FAA
Air Traffic Organization

# Annual Runway Safety Report 2010

## Message from the Administrator

Dear Colleague:

When serious runway incursions drop by 50 percent over the previous year, you know you're doing something right.

The good news here is every corner of the aviation community is sharing the success. From the airlines to the business aviation community to the pilots, controllers, surface vehicle operators and the GA enthusiasts who just fly for pleasure, everyone has taken a step up.

The numbers alone tell the story. With almost 53 million operations in FY 2009, we had 12 serious runway incursions, down from 25 the previous year; two serious incursions involved commercial aircraft. Those are encouraging numbers.

When we issued a Call to Action for runway safety almost two years ago, we as a community recognized the need to do a better job of keeping things safe on the airport surface. Even though the number of mistakes is infinitesimally small, given the number of successful operations per day, we nevertheless need to take every opportunity to continue to enhance surface safety.

As you'll clearly see in the runway safety report, that's what is happening. The emergence of a "just culture" between regulator and regulated has played a huge part. Because we have so few data points, we need for the people in the system to be able to say, "Here's a problem" without fear of penalty. As a result, we're learning about the soft spots, the places, and procedures that need to change.

Although we've been successful, we still need to do more. Given these results, I'm confident that we will.

**J. Randolph Babbitt**
FAA Administrator

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By the Numbers

52,928,316
Surface operations in FY 2009

58,562,343
Surface operations in FY 2008

951
Runway incursions in FY 2009

1,009
Runway incursions in FY 2008

12
Serious runway incursions in FY 2009

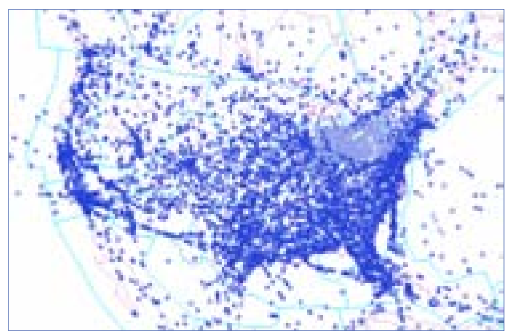
25
Serious runway incursions in FY 2008

# FAA Initiatives to Improve Runway Safety

The Federal Aviation Administration (FAA) is responsible for the oversight and regulation of the world's most advanced and safest aviation system. Strong partnerships within the aviation community, continued collaboration with stakeholders, and a clear vision of the future have resulted in a strong foundation from which the FAA continues to build a future air transportation system and improve safety.

The FAA is responsible for the largest and most complex National Airspace System (NAS) in the world (Figure 1), which includes more than 500 towered and roughly 18,500 non-towered airports. This complex airport environment operates safely and efficiently primarily due to the collaboration and diligence of more than 14,500 air traffic controllers, more than 624,000 FAA certificated pilots, ground crews, and a large number of airport vehicle operators. Their combined diligence has served to reduce the number and severity of runway incursions, and the impact of their role will become more evident as the FAA continues to engage in Next Generation (NextGen) initiatives.

Figure 1
***NAS With Air Traffic***



With NextGen technologies, procedures, and operations, the FAA will be able to accommodate the projected growth in air transportation demand and provide better reliability while improving runway safety in a more complex environment. NextGen technologies will promote greater situational awareness for pilots, ground vehicle operators, and air traffic controllers through real-time system-wide distribution of information. Slated for continous implementation, the FAA is constructing the NextGen air transportation system through near-, mid-, and far-term planning initiatives. The FAA is well under way to accomplishing many near-term runway safety initiatives and will soon begin work on mid-term activities.

The creation of the future air transportation system requires harmonization and collaboration between the FAA, foreign agencies, aircraft and component manufacturers, and airlines. To further international involvement, the FAA hosted the first International Runway Safety Summit to not only bring a global focus on safety issues but also advocate for increased awareness of the importance of runway safety domestically and internationally.

The FAA's Office of Runway Safety publishes this annual report to inform aviation stakeholders of the ongoing efforts to improve runway safety. The 2010 FAA Annual Runway Safety Report presents the FAA's progress toward the Flight Plan[1] goals and performance targets for runway safety. The report also describes the NextGen initiatives that pertain to runway safety, the role of human factors in runway safety, and FAA's international leadership responsibility, all contributing to improving the future of runway safety (Table 1).

