

NEWSLETTER

Airports Edition

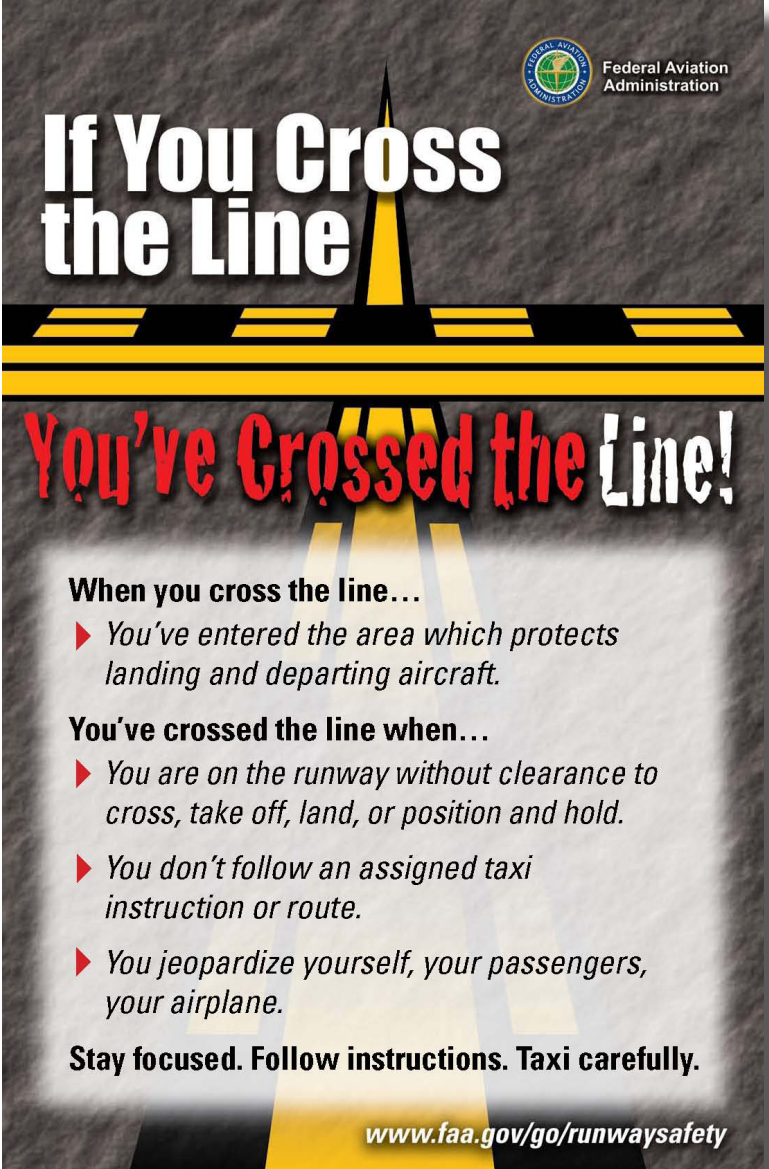
April ■ 2010

FAA's Runway Safety Office is launching a new campaign this spring to help reduce runway incursions and enhance runway safety. Entitled "If You Cross the Line, You've Crossed the Line," the program is designed to improve awareness among pilots and vehicle operators about what happens when you enter the protected runway safety area - "cross the line" - when not cleared to do so.

"Crossing the line" without permission can cause an aircraft on final approach to go-around, or force a departing aircraft to abort its takeoff. The program also highlights the danger of crossing the line in a less literal sense, and urges pilots to be especially vigilant of taxi instructions and airport signage.

"The crux of the new campaign is to keep runway safety as a high priority in the minds of airmen," says Wes Timmons, director of FAA's Runway Safety Office. "By using a catchy phrase like, 'You've Crossed the Line,' we believe we can get people's attention and convey an important surface safety awareness message that can be taken both literally and figuratively."

The new safety initiative will target about 30 airports around the nine FAA Regions. Focus airports in the Northwest Mountain Region are Snohomish County-Paine Field, WA; Denver-Centennial, CO; and Billings-Logan International Airport in Montana.



If You Cross the Line

You've Crossed the Line!

When you cross the line...

