

# Aviation Human Factors Industry News

**Volume X. Issue 03, February 09, 2014**



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

Hello all,

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## **FAA Clears Path for Installation of Angle of Attack Indicators in Small Aircraft**

### *Measure Could Improve Safety in Thousands of Aircraft*

The Federal Aviation Administration (FAA) today took an important step to help [improve safety in small aircraft](#) by simplifying design approval requirements for a cockpit instrument called an angle of attack (AOA) indicator. AOA devices, common on military and large civil aircraft, can be added to small planes to supplement airspeed indicators and stall warning systems, alerting pilots of a low airspeed condition [before a aerodynamic stall occurs](#), especially during takeoff and landing.



“Safety is our top priority, and with today’s announcement we are improving safety by streamlining regulations and cutting red tape – a win-win situation,” said U.S. Department of Transportation Secretary Anthony Foxx.

An “angle of attack” is the angle between a plane’s wing and the oncoming air. If the angle of attack becomes too great, the wing can stall and lose lift. If a pilot fails to recognize and correct the situation, a stall could lead to loss of control of the aircraft and an abrupt loss of altitude. Stalls can happen during any phase of flight, but they are critical when planes are near the ground and have less room to recover, such as during landing and takeoff.

AOA indicators may help prevent loss of control in small aircraft because they provide a [more reliable indication](#) of airflow over the wing. Although they have been available for some time, the effort and cost associated with gaining installation approval has limited their use in general aviation. The streamlined requirements are expected to lead to greater use of the devices and increased safety in general aviation.

“We have [eliminated major barriers](#) so pilots can add another valuable cockpit aid for safety,” said FAA Administrator Michael Huerta. “These indicators provide precise information to the pilot, and could help many avoid needless accidents.”

Under the new policy, manufacturers must build the AOA indicator system according to standards from the American Society for Testing and Materials (ASTM) and apply for FAA approval for the design via a letter certifying that the equipment meets ASTM standards and was produced under required quality systems. The FAA's Chicago Aircraft Certification Office will process all applications to ensure consistent interpretation of the policy.

The FAA believes this streamlined policy may serve as a prototype for production approval and installation **of other add-on aircraft systems** in the future.

The new AOA policy is available at: [http://rgl.faa.gov/  
Regulatory\\_and\\_Guidance\\_Library/rgPolicy.nsf/0/  
EB0FAC0C1641509586257C76005E6274?OpenDocument](http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgPolicy.nsf/0/EB0FAC0C1641509586257C76005E6274?OpenDocument)

## **To Error is Human ... But Not With Aircraft**

I want to share the following thought-provoking article written by Gordon Dupont of System Safety Services.

The very famous quote that is often used to justify our mistakes was made way back in 1709 by Alexander Pope. The second half of this quote, much less quoted, is "To forgive (is) divine." I would like to apply this 300-year old quote to our modern day profession, aircraft maintenance, and see what we can do **to lessen this human trait**.

We humans do make a lot of errors and these errors range from the trivial ("where did I leave my car keys?"), to the ultimate tragic loss of life(s). Firstly, what is an error? In its simplest form, it is "anything in which the result was not what you expected". Thus, if you are divorced, you made an error when you married. Interestingly, some of us go on to repeat the same error more than once. (has anyone been divorced twice?)

Thus, if we are to **reduce human error**, we have to learn from our mistakes.



This can be an expensive way to learn as it requires us to make an error before we react. Sadly, we don't always learn, but blame the error on being careless, stupid, dumb or just too lazy to do it right. Then it comes as a surprise when you make the same mistake again. In order to learn from our mistakes we have to first learn why we make them and what we can do to avoid making them in the future. With that understanding, we can now begin to learn from the errors we make. We can begin to create "[Safety Nets](#)" in order to ensure that we don't make the mistake again. A Safety Net is a practice or procedure that you use to help ensure that an error is not repeated. For example: you decide to always leave your keys hanging on a special hook whenever you enter the house. This will lessen the chances of you losing them somewhere. Better yet, let's try to learn from the mistakes of others as well. That is a lot less expensive and often a lot less painful. To do this we need to know about the mistakes and thus they have to be reported and analyzed.

