

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:

★Irrefutable Truth

★Here's Why Flying Is the Safest Mode of Transportation

★Serious incident: Wrong thrust setting, long takeoff of Boeing 747-8 at Tokyo-Narita, Japan

★Why is it ALWAYS the Pilot's Fault

★Paper Cites Beneficial Effects of Playing Video Games

★Errare Humanum Est

★Fatal GA Accident Rate in France Sharply Reduced

★FAA Is Taking Advice It Earlier Rejected to Prevent Jets Missing Runways

★Fly Safe: Prevent Runway Incidents

★8 Easy-To-Miss Preflight Items

cused on a task he may be oblivious to the environment around him or her.

Fire bottle carts are a necessary part of aircraft maintenance safety. However, without proper [operational risk management](#) they could be dangerous if not locked in placed properly.

12. Norms – Statements like [“It’s just the way we do things around here,”](#) are unwritten rules around the workplace. Some norms are force of habit and/or peer pressure. In late September 2016, VR-61 at Naval Air Station Whidbey Island, experienced a near mishap.

VR-61 operates C-40A aircraft conducting Navy Unique Fleet Essential Airlift missions around the world.



The morning of the event, maintenance control tasked three [highly motivated airframers](#) to align two fire bottle carts positioned in the back of VR-61’s hangar. The team consisted of two second class petty officers as observers, handlers, and guides; and a third class petty officer as the support equipment operator. The equipment used for this evolution included an A/S32A-48 tow tractor and two commercially obtained AFFF fire bottle trailers. These trailers each weigh approximately 12,000 pounds and support firefighting requirements when conducting offsite aircraft maintenance. Before the evolution, [the team reviewed the location and desired placement of the trailers.](#)

The movement of the first trailer was successfully completed without any issues. The second trailer movement was the greater challenge based on its initial position inside the hangar.

Slowly, safely, and as a team they pushed the second trailer outside the hangar until they gained enough clearance to maneuver the trailer into its final position. Once they had the appropriate clearance, they carefully shifted the tow tractor into drive to execute a near 90-degree turn of the trailer to align it with the first one. Once the trailer was in its correct location, the team moved to the next step of removing the tow bar.

Before the trailer could be disconnected from the tow tractor, one of the observers slowly jacked down the tongue jack. Once the tongue jack was fully retracted and appeared to be secured, the petty officer moved to the front of the tow bar to demonstrate and assist the other petty officer with unlatching the tow tractor's locking mechanism from the trailer tow hitch. **Unknowingly, the locking pin on the tongue jack had not been installed** and upon release of the locking mechanism, the fire bottle trailer's front end hit the deck and the entire cart rolled backwards. Both petty officers investigated the unintended movement and discovered the locking pin for the tongue jack **was never installed**. The weight of the trailer and the unrestrained condition created a potential hazard of property damage and a danger to personnel.

While no personnel injuries or property damage were reported, the incident could easily have been prevented.

During the post-evolution hot wash, the team concluded that personnel should have ensured the locking pin was securely in place, **and chocks were installed** to prevent the trailer from rolling backwards when unlatching the tow tractor's locking mechanism. The team also made great recommendations including the installation of a spring-loaded locking mechanism on the tongue jack and/or affix a warning placard to properly install the locking pin to secure the jack in place.

The human - errors in this incident or any can be caused by a **single dirty dozen infraction or multiple ones**. Hazards like these can be identified and mitigated by practicing **operational risk management (ORM)**, which is key to preventing mishaps. By applying the principles of ORM to each task, personnel can recognize hazards and create actionable plans to mitigate potential injury to personnel and property damage.

Here's Why Flying Is the Safest Mode of Transportation

Don't let fear of flying keep you from booking a trip abroad.

Catastrophic events in air travel, like the tragedy of Malaysia Airlines Flight 370 (which disappeared along with its 239 passengers and crew) may explain why 1 in 3 Americans either [feel anxious](#) or [scared to fly](#). Flight phobics are sometimes so afraid of air travel, they'll even find alternative routes to their chosen destinations. But is it really safer to drive or to take a boat than it is to fly?



Spoiler alert: it's not.

