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A Course Set *for* Safety

FAA Runway Safety Initiatives Prepared for Takeoff

"North Perry Ground, Cessna 1234A is at the flight school ramp with automated weather, VFR southbound, ready to taxi to Runway 18 Left."

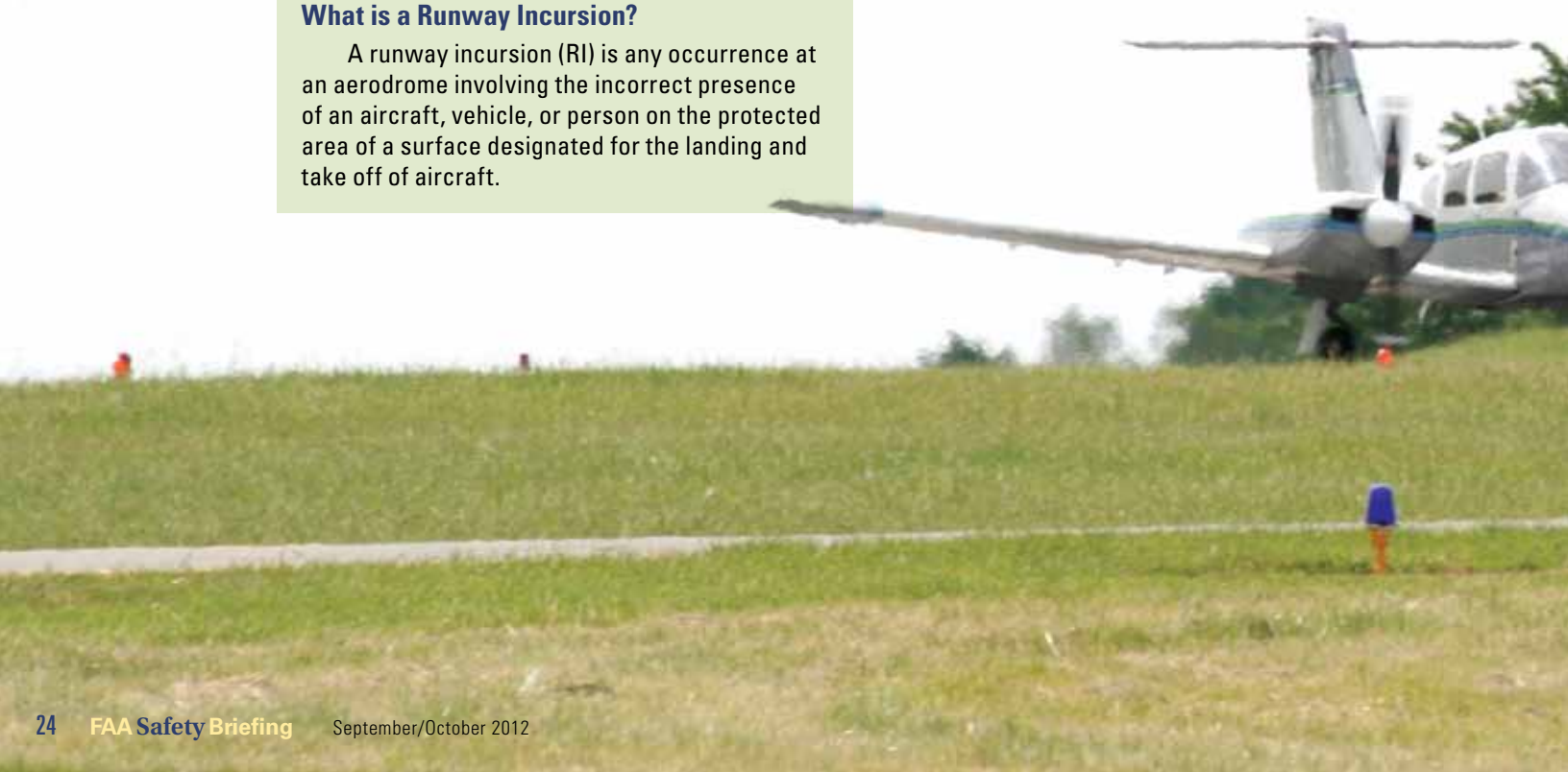
"Cessna 1234A, this is North Perry Ground, Runway 18 Left, taxi via taxiway Lima, Echo, hold short of Runway 36 Right."

The taxi instructions relayed to the Cessna 172 departing North Perry Airport (KHWO) in Hollywood, Fla., were read back and acknowledged by the tower precisely as issued. However, what ensued a moment later was not at all according to plan. The Cessna pilot, likely confused by the multiple runway and taxiway intersections at this location on the airport (which incidentally is one of the three runway "hot spots" identified at this airport), proceeded to cross 36R at the same time another Cessna was departing 18L on the opposite end. The departing traffic flew directly over the disoriented Cessna pilot with only about 150 feet to spare.

Despite vast improvements to the nation's overall aircraft accident rate, eye-opening events such as the one described in the above runway incursion (RI) report occur at an alarming average of three times every day. The example also shows just how easy it is for a pilot to wind up in the wrong place at the wrong time. Through the end of July 2012, preliminary data shows the total number of RIs in the United States was 895, an 11-percent increase over the same span in 2011. FAA has made runway safety a top priority, with a specific focus on developing new and more effective RI avoidance strategies.

What is a Runway Incursion?

A runway incursion (RI) is any occurrence at an aerodrome involving the incorrect presence of an aircraft, vehicle, or person on the protected area of a surface designated for the landing and take off of aircraft.