This is where the other half of Pope's quotation comes to play – To forgive (is) divine. Giselle Richardson, a keynote speaker at a human factors symposium, informed our industry that "only the Mafia with their cement boots have a harsher discipline policy."

Often we, and others in our industry, will tend to hide the things that we don't have to report. Before most people will report their errors, they have to understand why they made the error, and trust the system to treat them fairly if they report their error. To trust the system there must be a [just culture](#) in place.

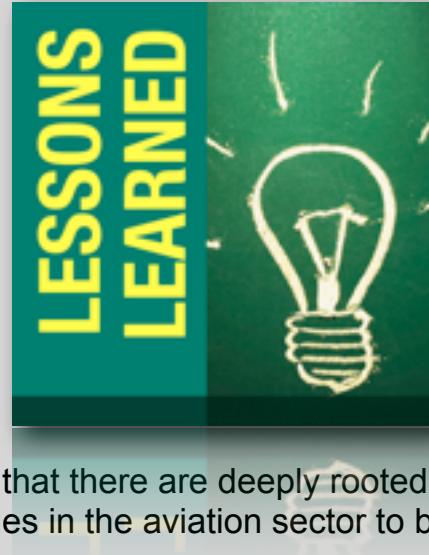
A just culture is one where any error or near miss will not result in discipline except in cases of recklessness. Recklessness must be defined as a case of an error in which the person knew there was a significant chance that an error could occur and chose to do it anyway.

These reported errors can now be analyzed (risk analyses) and corrective actions can be put in place to eliminate or lessen the chance of the error occurring. That is what a correctly functioning [Safety Management System](#) will do. What we are talking about is really very simple. We begin to sweat the small stuff so that we don't have to sweat the big stuff. We work, breathe and sweat the small stuff and with our participation, we and our industry will be Safer.

Mr. Pope had it right over 300-years ago.

## Lessons to learn from the fatal Cork Airport accident

European pilots welcome the [comprehensive accident investigation report](#) on the 2011 accident at Cork Airport, which took the lives of 6 people, including both pilots. The investigation identifies not only a probable cause of the accident but looks beneath the surface and uncovers some fundamental failings in Europe's aviation safety environment. "In the past years, many in our industry kept reassuring themselves that aviation has never been safer before," says Nico Voorbach, ECA President and an active pilot himself. "This report is a [much needed wake-up call](#) to pay attention to the growing number of signs that there are deeply rooted operational, organizational and regulatory deficiencies in the aviation sector to be addressed."



After an in-depth investigation, the Irish Air Accident Investigation Unit (AAIU) identified loss of control during an attempted go-around as the probable cause of the fatal accident. Along with that, it points [at several significant contributing factors](#) such as superficial oversight by aviation authorities, breach of existing aviation regulation by operators and company owners, insufficient pilot training, pilot fatigue and other operational and organizational deficiencies.

Among the report's conclusions are:

- Both pilots were most likely [fatigued](#) and had insufficient rest. The investigation identifies a total of five breaches of Flight and Duty Time Limitations (FTL) and Rest Requirements.
- The Operator and Authorities failed to carry out adequate safety oversight. The operator did not have sound management structures and procedures in place to ensure safe operations. Equally, the national authorities in the state of the operator (Spain) [failed to ensure](#) adequate safety oversight.
- The pilot [training had been inadequate](#) and not in accordance with EU laws. The Commander, who had made his first flight in command only four days prior to the accident, had had little continuity in his command training, and was scheduled to operate together with a recently joined co-pilot, who had not yet completed his line training with the Operator.

"The string of events described in this report makes it clear that the aviation safety system has blatantly failed," says Philip von Schöppenthau, ECA Secretary General. "Lack of oversight at various levels, inadequate training, intricate relationships between aircraft owner and different undertakings are a worrying mix. The problem is that this mix is spreading quickly in some parts of the industry, whereas oversight authorities are less and less able to keep pace and oversee operations that become very complex and hard to track."

The accident investigation report contains 11 safety recommendations to EASA, the European Commission, the Operator, the Spanish Civil Aviation Authority and ICAO. "We welcome the thorough work done by the Irish investigation authority and call on the national and European authorities to step up their efforts," says Pete Kaumanns, ECA Technical Affairs Board Director. "The accident shows why adhering solely to the letter of the law – if at all – **and not its spirit is insufficient**. Also without adequate regulation and proper safety oversight, such accidents are bound to happen again."