Every year, the United States Department of Transportation (DOT) shares statistics on the number of fatalities by mode of transportation. To compare the relative safety of each mode, [we looked at the most recent set of data](#) published by the Bureau of Transportation.

Safety on the Highway

Driving on the highway is, statistically speaking, the most dangerous way to travel. [Drivers have a 1 in 114 chance of dying](#) in a motor vehicle crash, and a 1 in 654 chance of dying as a car occupant. Out of the 35,092 highway fatalities in 2015, 12,628 were passenger car occupants, 9,813 were occupants in small trucks (e.g. pickups, vans, utility vehicles), and 4,976 were motorcyclists.

Safety on the Railroad

In 2015, 749 people were killed in railroad accidents. Sixty percent of these accidents were a result of trespassing, so train travel is mostly safe for those who take a train to work or use Amtrak to venture from one part of the country to the next.

Safety in the Water

Traveling by boat also comes [with little risk](#). There were 692 boating fatalities in 2015; however, 90 percent of these cases were caused by [recreational boating](#), and were not passenger-related.

Safety in the Air

Since you only have a 1 in 9,821 chance of dying from an air and space transport incident, flying is actually one of the safest forms of transportation. The DOT and the National Transportation Safety Board only have preliminary statistics for 2015, but for 2014, they reported 444 aviation-related deaths. [To put that in perspective](#), the Bureau of Transportation Statistics recorded some 848.1 million airplane passengers on flights to and from the U.S. that same year.

Safety on Public Transportation

If it's available to you, public transportation is the safest option out there. The DOT reported [only 30 passenger-related deaths](#) in 2015.

So why are people more afraid of flying?

Chalk it up to risk perception. Devastating events such as plane crashes grab our attention, induce fear, and tend to stick in our minds, [giving us the false impression](#) that these events are common occurrences no matter how infrequently they happen.

Research also shows that people generally feel more anxious when facing an uncontrollable or involuntary threat, as opposed to one is under their perceived control. Despite the fact that [speeding accounted for 9,557 deaths in 2015](#), drivers may feel less anxious behind the wheel because they believe they are in complete control of their safety.

Air travelers, on the other hand, must cede that power to flight crew, and cannot choose how unforeseeable threats and dangers are dealt with.

If you have a fear of flying, you can combat that fear by equipping yourself with knowledge (like how relatively safe it is) and with a variety of techniques ahead of your next flight.

Choose a seat at the front of a plane for a less bumpy ride, or face that fear head on with a flying lesson. British Airways, for example, offers classes that aim to reduce anxiety by teaching you how planes stay up in the air.

Another option is to [download](#) the SkyGuru app to know exactly what's happening (and what to expect) on your flight in real time. By learning how safe it is to actually fly, you can spend your next flight thinking less about the plane and more about the trip.

<http://flyfright.com/statistics/>

https://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/publications/national_transportation_statistics/html/table_02_01.html_mfd

<http://www.nsc.org/learn/safety-knowledge/Pages/injury-facts-chart.aspx>

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<http://www.psychologytoday.com/articles/200801/10-ways-we-get-the-odds-wrong>

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4181910/>

<http://www.nhtsa.gov/risky-driving/speeding>

<http://www.travelandleisure.com/travel-tips/mobile-apps/fear-of-flying-app>

Serious incident: Wrong thrust setting, long takeoff of Boeing 747-8 at Tokyo-Narita, Japan

A serious incident of a Boeing 747-8F of Polar Air Cargo was revealed on 9th August, 2017. In the night of 15th July, 2017, just **19 minutes before the curfew**, flight PAC/PO213 to Shanghai Pudong International Airport was taking off from runway 16L (2500 m/8202 ft long) at Tokyo/Narita.

The freighter became airborne just 85 m/279 ft from the departure end of the runway. However, the altitude should have been more than 10.7 m/35 ft at 326 m/1070 ft (15% length margin) from the departure end. No personal injuries were reported, and there were no further trouble for the rest of the flight.

A fence near the runway 16L departure end was damaged by the engine exhaust. A resident under the departure course reported household effects **were blown away** by the plane.

Polar Air Cargo explained that this occurrence was due to an **erroneous thrust setting at the takeoff**. JTSC launched an investigation as a serious incident similarly to overrun accidents.



