

# Aviation Human Factors Industry News

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

Hello all,

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

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★And Much More

## Smart goggles let helicopter pilots see through fog

A sea fog has blown in and covered the heliport I'm trying to land at. But - as if by magic - I can suddenly see the sharp lines of a helicopter landing pad and airport buildings picked out clearly ahead of me. And, as I move my head from side to side, I can clearly see the terrain and symbols representing the position and flight directions of other air traffic nearby.

I'm not really at the helm of a helicopter, though. Instead, I am sitting in a simulator at the Farnborough Air Show,

UK, wearing an augmented reality headset that's been developed to allow the pilots of business jets and helicopters to take off and land **in adverse weather** like fog, torrential rain, snow and dust storms.



Unlike big jets, helicopters and small aircraft don't have expensive automatic landing aids - so if weather suddenly changes a pilot can get caught out and disaster can strike. Last January, two people died in London when the helicopter they were flying in crashed into a crane **hidden by fog**.

Called Skylens, the system comprises wearable, wrap-around smart goggles that are fed video by multispectral cameras embedded in the plane's nose - which **can see through** any weather conditions. The goggles give the pilot clear images of the terrain, overlaid with information on local air traffic - even in the worst weather. A tiny depth-sensing camera the size of a cigarette lighter, fixed on the instrument panel, tracks pilot head motion - so the images move in sync as the pilot turns their head.

### **Runway clear ahead**

The idea is that when weather closes in unexpectedly the pilot simply dons the headset and the ground and the runway become visible again.

"This gives pilots **much more confidence** as they can still look ahead and to either side as normal.

This is better than looking down at instruments to perform the landing as that disconnects you from the environment," says Dror Yahav, vice-president of commercial aviation at Elbit Systems, based in Haifa, Israel, the firm that developed Skylens.

The headset works with a plane's other onboard systems so it can display any standard symbols from flight deck instruments in the wrap-around display - including artificial horizon, airspeed and altitude. By plugging it into the Traffic Collision Avoidance System (TCAS), which monitors the positions of nearby aircraft from their radar signals, Skylens can show other air traffic too.

"We have had 150 pilots try it out so far in rain, snow, haze and dust on five different types of aircraft - [including large regional jets](#), business jets, light aircraft and helicopters," says Yahav. "They really like it."

Skylens is undergoing airworthiness certification tests and should be on the market in 2016.

But Simon Brown, a helicopter flight instructor at Helair in Wellsbourne, UK, thinks it could be a tougher sell than Elbit expects. While the technology sounds interesting, he says it might ["encourage pilots to think they are invincible and fly in dangerous conditions"](#).

"I can see this having fantastic applications in the military and search and rescue, but it is the opposite of what I teach civilian student pilots: [we don't fly in degraded visibility conditions](#)."

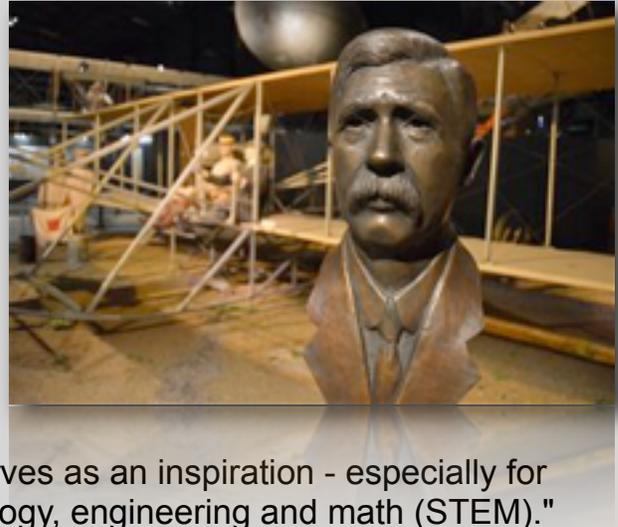
## **First aviation mechanic display added to the National Museum of the U.S. Air Force**

A bronze bust honoring the first aviation mechanic, Charles E. Taylor, is now on permanent display in the National Museum of the U.S. Air Force's Early Years Gallery.