[Download Press Release \(pdf\)](#) | [Download AAIU Accident Investigation Report report's conclusions](#)

## **UPS Crash Probe Focuses on Fatigue as U.S. Hearing Set**

U.S. crash investigators are focusing on pilot fatigue, training and adherence to procedures in the fatal Aug. 14 crash of a United Parcel Service Inc. (UPS) jet freighter in Birmingham, Alabama.

The National Transportation Safety Board will hold a one-day hearing into the accident Feb. 20 to examine issues including whether pilots are **fit for duty** when they report to work and how well they monitor instruments and follow airline



policies, according to an e-mailed statement today. Both UPS pilots died when the twin-engine Airbus A300-600F plane struck a hillside short of the runway at Birmingham-Shuttlesworth International Airport shortly before dawn. Atlanta-based UPS is the world's largest package-delivery company.

The NTSB will call witnesses to discuss how UPS trains pilots for approaches like the one the accident crew was flying to Birmingham, which required them to stay clear of unlit hills near the runway without a radio beam to ensure they were at the correct altitude, according to the release.

The hearing will also examine how well pilots [communicate with each other, the ways they check themselves and each other](#), and "fatigue and fitness for duty," the agency said in the release.

#### UPS Response

"We have been actively engaged in the NTSB's investigation since it began," Malcolm Berkley, a UPS spokesman, said in an e-mail. "This hearing is another step in the process of determining the cause and how to avoid such an accident in the future."

The safety board will open its investigative files for the first time at the hearing. Among the items released will be a transcript of the cockpit voice recorder and preliminary reports from investigators. The NTSB's findings about the cause for the accident won't be released until later.

Runway 18 at the Birmingham airport [lacked](#) an instrument landing system, according to information released by the NTSB in the days after the crash, and a larger runway was closed at the time of the attempted landing for repairs.

As the jet approached the airport after a flight from UPS's air hub in Louisville, Kentucky, a cockpit alert warned pilots they were descending too quickly 7 seconds before the first impact, NTSB member Robert Sumwalt said after the accident.

The plane hit trees and a utility pole before striking a grassy hill and bursting into flames.

## Audio from air traffic control tower from UPS Cargo Plane crash released by FAA

Nearly six months after the fatal UPS plane crash, audio from the air traffic control tower has been released.

In the 14-minute audio clip, seven distinct voices can be heard. They include the person in the tower guiding the flight in, as well as co-pilot Shanda Fanning before she and pilot Cerea Beal Jr. were killed.



[[LISTEN TO THE AUDIO](#) -- Note that there are periods of silence included.]

The other voices are folks on the ground who are airport authority employees and the Alabama Air National Guard Fire Station.

[[READ TRANSCRIPT HERE](#)]

## Huerta Stresses Weather At Safety Summit

FAA Administrator Michael Huerta met with GA leaders recently and urged them to tell their members to [avoid weather traps](#) in the coming flying season. Huerta told the leaders at the General Aviation Safety Summit that the GA accident rate has flattened over the last six years and last year there were 259 fatal accidents that killed 449 people. He said "a top priority" with the agency is to reduce those numbers and he asked for help from the leaders. "..."



I met with general aviation leaders to jump start our efforts for this year's flying season and we agreed to work together to raise awareness to prevent weather related accidents for the upcoming flying season," he said in a statement. Huerta said the agency is also taking a fresh look at data it already has to see if it can identify safety issues. "We're also working with industry on a prototype program to use de-identified GA operations data in the [Aviation Safety Information Analysis and Sharing \(ASIAS\)](#) program to help identify risks before they become accidents," Huerta said.

## **Skiles' 'Miracle On The Hudson' Lecture Now Available Online**

Jeff Skiles' January 16 [multimedia presentation about the Miracle on the Hudson](#) commemorating the five-year anniversary of the event is now available online at Wisconsin Public Television's University Place.

Skiles, EAA vice president of communities and member programs, was first officer in the US Airways Flight 1549 Airbus A320 captained by Chesley "Sully" Sullenberger on January 15, 2009. He recounted step-by-step the events leading to the forced emergency ditching on the Hudson after a flock of geese crossed paths with the airplane, knocking out both engines.