- ▶ You've entered the area which protects landing and departing aircraft.

You've crossed the line when...

- ▶ You are on the runway without clearance to cross, take off, land, or position and hold.
- ▶ You don't follow an assigned taxi instruction or route.
- ▶ You jeopardize yourself, your passengers, your airplane.

Stay focused. Follow instructions. Taxi carefully.

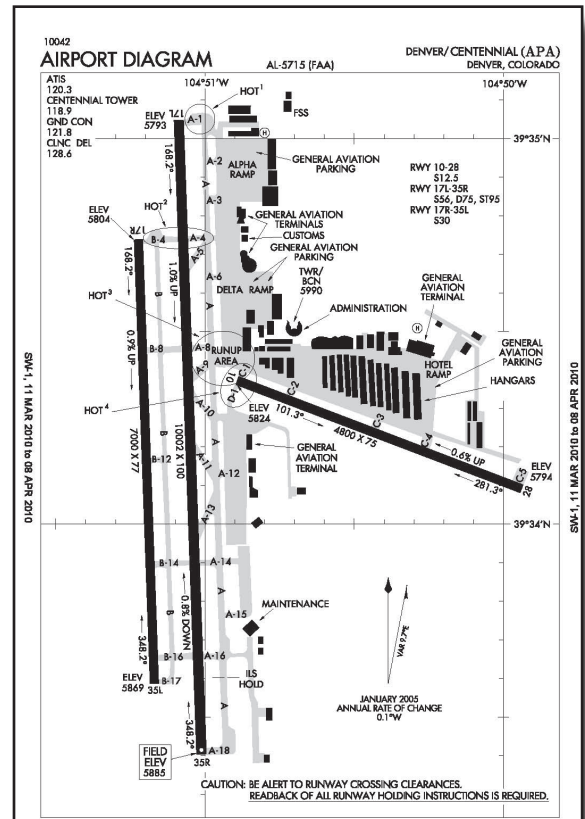
www.faa.gov/go/runwaysafety

The Airport Diagram *by Charles Riordan, Pilot Analyst (NISC)*

Have you ever had someone give you bad directions when you were on a tight time schedule, misread a confusing street map, or used a map from an internet service that didn't take you to where you wanted to go? While these situations can be frustrating as we drive on our city streets, they can be catastrophic when they happen on an airport. When a current airport diagram doesn't provide accurate directional information for users operating on the surface of an airport, the potential for a serious accident exists!

Pilots are required by Federal Aviation Regulation 91.103 to become familiar with all available information concerning their flight, including information about the airports they intend to use. Air Traffic Controllers are required to memorize the airport configuration as shown on the airport diagram, and airport operators are tested on surface operating procedures and the use of an airport diagram as their map before they are authorized to drive their vehicles on an airport.

These regulations and best operating practices are intended to improve safety by preventing runway incursions. However, runway incursions continue to be a recurring problem for airports, and in particular, airports that serve large general aviation populations. Based on data from 2001 to 2008, in a typical January there are about 55 runway incursions nationwide, and in the months between May through August, the average is over 80 per month.



"...there have been recent cases where pilots have gone the wrong way and caused runway incursions because a new taxiway wasn't shown on the current airport diagram."

The incredible situational awareness benefit of using airport diagrams in the cockpit of an airplane and in the cab of a vehicle has been well documented. The airport diagram is a graphic representation of the features on the surface of an airport and it is designed to assist in the movement of ground traffic at airports with complex runway and taxiway configurations. Whether you are a pilot, air traffic controller, mechanic, fuel truck driver, or airport employee, the airport diagram should always be used as your map for navigating on the surface of an airport.

Unfortunately, there have been recent cases where pilots have gone the wrong way and caused runway incursions because a new taxiway wasn't shown on the current airport diagram. The FAA's Office of Runway Safety continues to emphasize how critically important it is for the airport diagram to represent the most current and accurate layout of an airport. Construction projects often require renaming many of the existing taxiways on an airport. Even the simple addition of one connecting taxiway between a runway and a parallel taxiway can require renaming the other existing taxiways on an airport. (Continued)

(The Airport Diagram continued...)