Why is it ALWAYS the Pilot's Fault?

Read any given NTSB accident investigation and you will find that the pilot is at least partially responsible for the accident. If it is not the pilot's stick and rudder skills, it's the pilot's **decision-making** prior to or during the flight that is identified as the cause, or a contributing factor. The pilot rarely escapes some of the blame and, unfortunately, rightfully so! Pilots need to come together to collectively—and individually—address the 'human in the loop.'



An area where **human factors** are repeatedly identified as contributing to the accident is in **Loss of Control Inflight (LOC-I)**. Every four days, a fatal accident occurs due to LOC-I.¹ The statistics are staggering and although each incident could likely result from one or more primary causes of LOC-I—environmental, systems anomalies, and human factors—they almost all **include contributing errors** made by the flight crew.

As pilots, our collective reaction is often **denial**. Certainly we are not the issue? Other pilots make those types of NTSB-noteworthy mistakes. It is their poor reaction to a system anomaly or their carelessness that led to flight into a convective front that put them in a position where they are left with very few options. However, the reality is that **there is a human factor to almost every aviation accident**, and we need to address it.

Questions We Must Ask Ourselves Before Every Flight

There are three simple questions that we must ask ourselves before every flight that can help effectively **manage and mitigate** the potential for degraded cognitive ability of the 'human in the loop':

1. **Did you sleep for eight hours?**
2. **Are you hydrated?**
3. **How do you feel overall?**

Early in my flying career I was working with a new pilot just prior to his Navy aircraft carrier qualifications. Let's call that pilot 'Blaze.' Aircraft carrier qualifications are just that: new pilots landing on the aircraft carrier for the first time. In our story, it was in an F-14 Tomcat. Carrier qualifications require very significant practice time dedicated to the landing pattern. Each new pilot flies literally hundreds of 'passes' at a practice field, day and night, before ever going to the actual ship. The field does not move, pitch, or roll, so overall it is generally a more peaceful experience. Every time someone mentions [human factors](#), I think of this one flight. It was an otherwise beautiful day and we were making the base-to-final turn when Blaze announced that he did not have his normal digital cues required to make a successful landing on the carrier. I queried him on the status of the landing gear and, almost magically, his digital cues appeared and his landing systems were now in a GO status (largely because the landing gear was now extended).

I had previously flown hundreds of passes with Blaze without any issues. I was certain this would just be another day of practice until it wasn't. At 500 feet, 30 degrees angle of bank, on final approach [with the gear up](#). In the debrief, Blaze quickly told me how he [hadn't gotten much sleep the night before](#), hadn't had any water that day, and was exhausted. Blaze was officially off his game with regard to those three simple questions before we ever took off, and had failed to address his physiological status with me, his instructor.

The Effect of Lack of Sleep and Dehydration on Pilot Performance

A pilot fatigue study conducted in 2012 still proves true today. John Caldwell confirmed that, "[The combination of insufficient sleep and circadian factors is at the heart of the fatigue problem in any operational context.](#)" He later goes on to say, "As a society, we must come to grips with the fact that the average adult needs 7-9 hours of sleep every single day... *and there is no amount of willpower, professionalism, training, or money that will prevent the performance losses associated with the failure to routinely acquire sufficient sleep.*" Each pilot needs to [take responsibility](#) for a sleep schedule that meets their flight schedule, and to understand the debilitating effects of lack of sleep on performance.

There are any number of studies that all corroborate the linkage [between hydration and performance](#). In young and old, independent of gender or physical fitness, dehydration has a direct negative effect on cognitive function and other performance metrics, especially during times of stress.

“Being dehydrated impairs performance in tasks that require attention, psychomotor, and immediate memory skills, as well as assessment of the subjective state.” Those are the very skills that we, as pilots, rely on most, especially during an airborne emergency. In this day and age, even drinking water seems to take too much time. Really? Medical recommendations for daily water intake range around **12-15 cups for men and 10-12 for women**, but all recommend drinking enough to keep one’s urine clear. Sounds like good advice if it keeps our cognitive function at its peak and eliminates fatigue.

How goes it?