Skiles and Sully's efforts were called heroic as the aircraft landed perfectly on the water and all 155 souls aboard survived. The presentation, which had hundreds of attendees riveted at the museum's Founders' Wing, was recorded by Wisconsin Public Television for use on its University Place website.

University Place also features several other EAA presentations and is also slated to cover upcoming EAA Aviation Adventure Speaker Series on February 20, March 20, and May 15.



<http://wpt.org/University-Place/miracle-hudson>

## **'Sully' takes on new cause: patient safety**

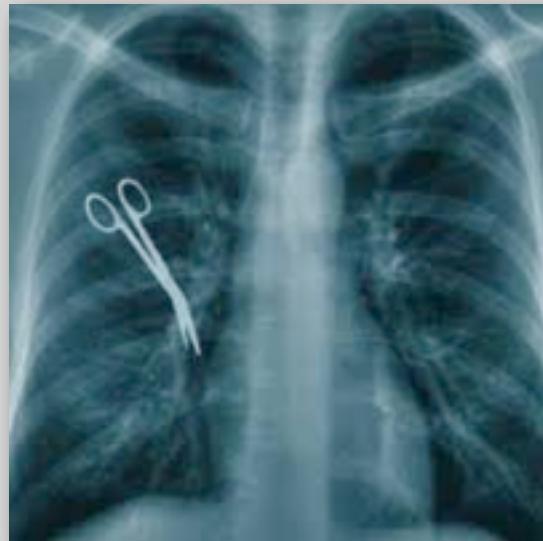
Capt. Chesley B. Sullenberger often thinks back to those three long minutes on Jan. 15, 2009, that catapulted him into history.

Shortly after an uneventful takeoff from New York's La Guardia Airport, a flock of geese struck US Airways Flight 1549. With both engines failing, Sullenberger and co-pilot Jeffrey Skiles called on more than [50 years of combined flight experience](#) to make split-second decisions in a crisis no one could have trained for, saving the 155 passengers and crew in an emergency landing on the Hudson River.

The "Miracle on the Hudson" was hailed as unique in aviation history and launched the Danville resident into the national spotlight. While "Sully" is looking forward to being in New York for events with passengers and crew commemorating the fifth anniversary, he says he never wanted the attention he says has been "absolutely traumatic and overwhelming" for him, his wife, Lorrie, and two daughters, now 19 and 21. Still, he quickly recognized his hero status [presented a unique opportunity](#) to advance causes he believes in. Since retiring in 2010, he's kept up a busy, cross-country schedule as author, speaker, safety consultant and CBS News analyst.

But the most "logical good fit," he says, has been as an [advocate for patient safety](#) in America's hospitals. "It's applying all the things we've learned for decades in aviation and making them transferable to medicine, where the need is so great," he explained in a phone interview last week.

[Preventable medical errors kill anywhere from 200,000 to 400,000 people each year](#), according to a 2013 study in the Journal of Patient Safety, making medical errors the third leading cause of death in the United States, behind heart disease and cancer. Even the 200,000 figure is "equivalent to three airline passenger planes crashing a day with no survivors," Sullenberger said. If anywhere near that number of people were dying each year in air disasters, planes would be grounded and a presidential commission launched to address the situation, he said.



Like aviation, medicine is a [highly technical and complex](#) profession with most errors caused by individual error, poor communication, defective equipment or faulty systems.

But aviation has dramatically improved its safety record over the past few decades; the last air disaster in the United States with major loss of life was in November 2001, Sullenberger said. Gone, too, are the "bad old days" when captains ruled cockpits [through arrogance and personal whim](#), he added. Airlines now run according to standard safety practices. With a somewhat flattened hierarchy, captains and crews are expected to work together as teams and share a sense of responsibility.

"Captain Sullenberger highlights the importance of having an [expert team rather than a team of experts](#)," said Peter Pronovost, director of Johns Hopkins Medicine's Armstrong Institute for Patient Safety and Quality.

Another supporter of Sullenberger's advocacy is physician Atul Gawande, author of "[The Checklist Manifesto](#)." Gawande draws the same parallel between aviation and medical safety and singled Sullenberger and his crew's actions on Flight 1549 for their "admirable adherence" to their training and safety checklists.

