigue**.

3 examples of awkward lifting are lifting objects above the shoulders, lifting objects below the knees or lifting objects at arms' length.

To reduce heavy lifting in workplaces, employers can do these **5** things: Reduce the weight of the load, increase the weight of the load so it can't possibly be lifted by a worker, use mechanical assistance, direct workers to slide heavy objects instead of lifting them, and perform team lifts.

About **10** percent of jobs require extensive manual materials handling, which includes lifting, pushing, holding, carrying and throwing. (United States Office of Compliance)

Lifting loads heavier than **20** kilograms (44 pounds), results in an increased incidence and severity of back injuries. (Canadian Centre for Occupational Health and Safety)

25 percent of all workers' compensation claims involve **back injuries**. (OSHA)



Five Mistakes Companies Make with Ergonomics

Walt Rostykus, vice president at Humantech, advises clients to [integrate ergonomics into their safety management systems](#) and to make ergonomics a component in the process they use to manage quality or continuous improvement. Rostykus is author of the eBook Five Mistakes Companies Make with Ergonomics. The 16-page publication can be downloaded at no cost from the Humantech website at www.Humantech.com.



Here's a preview.

- **Mistake #1: The wrong goal.** Despite the preponderance of articles and blogs on the need to look at leading, not lagging, indicators, CEOs are still most interested in injury and illness rates. However, says Rostykus, that is like "predicting the outcome of a baseball game after it's been played, which is too late!"
- **Mistake #2: An unsustainable approach.** Good ergonomics is not about a laundry list of technical requirements. That's an antiquated approach that is not sustainable long term. Rostykus recommends managing ergonomics using familiar systems such as continuous improvement, which have been used to achieve other improvements.
- **Mistake #3: A narrow view.** Viewing ergonomics strictly as a safety discipline stops companies from achieving the full benefit of incorporating workplace improvements. For a long time ergonomics has been associated strictly with safety. It can, however, lead to valuable changes like eliminating unnecessary motion that slows down cycle time, improving the quality of products, and reducing quality defects, which leads to fewer shipping delays.
- **Mistake #4: Ineffective and inconsistent tools.** "It's amazing how organizations focus on comparing their exposure to a known threshold like TLVs for chemicals," says Rostykus. "But when it comes to ergonomics, they are subjective." He recommends using tools based on valid data.

- **Mistake #5: Failure to check.** Humantech research found that many companies make ergonomic improvements and check them off a list without any effort to assess their impact. Comparing conditions before and after the change is essential, whether it's tactical or system-based improvement.

www.humantech.com

A Schedule Not Kept

A must-be-there business meeting enticed two pilots to launch into weather they couldn't handle; with predictable results.

An old and often-used justification for owning a light General Aviation aircraft is the ability to bypass the automobile and the airlines in order to spend valuable time in a more productive manner. This [rationalization](#) focuses on the time savings created by flying oneself. Thus, according to the reasoning, it is possible to easily meet with clients in distant cities and be home for dinner. And as pilots, we also know it's always more fun to fly ourselves than it is to drive or to sit in the back of a crowded airliner.



[Click here to read the full article.](#)

DC-8 WRONG AIRFIELD IN VIET NAM - April 1969 **Video**

During the Vietnam War, a contractor-operated DC-8 [landed on the wrong airfield](#) in South Vietnam.

The control tower cleared the DC-8 to land at Da Nang Air Base, and by mistake the co-pilot landed the plane at Marble Mountain Airfield a remote operating location near Da Nang with a 3200 foot runway.

This event is pretty well-known history among the "Non-Sched" flight crews flying the MAC charters in and out of Viet Nam.

When Seaboard World Flight Operations got the word on what happened, they contacted Douglas Aircraft Corp for advice.

Douglas said "take the aircraft apart and ship it home". FAA said the same thing.

Instead, the pilot and co-pilot elected to try and get airborne on a less than adequate length runway and succeeded, getting in the air about 300 feet from the end of the runway.

For safety concerns, the flight hostesses were left behind at the remote airstrip.



<http://www.youtube.com/watch?v=6bvK6enoQDg>

Did you Know?

One third of American aren't sleeping enough, and it's hurting their employers. Harvard scientists found that sleep deprivation costs U.S. companies \$63.2 billion in lost productivity each year, thanks to "presenteeism," defined as "people up for work but operating at subpar level."



Be Kind to Yourself to Become the Best Version of Yourself

Let's face it: Stress can often be a product of that **inner critic** reminding us of the things we did wrong today. We often criticize ourselves about things that we would forgive in others. But researchers at Duke and Wake Forest Universities found that people who were able to **practice self-compassion** and not "beat themselves up" were much better suited to handle negative events in their lives.



