

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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FAA Safety Team (FAASTeam) Announces Virtual Safety Stand Down

Live Webinar On March 21 To Include Speakers, Panel Discussions

For the first time ever, [The FAASTeam](#) will facilitate a National Virtual Aviation Safety Stand Down. The event will take place on Saturday, March 21, 2015. The event will be done in live webinar format and will feature several speakers, [all experts in their field](#). Each presentation will be followed by a panel discussion and attendees will have the opportunity to participate live.

Attendance at the event will be valid for all three WINGs Knowledge Credits at the Basic Level. The event has been scheduled for a time that should work for all time zones in the Continental U.S. The event can be attended on computers and personal electronic devices, but maximum benefit can be obtained by viewing with a group. The FAASTeam [is asking for help from the pilot community](#) to help promote the event locally and in securing FBOs, flight schools, flying clubs, and individuals to host the event at their facilities or homes. Hosting consists of showing the webinar on a large screen TV or projecting it onto a screen or wall. A web page has been created to assist hosts in their set-up and additional technical support is also available. Of course, some refreshments are always appreciated by attendees. Details on hosting a local event can be on the links below.

FAASTeam Representatives, meanwhile, are encouraged to create their own event on SPANS and treat it as you would any other seminar after discussing it with their local FAASTeam Program Manager. The SPANs event for those that choose to participate in the event on their own using their own computer or electronic device will be disseminated in a couple of weeks.

The March 21 event [is free to everyone](#) and represents the partnership between the FAASTeam and the Advocates for Aviation Safety Foundation, Inc.



http://advocates4safety.org/vsd/host_resource.html

FMI: https://advocates4safety.org/vsd/vsd_032115.html

Accident Prevention is my Passion!

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

One of the worst possible things a person can go through is being at an airport and hearing that the flight carrying his or her loved one may have gone down. The emotions can be overwhelming, distressing, and blinding. It's a life changing moment.

I travel globally and **have worked through** nasty things like circadian desynchronization, jetlag, flu, laryngitis, gastrointestinal anomalies, chronic fatigue and sleep deprivation. And I have made a lot of sacrifices. But it's OK. I love what I do and feel blessed and privileged to have been given the opportunity to do what I have a passion for. And it really is a passion. For the past 15 years I have busted my butt 7 days a week working to prevent airplane accidents. I hope that somewhere in the world, at some point in time, I have, and will

continue, to meet this objective. If I have prevented one accident then I am happy. More than that and I am on fire! You may not see me on the "front line" but I assure you I am in the background doing everything I can to make flying even safer.

ONE of the reasons I do what I do:

About 14 years ago I lost a very close pilot friend, Rick Smith, in an airplane accident in Boca Raton, Florida. A week before his passing, Rick and I flew a trip together and we laughed and joked about this and that. Little did I know that one week later I would be attending his funeral. I had to see his wife and baby. It was absolutely heartbreaking. **But Rick taught me a very important lesson about life;** he showed me just how fragile life is and that you never know when it's going to be your time to go. I would have never thought in a million years that Rick would no longer be around shortly after we flew that last trip together. It was a pleasure flying with you Rick, and thank you for teaching me an important lesson about life. I miss you, man!



DO IT WITH
PASSION
OR NOT
AT ALL.

<http://www.tacgworldwide.com/>

FAA to require airlines use data analysis to spot safety trends, prevent accidents

New federal rules announced recently will require airlines to collect and analyze safety data in an effort to [spot troubling trends](#) and help prevent accidents.

The Federal Aviation Administration said the causes of 123 accidents between 2001 and 2010 could have been identified beforehand if airlines had safety management systems in place.

Passenger and cargo airlines must have such systems by 2018. The rules detail the kind of data to be collected and analyzed but give airlines flexibility about gathering the information. Airlines will be required to develop programs to analyze the data.

The systems are also designed to [imbue a safety consciousness](#) throughout airline companies and establish formal methods for not only identifying hazards, but also controlling and continually assessing risks. Most U.S. airlines already have safety systems, or elements of them. "Aviation is incredibly safe, but continued growth means that we must be [proactive](#) and smart about how we use safety data to detect and mitigate risk," Transportation Secretary Anthony Foxx said.

He said the safety systems give "airlines [the tools they need](#) to further reduce risk in commercial aviation."