Sullenberger said he would "amplify" Gawande's idea to say checklists work best within cultures with effective leaders and front-line employees [who feel safe to speak up about concerns](#).

"That doesn't exist in medicine," Sullenberger said.

As captain, one of Sullenberger's checklist items was to hold crew briefings before each flight, because members often have not worked together before. Sullenberger met his co-pilot three days before Flight 1549, "but to see us in the cockpit that day, you would have thought we had been flying together for years."

Sullenberger and other patient safety advocates have called for the creation of a national agency to oversee health care, one that would investigate certain hospital deaths in order to identify systemic failures and prevent recurrence. Such an agency could apply a [non-adversarial, "root cause" analysis](#) to situations such as the death of 13-year-old Jahi McMath at Children's Hospital Oakland, in much the same way that the National Transportation Safety Board analyzes transportation accidents and prescribes possible solutions.

Sullenberger says there has been less urgency to reduce medical errors because the deaths occur individually in a fragmented system where there are "[islands of excellence within a sea of system failure](#)," he said. He concedes that reforming aviation safety is simple compared to health care, which is highly politicized among industry leaders and representatives on Capitol Hill.

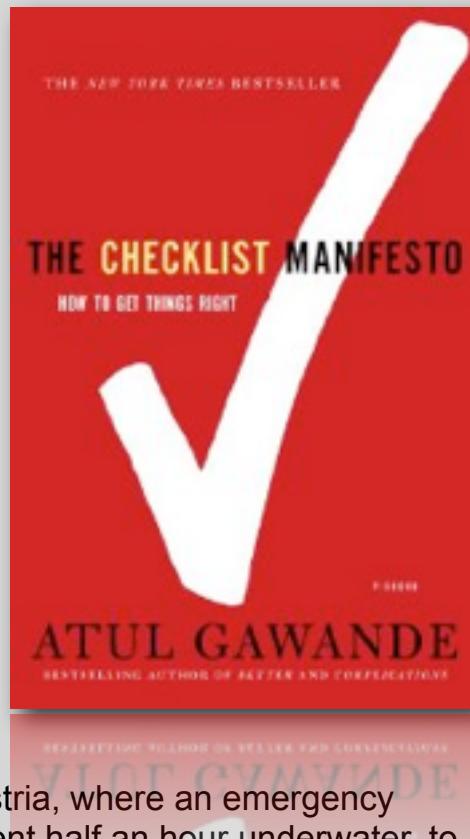
"I guess I'm the eternal optimist," he said. "I think in our society, as with every other crisis it has faced, whether it's slavery or seat belt use or smoking, we eventually do the right thing. The question is when. In 20 years, when we've lost 4 million more people to preventable deaths? My vote is to do it now."

## Checklist Manifesto - Book

We live in a world of great and increasing complexity, where even the most expert professionals struggle to master the tasks they face. Longer training, ever more advanced technologies - neither seems to prevent grievous errors. But in a hopeful turn, acclaimed surgeon and writer Atul Gawande finds a remedy in the humblest and simplest of techniques: the checklist. First introduced decades ago by the U.S. Air Force, checklists have enabled pilots to fly aircraft of mind-boggling sophistication. Now innovative checklists are being adopted in hospitals around the world, helping doctors and nurses respond to everything from flu epidemics to avalanches. Even in the immensely complex world of, a simple 90-second variant has cut the rate of fatalities by more than a third.

In riveting stories, Gawande takes us from Austria, where an emergency checklist saved a drowning victim who had spent half an hour underwater, to Michigan, where a cleanliness checklist in intensive care units virtually eliminated a type of deadly hospital infection. He explains how checklists actually work to prompt striking and immediate improvements. And he follows the checklist revolution into fields well beyond medicine, from disaster response to investment banking, skyscraper construction, and businesses of all kinds.

An intellectual adventure in which lives are lost and saved and one simple idea makes a tremendous difference, The Checklist Manifesto is essential for anyone working to get things right.



## **Canadian Smartpilot Website Offers New Videos On Upset Training And More**

### **Helps Pilots Recognize Sudden Loss Of Control And How To Correct Such Situations**

Canadian GA web portal [Smartpilot.com](http://Smartpilot.com) has recently added more new, purpose developed material. The latest additions deal with the subject of [Upset Training](#). Three segments are live now. Further installments will follow in the coming weeks.