Digging Into the Data

A further look at RI data shows that pilots cause approximately 65 percent of all RIs. And of those pilot-induced RIs, 75 percent are caused by general aviation pilots. Three areas in particular that lead to RIs are:

- failure to comply with ATC instructions
- lack of airport familiarity
- nonconformance with standard operating procedures

A GA pilot operating solo in a complex airport environment can easily fall victim to these causal factors. With that in mind, the FAA took a hard look at several airman guidance and training materials, as well as testing and enforcement procedures, to see where they could make improvements.

After several months of researching and analyzing runway safety data, the FAA collaborated on several new runway safety initiatives, many of which have already been implemented. Here are a few of the current efforts that have been completed or are underway:

Pilot Handbook of Aeronautical Knowledge (PHAK): A new chapter devoted entirely to runway safety and runway incursion avoidance was added to the PHAK in April 2012. It is currently listed as a separate PHAK appendix on FAA.gov, but will be added as a chapter during the next revision cycle. The new chapter has extensive coverage of taxi route planning and procedures along with several detailed photos and graphics that can help pilots properly identify airport signs, lights, and markings designed to help them maintain situational awareness. There are also several pilot/controller communication samples that highlight the correct use of phraseology, including the recent introduction of "line and up wait" instructions. Both the RI appendix and PHAK are available at www.faa.gov/library/manuals/aviation/.

Change to Practical Test Standards: Effective June 1, 2012, practical test standards (PTS) for the Private Pilot and Commercial certificates will include a required RI avoidance task. For a copy of the revised PTS, go to www.faa.gov/training_testing/testing/airmen/test_standards/. The CFI PTS has also been updated with a new RI avoidance task, but won't be in effect until Dec. 1, 2012. You can access the revised CFI PTS with the previous link.

Updates to Taxi Operations Advisory Circulars: Revisions to AC 91.73, *Part 91 and Part 135 Single-Pilot Procedures during Taxi Operations* and AC 120.74, *Parts 91, 121, 125, and 135 Flightcrew Procedures During Taxi Operations* have been approved and should be published by the end of 2012.

Photo by James Williams

Runway Safety Tip:

Consider lining up slightly to the left or right of the runway centerline (about three feet) when holding in position at night so landing aircraft can distinguish your aircraft from runway lights.

RI Remedial Training: A new revision to FAA Order 8900.1 will outline procedures for required remedial training for any pilots involved in a RI. This includes providing standardized ground training and requirements for the satisfactory demonstration of knowledge of runway safety topics. Pilots involved in certain RIs may also be required to complete an additional flight training component. The change is currently being phased in and should go into effect later this fall.

New Collaboration with Designated Pilot Examiners (DPE): With the goal of having DPEs more involved with up-to-date runway safety practices, a new collaborative effort was initiated to better facilitate information sharing among the FAA Runway Safety Regional Offices, Flight Standards District Offices, and DPEs. This can be especially effective at the local level, where experts can discuss safety issues at specific airports within a DPE's jurisdiction. One of the first steps of the effort will involve participation among the three groups during DPE initial training.

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Part 91 Rule Change For Taxi Clearance: With a final rule change that became effective May 14, 2012, the FAA removed some contradictory language regarding abbreviated taxi clearances. These clearances previously allowed pilots to cross all runways that intersected the taxi route to their departure runway. With the new rule, 14 CFR 91.129 (i) was changed to align with current air traffic procedures which require pilots to have explicit runway crossing clearances.

Technology: The FAA is currently evaluating a stand-alone visual warning system designed to help reduce RIs at small- to medium-sized airports. The Final Approach Runway Occupancy Signal (FAROS) system uses inductive loops embedded in the asphalt to detect an aircraft or vehicle on the runway. If either is detected, the system will indicate to pilots on final approach that the runway is occupied by immediately flashing the Precision Approach Path Indicator (PAPI) lights. FAROS has been tested extensively and found to be an effective tool in preventing RIs. Stay tuned for more information on this exciting initiative.

The FAA also leverages technology through a special runway safety page on its website (www.FAA.gov/airports/runway_safety). Here you'll find regular updates to airport hot spots, airport construction notices and diagrams, best practices, educational videos, safety quizzes, and much more.

Education is the Key

Another critical component of improving runway safety is the role of the CFI. As Doug Stewart states in his article, "So You Want to Be a CFI" on page 12, "the things we learn first are the things we retain… and also the hardest things to change." As such, the stage is set for CFIs to impress good habits upon their primary students when it comes to learning situational awareness and runway safety. Although beginner students are most impressionable, instilling good runway safety habits shouldn't be limited to just primary flight training. For CFIs, stressing the need for sound runway safety practices should be an ongoing endeavor throughout all phases of flight training — including the flight review (as required under 14 CFR section 61.56).

Often, the flight review may be a pilot's only opportunity to interact with another pilot as well as identify and correct any bad habits they've accumulated. Besides including runway safety as part of the flight review lesson plan, CFIs should also show pilots how and where to access educational tools like those listed in this article.

The FAA stands committed to improving the current safety culture and will continue to collaborate with aviation stakeholders to explore ideas that promote safe practices.

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Learn More

FAA Runway Safety Website
http://www.faa.gov/airports/runway_safety/

"How a Runway Earns Its Stripes" – FAA Safety Briefing Nov/Dec 2011, p. 12
www.faa.gov/news/safety_briefing/2011/media/NovDec2011.pdf