The FAA has been under pressure for nearly a decade to develop such rules. In 2006, the International Civil Aviation Organization, a U.N. agency without power to force action, told countries to require their airlines to adopt safety management systems and set standards.

Following the 2009 crash of a regional airliner near Buffalo, New York, Congress passed an aviation safety law that included a deadline of July 2012 for the FAA to issue rules requiring airlines to have safety management systems. The National Transportation Safety Board, which investigates air crashes, has also urged the FAA to require such systems.

Susan Bourque, who lost her sister Beverly Eckert, a noted 9/11 widow and activist, in the 2009 crash, praised the FAA for including regional air carriers in the rule.



"It is so important that every passenger flying on a regional airline ... receives the benefit of a [commitment to and investment in best-practice, data-driven safety programs](#) that is commensurate with that of the major carriers like Southwest and Delta — a commitment and investment that my sister Beverly and everyone else lost on Flight 3407 sadly and tragically did not receive," Bourque said in a statement.

Continental Connection Flight 3407 was operated for Continental Airlines by now-defunct regional carrier Colgan Air. All 49 people aboard the plane and a man on the ground were killed when the pilots allowed the plane to slow to a dangerously low speed, and the captain responded incorrectly to a safety warning, sending the airliner into an aerodynamic stall.

OSHA Orders Pilot to be Reinstated after Being Illegally Fired

According to a news release from OSHA, Air Methods Corp. has been ordered to reinstate a pilot that [refused to fly an unsafe aircraft](#) and was then terminated. The pilot faced a trip over mountainous terrain in a medical transport helicopter with a faulty emergency locator transmitter. OSHA found that Air Methods Corp., the largest U.S. provider of air medical transportation services, violated the Wendell H. Ford Aviation Investment and Reform Act for the 21st Century (AIR21) when it fired the pilot who was assigned to the company's Lucasville, Ohio station. AIR21 protects employees who report air safety information. Federal Aviation Administration regulation requires pilots in command of a civil aircraft to determine if an aircraft is in a condition for safe flight.

"[Pilots should never have to choose between the safety of themselves and their passengers, and their job,](#)" said Nick Walters, OSHA's regional administrator in Chicago. "Whistleblower protections are critical to keeping workplaces safe. Disciplining an employee for following safety procedures is illegal and puts everyone at risk."



<http://www.dol.gov/opa/media/press/osha/OSHA20142294.htm>

Failure to reset altimeter results in fatal low approach

The 387-hour instrument-rated pilot, who had just 17 hours in actual IMC, and a passenger were flying in a Piper Seneca in IFR conditions near Manteo, N.C. The weather at the destination airport at the time of arrival was IFR because of reduced visibility with low drifting fog.

According to the passenger, the flight was normal and the pilot acknowledged a reduced visibility report at the destination airport relayed by another pilot who landed ahead of the Seneca. The pilot initiated an instrument approach. When the airplane descended through clouds, he realized the plane was too far down the runway to safely land, but rather than execute the missed approach, [he entered a low traffic pattern](#).

According to the passenger, the pilot [had not reset the altimeter to the correct barometric pressure prior to the approach](#). That meant that although the altimeter indicated that the airplane was at 410 feet MSL on the downwind leg, the airplane was actually flying about 260 feet MSL. The Piper came down in water next to the airport.

The NTSB attributed the accident to the pilot's attempted visual flight in instrument meteorological conditions while maneuvering at a low altitude in the traffic pattern, which resulted in spatial disorientation and impact with the water. The pilot's [lack of experience](#) flying in actual instrument meteorological conditions was a contributing factor.:



NTSB Identification: [ERA13LA113](#)

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

12 acquitted, 8 convicted in 2007 plane crash trial

Twelve defendants have been acquitted by the İsparta High Criminal Court in the trial regarding a fatal 2007 Atlasjet plane crash, while eight others were sentenced to prison terms ranging from 20 months to 11 years.

Atlasjet flight 4203, a scheduled flight from İstanbul Atatürk Airport to İsparta Süleyman Demirel Airport, crashed in the mountains of southwest Turkey on Nov. 30, 2007, killing 57 people. Among those convicted were World Focus Airlines technician Fikri Zafer Dinçer, who received a five-year, 10-month sentence for reckless homicide resulting in the death of more than one person, and World Focus Airlines CEO Aydın Kızıltan and business partner Yavuz Çizmeçi, who received 11-year, eight-month terms for the same crime. World Focus Airlines leased the aircraft to Atlasjet.