Airport managers, engineers, planners and consultants who work on airport improvement projects should include updating the airport diagram as a check list item or task to be accomplished at the conclusion of every airport construction project. Because the airport diagram is such critical component to the safety for every pilot, airport operator and tenant who operates on the surface of an airport, the Office of Runway Safety strongly recommends that airport diagrams be reviewed, and updated as needed, after every construction project.

We always need to be extra vigilant in airport surface operations. Whether you are a pilot, mechanic, or airport manager, you always need to have a copy of the current airport diagram in your airplane or vehicle, you need to know your airport markings and signs, and you should always read back all hold short instructions. If you ever find yourself in doubt about your location or how to get to where you are going, ask for progressive taxi instructions. We know we can never eliminate runway incursions. With a concerted effort, we can continue the trend downward and make airport surface operations as safe as possible.

Updating an airport diagram is an easy thing to do.

After construction activity or changes have occurred on an airport, managers should submit an electronic drawing of the airport layout showing the current configuration of the airport which includes all of the changes that are different from the currently published airport diagram.

Mr. Chris Criswell of the FAA is the designated point of contact for Airport Diagrams.

Please contact him at 9-AWA-ATS-Diagrams@faa.gov for questions regarding submitting airport diagram updates.

Looking for Runway Safety Training Materials?

The ANM Office of Runway Safety has over 22 varieties of free training materials including, the Runway Safety Collection DVD, an Airport Ground Vehicle Operations booklet, and laminated Signs and Markings Place mats. Most materials are kept in stock. In stock items are shipped via Priority Mail within one week of order receipt. Please allow extra time for large orders or out of stock items.

Can't find what you're looking for? The Office of Runway Safety is here to help you develop the proper training materials for your facility. Please contact us for more information.



To request an order form or for more information please contact Jennifer Lee:

(425) 227-1223 or jennifer.ctr.lee@faa.gov

How Bright Are Your Hold Signs???

By Gene Sager, Airports Analyst (NISC)

Is the luminance of your Airfield Signs constant throughout lighting intensity steps? When the runway and taxi lights are set to the lowest intensity, how bright are your runway hold position signs?

When lighted airfield sign systems became a requirement back in the 1980's, airport operators relied on existing airfield lighting systems (runways and taxiways) as a power source. It became apparent that runway and taxiway edge light intensity changes directly affected sign brightness. Users complained about the difficulty of seeing runway hold signs and their potential to lead a pilot to enter a runway by mistake. Most taxiway and runway lights are left on low intensity when the weather is clear, raising the risk of a dimly lit sign contributing to a runway incursion. For example, with a runway Step Setting of two or lower airfield signs appeared turned off, defeating their purpose and denying pilots critical information.

Fortunately the development of several system improvements and standards virtually eliminated the problems of maintaining airfield sign brightness. In fact, current Advisory Circulars require that hold position signs maintain a constant intensity regardless of the associated runway or taxiway light settings. It may even be possible to retrofit older signs to maintain a constant light intensity at all times.

"...with a runway Step Setting of two or lower airfield signs appeared turned off, defeating their purpose and denying pilots critical information."

Try a simple test for your airport signs: Go out on the airfield and conduct a night test. Request the tower to increase the step settings of the runway edge lights. Watch the Runway Holding Position Signs, and if their luminance changes with the runway lights then you should plan to retrofit or replace the signs in the future. Fixing the problem means you will have to take action according to the standards and remedies described in the reference material below.

14 CFR Part 139, Certification and Operations: Land Airports Serving Certain Air Carriers 139.311(b) (3) Subpart D – Operations Marking, Signs, and Lighting

FAA Advisory Circulars:

150/5340-26a Constant Current Regulators

150/5340-18e Airport Sign Systems

150/5345-44h Specifications for Runway and Taxiway Signs

150/5340-30 Luminance Requirements for Runway and Taxiway Signs

150/5345-47b Isolation Transformers

Is Your Airport at a Higher Risk for Runway Incursions???

By Mike Meigs, ANM Regional Runway Safety Program Manager

Teaching my fifteen year old daughter to drive over the last nine months has been an educational experience for me. She is quick to point out when stops signs are placed in spots where it is hard to see oncoming traffic, or how difficult turns greater than 90 degrees are to navigate. As someone who has been driving for 28 years, seeing these things through the eyes of a new driver has given me a new appreciation of how road design and layout affect driver safety. Are you aware that some of these same human factors issues apply to airport design and layout, and that airport design has a major impact on Runway Safety?