The last significant consideration that every pilot should assess before each flight is an overarching ‘*how goes it*’ regarding **overall physical, mental, and emotional well-being**. It is rare indeed that you will have no complaints in any of these areas, but your awareness of them ahead of your flight, and your careful and considered mitigation of them is critical to a safe evolution. You are responsible for a highly complex task while flying, and anything that reduces your substantial skill as a pilot may end up reading as a ‘**contributing factor**’ in an accident investigation. There are several available checklists that address human factor risk, and provide methodologies for mitigating that risk, including **IM SAFE** (Illness, Medication, Stress, Alcohol, Fatigue, Eating) and others. But only if you take the time to consider and address them will you remain at your peak piloting performance.

“Aviation in itself is not inherently dangerous. But to an even greater degree than the sea, it is terribly unforgiving of any carelessness, incapacity or neglect.” We have all heard this quote at some point over the years. Every pilot has a responsibility to help eliminate carelessness, incapacity and neglect—the **human factor**—from aircraft accidents.

Paper Cites Beneficial Effects of Playing Video Games

The authors of a paper published in the journal Human Factors -- human factors/ergonomics researchers -- evaluated whether casual video game play is an effective way to combat workplace stress during breaks.

People who feel stressed during their work day **could benefit** from playing video games, the authors of a paper recently published in the Human Factors and Ergonomics Society's journal *Human Factors* concluded. More than half of Americans report they experience **cognitive fatigue** related to stress, frustration, and anxiety while at work. People who work in **safety-critical fields**, such as air traffic control and health care, are at greater risk for cognitive fatigue, which can lead to errors. The authors of the paper -- human factors/ergonomics researchers -- evaluated whether casual video game play is an effective way to combat workplace stress during breaks.



In their article, "Searching for Affective and Cognitive Restoration: Examining the Restorative Effects of Casual Video Game Play," Michael Rupp and co-authors used a computer-based task to induce cognitive fatigue in 66 participants, who were then given a five-minute rest break to played a video game, participate in a guided relaxation activity, or sit quietly in the testing room without using a phone or computer. They measured participants' stress level and cognitive performance.

Those who took a silent rest break reported that they felt less engaged with work, which worried them, and those who participated in the guided relaxation activity had lower negative affect and distress. **But only those who played the video game reported they felt better after taking the break, according to HFES.**

<http://www.hfes.org/http://journals.sagepub.com/doi/abs/10.1177/0018720817715360>

Errare Humanum Est

As a pilot, have you ever skipped a weather briefing? Rushed a preflight? Skipped a checklist? If the answer is yes, you'll want to read this:



“[Errare Humanum Est – To Err is Human](https://adobe.ly/2toAmM5)” in the July/Aug issue of *FAA Safety Briefing* (<https://adobe.ly/2toAmM5>).

You can download the entire issue here at www.faa.gov/news/safety_briefing/2017/media/JulAug2017.pdf.

Fatal GA Accident Rate in France Sharply Reduced

Fatal accidents involving general aviation (GA) aircraft in France, as well as the number of fatalities, **dropped significantly** last year compared to 2015. According to the recently issued annual report from the country's safety investigation agency, the 2016 figures are the lowest in more than a decade.

Last year, 37 people died in 30 crashes of GA airplanes, microlights and helicopters, compared with 64 deaths in 46 accidents in 2015. The number of fatal general aviation accidents involving only fixed-wing, non-microlight aircraft in 2016 was “relatively stable compared to the previous three years,” the report said.



“On the other hand, while the number of fatalities was comparable to 2015, it was sharply lower than in 2013 and 2014.” There were 11 fatal accidents in such fixed-wing GA aircraft last year versus 10 in 2015, 14 in 2014 and 13 in 2013.

Apart from 2012, which was “exceptional” (when seven people died in five crashes), the number of fatalities in airplanes in 2016 was the lowest observed over the past 10 years. There were 10 such fatalities last year versus 17 in 2015, 22 in 2014 and 31 in 2013. Five of the 11 fatal accidents in 2016 were linked to continuing VFR in IMC. Four crashes were due to loss of control on takeoff (two cases), one on a go-around and one involving low-level flying.