Recep Değirmencioğlu and Vedat Örs, the flight's pilots, received sentences of two years and six months for providing false testimony.

Twelve top-level executive and technical staff, including Atlasjet owner Ali Murat Ersoy and former CEO Tuncay Mustafa Doğaner, were acquitted of charges related to the accident.

After the crash, an investigation revealed that the cockpit voice recorder (CVR), also known as a black box, had not worked for nine days prior to the accident. According to safety regulations, a CVR must be made operable within 72 hours of a fault being discovered. Teams investigating the incident, however, said the aircraft had completed “many flights” in the nine days before the fatal incident.

It was also discovered that the plane's flight data recorder (FDR) was out of order. The device recorded only 15 minutes of the entire flight, experts said.



Program on forced landing survival skills offered

The Aircraft Owners and Pilots Association's (AOPA) Air Safety Institute has released a [new video and printed guide](#) to help pilots and passengers survive conditions following an aircraft forced landing.

The program, “[Survive: Beyond the Forced Landing](#),” covers best practices for general aviation flights that result in off-airport landings. It also reviews survival communications, preferred gear and offers advice for detection from rescuers.

“[The safest pilot is one who prepares for any eventuality](#),” said George Perry, Air Safety Institute senior vice president. “That includes preparing for an off-airport landing. You need to take the right steps, have the right equipment and know the right techniques to ensure a successful outcome. This new video does a great job showing what pilots can do to be prepared.” The program was developed with funding from the Canadian Owners and Pilots Association (COPA), which was concerned that pilots there were not carrying adequate survival kits, due in part to confusion over government requirements.

The video and 16-page guide cover the importance of flight plans and flight following, and the need to consider terrain along the route of flight where an emergency landing may be necessary. The video also discusses [communication techniques with air traffic control](#) and other authorities once on the ground, appropriate medical care, and the use of basic survival equipment, such as emergency locators, strobes and space blankets.

The program also notes that pilots should pack clothing that is appropriate for the weather along the planned flight path, and not just for the final destination. Beach clothing, it suggests, won't be much good during a night on a cold mountainside.

Pilots should ensure their [passengers know how to use emergency equipment](#) in the event the pilot is incapacitated, and the Air Safety Institute already offers guidance on briefing passengers, including a separate video, a briefing checklist and customizable briefing card.



<http://www.aopa.org/AOPA-Live?watch=%7b8841D3F4-19B9-4BA8-938F-E02B8987C3B8%7d>

<http://www.aopa.org/-/media/Files/AOPA/Home/Pilot%20Resources/ASI/Safety%20Advisors/sa31.pdf>

Memories still raw for sole survivor of '85 plane crash

Some wounds don't heal. Some memories don't fade.

Galaxy Airlines Flight 203 crashed into a Reno field just after 1 a.m. on Jan. 21, 1985 – 30 years ago Wednesday.

But for the first responders and the flight's sole survivor, it seems like yesterday.

"I spent 32 years in the department and have been retired for 15 years now, but [that's the one I remember the most](#)," said George Kitchen, a retired Reno Fire Department captain. "I think about it every time I drive by there."



Richard Ross, a retired Washoe County sheriff's sergeant, who was the first officer on the scene still can't bring himself to talk extensively about the experience. "[It will be with me forever](#)," he said. "The whole thing that bothers me still is that so many people perished and there was nothing we could do."

On Wednesday, a new memorial will be unveiled to commemorate the 30th anniversary of the crash.

Of the [71 passengers and crew on board](#) the charter flight bound for Minneapolis, only one – 17-year-old George Lamson Jr. – survived.

"It's very difficult to say anything," said Lamson, now 47, who said it would be too difficult for him to attend the ceremony.

"I don't want to be remembered as the boy who survived this accident. I want to be remembered as the man that lived," he said. "[Life is a gift for which I am always grateful for. Thank you to all that have helped me along in my journey.](#)"

Lamson, who has lived a quiet life in Reno since 1990, said he recently made a private trip to Rancho San Rafael to view the memorial and was pleased with both the design and placement of the plaque, which is embedded in a granite boulder and surrounded by the pine trees that were planted in memory of the plane's passengers and crew.

He wrote on his Facebook page, "It is so quiet and beautiful at this park this time of year. I spent a good half hour there and only saw one other person. I am grateful for the kindness given to us. Thank you for the beautiful place to remember our loved ones!"