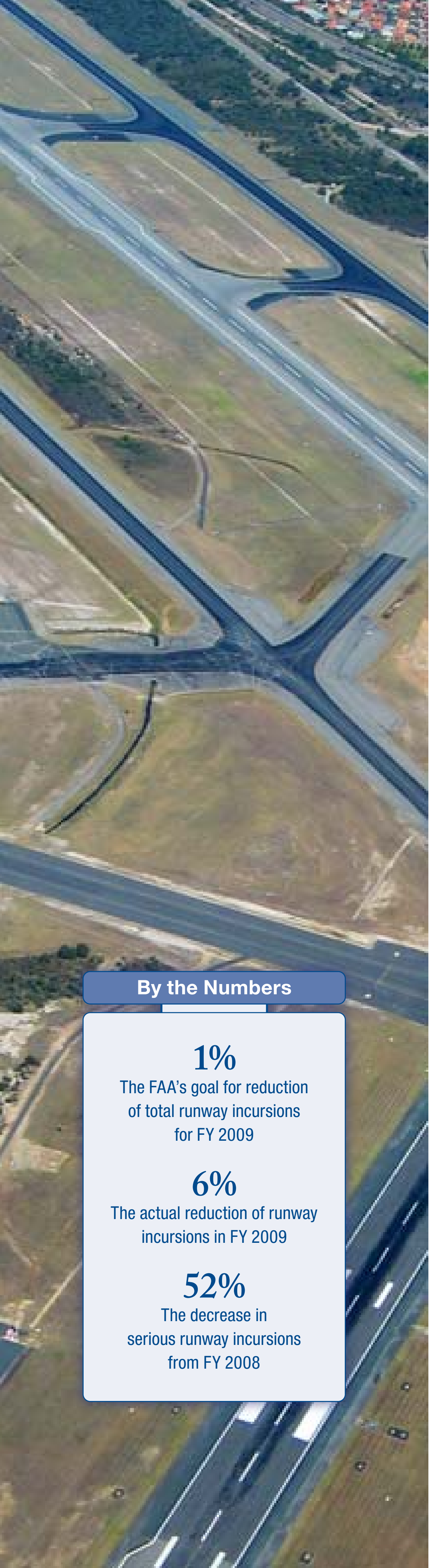
To learn more about the FAA's current initiatives and future plans for runway safety, please visit www.faa.gov/go/runwaysafety. The following FAA publications are available at www.faa.gov:

- *National Runway Safety Plan, FY 2009 through FY 2011*
- *FAA Flight Plan, 2009–2013*
- *FAA Portfolio of Goals, 2009*
- *FAA Office of Safety, Safety Blueprint, 2009*

Table 1
***FY 2010 Runway Safety Report***

| | |
|---|---|
| **FAA Measures and Evaluates Runway Safety** | ▪ FY 2009 data and its comparison to FY 2008 data |
| **Updates and Progress on Runway Safety Activities** | ▪ Meetings<br>▪ Multimedia<br>▪ Training<br>▪ Other initiatives<br>▪ More runway safety improvements<br>▪ Improvements for infrastructure and technology |
| **NextGen and Runway Safety** | ▪ What is NextGen?<br>▪ How will NextGen impact runway safety?<br>▪ NextGen and runway safety technologies available today<br>▪ NextGen and runway safety in the near term<br>▪ NextGen and runway safety in the mid-term (2012–2018)<br>▪ NextGen and runway safety beyond the mid-term (2018+) |
| **The Human Factor in Aviation** | ▪ What is the human factor discipline?<br>▪ Why is the study of human factors so important?<br>▪ How human factors research reduces human errors<br>▪ Designing with the human factor in mind<br>▪ Anatomy of an incursion |
| **International Leadership in Runway Safety** | ▪ International leadership in runway safety<br>▪ FAA is a key participant in ICAO<br>▪ Adopting international phraseology<br>▪ FAA collaborates on runway safety with international aviation stakeholders<br>▪ FAA and Eurocontrol's collaboration in runway safety<br>▪ International safety data sharing<br>▪ FAA and CAST<br>▪ FAA and Chinese aviation authorities<br>▪ FAA's future leadership role |

[1] 2009–2013 FAA Flight Plan Objective 3, Reduce the Risk of Runway Incursions.