A brilliant, self-taught man, Taylor began working in the Wrights' bicycle business in 1896, and played an important role in their flying experiments for several years. Unable to find a manufacturer who could build an engine to their specifications - weighing no more than 180 lbs. and delivering 8-9 horsepower - the Wright brothers turned to Taylor. [In just six weeks](#) Taylor designed and built the engine that made their pioneering powered flights possible.

According to Museum Director Lt. Gen. (Ret.) Jack Hudson, the Taylor bust is a fitting addition to the museum since the story of the Wright brothers cannot be fully told without him.

"The importance of Charles Taylor's role in helping the Wright brothers achieve their dream of heavier-than-air powered flight should not be understated," Hudson said. "His development of a lightweight engine for propulsion was critical, and Taylor's story of innovation serves as an inspiration - especially for those pursuing careers in science, technology, engineering and math (STEM)."



Aircraft Maintenance Technicians Association (AMTA), a non-profit organization created in 2002 [to promote Taylor for his contributions to aviation](#), the United States and those who have followed in his footsteps, commissioned Dayton artist Virginia Hess to create the bust for the museum.

According AMTA Director Ken MacTiernan, having a bust of Taylor on display at the National Museum of the U. S. Air Force will ensure that his contributions to aviation history are well remembered.

"The National Museum of the U. S. Air Force was chosen because of the respect given to the museum by its visitors worldwide," said MacTiernan. "The quality of exhibits and displays is second to none, and having the museum as a place that Taylor can call 'home' just seems highly appropriate."

In addition to the bust at the National Museum of the U.S. Air Force, AMTA has commissioned other Charles E. Taylor busts at the following locations: San Diego Air & Space Museum; Smithsonian's Steven F. Udvar-Hazy Center; American Airlines maintenance facilities in Kansas City, Mo.; Tulsa, Okla.; Alliance, Texas and Dallas-Fort Worth Airport; Le Mans Sarthe France and the United States Air Force Academy.

Among those in attendance at the ceremony included Taylor's grandson, Reuben Taylor, and great-grandson, Charles Taylor II.

The National Museum of the United States Air Force, located at Wright-Patterson Air Force Base near Dayton, Ohio, is the service's national institution for preserving and presenting the Air Force story from the beginning of military flight to today's war on terrorism.

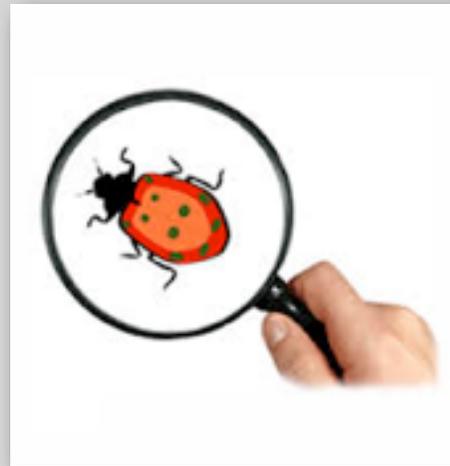
It is free to the public and features more than 360 aerospace vehicles and missiles and thousands of artifacts amid more than 17 acres of indoor exhibit space. Each year about one million visitors from around the world come to the museum.

For more information, visit [www.nationalmuseum.af.mil](http://www.nationalmuseum.af.mil).

## **Dutch find aircraft autopilot bug**

The Netherlands' air safety agency says it has **detected a glitch** that can cause airplane autopilot systems to respond in a dangerous way when a plane is attempting a steeper than normal landing approach.

In a report published Thursday, the Dutch Safety Board, which investigates disasters and potential accidents, said the glitch **in some runway technology systems** can cause the autopilot to pull up a plane's nose at the wrong moment during a steep approach, potentially leading to a stall.



The agency has notified airline safety organizations globally of the issue. Its investigation stemmed from a May 2013 incident at Eindhoven Airport, and it examined four similar incidents in Europe and 19 in the United States involving different aircraft, airports and airlines. Agency spokesman Wim van der Weegen said none of the incidents caused a crash.

Approximately 1,500 to 2,000 major runways worldwide use an Instrument Landing System, or ILS.

Describing the problem in more detail, the Dutch agency report said the ILS sends out two radio signals, one to "fly higher" and another to "fly lower," which work together to help planes coming in for a landing center on a downward glide slope of 3 degrees.