A SUPER BOWL CHARTER

In January 1985, Lamson, his father George Sr., and 64 other football fans from Minnesota traveled on a charter flight from Minneapolis to Reno. Some of the group went by bus to Stanford, Calif., to attend the Super Bowl game between the San Francisco 49ers and Miami Dolphins, while others traveled to Lake Tahoe and watched the game at Caesars Tahoe.

The charter group reunited late on the night of Jan. 20, 1985, at then-Reno-Cannon International Airport, and Galaxy Airlines Flight 203, a Lockheed Electra four-engine turboprop fully loaded with fuel, took off just after 1 a.m.

A minute after takeoff, the co-pilot notified the Reno tower of a severe vibration and requested an immediate return to the airport. Seconds later, the plane went down. It caromed into a berm and broke in half, just in front of the row where Lamson and his father were seated.

A huge fireball followed. Lamson, strapped in his seat, was launched through the fireball.

INITIAL CONFUSION

First responders were notified immediately that something had happened, but messages were mixed. The airport fire department knew it was a plane crash.

Dick Swinney, a volunteer with the Washoe County Sheriff's Hasty Team at the time, recalls his pager going off with the report of an 18-wheeler colliding with a motor homes. (The plane crashed into an RV sales lot.)

"It wasn't until we got there that we realized it was far worse," said Swinney.

George Kitchen was the captain at Reno Fire Department's Station 6 and his was one of two trucks from the station that responded.

"As we pulled on the scene, I noticed a seat sitting out in the street and I radioed to the the crew that was following us to check it out," Kitchen said. "It ended up being the only survivor."

Firefighter Mike Mooney was in the vehicle behind Kitchen. He found Lamson strapped in his seat and began administering first aid until paramedics arrived.

"After that, we started to attack the fire," he said. "But looking back, the biggest thing I can remember was the survivor. [Those memories don't go away](#). They're pretty fresh."

Two other passengers, George Lamson Sr. and Robert Miggins, initially survived the crash, but both died in the hospital days later.

George Lamson Jr., was released from the hospital after eight days and returned to Minnesota, accompanied by his mother.

AFTERMATH

In April 1985, he came back to Reno to testify at the National Transportation Safety Board hearing on the crash. He told the *Reno Gazette-Journal* at the time, "I feel I was watched over for sure. I feel lucky to be alive."

The final NTSB report was released in March 1986. It said the plane went down when the pilot, Allen Heasley, [reacted to the vibration incorrectly](#) by ordering an engine power reduction.

Galaxy Grove, the memorial tribute to the passengers and crew of Galaxy Flight 203, was dedicated at Rancho San Rafael in 1986, featuring a bronze plaque and a grove of pine trees.

Sometime in late 2013, the large brass plaque was stolen, likely to be sold as scrap metal. The Washoe County Parks Department commissioned a replacement memorial be made, this one etched in granite and attached to a two-ton boulder.

HOW \$900 GLASSES MAY PROTECT PILOTS FROM LASER STRIKES

LASER STRIKES AGAINST PILOTS ARE SERIOUS BUSINESS.

Lasers striking airplanes seems like a joke, but it's a real thing-and although a laser-struck flight has never injured anyone, they are being taken increasingly seriously by federal authorities. Last year, a federal court sentenced one man to [14 years in prison](#) as a result.

Laser strikes are typically carried out by people standing at the end of a runway, firing a miniature laser into the cockpit of a aircraft while it is landing or taking off. Things have gotten so serious that an official FBI post on the matter has described laser attacks as reaching "[epidemic level](#)."

Technology may be coming to the aid of pilots, though.

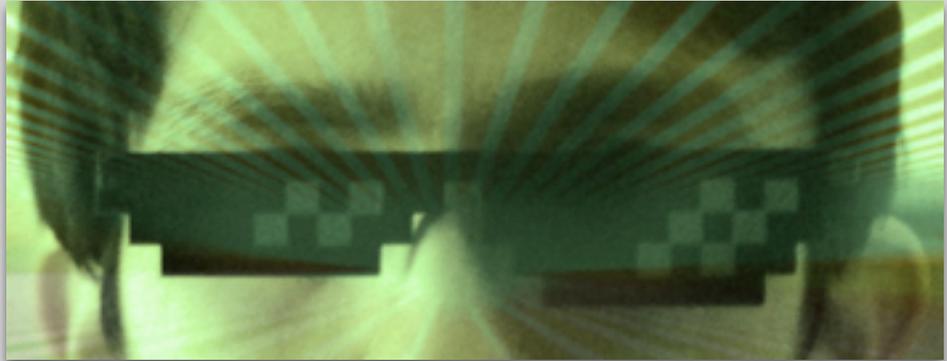
Aerospace firm Sierra Tango LLC is reportedly working on a pair of \$900 glasses designed to filter out certain lasers-including green lasers and