By the Numbers

**1%**
The FAA's goal for reduction of total runway incursions for FY 2009

**6%**
The actual reduction of runway incursions in FY 2009

**52%**
The decrease in serious runway incursions from FY 2008

# The FAA Measures and Evaluates Runway Safety

The FAA depends on the support of strong partnerships in the airport environment to collectively improve runway safety (Figure 2). These partnerships have provided the framework necessary for building the future of air travel, one that increases safety awareness for all involved and will allow us to travel from where we are today to the projected increased capacity requirements of tomorrow. Leveraging NextGen technologies, improved training materials and refined communication techniques will aid in decreasing the number of serious incursions and continue to improve runway safety.

Figure 2:
***Runway Safety Is a Shared Responsibility.***


Runway safety is measured by the occurrence of runway incursions, which are defined as follows: "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 takeoff of aircraft." The FAA uses this definition to identify runway incursions, and then categorizes each based on the severity of the incident (Table 2 and Figure 3). Category A and B events are considered to be serious incursions.

Table 2:

***Runway Incursion Severity Classification***

| Category | Description |
|---|---|
| A | A serious incident in which a collision was narrowly avoided. |
| B | An incident in which separation decreases and a significant potential for collision exists, which may result in a time-critical corrective/evasive response to avoid a collision. |
| C | An incident characterized by ample time and/or distance to avoid a collision. |
| D | An incident that meets the definition of runway incursion such as incorrect presence of a single vehicle/person/aircraft on the protected area of a surface designated for the landing and take-off of aircraft but with no immediate safety consequences. |

Runway incursions can be further classified by type as Operational Errors, Pilot Deviations, or Vehicle/Pedestrian Deviations (Table 3). Pilot deviations accounted for 63 percent of runway incursions, with operational errors and vehicle/pedestrian deviations accounting for 37 percent (Figure 4).

In FY 2009, 270 of more than 500 towered airports reported runway incursions. A total of 951 incursions occurred at these 270 airports. Flight operations dropped from 58.6 million in FY 2008 to 52.9 million in FY 2009—a 10-percent decrease. As a result, the rate of runway incursions per million operations increased slightly (Figure 5). Although the rate of incursions increased, the number of serious incursions decreased significantly (25 to 12). More than 98 percent of the 951 runway incursions were recorded as Category C and D or non serious. The FY 2009 performance target for total incursions was set at a 1-percent decrease from FY 2008; however, the actual decrease was 6 percent.[2]

During FY 2008, the FAA recorded 25 serious incursion incidents out of 58.6 million operations (0.43 incursions per million). In FY 2009, the FAA recorded 12 serious incursion incidents out of 52.9 million operations (0.23 incursions per million). These numbers represent a reduction of serious runway incursions by 52% in one year, and surpass the FAA FY 2009 Portfolio of Goals performance target of not more than 0.47 incursions per million operations (Figure 6).