<http://ea.ecn5.com/Clicks/TDdJeEg0STIiTEttd1Y5ckdXc2JTbTVyUUtBbU9FNFU5bTVIL0dDcmM3UzM4VmltM0djMFpSWmVPS2prTHBPU0g3a0N4TzRFUEhJMEozY3ExQ2ozdmc9PQ%3d%3d>

FAA Is Taking Advice It Earlier Rejected to Prevent Jets Missing Runways

The U.S. Federal Aviation Administration is implementing recommendations it **rejected six years ago** that could have prevented pilots from nearly landing last month on a taxiway crowded with jetliners awaiting takeoff in San Francisco.

The National Transportation Safety Board in 2011 recommended a **software upgrade** to ground radar systems that would warn when a plane is landing in the wrong place. But the FAA dismissed the recommendation, declining to even study whether it was feasible, according to government records.



In an announcement issued since the San Francisco near-collision, the FAA says it has begun over the past year doing what the safety board recommended and testing could begin in a few months.

"We believe recent technological advances may now enable us to modify our ground surveillance systems to detect aircraft [that are lined up to land on taxiways](#)," the agency said Friday in an emailed statement.

Air Canada Flight 759 was approaching the San Francisco International Airport just before midnight on July 7. Instead of heading for the runway, pilots lined up about 500 feet to the right, aiming for a parallel stretch of pavement where four planes were preparing for takeoff, according to the NTSB. The tails of the first two planes on the ground were about 56 feet high, just three feet below the landing plane's lowest altitude, according to the safety board.

["Where's this guy going?"](#) a pilot in a United Airlines plane that was at the head of the line said in a radio call to the airport tower. The air-traffic controller didn't warn the Air Canada pilots until after the cockpit crew had already aborted the landing.

The potential risks of such a collision have been highlighted by several similar instances in the past, including when actor Harrison Ford landed a small plane on a taxiway in February at John Wayne Airport in California.

The NTSB examined the issue in 2009 after a Delta Air Lines Inc. plane touched down on a taxiway in Atlanta. No one was hurt because there were no other aircraft on the taxiway at the time. The safety board concluded the [crew's abilities were degraded by fatigue after an all-night flight](#).

As part of that investigation, the NTSB found that an existing radar system at major airports could be adapted to warn controllers if a landing plane was headed to a taxiway instead of a runway. This was critical, according to NTSB, because controllers stationed in airport towers often can't tell whether an arriving plane is properly lined up for a runway.

Warning Opportunity

Investigators contacted what is now Saab Sensis Corp., a division of Sweden-based Saab AB, to see if its system that tracks planes on the ground would help.

Officials at Sensis concluded the technology, known as ASDE-X, could be programmed to detect a potential errant landing as far as 0.75 miles from the airport at Atlanta, according to a March 2, 2011, recommendation letter by NTSB.

"Such a warning would afford air traffic controllers the opportunity to assess the situation and provide instructions to a flight crew that would prevent a taxiway landing or potential collision with aircraft or vehicles that may be on the taxiway," NTSB wrote.

The safety board, which investigates accidents but has no regulatory authority, called on FAA to conduct a broader feasibility study and to upgrade the warning system where possible.

Randolph Babbitt, the FAA's administrator at the time, responded later that year that the ASDE-X [system wasn't up to the task](#), according to NTSB records of correspondence in the case. ASDE-X's primary job is to warn controllers when there's a risk of a plane colliding with another aircraft or vehicle on a runway. Adding a taxiway warning would degrade the system's primary mission of preventing runway collisions, Babbitt wrote.

"Simply concluding that the performance tradeoffs would outweigh the safety benefits of providing the recommended capabilities without performing the review ... does not constitute an acceptable response to these recommendations," the NTSB wrote in response.

As part of its formal system of tracking recommendations, the NTSB classified it as ["closed -- unacceptable action."](#)

A more recent taxiway landing, this one involving an Alaska Air plane in Seattle in 2015, helped prompt the agency to refocus on trying to develop a technological solution, according to the FAA. No other planes were on the taxiway and there were no injuries.

The upgrade was also made possible by recent software improvements in how the ASDE-X system tracked arrivals, the agency said.