high-power blue lasers, both of which can cause dizziness and temporary blindness on the part of anyone they are directed at.

"We've got one major U.S. airline that is running trials, we've had some helicopters in police departments that are trying it," company president Tony Reed told Ars Technica, although he refused to elaborate on which company or agency was involved with the testing.

It is hoped that pilots' unions will help subsidize the cost of the glasses.

The Federal Aviation Administration confirmed that three new instances of laser strikes against Delta aircraft took place recently, on their approach to Los Angeles International Airport. In 2014, there were 101 reported laser strikes against pilots in L.A.



New deicing simulator saves money, manpower, increases training - US Air Force

Staff Sgt. Tyler Mousner uses the deicing simulator Dec. 3, 2014, at Fairchild Air Force Base, Wash. The recently-installed simulator increases training by allowing students to learn how to deice a plane without using costly resources. Mousner is a 92nd Maintenance Group Maintenance Qualification Training program instructor. (U.S. Air Force photo/Staff Sgt. Veronica Montes)

With the winter months comes freezing temperatures, snow, frost and ice, but despite the inclement weather the mission continues, making aircraft deicing a main priority for maintainers.

This year, to increase training capabilities and save money and manpower, the 92nd Maintenance Group installed a deicer simulator, allowing Airmen to train without using deicing equipment and costly resources.



"Because of the cost of deicing/anti-icing fluid, new Airmen have been unable to get good hands-on training during winter months," said Staff Sgt. Tyler Mousner, the 92nd MXG Maintenance Qualification Training program instructor. "The Federal Aviation Administration Clean Water Act also requires us to recover the fluid which also cost money. Now they will be able to train indoors and gain proficiency before deicing on the flightline."

The simulator resembles a video game with controls that are an exact replica of the controls in the deicing cab.

"It helps students with muscle memory," said Tech. Sgt. Chris Runge, the 92nd MXG Development Element NCO in charge. "It allows them to get to a level they wouldn't normally get to in a short time period."

The simulator has a variety of capabilities and settings allowing Airmen to deice or anti-ice in different environments. In the program Airmen are able to change the time of day, amount of snow, adjust the weather, and add wind as a factor.

"Weather can be a major factor on the flightline, and depending on the winds, deicing can be different," Mousner said. "It is also very important to be careful to not damage the aircraft. It is also crucial to make sure the whole aircraft is properly deiced to ensure the safety of the passengers aboard."

To properly deice the plane, the deicing fluid must be evenly distributed across the desired area, and then anti-ice fluid must be sprayed over the area within the following three minutes.

"The Air Force policy is that pilots will not take off with ice, snow or frost adhering to the wings, controls surfaces, engine inlets or other critical surfaces of the aircraft," said Tech. Sgt. David Lamb, a 92nd MXG MQTP instructor.

"Tests have proven that ice, snow, or frost formations having a thickness and surface roughness similar to medium or coarse sandpaper on the leading edge and upper surface of a wing can reduce wind lift up to 30 percent and increase drag up to 40 percent. If anything is left on the plane it can interfere with the aircraft's lift and be potentially dangerous."

Airmen new to the 92nd Aircraft Maintenance Squadron will have a chance to train on the new simulator and it can also be accessed by Airmen needing to keep proficiency during summer months.

"This new training tool not only will save deicing fluid, diesel gas and manpower, but contributes to less wear and tear on our vehicles, resulting in less vehicle maintenance," Mousner said. "This is very important and will allow new Airmen to gain a better understanding of the job, allowing Fairchild's mission to better continue throughout the winter months."

Researchers develop fireproof coating for Business Jets

A new coating protects business jet interiors against fire. Not only is the agent more environmentally friendly than before; it can also be applied more quickly. Empa is thus helping the Swiss company Jet Aviation to leave its competitors in the dust. This new coating could also be used in textiles and wood-based furnishing and architectural systems.