Figure 3:
***Distribution Across Runway Incursion Severity (FY 2009)***

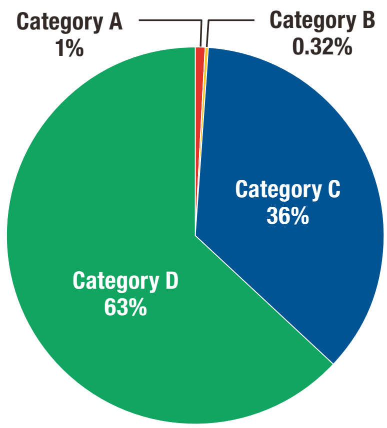



Figure 4:
***Distribution Across Runway Incursion Type (FY 2009)***

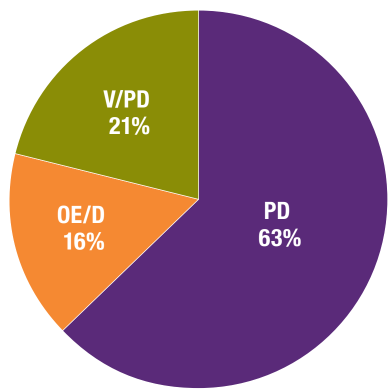
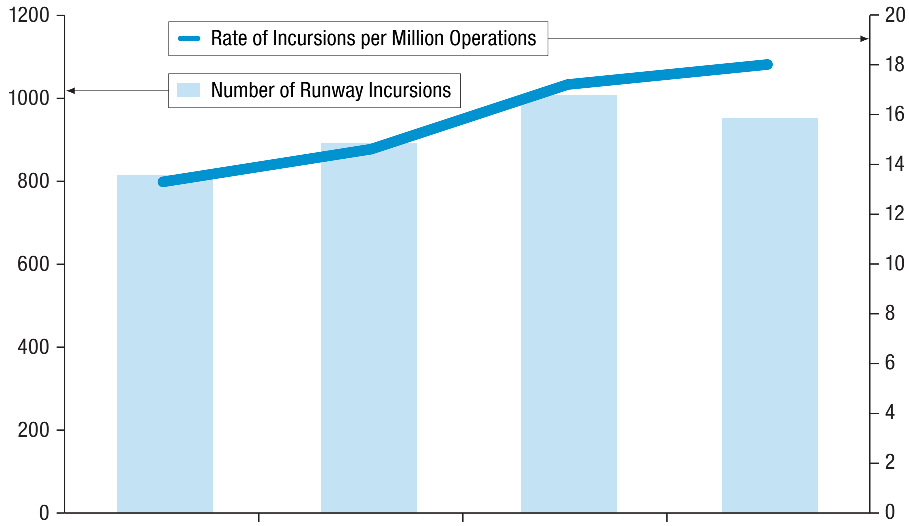



Table 3:
***Types of Runway Incursions***

| Operational Errors | Pilot Deviations | Vehicle/Pedestrian Deviations |
|---|---|---|
| Action of an air traffic controller that results in less than required minimum separation between two or more aircraft or between an aircraft and obstacles (e.g., vehicles, equipment, personnel on runways) or clearing an aircraft to take off or land on a closed runway. | Action of a pilot that violates any Federal Aviation Regulation (e.g., a pilot crosses a runway without a clearance while en route to an airport gate). | Pedestrians or vehicles entering any portion of the airport movement areas (runways/taxiways) without authorization from air traffic control. |

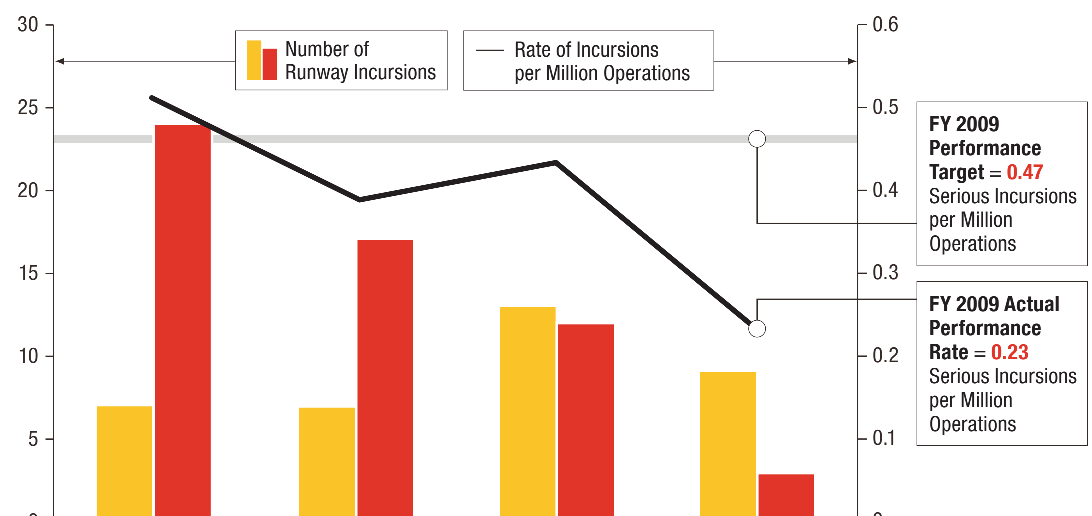
[2] FAA FY 2009 Portfolio of Goals

Figure 5:
***Number and Rate of Runway Incursions (FY 2006—FY 2009)***




| | FY 2006 | FY 2007 | FY 2008 | FY 2009 |
|---|---|---|---|---|
| **Total Runway Incursions** | 816 | 892 | 1009 | 951 |
| **Rate of Runway Incursions per Million Operations** | 13.36 | 14.59 | 17.23 | 17.97 |

