

Runway Incursions



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At the beginning of this year, several Central Air Safety Committee members had a meeting with US Airways Corporate Safety management to do some cooperative “goal setting” and to set some priorities for issues that affect our pilot group. Of the issues discussed, reducing runway incursions was of utmost importance to all of us.

Inadvertent runway incursions are not unique to US Airways. They continue to plague the industry as well. Recently, the Federal Aviation Administration reported that in 2001 there were 381 runway incursions. This number is down from 2000 when there were 431 reported. There were fewer flights last year and in the wake of the September 11 cutbacks, the rate of incursions also dropped, from 0.64 incursions per 100,000 takeoffs and landings in 2000 to 0.59 in 2001. While the numbers represent a reversal in what had been an increasing trend in both numbers of incursions as well as the rate of incursions, there still is more than one runway

incursion per day that has the potential to create a catastrophic event.

FAA Runway Safety report

Both the FAA and the National Transportation Safety Board have made stopping runway incursions one of their top safety improvements. In June of last year, the FAA Office of Runway Safety issued a report on runway incursions, in which they assessed the severity of runway incursion trends nationwide from 1997-2000. In their report, they analyzed 1,369 runway incursions by placing them in one of five categories of severity of the incursion. These categories ranged from near-collisions or accidents to incidental events, which they labeled A through D. Categories A and B represented major runway incursions where there was a high risk of collision while categories C and D represented minor incursions where there was little or no risk of a collision (see figure 1).


Increasing Severity 				
Category D	Category C	Category B	Category A	Accident
Little or no chance of collision but meets the definition of a runway incursion	Separation decreases but there is ample time and distance to avoid a potential collision	Separation decreases and there is a significant potential for collision	Separation decreases and participants take extreme action to narrowly avoid a collision	An incursion that resulted in a runway collision

Figure 1

The findings

The analysis of the data showed that 81 percent of the incidents were Category C and D events, 12 percent were Category B events, and 7 percent were Category A events. Of the 1,369 runway incursions during the 1997-2000 time period, 60 percent were attributed to pilot deviations, 20 percent to operational errors of an air traffic controller, and 20 percent to vehicle or pedestrian deviations. The top five airports with the highest number of runway incursions were LAX, STL, SNA, LGB, and DFW. Among the various aircraft operations, 60 percent of the runway incursions occurred with general aviation operations, 38 percent from commercial operations, and 2 percent from military operations.

Pilot solutions

With 60 percent of the runway incursions attributed to pilot deviations, as pilots, we must

take a proactive role in their prevention. At US Airways, as part of our enhanced Crew Awareness program, we implemented new policies that were addressed specifically in an attempt to reduce the number of runway incursions our crews were experiencing.

Section 5.5.1 of the US Airways Flight Operations Manual regarding taxiing states the following:

Policy. Both pilots will monitor taxi clearance. The pilot will read back all hold short instructions. The captain will verbalize to first officer any hold short instructions (first officers will request if not received.)

The FOM continues with the following statements:

Airport Orientation. Both pilots must be thoroughly familiar with airport orientation and taxi route. When necessary have taxi chart in full view. When approaching an entrance to an active runway, both pilots will ensure the hold short or crossing clearance is complied with before continuing with non-monitoring tasks (e.g., FMS programming, ACARS, company radio calls, etc.)

These procedures, as outlined in our FOM, are essential ingredients to the reduction in runway incursions. There are other things we can do as well. As part of the air safety structure for ALPA International, the Airport and Ground Environment Group has been very active in the area of runway incursions. Here are just a few of the procedures they recommend to consider:

1. The expected taxi routing to/from the runway should be as thoroughly briefed as instrument approaches. Briefing should be accomplished prior to pushback, initial taxi, or landing.
2. The crewmember receiving the taxi clearance should write down the routing and progressively follow it on the airport diagram chart once taxi is initiated.
3. Use the taxi light or another appropriate light to indicate movement or imminent movement of the aircraft.
4. Always clarify any misunderstanding or confusion related to the taxi route clearance, including holding instructions along the route to the satisfaction of ALL cockpit crewmembers.
5. Plan and designate where company communications and checklists will be conducted so as to avoid or eliminate distractions to

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- focusing on the taxi route, complex intersections and runway entrances.
6. Maintain situational awareness at all times by listening for and understanding clearances issued to other aircraft on the movement area.
 7. Be alert for mandatory signs and marking to ensure that a runway is not inadvertently entered.
 8. Confirm alignment with the proper runway using compass or heading display before applying takeoff power.
 9. Maintain situational awareness on final approach, particularly on short final at night. Ensure that the runway you are about to land on is not occupied by an aircraft holding in position at the departure end or down field.
 10. Beware landing on an outboard parallel runway or a runway where the exit taxiway intersects a separate runway in a short distance.

Conclusions

The statistics show that we are starting to move in the right direction in reducing the number of runway incursions. However, a one-year improvement does not constitute a trend. Human error plays a role in almost every runway incursion, whether by a crewmember or a controller. The key to solving the runway incursion problem will be developing the proper hardware (radar, cockpit displays, etc.), procedures and training that will mitigate those errors. In the meantime, in order for us to reduce the number of events and ensure a downward trend, we must continue our vigilance, keep distractions out of our cockpits, and use safe and prudent operating practices.

Fly safe and thank you for making safety your number one priority