The customers want business jets to be nice inside; [the aviation safety authorities want the furnishings to be fireproof](#). And the jet must never stand around in the hangar for too long while it is being refurbished as that costs money. Swiss aircraft equipment supplier Jet Aviation, who rearranges the furnishings or gives the interior a makeover, touched down at Empa to ask for some support. Until now, it took several steps to fireproof the individual layers of the lightweight furniture while the expensive business jet remained grounded. This begged a major question: Can't this be done more quickly?

Swiss aircraft equipment supplier Jet Aviation rearranges the furnishings or gives the interior a makeover. Using Empa technology, this can now be done much faster and in a more environmentally friendly way than ever before.

Empa researcher Sabyasachi Gaan and his team subsequently developed a new coating against fire. This new coating is more environmentally friendly than the one used thus far – it can do without chlorinated and brominated chemicals and achieves the flame-retardant effect purely due to its especially **heavy molecular weight**, which gives it another advantage: the flame-retardant material does not evaporate, so the refurbished jet is not filled with any unpleasant odors.

The Empa team also managed to guarantee the coveted time-saving aspect when handling the expensive machines: the newly developed flame-retardant material **only needs to be applied once** – instead of in several layers on top of each other – which saves on labor hours and drying time, and enables the new-look jet to roll onto the runway several days earlier. The project was co-funded by the CTI and launched in 2012 within the scope of the special measures to counter the strong Swiss franc. Meanwhile, the research work has been completed and the method is patent pending.

Project leader Gaan is already thinking one step ahead: if the fireproof equipment saves time while refurbishing private jets, it could also be used lucratively in the production of business aircraft. Talks with business jet manufacturers are already in the pipeline. The production of designer furniture for the flying conference rooms, sitting rooms and bedrooms has thus experienced a small revolution. The method is also suitable for household furniture, where various European countries also demand fireproofing.

Airline Safety & Losses - Annual Review 2014



[Download our free Annual Safety Review here](#)

<http://www.flightglobal.com/news/articles/analysis-airline-safety-performance-in-2014-407718/>

No region to fear: Top 20 aircraft accidents since 1990

While search teams are recovering bodies and debris of Air Asia's flight 8501 which crashed, killing all 162 people on board, it remains a mystery what caused the plane to plunge into the sea.

Coming about nine months after the mysterious disappearance of Malaysia Airlines flight 370, it has spooked many about aviation safety standards in the region. An analysis of the deadliest plane accidents since 1990, however, suggests that no region is more accident prone than any other with accidents spread across the world.

Incidentally, the deadliest aircraft accident in this period happened in India. The mid-air collision of a Saudi Arabian Airlines Boeing 747-100B and a Kazakhstan Airlines Ilyushin Il-76 resulted in 349 deaths.

Event Date	Aircraft Operator	Event Location	Total Fatalities
12-Nov-96	Saudi Arabian Airlines/ Kazakhstan Airlines	Charkhi Dadri, near Delhi, India	349
12-Nov-01	American Airlines	New York, US	260
26-Apr-94	China Airlines	Nagoya, Japan	264
11-Jul-91	Nationair Canada	Jeddah, Saudi Arabia	261
08-Mar-14	Malaysia Airlines	Missing- Indian Ocean	239
26-Sep-97	Garuda Indonesia	Medan, Indonesia	234
01-Jun-09	Air France	Atlantic Ocean	228
06-Aug-97	Korean Air	Agana, Guam	229
02-Sep-98	Swissair	Nova Scotia, Canada*	229
26-May-91	Lauda Air	Bangkok, Thailand	223
17-Jul-96	Trans World Airlines	New York, US	230
25-May-02	China Airlines	Taiwan*	225
31-Oct-99	Egyptair	North Atlantic Ocean	217
16-Feb-98	China Airlines	Taipei, Taiwan	196
17-Jul-07	Tam Linhas Aereas	Sao Paulo, Brazil	187
06-Feb-96	Birgenair	In Atlantic Ocean	189
22-Aug-06	Pulkovo Aviation	Donetsk, Ukraine	170
30-Jan-00	Kenya Airways	Abidjan, Ivory Coast*	169
28-Sep-92	Pakistan Int'l Airlines	Kathmandu, Nepal	167
15-Jul-09	Caspian Airlines	Nr. Tehran, Iran	168

Source: World Aircraft Accident Summary, Federal Aviation Administration, Date Range 1990-2014

In 2015 you (and the people in your organization) should resolve to work less.