Scientist Kristin Neff, a pioneer in the field of self-compassion, has even developed a test to see how self-compassionate you are and exercise to increase self-compassion. "When we soothe our agitated minds with self-compassion, we're better able to notice **what's right as well as what's wrong**, so that we can orient ourselves toward that which gives us joy," Neff writes in "Why Self-Compassion Trumps Self-Esteem."

The idea is that, **when you're kind to yourself**, you're much better able to take life—with its ups and its downs—in stride.

It can be easy, in our culture, to look to the "Teflon people" who aren't stressed out and think they're just different than you are. But those people are just a little better at turning off their Velcro brains. They're probably a little better at remembering the good news of their days. **And they're probably a little nicer to themselves.**

But with a little self-awareness, you can teach yourself to do the same.

<http://phys.org/news98466411.html>

<http://www.self-compassion.org/exercises.doc>

<http://www.self-compassion.org/test-your-self-compassion-level.html>

http://greatergood.berkeley.edu/article/item/try_selfcompassion

Alone on the Ice: The Greatest Survival Story in the History of Exploration

His two companions dead, food and supplies vanished in a crevasse, Douglas Mawson was still one hundred miles from camp.

On January 17, 1913, alone and near starvation, Douglas Mawson, leader of the Australasian Antarctic Expedition, was hauling a sledge to get back to base camp. The dogs were gone. Now Mawson himself plunged through a snow bridge, dangling over an abyss by the sledge harness. [A line of poetry gave him the will to haul himself back to the surface.](#) Mawson was sometimes reduced to crawling, and one night he discovered that the soles of his feet had completely detached from the flesh beneath. On February 8, when he staggered back to base, his features unrecognizably skeletal, the first teammate to reach him blurted out, "Which one are you?"

This thrilling and almost unbelievable account establishes Mawson in his rightful place as one of the greatest polar explorers and expedition leaders. It is illustrated by a trove of Frank Hurley's famous Antarctic photographs, many never before published in the United States. 24 pages of illustrations



Gen Y Demands Career Fulfillment Over More Pay

Companies need to understand what motivates Generation Y workers (Born in the mid-1980's and later) if they want to retain them and grow them into new leadership roles. The problem is that companies are still treating them like older generations and are losing them to competitors.



The average Gen Y employee leaves after two years of working. In the book, [Happiness at Work: Maximizing Your Psychological Capital for Success](#), the authors unveiled new research by the iOpener Institute about this important demographic. They found that they are motivated to stay with their employer and are willing to actively recommend their company to friends based more on job fulfillment than pay. The survey of 18,000 Gen Y's uncovered that a belief in the firm's economic or social purpose, and pride in the organization and its work, had a strong correlation with staying at a company. The report also confirmed that there was no connection between retention and compensation. Here are five things you can do to help them achieve more fulfillment at work:

5 Ways to Help Generation Y Workers Achieve Fulfillment at Work

1. Set expectations with them

The biggest problem I see is that managers don't tell their Gen Y employees what they need to do in order to get ahead at work. They don't tell them what the criteria is for a promotion, how to obtain the skills they are going to need and show them the path to success. If you don't set expectations, then don't expect them to be with you very long. This year, companies are going to be aggressively stealing talent and you might just lose employees if you don't tell them what they need to do in order to advance.

2. Have managers mentor them

Gen Y wants their managers to almost be their parents in the workplace. They were coddled when they were younger and parents have always played an important role in their lives. Some parents are even called "helicopter parents" because of their intense involvement. Obviously you aren't their parents, but you need to give them career advice so they feel like you care, like the company is investing in them and so they understand what it takes to get ahead.

3. Show them the impact they are making

Gen Y feels fulfilled when they know they are making a difference. When you introduce them to a project, explain what impact a positive result will have on the company (and even society). This way, they will feel like their performance is making a difference and they will work harder as a result. After they complete a project, sit down with them and explain how the result helped the company and then give them even bigger projects.

4. Give them access to executives

Gen Y's love the ability to network with people who can have a positive influence on their careers. In most companies, especially the larger ones,

it's hard for them to gain access to executives because of their schedules and seniority. I recommend that you break down these barriers, flatten your hierarchy and create executive sponsorships. This way, Gen Y can feel like they are not only important to the company but that they have someone who can take their career to new heights.

5. Enable them to pitch their ideas

They typically feel ignored at work because they are confined to a specific role and job title. If you want to engage them and make them want to stay at your company, you should allow them to pitch their business ideas to you. They might see problems and solutions that you don't! In general, companies need to better utilize their talent and extract ideas from their current database instead of just going outside for ideas.

Picture this!