"One of the most dangerous types of aircraft accidents are those which fall under the general heading of 'Aircraft Upsets'. This sudden, drastic loss of control of an aircraft accounts for only [17% of all accidents](#), however 80% of these incidents result in fatalities," said Ted Rankine, Project Manager. "In keeping with the purpose of SmartPilot.ca, we are presenting material that will help [create awareness and understanding](#) of the subject. It still does not replace formal training with a recognized and accredited institution, but it may just help someone one day when they need it most." The website says the videos were developed with a professional flight educator using proven techniques that have been taught to many pilots. The first installments cover an "Introduction" to the overall subject, followed by "Stall and Spin Awareness" and then "Unusual Attitudes".

Late in the Fall of 2013, SmartPilot.ca also added a "teaser" for a new feature video section entitled "VFR into IMC". The premise of this segment is based on the simple question "How long can a pilot who has no instrument training expect to live after they fly into bad weather and lose visual contact with the ground?" SmartPilot.ca put that question to the test.

"Many pilots have heard of the [178 second story](#). It is based on a study by researchers at the University of Illinois. They put twenty student "guinea pigs" into simulated instrument weather," Rankine said. "All went into graveyard spirals or roller-coasters with time intervals that ranged from 480 seconds down to 20 seconds. The average time was 178 seconds. SmartPilot.ca took 17 Canadian pilots to PrecisePilot's full motion flight simulator in Vaughan, Ontario to see firsthand what would happen. All the pilots had some instrument time and most had total times in excess of 1000 hours."



The results will be released in a video series during the first half of 2014. In the interim the “teaser” provides a fair synopsis of how it all happened.

To date, SmartPilot.ca has written, developed, produced and posted 31 new video segments that cover a dozen different subject areas. This is in addition to vast amount of existing material, articles and interactive courses that were gathered and posted to the web portal. Work continues on additional new subject matter. This will be announced in the coming months. As always access to and use of SmartPilot.ca remains totally open and free.

FMI: <http://smartpilot.ca Video Link>

<http://smartpilot.ca/airmanship/airmanship-features/143-airmanship/airmanship-features/775-vfrimc-178-seconds-smartpilot>

## **Challenger Disaster Ebook By 'Voice Of NASA' Hugh Harris Available**

Released On The 28th Anniversary Of The Space Shuttle Accident

On the twenty-eighth anniversary of the space shuttle Challenger disaster came the release of a new e-book [Challenger: An American Tragedy – The Inside Story](#) from Launch Control by Hugh Harris

Harris was chief of public information for NASA's Kennedy Space Center at the time. He delivers a gripping insider account of the events around January 28, 1986, when the space shuttle Challenger broke apart seventy-three seconds after launch – a moment that left an indelible mark on the nation's psyche.

From his unique vantage point as "the Voice of NASA," Harris takes us from the preparations for Challenger's launch, through to lift-off (Harris delivered the iconic countdown on that day), to the terrible moment when the O-ring failed, and on to the aftermath and investigation. Harris goes beyond discussing just the technology of the accident, revealing the touching stories of the people that were involved.Challenger:



An American Tragedy not only demonstrates the importance of the shuttle program and NASA, but also the necessity of man's exploration of space. As Harris writes of the disaster, "It was a chilling reminder that it is safer to sit on the ground than fly into space. But that's not an option for the human race."

## Manufacturing Defect Caused Bell 206L Blade Separation

A report by the Transportation Safety Board of Canada has detailed how the main rotor blades of a Bell 206L separated in a November 2011 accident.

The Transportation Safety Board of Canada (TSB) says in a December 2013 report that a **manufacturing defect** by a vendor for Bell Helicopter caused eight feet of a 206L LongRanger's main rotor blades to separate in flight on Nov. 2, 2011. The pilot and two passengers were killed when the aircraft, operated by Sunrise Helicopters, subsequently crashed shortly after takeoff from Kapuskasing in Ontario. The TSB report said the broken blade exhibited a complete chord-wise fracture approximately 100 inches from the tip, in addition to a significant void in the adhesive that bonded the lead weights to the blade. There were also numerous secondary fatigue cracks originating from the inner surface of the blade spar. The main rotor system, including the transmission, and the top of the fuselage separated as a unit in flight and came to rest approximately 140 feet west of the main wreckage. The engine separated from the airframe before impact and came to rest 170 feet north of the main wreckage. Various other components, which also separated in flight, were found strewn near the crash site.