Figure 6:
***Number and Rate of Serious Runway Incursions, Categories A and B (FY 2006–FY 2009)***




| | FY 2006 | FY 2007 | FY 2008 | FY 2009 |
|---|---|---|---|---|
| **Category B** | 7 | 7 | 13 | 9 |
| **Category A** | 24 | 17 | 12 | 3 |
| **Rate of Serious Runway Incursions per Million Operations** | 0.51 | 0.39 | 0.43 | 0.23 |

# Updates and Progress on Runway Safety Activities

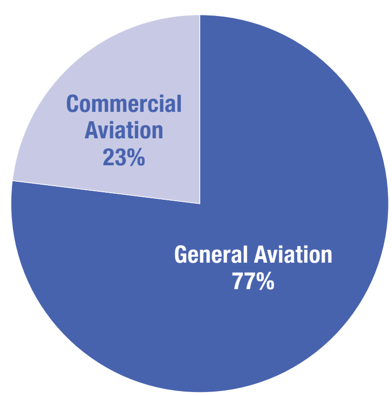
The FAA Office of Runway Safety has made progress in continuing to build a proactive safety culture across the aviation community. An important part of a robust safety culture is the awareness and identification of hazards. The FAA has achieved increased community awareness of the hazards that contribute to runway safety by using specific targeted outreach and training activities.

The FAA continually informs the aviation community about runway safety updates and best practices through various formats ranging from traditional flyers, multimedia DVD's, interactive websites, and aviation events. This multi-pronged approach enables the FAA to reach a far broader aviation audience.

Safety in the runway environment is largely dependent on effective communications among pilots, controllers, ground crews, and vehicle operators to ensure airport operations are conducted in the safe manner in which they were intended. Effective communication has proven to be a critical factor in decreasing operational risk resulting from misinterpreted or misunderstood instructions and information. Therefore, human factors influences are given greater consideration in discussions about phraseology changes, pilot situational awareness improvements, and technology implementation.

Human error is known to contribute to almost every runway incursion; the largest proportion of those incursions involved general aviation pilots. In fact, general aviation pilots were involved in 77 percent of all runway incursions that were categorized as pilot deviations in FY 2009 (Figure 7). In FY 2009, general aviation pilots were involved in 11 of the 12 serious runway incursions. Consequently the FAA and the general aviation community have joined together to identify and address specific runway safety issues. By developing training and outreach activities targeting runway safety, hundreds of thousands of pilots, air traffic controllers, and airport vehicle drivers have the opportunity to increase operational awareness and help decrease the number of runway incursions. In support of this effort, for example, the FAA teamed with the Aircraft Owners and Pilots Association (AOPA) to distribute runway safety DVDs. This one initiative reached more than 400,000 or about two-thirds of all registered pilots.

Figure 7:
***FY 2009 Pilot Deviations by Operating Type***




**By the Numbers**

**500,000**
the number of runway safety DVDs distributed in FY 2009

**240**
the number of runway safety briefings conducted in FY 2009

**77%**
the percentage of pilot deviations that involved general aviation aircraft

The Office of Runway Safety's strategic communication, community outreach, and training activities encompass four focus areas: meetings, multimedia, training, and other initiatives (Table 4). Since the initiation of these activities, occurrence of serious runway incursions has decreased. The program has achieved success in promoting the message of runway safety to the aviation community. The following subsections explain these activities in greater detail.

Table 4:
***Office of Runway Safety Communications Strategy***

| meetings | multimedia | training | other initiatives |
| --- | --- | --- | --- |
| International Runway Safety Summit | DVD Pilots Guide to Safe Surface Operations | Airport Recurrent | Signs and Markings Quizzes |
| Runway Safety Action Team (RSAT) Meetings | National Association of Flight Instructors (NAFI) DVD | Crew Resource Management (CRM) | Postcards, Posters, and E-mails |
| Runway Safety Briefings | Pilot Safety Announcement Films on Runway Safety | National Air Traffic Professionalism | Safety Summer Flying Briefing |
| Flight Instructor Refresher Clinics | Online Runway Safety Course | Tower Refresher | Taxi Clearance "Post-it" Notes |
| Industry Conferences | Runway Safety Website | Prevention of Operational Errors | Vehicle Safety Stickers |
| Trade Shows | | | University Competitions |
| Runway Safety Council | | | |

## Meetings

**The first-ever FAA International Runway Safety Summit** was held December 1–3, 2009, in Washington, DC. Focusing on runway safety from an international perspective, the 3-day event attracted more than 500 airport managers and planners, air traffic controllers, pilots, engineers, airline officials, aviation association executives, human factors specialists, and safety experts from 17 countries worldwide.