For some time now, researchers suggest that after some period of work in a day/week, that we begin to actually get less work done for every additional hour of effort. Said differently, the [marginal amount of output](#) begins to decline (and pretty rapidly), for every additional hour past about 50 in a week.

This conclusion comes from some recent research from John Pencavel from Stanford who examined output and productivity in World War II-era British munitions factories. Productivity in these factories [dropped dramatically](#) for every working hour past 50, and from about 56 working hours to 70 hours there was no discernible difference in total output. Essentially, every working hour [past 56 in a week](#) was simply wasted effort, producing nothing.

So I know what you are thinking about this data. First, you might think that 56 is a lot of weekly hours, and that you and most of your employees are not clocking in that much time each week. Well, the reduced productivity effect starts to kick in much closer to a 'normal' work week, [at about 49 hours](#). Now we are getting into whether or not that extra hour or two in a day actually has any value, a nagging thought I am sure you have had at least from time to time in 2014 when you were still at your desk at 6:25PM.

And second, you also might object to the use of 70 year-old data from a munitions factory as not being relevant to what you do—creative, varied, and knowledge-intensive 'thinking' type work. The kind of work that can't be measured in discrete quantities like "number of 40MM shells produced per hour." That might be a fair objection.

But at the same time, I bet that if you are in the "knowledge" creating game, that your productivity has even less to do with the total number of hours you devote to the effort. You may achieve the equivalent of a day's or even a week's worth of "output" in an hour or two [of inspiration and creativity](#). Maybe half a day each week spent sitting under your favorite park bench and just thinking is more valuable than a 13 hour day sitting in your cube.



The bottom line to all of this is that for the most part putting in **super high hours** at the office—say anything past 55 per week—is almost assuredly a losing strategy if sustained high performance is your goal.

And once you get into the 50-hour or so weekly count, you are in the danger zone for simply getting **more frustrated, burned out, and certainly, as this data show, less productive.**

So that's it.

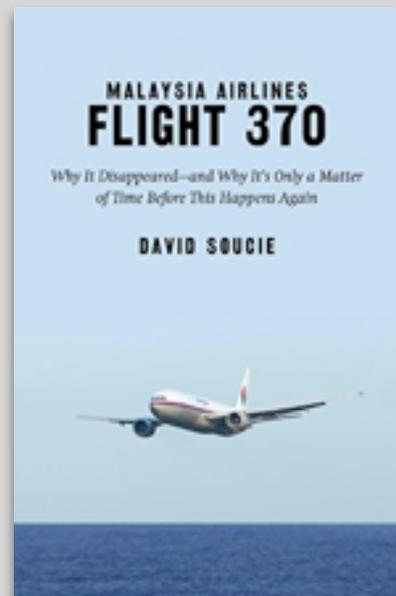
If you or your teams have been in a 50+ hours zone then I hope in 2015 you can find some ways to bring that number down. If it didn't make sense in a World War II munitions factory, (where they needed every bit of production they could get), it probably doesn't make sense in your marketing services company either.

<http://www.economist.com/blogs/freeexchange/2014/12/working-hours>

Malaysia Airlines Flight 370: Why It Disappeared—and Why It's Only a Matter of Time Before This Happens Again

On March 8, 2014, Malaysia Airlines Flight 370 loaded 239 people on board and took off for what should have been a six-hour flight. It never made it—and it's still missing. It's been a year since Malaysia Airlines Flight 370 vanished, and there's still no sign of the aircraft, its passengers, or its crew—nor confirmation of what happened or where the aircraft resides.

In this gripping investigation of the events that led to the plane's disappearance— and why they could happen again—CNN aviation analyst David Soucie exposes the flaws in the aviation industry, **shares what needs to be done** so a plane doesn't go missing again, and uses a Bayesian analysis model to reveal what most likely happened on board the plane that led to its downfall.



TED Talks - Ideas worth Spreading

Addiction

The source of addictions is not to be found in genes, but in the early childhood environment. [In The Realm Of Hungry Ghosts](#), Dr. Maté's most recent best-selling book, draws on cutting-edge science to illuminate where and how addictions originate and calls for a more compassionate approach toward the addict.



<http://drgabormate.com/>