The study found that planes coming in at a slope of between 3 and 9 degrees are correctly instructed to fly lower. But if a plane approaches above a slope of 9 degrees, instruments are liable to read a false "reverse" signal instructing them to fly up. When a plane is on autopilot, its nose will pitch up, causing it to lose speed or even stall.

The agency said the essence of its recommendation is that "pilots and other professionals in the aviation sector should be aware of the existence of reversed signals ... and of the response to such signals by the autopilot."

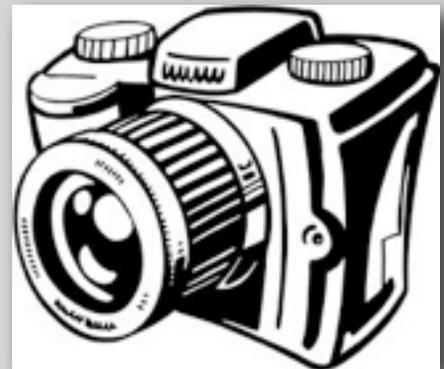
The agency added a warning that it is generally worried that over reliance on autopilots is leading to a reduction in pilots' skills.

## Namibia: Taking Photos Caused Plane Crash

Investigations into the Aircam 1999 plane crash that killed One Africa Television founder and chairman, Paul van Schalkwyk, revealed he lost control and crashed because he was concentrating more on capturing pictures. Flying the aircraft became a second priority at the time of the crash.

Van Schalkwyk (59) who was an award-winning photographer and businessman died on March 8 this year some 75km from Ondangwa airport near the Etosha national park. The businessman who was alone in the aircraft left Eros airport on March 8 for a low level flight to Ongava Lodge in Etosha to go and take pictures. The aircraft never arrived at Ongava as the deceased diverted to Outjo.

Speaking to New Era in an interview yesterday, Thomas Herman, the investigator-in charge who compiled a report of the accident for the Ministry of Works and Transport, said: "He was concentrating more on taking pictures and flying became second priority, while his aircraft did not have auto-pilot. The pictures on his camera show that moments before the crash the pilot was flying too low while taking pictures of an elephant in line with a thunderstorm in the distance. Taking pictures while flying this type of aircraft severely affects the ability to maintain a safe flight."



Further, the information obtained on his camera relating to the position of the aircraft to the elephant and the timing show that the pictures were taken during "a lot of steep turns made in close proximity to the ground".

Although Herman could not determine the exact altitude Van Schalkwyk was flying, he said the minimum height allowed to be flown in Etosha is 1 000m.

"He was however flying below 1000 meters while concentrating more on taking pictures. And in the process he lost flying situational awareness," Herman explained.

The aircraft, Herman said, was flying in a steep bank of about 45 degrees and impacted the ground with the right wing first followed by the forward section.

From the last impact the aircraft accelerated 6.3m forward, turned 180 degrees to the direction of flight and came to rest.

"The right wing was destroyed and found detached from the empennage. The forward section was destroyed by the impact, the right main under carriage was damaged and the wheel was found around 40m from the wreckage and because of the wobbling effect the tail section was found broken upward," he said.

The three propellers on the right engine were also found broken off and one piece of the propeller was found around 70m in the direction of flight from the wreckage.

The investigation into the plane crash started on March 10 and ended on June 3.

Other shocking revelations were that the camera he used was heavy and can normally only be handled with both hands during a photographic session.

"Which means that the pilot had to leave the flight control column to operate the camera which in turn makes the flying a second priority," the investigator observed.

The investigation also found out that the pilot (deceased) did not hold a micro light pilot license but merely a private pilot's license.

There was no reported communication failures between the pilot and the air traffic controller who handled the flight from Eros airport.

## Helicopter safety reports published

The UK House of Commons Transport Committee has published its report into offshore helicopter safety. The report acts as a companion to the technical report conducted by the Air Accident Investigation Branch, focusing on the May 2012 Aberdeen, and August 2013 Shetland Super Puma helicopter incidents, where both helicopters were ditched into the sea after coolant failures.

The Government report notes:

- problems with the safety briefings provided to passengers, where the passengers chose not to use the emergency breathing system, based on what they were told during the pre-flight briefing, and
- a 'culture of bullying', where staff concerns over the safety of the helicopters were ignored (although no evidence was found to suggest the Super Pumas are less safe than other helicopters).