In November 2007, the FAA Office of Airports issued *Engineering Brief Number 75*, Incorporation of Runway Incursion Prevention into Runway and Taxiway Design. The authors of this document analyzed years worth of runway incursion data and have provided lessons learned that any airport designer or operator can apply to reduce the risk of runway incursions at your airport. Any airport operator serious about improving runway safety should consider implementing the concepts in this document into each and every major airport construction project. Let's take a quick look at some of the major concepts in this document.

Taxiway Geometry: Studies have shown that when an aircraft crosses a runway on a taxiway, the risk of a runway incursion increases exponentially when that taxiway

meets the runway at an angle less than or more than 90 degrees. When taxiways intersect the runway at 90 degrees, the placement of signs and markings are optimized and the width of the pavement intersection is minimized. Another taxiway layout concern is providing a straight ahead taxi route directly from a ramp to a runway. Pilots have a tendency to get busy while taxiing aircraft and if there is a straight ahead route directly to the runway, they are more likely to get onto the runway by mistake. Offsetting the ramp to parallel taxiway access from the parallel taxiway to runway access reduces the chance of a serious runway incursion.

Taxiway Placement: When looking at the taxi patterns for your airport, does your taxiway layout require aircraft to cross a departure runway to reach the ramp? Over half of the most serious runway incursions involve aircraft crossing a departure runway to reach their ramp or gate. Taxiways which cross in the first third of a runway increase the chance of a serious runway incursion or collision. In the first two thirds of a runway, aircraft landing will not have time to stop and departures will be rolling too fast to stop if an aircraft or vehicle gets onto the runway by mistake. The safest place for aircraft to cross a runway is at each end. At the arrival end, a landing aircraft will most likely pass over someone crossing the runway, and at the departure end an arrival or departure will have the best chance to stop and avoid a collision. *(Continued)*

“Any airport operator serious about improving runway safety should consider implementing the concepts in [Engineering Brief Number 75] into each and every major airport construction project.”

(Is Your Airport at Higher Risk for Runway Incursions continued...)

Pavement: The wider the pavement, the harder it will be for pilots to see hold signs. Most of the intersections which Runway Safety designates as “hot spots” involve wide expanses of pavement. Taxiway designers should look to minimize the width of taxiways and fillets, so that signs may be placed as close as possible to the taxiway centerline. Another major factor in runway incursions or surface incidents is the placement of taxiways or runways on the edge of paved ramps. Expecting a painted marking to protect against unauthorized access without a break in pavement has not proven to be effective. Having even a small grass area, which allows for signs to be placed, reduces the likelihood of unauthorized access dramatically.

These are just a few of the concepts contained in Engineering Bulletin 75. The Office of Runway Safety is working with the Office of Airports to incorporate as many of these concepts as possible into the Airport Design Advisory Circular update. Until then, please ensure that you consider whether changes to your airport are possible any time you are altering or adding pavement, or performing a major rehabilitation at your airport. The Office of Runway Safety is available to provide advice to airport operators on how to improve your airport geometry and is now evaluating airport design changes and airport layout plans for all towered airports in the Northwest Mountain Region.

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Upcoming Runway Safety Events

April 26-29, 2010: Regional Runway Safety Action Team meetings at MFR and OTH.

May 4-5, 2010: Regional Runway Safety Action Team meeting at SEA.

June 14-17, 2010: Regional Runway Safety Action Team meetings at SLC and PVU.

July 8-11, 2010: Arlington Fly-In. Arlington, WA

July 20-23, 2010: Regional Runway Safety Action Team meetings at RDM and LMT.

August 20-22, 2010: Oregon International Airshow. Hillsboro, OR.

August 25-26, 2010: Regional Runway Safety Action Team meeting at DEN.

August 28-29, 2010: Rocky Mountain Regional Fly-In. Broomfield, CO.

Dates are subject to change. Please contact the ANM Office of Runway Safety at (425) 227-1223 for confirmation.

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