"By bringing these individuals together, we will not only be able to evaluate our progress to improve runway safety to date, but will also set a course for the future of runway safety worldwide."

—Wes Timmons
*Director of Runway Safety*

Special keynote talks by U.S. Deputy Secretary of Transportation John D. Porcari, FAA Administrator J. Randolph Babbitt, National Transportation Safety Board Chairperson Deborah A. P. Hersman, and FAA Air Traffic Organization Chief Operating Officer Hank Krakowski emphasized the importance that the United States and its aviation partners worldwide place on runway safety.

Recognized safety and human factors experts from industry groups—Air Line Pilots Association (ALPA), National Air Traffic Controllers Association (NATCA), Civil Air Navigation Services Organization (CANSO), International Air Transport Association (IATA), and EUROCONTROL—led presentations, panels, and runway safety progress, and future plans also were included in the agenda.

**The Runway Safety Action Team (RSAT)** is chartered to address existing and potential runway safety issues and offer recommendations for improvement of local airports. The nine regional Runway Safety Program Offices held 129 meetings combined at nationwide airports reporting frequent or severe runway incursions. RSAT meeting attendees included airport management, air traffic controllers, airport tenants, airlines and charter companies, fixed base operators, general aviation pilots, airport certification inspectors, and other stakeholder entities (Table 5).

**Runway safety briefings, presentations, and Flight Instructor Refresher Clinics (FIRC)** were presented to flight instructors to help them stay current with general aviation flight training guidance. The FAA conducted 71 clinics nationwide, reaching thousands of flight instructors. FIRCs are an important conduit for the FAA, starting at the source with student pilots. The FAA is bringing the importance of runway safety directly to each flight instructor so that each of them can teach proper runway safety awareness and incursion avoidance to each general aviation pilot through improved training, printed materials, and electronic media (e.g., runway safety DVDs).

**The Runway Safety Council (RSC)** is a joint effort between the FAA and the aviation industry. A working sub-group, called the Root Cause Analysis Team

Table 5:
***Runway Safety Activities (FY 2009)***

| Runway Safety Activities (FY 2009) | Total |
|---|---|
| Runway Safety Program Meetings | 116 |
| Local RSATs | 81 |
| Follow up RSATs | 48 |
| Pilot Meetings | 106 |
| FIRCs | 71 |
| Designated Pilot Examiner Meetings | 3 |
| Flight Schools Part 91/141 | 24 |
| Mechanic Schools Part 143 | 6 |
| National Association of State Aviation Organizations Events | 14 |
| Fly-ins AOPA EAA Local | 20 |
| Safety Assessments/FCT Site Visits | 26 |
| Incident and Other Investigations | 150 |
| Speaking Engagements | 84 |
| Other Customer Meetings | 288 |
| Meetings With Aircraft Manufacturers | 2 |
| Total Major Activities | 1039 |

Table 6:
***Runway Safety Conferences***

| Runway Safety Conferences | Date |
|---|---|
| NBAA Annual Meeting and Convention (Orlando) | 10/2008 |
| AOPA Expo (San Jose) | 11/2008 |
| Ohio Regional Business Aviation Association Safety Day (Columbus) | 01/2009 |
| Women in Aviation Conference (Atlanta) | 02/2009 |
| Aviation Human Factors Conference (Dallas) | 03/2009 |
| ICAO Runway Safety Seminar (Bangkok) | 04/2009 |
| NBAA Regional Forum (Dallas) | 04/2009 |
| Corporate Aviation Safety Seminar (Orlando) | 04/2009 |
| EAA Sun 'n' Fun (Lakeland, FL) | 04/2009 |
| Regional Airline Association Annual Convention (Salt Lake City) | 05/2009 |
| AAAE Annual Meeting (Philadelphia) | 06/2009 |
| NBAA Regional Forum (St. Paul) | 07/2009 |
| EAA AirVenture (Oshkosh, WI) | |
| NBAA Regional Forum (Las Vegas) | 09/2009 |
| NASAO Annual Meeting (Tucson) | 09/2009 |
| Bombardier Safety Standdown (Wichita) | 09/2009 |

**The Runway Safety Council (RSC)** is a joint effort between the FAA and the aviation industry. A working sub-group, called the Root Cause Analysis Team (RCAT), conducts root cause analysis of most serious runway incursions, which are then presented to the RSC along with recommendations to improve runway safety.