The Government has asked for a further report from the Civil Aviation Authority as to why more helicopter incidents are reported in Norway than in the UK. The Government also notes that the impact of **commercial pressure** on helicopter safety has not been looked at in enough detail, due to commercial sensitivities making it difficult to see the contractual obligations being placed on helicopter providers.



<http://www.publications.parliament.uk/pa/cm201415/cmselect/cmtran/289/289.pdf>

## Former WECO Aerospace owner sentenced to prison for faulty airplane parts, repairs

William Hugh Weygandt was sentenced Tuesday in federal court in Sacramento to two and a half years in prison for conspiracy and fraud at his former airplane business in Lincoln and Burbank.

On Nov. 4, a federal jury in Sacramento found Weygandt guilty of a conspiracy to commit fraud involving aircraft parts and repair. Weygandt, 64, of Granite Bay, is the former owner and president of WECO Aerospace Systems Inc., which was a Federal Aviation Administration-certified air repair station with operations in Lincoln and Burbank.

[Certified air repair shops must follow federal regulations on equipment maintenance and comply with manufacturer's rules on inspections.](#)

Evidence during the three-week trial showed WECO employees in Lincoln and Burbank failed to follow FAA regulations in repairing and overhauling aircraft parts. And in many cases, WECO [did not have equipment capable](#) of performing some of the required tests.

“The jury verdict, conviction, and evidence demonstrated that Weygandt was the leader of a company engaged in fraud over a number of years. ... [He had the ability to stop the fraud.](#) ... This was, remains, and will always be a serious offense,” said U.S. District Judge John A. Mendez at sentencing, in a news release from the court.

Evidence at trial showed that the missing equipment [was sought by employees to do the work correctly, but it was not purchased.](#) The testing equipment would have cost about \$300,000.

“Federal aircraft part repair regulations are intended to promote aircraft safety,” U.S. Attorney Benjamin Wagner said in a news release. “William Weygandt allowed his company [to circumvent those regulations for profit.](#) His conviction was important in preserving the integrity and effectiveness of the FAA regulatory system.”



## Landmark victory as man wins £600,000 payout after losing arm and leg in tire blast

A lawyer has secured a landmark legal victory – which included the [setting of an international precedent](#) for future cases – by securing a German aircraft worker who lost an arm and a leg at a UK airport 750,000 euros in personal injury compensation.

The case, handled by Jane Woodcock of Neil Hudgell Solicitors, which has offices in Hull and Leeds, has taken four years to settle on behalf of the injured engineer.

The engineer, who was experienced and worked for a German airline, had been called to service a tire under the nose of an aircraft at Manchester Airport when the accident happened in November, 2008. He was handed [a faulty nitrogen rig](#) by a ground-handling company at the airport – which wrongly measured pressure in BAR rather than the internationally used psi – leading to the tire inflating to a pressure [14 times higher](#) than expected. Standing less than a meter away at the time, the worker lost an arm and a leg when the tire exploded.

An 18-month investigation by the Air Accident Investigation Bureau confirmed that the nitrogen rig used, which had been supplied by a UK company, had been faulty.

“Despite the severity of the injuries sustained I initially thought this would be a straight-forward case on liability, but in the end it was without doubt the most complicated of my career, involving solicitors and barristers on behalf of insurers in England and Germany, High Court hearings and much delicate and complicated negotiation,” said Mrs Woodcock.

His Honor Judge Brian C Forster QC found in favor of her client after deciding that the case should be determined under English law.

At the High Court in London the Judge stressed the airline could not “rely upon exclusions and limitations around German Social Accident Insurance”.

The German airline and UK ground handling company agreed a joint settlement for her client of E750,000, about £600,000.



## FAA Proposes New Cockpit Simulator Standards In Wake Of Flight 3407

The Federal Aviation Administration proposed new standards for flight simulators used in pilot training, saying [the upgrade is necessary](#) so that pilots can be taught how to avoid sudden airborne upsets such as the one that led to the 2009 crash of Continental Connection Flight 3407 in Clarence Center.