"The FAA since last year has been working to modify the systems so they will also capture aircraft that are lined up for taxiways," the agency said in an emailed statement. "The agency expects to begin testing some modified systems in a few months."

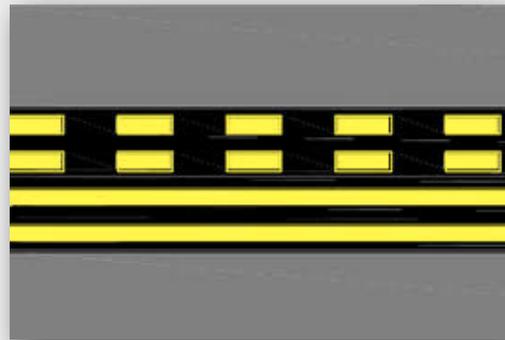
Fly Safe: Prevent Runway Incidents

After a busy flight, you might think the challenging bits are all behind you as you're taxiing across your airport's surface, **but that is no time to let your guard down**. In fact, pilots need to be extra vigilant when it comes to runway safety.

What is runway safety? It's your active participation in making sure the beginning and the conclusion of your flight are safe. It means everyone sharing that airport surface, including pilots and airport vehicle drivers, stays vigilant, follows directions, and remains alert. Ground operations require your full attention until you park your aircraft.

Runway safety continues to be one of the FAA's highest priorities. Pilot deviations are of particular concern due to their potential for a collision. The greatest loss of life in a single airplane accident was the result of a runway collision in which 585 passengers and crew lost their lives when two 747 aircraft collided on the island of Tenerife.

By remaining alert on the airport surface, you can help avoid collision risks like runway incursions, where an unauthorized aircraft, vehicle, or person is on a runway and is adversely affecting runway safety. Actions that could lead to a runway incursion include taxiing or taking off without clearance, deviating from an assigned taxi route, or failing to hold short of an assigned clearance limit.



How big a problem is this? The FAA has devoted many resources, including a dedicated Runway Safety office, to raising awareness among pilots and providing continuing education on the topic. There's a lot of information available to you, and it is a good idea to review these resources on a regular basis

- You can begin by knowing your airport's layout, including ["hot spots,"](#) which are locations on an airport movement area where there is a history of runway incursion. These hot spots need your undivided attention.
- You also need to know how to quickly read and understand signs and markings that you see on the runway and airport movement areas. One of the most critical markings on the airport surface is the runway holding position marking (four yellow stripes – two solid, two dashed). You will need proper clearance from air traffic control to cross this line when approaching a runway from a taxiway.

To ensure pilots see these markings, the FAA developed an [enhanced taxiway centerline](#) that helps alert pilots that they are approaching a runway. The enhanced centerline consists of a series of staggered dashed lines on either side of the yellow taxiway centerline, 150 feet from the runway holding position markings. These markings are required at Part 139 airports, but they're becoming more common at many smaller GA airports, too.

- Elevated runway guard lights or ["wig-wag" lights](#), are also used at many airports to help pilots identify a runway holding position. These lights may be elevated at either side of a taxiway or used as a series of in-pavement lights across the holding position marking.

The FAA is also working to further standardize airport signage. Brightly-colored signs are now being used to alert pilots to airport construction projects.

New lighting advancements, including brighter lights and runway status lights (RWSLs), are being used at more airports. RWSLs use surveillance data to illuminate and warn pilots it is unsafe to enter, cross, or take-off on a runway. Electronic message boards, apps for your phone or tablet, and ADS-B technologies are also being developed to ensure that ALL phases of your flight remain safe.

Learn more:

The FAA's [Runway Safety webpage](#) has lots of diagrams, hot spots and videos for you to review.

The FAA [Airport Safety Information Video Series](#) helps you visualize the challenge of runway safety operations, and each video provides helpful tips for staying safe.

This [FAA Fact Sheet](#) (PDF) will help you avoid Pilot Deviations.