**Industry conferences, trade shows, and events** are all places at which the FAA's Office of Runway Safety showed a strong presence (Table 6). These platforms enable the FAA to engage and interact with industry leaders, airport managers, air traffic controllers, pilots, aircraft operators, and industry groups. This interaction enables the FAA to receive comments and suggestions regarding runway safety issues, concerns, and progress. The events listed in Table 6 signify the FAA's sustained communications and collaboration efforts.

## Multimedia

**A runway safety DVD** containing four videos, co-produced by the Office of Runway Safety, was included in the April 2009 issue of *AOPA* magazine, reaching approximately two-thirds of the nation's airmen. The four short films were entitled *Face to Face, Eye to Eye; Heads up, Hold Short, Fly Right; Listen Up, Read Back, Fly Right;* and *Was That for Us?* The short films focused on good communication, situational awareness, and proper planning procedures before a flight (Table 7). All films were accompanied with examples of real-life situations and problems that have historically occurred. An FAA-published brochure, *A Pilot's Guide to Safe Surface Operations*, designed to augment the videos was also included.

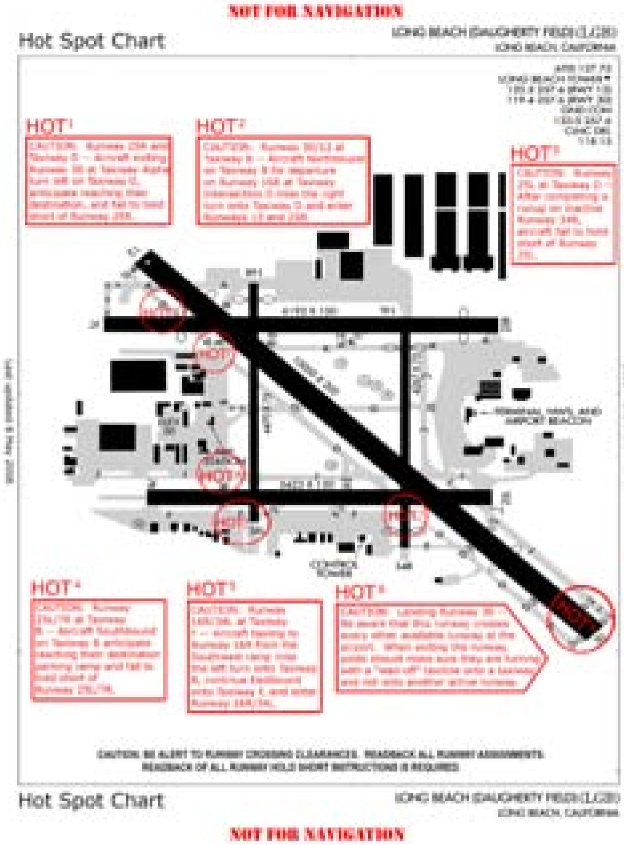
**The FAA's Office of Runway Safety official website** was launched in October 2009 (Figure 8). This website contains valuable information for everyone involved and interested in runway safety. The website also offers resources, best practices, and statistics focused on runway safety. For more information, visit **www.faa.gov/go/runwaysafety**.