"These changes are necessary to ensure a realistic crew training environment and to prevent incorrect simulator training," the FAA said.

Federal investigators blamed the February 2009 crash, which claimed 50 lives, on pilot error. Flight 3407's pilot, Capt. Marvin D. Renslow, reacted incorrectly to a stall warning, [doing exactly the opposite](#) of what he should have done and thereby losing control of the plane. Investigators said Renslow never received simulator training in how to handle such a situation. A year later, the Families of Continental Flight 3407 pressured Congress into adopting a comprehensive aviation safety law that [boosted pilot experience requirements and requires them to get more rest](#). In addition, the law boosts pilot training in several ways, and for the first time requires pilots to receive simulator training in reacting to airborne "upsets" such as the one that occurred with Flight 3047.

While the FAA finalized its new pilot training rules last November, the agency said training simulators need to be upgraded to make sure they can actually simulate those sudden airborne upsets.

The new simulator standards quickly won praise from both the Families of Continental Flight 3407 and federal lawmakers.

"This is very much positive progress continuing toward safety," said Karen Eckert, whose sister Beverly Eckert, a 9/11 activist, was killed in the crash.

"I urge the FAA to act quickly to approve and implement these new simulators to comply with the law and [give pilots the best possible training for the safety of the flying public](#)," said Rep. Brian Higgins, D-Buffalo, who praised the proposed new simulator standards in a speech on the House floor.



In proposing the new rules for simulators, the FAA said leaving the current standards in place could be downright dangerous, given that they don't require simulators to be able to mimic all sorts of airborne upsets.

The release of the proposed standards marks the beginning of a 90-day public comment period, after which the FAA will finalize the new standards. Once the rules are made final, the agency will give simulator operators three years to comply with them. That means the simulator upgrades will have to be done before the new rule requiring more simulator training goes into effect in February 2019.

Sen. Charles E. Schumer, D-N.Y., who played a key role in the passage of the 2010 aviation safety law, said he will be watching the FAA "like a hawk" to make sure the new simulator standards get implemented. "I am pleased that the FAA has released this new proposal, which will help pilots be better prepared to handle difficult weather situations," as well as other in-flight upsets, Schumer said.

Rep. Chris Collins, R-Clarence, said, "Better-trained pilots are without question the best way to prevent a tragedy like the crash of Flight 3407 from ever happening again."

## **Report: U.S. Military Has Lost More Than 400 UAVs In Accidents**

### Issues Range From Mechanical Problems To Human Error

The U.S. military has experienced more than 400 accidents involving UAVs, according to a report appearing in The Washington Post.

The paper culled through some 50,000 pages of accident investigation reports dating back to the 9/11 attacks, and found that the unmanned aircraft have suffered from mechanical and weather issues as well as human error. The investigation looked at accident between September 11, 2001 and the end of 2013. It found 418 known accidents including 194 "Class A" accidents that resulted in the total loss of the aircraft or damages over \$2 million.



That is similar to the number of accident involving manned aircraft over the same period, but the UAVs fly "far fewer missions and hours," according to the report.

The Post reports that 47 of those accidents occurred during testing and training in the U.S. The Predator ... perhaps one of the most-recognizable of the military's UAVs, was involved in 102 Class A accidents during the period studied.

Sixty-seven of the accidents occurred in Afghanistan, with another 41 in Iraq, according to the report.

## **Cockpit invention promises to boost pilot spatial awareness**

An Australian pilot stands to revolutionize the global aviation industry with his [world-first idea](#) for a cockpit lighting system that could solve the problem of spatial disorientation.

Spatial disorientation involves pilots being unable to detect the position of their aircraft when they have no visual reference of the horizon, such as when flying in dark or cloudy conditions. It is believed to have contributed to accidents including Air France 447. Russell Crane, a South Australian pilot and businessman, has received a provisional patent for the Green Orientation Light - or GO Light – a proposed system that some aviation safety experts have called "[the most important Australian aviation invention since the black box](#)".

"The GO Light is a system of gyroscopically moving lights that will give pilots a constant reference point of the horizon in their peripheral vision, helping them stay continually aware of the plane's attitude," Crane said.

He said the idea was inspired by his experience of '[how easily the human eyes and mind can be spatially confused](#)'.