Another LongRanger accident in August 2008 was also blamed on **defective blade manufacturing**. Three people died in that accident.



<http://www.bst-tsb.gc.ca/eng/rapports-reports/aviation/2011/a11o0205/a11o0205.asp>

## We Can All Prevent Aircraft Damage

We perform many of the same tasks every day without missing a beat. Suddenly, in a moment, **we forget** to walk around an aircraft, or we forget to check a parking brake, or we have other things **on our mind** and are **not paying attention** to our surroundings. It is at these times that aircraft damage can happen or even worse, someone gets hurt. With the stress of our everyday lives and the stress in our industry it is important for all of us **to be focused** on everything we do. So when we are jacking an aircraft, check to make sure the aircraft is clear. If you are using mobile platforms, ensure that all railings maintain clearance, and when staging vehicles in the vicinity of aircraft, be sure to get guideman assistance if there is any doubt as to maintaining clearance between aircraft structure and equipment. If you are in a high traffic area, or aircraft clearance from hazards is at a minimum (in or around the hangar, at the gate, etc.), get wing walkers to monitor the aircraft wing tips and tail, and before you move the aircraft, get clearance to depart from the guideman. **Be aware** of what is happening in the vicinity, use guidemen, and follow proper procedures. All of us working together can prevent aircraft damage.

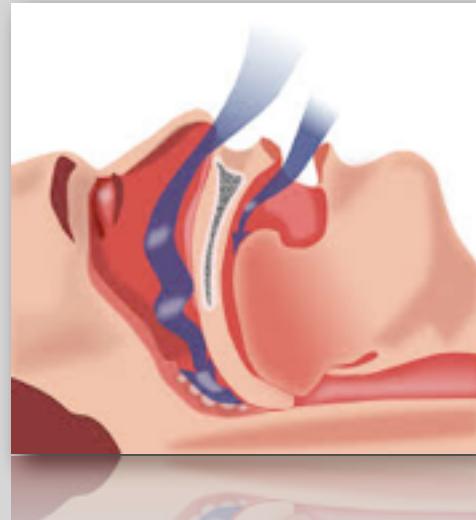


## 40% of Adults Who Suspect OSA Don't Take Diagnostic, Treatment Actions

Forty percent of adults between ages 30 and 65 who suspect that they or their spouses/partners have **obstructive sleep apnea (OSA)** have not taken action to get diagnosed and/or treated, according to a survey by [NovaSom Inc](#) NovaSom Inc and The American Sleep Apnea Association (ASAA).

NovaSom, a maker of home sleep tests, and ASAA, a nonprofit that promotes awareness of sleep apnea, polled over 500 American consumers in September 2013. The results revealed a **lack of awareness** about the latest screening and testing technologies.

Awareness of sleep apnea is fairly high, according to the survey. The majority (77%) of respondents said they are aware of sleep apnea, and many (69%) of them know someone who lives with it. Most respondents (76%) also feel that they understand the associated risks of the condition. Not everyone **feels concerned enough about sleep apnea risks** to take action. Forty percent of survey respondents who suspected themselves or their spouses/partners of having sleep apnea **did nothing about it**. Those who chose to do something discussed their concerns with their primary care physician (67%) and/or opted to complete a sleep study at a clinic or sleep lab (72%), the study found.



When respondents were asked where they would go to learn more about sleep apnea if they suspected that they or a loved one might have it, the majority of respondents (67%) said they would speak with their family doctor, followed by utilizing Google (34%) and WebMD (34%).

Awareness of screening and testing options for sleep apnea was relatively low among survey respondents. Most (88%) were unaware of online risk assessment tools for sleep apnea (e.g., the Stop-Bang and Epworth questionnaires), and over 80% were unaware that **they could test at home** for sleep apnea, without visiting a sleep facility. Interest in home testing options for sleep apnea is high. More than 80% of respondents would prefer to take a home sleep test over a sleep lab test, with the top reason being the "ability to sleep in my own bed," followed by "ability to take the test at a time that is convenient for me."