The following FAA Safety Briefing articles cover runway safety:

- [“There’s Light at the End of the Runway – Using Data to and Technology to Improve Runway Safety\(PDF\),”](#) Jan/Feb 2014
- [“It Can Happen to You – A Runway Incursion Confession \(PDF\),”](#) Sep/Oct 2013
- [“It Can Happen to Anyone – Lessons Learned from a Runway Incursion \(PDF\),”](#) Nov/Dec 2011
- [“Avoiding Runway Incursions–It’s All In Your Head \(PDF\),”](#) Mar/Apr 2010

The [FAASafety.gov](#) website has Notices, FFAST Blasts, online courses, webinars and more on key general aviation safety topics.

Check out GA Safety Enhancements fact sheets on the main [FAA Safety Briefing](#) website, including Flight Risk Assessment Tools.

The [WINGS Pilot Proficiency Program](#) helps pilots build an educational curriculum suitable for their unique flight requirements. It is based on the premise that pilots who maintain currency and proficiency in the basics of flight will enjoy a safer and more stress-free flying experience.

The [General Aviation Joint Steering Committee \(GAJSC\)](#) is comprised of government and industry experts who work together to use data to identify risk, pinpoint trends through root cause analysis, and develop safety strategies to reduce the risk of GA accidents.

The GAJSC combines the expertise of many key decision makers in the FAA, several government agencies such as the National Aeronautics and Space Administration, and stakeholder groups. Industry participants include the Aircraft Owners and Pilots Association, Experimental Aircraft Association, General Aviation Manufacturers Association, Light Aircraft Manufacturers Association, National Business Aviation Association, National Air Transportation Association, National Association of Flight Instructors, Society of Aviation and Flight Educators, and the aviation insurance industry. The National Transportation Safety Board and the European Aviation Safety Agency participate as observers.

http://links.govdelivery.com/track?type=click&enid=ZWFzPTEmbXNpZD0mYXVpZD0mbWFpbGluZ2lkPTlwMTcwODA0Ljc2NjgyNjgxJm1lc3NhZ2VpZD1NREltUFJELUJVTC0yMDE3MDgwNC43NjY4MjY4MSZkYXRhYmFzZWlkPTEwMDEmc2VyaWFsPTE3MDg5NTkzJmVtYWlsaWQ9cmh1Z2hlc0BodW1hbmZhY3RvcnNIZHUuY29tJnVzZXJpZD1yaHVnaGVzQGh1bWVuZmFjdG9yc2VkdS5jb20mdGFyZ2V0aWQ9JmZsPSZtdmlkPSZleHRyYT0mJiY=&&&104&&&https://www.faa.gov/news/fact_sheets/news_story.cfm?newsId=14895

8 Easy-To-Miss Preflight Items

There's more to it than what your checklist says...

1) Maintenance Records

Flying an airplane over a required inspection isn't good, not to mention the headaches you'll have with the FAA. Make sure you check the maintenance records before you go flying. Whether it's your own airplane, a friend's plan, or an FBO rental, your certificates and safety are at risk.



2) Pitot Tube Drain Hole

A plugged drain hole could force water into your pitot system. If that happens, your airspeed indicator readouts could be all over the board.

3) Oil Breather

The oil breather is what vents the crankcase. Make sure to check that the oil breather is clear of obstructions, otherwise, the crankcase could become pressurized. If the crankcase over-pressurizes, it will put stress on the seals in the engine, and could even cause an engine failure.

4) Safety Wiring And Cotter Pins

Safety wiring and cotter pins prevent bolts loosening from engine vibrations and movement of control surfaces. Make sure they're intact before you fly.

5) Stall Warning Horn

Check that the stall warning horn hole is fully clear during preflight. With lots of summertime bugs, debris can collect in here, and prevent a stall indication.

6) Required Documentation

ARROW - Airworthiness, Registration, Radio Station License, Operating Limitations, and Weight and Balance. Make sure these are on-board the aircraft and up-to-date. Without them, your plane isn't airworthy.

7) Antennas

There aren't a lot of checklists that tell you to check the condition of antennas on your aircraft. Make sure they're not damaged or missing.

8) Landing Gear

It may seem hard to miss, but there are a lot of parts on the landing gear you can overlook. Landing gear take a beating (yes, even *you* bounce a landing every once in awhile!). Make sure they're ready for impact before you go. Check for tire inflation, tread wear, brake pads, and that there isn't any hydraulic fluid leaking.