“Everyone has experienced spatial disorientation at some time or another. Think of when you’re in a car, stationary in traffic, and you get the feeling of backwards movement when the car next to you moves forward. That’s spatial disorientation,” Crane said.

Crane said spatial disorientation can occur in mere seconds when a pilot looks away from the horizon, for example, to consult a map.

“Presently, to verify orientation when there are no visual cues, the pilot has to focus on their small attitude indicator (AI) instrument. However, this verification requires the pilot to recognize that they may be disorientated and actively focus their attention on the AI,” he said.

“Many spatial disorientation-related accidents occur when [the pilot does not even realize they are disoriented](#), such as in cloud or at night.

“The GO Light mitigates unrecognized spatial disorientation and allows pilots more freedom to concentrate on their other instruments whilst maintaining an almost subconscious and accurate awareness of their attitude.”

If implemented by a manufacturer, the GO Light would be the first attitude indication instrument to provide a full illumination function that would bathe the cockpit in a field of light visible to pilots at all times.

The system’s design also includes an additional feature in which external lights on the fuselage would be replaced with pivoting lights to replicate the in-cockpit system outside the aircraft.

AvLaw International chairman Ron Bartsch – a former airline safety manager and current UNSW aviation lecturer – said that spatial disorientation [was thought to be a contributing factor in up to 32 per cent of aviation accidents](#).

“A solution to spatial disorientation is like the elusive Holy Grail of aviation safety,” Bartsch said.

“The GO Light takes the concept of the AI and turns it into a constant part of the pilot’s subconscious perception.

Watch The Animation [Here](#)

## Australia Reports on Powerplant Incidents

The Australian Transport Safety Bureau (ATSB) reported last month that with 5.5 million flight hours recorded on turbofan engines between 2008 and 2012, only 280 powerplant incidents were recorded, or about one every 20,000 flight hours. Of those 280 occurrences, 98 percent could be classified as low risk; four were classified as medium risk, two as high risk and one as a very high risk. None, however, resulted in any injuries to passengers or crew. Although the rates were low for the turbofan-powered aircraft group as a whole, there were large variations among individual aircraft models. Three aircraft types in particular—the Boeing 747 classic, the Fokker F28/F100 and the British Aerospace BAE 146/Avro RJ—had far greater rates of powerplant occurrences between 2008 and 2012 than any other aircraft studied. Although these types represented some of the older airframes, there were other fleets of similarly aged aircraft with far lower incident rates.



The ATSB said other operating conditions might need to be considered when estimating engine reliability, including the operating environments, flight cycle number (as opposed to total engine hours), maintenance procedures and the individual reporting practices of each operator.

[http://www.atsb.gov.au/media/4908943/ar-2013-002\\_final.pdf](http://www.atsb.gov.au/media/4908943/ar-2013-002_final.pdf)

## New Materials Promise Self-Healing Airplanes

A team of scientists at the University of Illinois has developed materials that can immediately respond to damage and self-repair large cracks and holes. "We have demonstrated repair of a nonliving, synthetic materials system in a way that is reminiscent of repair-by-regrowth as seen in some living systems," said chemist Jeffrey Moore.



The technology comprises two adjoining, parallel capillaries that are filled with regenerative chemicals that flow out when damage occurs. The two liquids mix to form a gel, which spans the gap caused by damage, filling in cracks and holes. The gel then hardens into a strong polymer.

"We have to battle [a lot of extrinsic factors for regeneration](#), including gravity," said study leader Scott White, an aerospace engineer. "The reactive liquids we use form a gel fairly quickly, so that as it's released it starts to harden immediately. If it didn't, the liquids would just pour out of the damaged area and you'd essentially bleed out. Because it forms a gel, it supports and retains the fluids. Since it's not a structural material yet, we can continue the regrowth process by pumping more fluid into the hole." Self-repairing materials have been developed in the past, but they were capable only of bonding tiny microscopic cracks. [The new materials can repair holes the size of a bullet](#). The team's research was supported by the Air Force Office of Scientific Research, and published in last month's issue of Science.