"The results of this survey validate the need to **increase consumer awareness** of sleep apnea risk factors and the convenient testing options that are available through their doctor, whether ultimately ordered by a family doctor, sleep specialist, or other medical practitioner," says John Spitznagel, Chief Executive Officer of NovaSom, in a release.

<http://www.sleepapnea.org>

## 5 of the best exercises you can ever do

If you're not an athlete or serious exerciser — and want to work out for your health or to fit in your clothes better — the gym scene can be intimidating. Just having to walk by treadmills, stationary bikes, and weight machines can be enough to make you head straight back home to the couch.

Yet some of the best physical activities for your body **don't require the gym** or that you get fit enough to run a marathon. These "workouts" can do wonders for your health. **They'll help keep** your weight under control, improve your balance and range of motion, strengthen your bones, protect your joints, prevent bladder control problems, and even ward off memory loss. No matter your age or fitness level, these activities can help you get in shape and lower your risk for disease:



1. **Swimming.** You might call swimming the perfect workout. The buoyancy of the water supports your body and takes the strain off painful joints so you can move them more fluidly. "Swimming is good for individuals with arthritis because it's less weight bearing," explains Dr. I-Min Lee, professor of medicine at Harvard Medical School. Research finds that swimming can improve your mental state and put you in a better mood. Water aerobics is another option. These classes help you burn calories and tone up.
2. **Tai Chi.** **Tai chi** — a Chinese martial art that incorporates movement and relaxation — is good for both body and mind. In fact, it's been called "meditation in motion." Tai chi is made up of a series of graceful movements, one transitioning smoothly into the next. Because the classes are offered at various levels, tai chi is accessible, and valuable, for people of all ages and fitness levels. "It's particularly good for older people because balance is an important component of fitness, and balance is something we lose as we get older," Dr. Lee says.

Take a class to help you get started and learn the proper form. You can find tai chi programs at your local YMCA, health club, community center, or senior center.

3. **Strength training.** If you believe that strength training is a macho, brawny activity, think again. Lifting light weights won't bulk up your muscles, but it will keep them strong. "If you don't use muscles, they will lose their strength over time," Dr. Lee says.

Muscle also helps burn calories. "The more muscle you have, the more calories you burn, so it's easier to maintain your weight," says Dr. Lee. Strength training might also help preserve your ability to remember.

Before starting a weight training program, be sure to learn the proper form. Start light with just one or two pounds. You should be able to lift the weights 10 times with ease. After a couple of weeks, increase that by a pound or two. If you can easily lift the weights through the entire range of motion more than 12 times, move up to slightly heavier weight.

4. **Walking.** Walking is simple yet powerful. It can help you stay trim, improve cholesterol levels, strengthen bones, keep blood pressure in check, lift your mood and lower your risk for a number of diseases (diabetes and heart disease for example). A number of studies have shown that walking and other physical activities can improve memory and resist age-related memory loss.

All you need is a well-fitting and supportive pair of shoes. Start with walking for about 10-15 minutes at a time. Over time you can start to walk farther and faster until you're walking for 30 to 60 minutes on most days of the week.

5. **Kegel exercises.** These exercises won't help you look better, but they do something just as important — strengthen the pelvic floor muscles that support the bladder. Strong pelvic floor muscles can go a long way toward preventing incontinence. While many women are familiar with Kegels, these exercises can benefit men too.

To do a Kegel exercise correctly, squeeze and release the muscles you would use to stop urination or prevent you from passing gas. Alternate quick squeezes and releases with longer contractions that you hold for 10 seconds, and the release for 10 seconds. Work up to three 3 sets of 10-15 Kegel exercises each day.

Many of the things we do for fun (and work) count as exercise. Raking the yard counts as physical activity. So does ballroom dancing and playing with your kids or grandkids. As long as you're doing some form of aerobic exercise for at least 30 minutes a day, and you include two days of strength training a week, you can consider yourself an "active" person.

For additional information on this and other questions about getting started on a healthy exercise program, buy the Special Health Report, [Exercise: A Program You Can Live With](#) from Harvard Medical School.

## **Inspiration - Teamwork and High Fives**

### Absolute Aircraft Design Painting Challenge



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