[http://www.youtube.com/watch?feature=player\\_embedded&v=Rb5v-Hs6800](http://www.youtube.com/watch?feature=player_embedded&v=Rb5v-Hs6800)

## **Boeing Introduces New Method For Building 777 Fuselages**

### **Fuselage Automated Upright Build Expected To Yield Safety, Quality Benefits**

Boeing is in the final phases of testing and production readiness of a new method for building 777 fuselages as part of its ongoing technology investment strategy, the company says. Known as the [Fuselage Automated Upright Build](#), or FAUB, this Advanced Manufacturing technology [improves workplace safety and increases product quality](#). This technology has been in development by Boeing since 2012.



With this new technology, fuselage sections will be built using automated, [guided robots](#) that will fasten the panels of the fuselage together, drilling and filling the more than approximately 60,000 fasteners that are today installed by hand.

FAUB offers numerous benefits including an improvement in employee safety. The nature of the drilling and filling work makes it ideal for an automated solution. [More than half of all injuries on the 777 program have occurred during the phase of production that is being automated.](#) In addition, the automated system is expected to reduce build times and improve first-time quality of the build process.

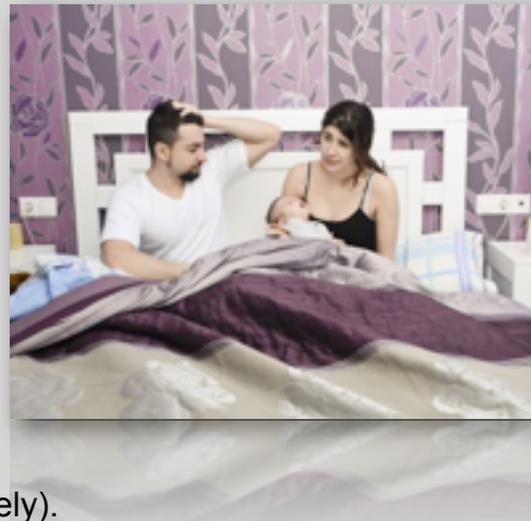
"This is the first time such technology will be used by Boeing to manufacture widebody commercial airplanes and the 777 program is leading the way," said Elizabeth Lund, vice president and general manager, 777 program and Everett site, Boeing Commercial Airplanes. "We're excited to continue improving the production process here and we're positioning ourselves to begin building 777X airplanes in the future."

The 777 program has already begun testing FAUB at a facility in Anacortes, WA. Production readiness preparations are underway and the system will be installed in Everett in a new portion of the main factory that is under construction now. The technology is expected to be implemented in the next few years.

The robotic system, designed for Boeing by KUKA Systems, is the latest in a series of strategic Advanced Manufacturing moves on the 777 program, which have already included new systems for [painting wings and other drilling operations.](#)

## **Most Common Major Stressful Event? Health. And That Impacts Sleep.**

A new NPR/Robert Wood Johnson Foundation (RWJF)/Harvard School of Public Health (HSPH) poll released yesterday that examines the role of stress in Americans' lives finds [that about half of the public \(49%\)](#) reported that they had a major stressful event or experience in the past year. Nearly half (43%) reported that the most stressful experiences related to health. More than half of those who experienced a great deal of stress in the past month say [too many overall responsibilities and financial problems were contributors](#) (54% and 53%, respectively).



More than a third of those with a great deal of stress say the contributors include their own health problems (38%) and health problems of family members (37%).

“It is not widely recognized how many Americans have a major stressful event over the course of a year, or how often health problems are the cause,” says Robert J. Blendon, Richard L. Menschel Professor of Health Policy and Political Analysis at HSPH, in a release.

Risa Lavizzo-Mourey, RWJF president and CEO, says: “Stress touches everyone. Unfortunately, many of those feeling the most stress get trapped in cycles that can be very unhealthy. If we are going to build a culture of health in America, one big step we can take is recognizing the causes and effects not just of our own stress and the stress of those closest to us, [but of others we encounter in our day-to-day lives](#). That recognition can go a long way in helping us create healthier environments in our homes, workplaces, and communities.”

### **High Levels of Stress in the Last Month**

About a quarter reported having a “great deal” of stress (26%) over just the past month. People in poor health are more than twice as likely as the public as a whole to report a great deal of stress in the past month (60%).

People who are disabled are also much more likely to report a great deal of stress (45%). Other groups likely to report a great deal of stress include those with a chronic illness (36%), those with low incomes (<\$20K) (36%), those who face potentially dangerous situations in their jobs (36%), single parents (35%), and parents of teens (34%).

### **Significant Impact on Lives**

Bad effects on emotional well-being (63%) are the most common health effect reported by those with a great deal of stress in the last month, followed by problems with sleep (56%) and difficulty in thinking, concentrating, or making decisions (50%). About half of those with a great deal of stress as well as a chronic illness or disability say stress made the symptoms worse (53%) or made it harder for them to manage their chronic illness or disability (52%).

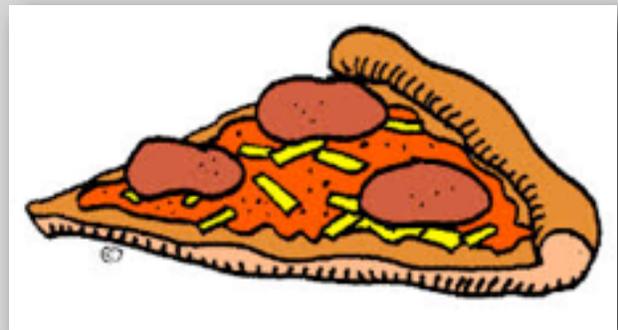
In addition, many report significant impacts from stress in other spheres of their lives. More than 4 in 10 of those under a great deal of stress in the last month report that this stress made it harder to get along with family members (45%) and prevented them from spending time with family members (44%). Half of those who experienced a great deal of stress in the last month and are employed say stress made it harder to concentrate at work (51%), and 41% say it made it harder to take on extra responsibilities that could help advance their career.

## Efforts to Manage High Levels of Stress

Those who have experienced a great deal of stress over the past month tried to reduce their stress in many ways. Most who had experienced a great deal of stress in the last month and taken steps to manage it say each of the things they did to reduce stress was effective. More than 9 in 10 say that regularly spending time outdoors (94%) or spending time on a hobby (93%) was effective. About 7 in 10 (71%) said they regularly spent time with family and friends to reduce stress, while just under 6 in 10 say they regularly prayed or meditated (57%), spent time outdoors (57%), or ate healthfully (55%). **However, less than half of respondents took certain steps to reduce their stress that are often recommended by experts, such as regularly exercising (51% did not) or regularly getting a full night's sleep (54% did not).**

## Top 10 sources of calories in the U.S. diet

According to the Dietary Guidelines Advisory Committee (a panel of 13 nutrition experts charged with helping develop federal nutrition standards), Americans are **eating many more calories** than they used to. Very few people follow the federal dietary guidelines, which recommend daily servings of dark green vegetables, orange vegetables, legumes, fruits, whole grains, and low-fat milk and milk products. Instead, we eat foods full of refined grains, sugar, fat, and calories — **just check out the list below.**



**This is one Top 10 list you don't want to make.** Take a look and see what you can do to get closer to the recommended dietary guidelines.

### What Americans eat: Top 10 sources of calories in the U.S. diet

1. Grain-based desserts (cakes, cookies, donuts, pies, crisps, cobblers, and granola bars)
2. Yeast breads
3. Chicken and chicken-mixed dishes

4. Soda, energy drinks, and sports drinks
5. Pizza
6. Alcoholic beverages
7. Pasta and pasta dishes
8. Mexican mixed dishes
9. Beef and beef-mixed dishes
10. Dairy desserts

Source: Report of the 2010 Dietary Guidelines Advisory Committee

For more on weight loss strategies, buy [Healthy Solutions to Lose Weight and Keep it Off](#), a Special Health Report from Harvard Medical School.

## **TED TALK - Ideas Worth Spreading**

How to speak so that people want to listen

Have you ever felt like you're talking, but nobody is listening? Here's Julian Treasure to help. In this useful talk, the sound expert demonstrates the how-to's of powerful speaking — from some handy vocal exercises to tips on how to speak with empathy. A talk that might help the world sound more beautiful.



[http://www.ted.com/talks/julian\\_treasure\\_how\\_to\\_speak\\_so\\_that\\_people\\_want\\_to\\_listen](http://www.ted.com/talks/julian_treasure_how_to_speak_so_that_people_want_to_listen)