Table 7:
***Runway Safety DVD Films***

| Title | Overview |
|---|---|
| *Face to Face, Eye to Eye* | The film highlights human factors elements of runway safety, detailing the importance of situational awareness, phraseology, and communication between pilots and controllers. The key message throughout this short film was to educate the viewer about the importance of continual education of runway safety. |
| *Heads up, Hold Short, Fly Right* | The film underscores paying attention to detail, keeping a sharp sense of situational awareness, and if unsure, asking someone who knows. Best practices included keeping a sterile, safe, and observant cockpit. The video message reminded viewers that reducing distractions in the cockpit, being aware of surroundings, and clarifying any unclear instructions are critical for maintaining a safe runway environment. |
| *Listen Up, Read Back, Fly Right* | The script focused on pilots who fly to or from non-towered airports and the procedures that should be used to maintain safety while emphasizing a sterile cockpit, planning for readiness of flight, and phraseology in an area that relies on the communication skills of pilots when no air traffic services are provided. |
| *Was That For Us?* | The script emphasized the importance for good preflight planning by flight crews, focusing on taxiing procedures, understanding lighting and signage, and good communication. |

Figure 8:
***Office of Runway Safety's Official Website***


Figure 9:
***Hot Spot Chart***




**The FAA published 63 Hot Spot charts** (Figure 9). A Hot Spot is an area on an airport that has had a history of problems, either from congestion or runway incursions. The FAA has added Hot Spots to its AERONAV Services airport diagrams. to airport diagrams, which are available free of charge. Visual displays of Hot Spots are an effective way for a pilot or vehicle driver to be forewarned of existing areas of concern and to plan for contingencies. Last year, the FAA identified 23 airports as potential candidates for Hot Spot markings. To date, the FAA has published 63 airport diagrams, complete with Hot Spot markings. Some of these charts also have been made into foldout pamphlets that illustrate more detail.

**Runway Safety DVD and Pilot's Guide brochures** were mailed in April 2009 to National Association of Flight Instructors (NAFI) members (more than 5,000 members, or about 90% of all active flight instructors) to spread awareness for runway safety. The NAFI mailing included an introductory message about runway safety and was co-signed by NAFI's Executive Director and FAA's Director of Runway Safety.

## Training

**Crew resource management (CRM) training**, initially designed for flight crew personnel, was enhanced in 2009 and tailored to meet the air traffic controllers' specific needs. Continuing to promote an operational safety culture, the FAA's CRM human factors training is geared toward addressing the operational aspects of the air traffic control team environment and is relevant to daily operations. The training includes three major sections: Improving Teamwork, Improving Individual Performance, and Threat and Error Management (TEM). A DVD highlighting the basic concepts of CRM also was distributed to all air traffic facilities. The FAA's Office of Safety has conducted training at many of the nation's largest airports and terminal facilities, and 2,914 controllers have been trained in CRM. For FY 2010, CRM workshops are scheduled to be held at another 21 facilities.

**National Air Traffic Professionalism (NATPRO)** training is focused on visual sensory perception to enhance cognitive skills, situational awareness, memory, and reaction time for controllers in radar and tower facilities, and was completed by all terminal facilities in 2008–2009. NATPRO II is the complementary part of the training for controllers in radar and tower facilities, and targets auditory sensory training. It is also intended to improve cognitive skills, situational awareness, memory, and reaction time, with an emphasis on improving hearback/readback skills. It was completed in radar facilities in January 2010, and tower facilities will complete it by December 31, 2010.

**Tower Refresher Training** is a comprehensive refresher training class for air traffic controllers specifically focusing on tower procedures, best operating practices, and runway incursion prevention. This training, which was conducted at all FAA and contract towers nationwide and completed in September 2009, consisted of briefings on risk management techniques, actual surface events, and a review of unique local airport characteristics and procedures.

**A Prevention of Operational Errors When Conducting On-the-Job Training Program** was developed in response to numerous operational errors that have occurred during new air traffic controller training sessions. To address this issue, training presentations were given to all terminal facilities. These presentations addressed the potential risks when on-the-job training is occurring. Terminal facilities are encouraged to utilize this training on an ongoing basis for all newly formed "training teams" consisting of the controller receiving training, the on-the-job training instructors and the front line manager.

**Back to Basics DVDs for Airport Traffic Control Tower Controllers.** From 2006–2010, two series of "Back to Basics" DVDs were deployed and training completed. Subjects of the DVDs included: Be Sure the Runway is Open; Aircraft Position is Verified; Scan the Runway; Issue Clearance Using Correct Phraseology; Close the Loop by Getting an Accurate Readback, Thunderstorm Hazards, Inflight Icing, and Clear Communications.

**Hearback/Readback Joint Initiative.** A significant number of operational errors that occur in terminal facilities are a result of hearback/readback errors; therefore Terminal Quality Control developed a multimedia presentation to mitigate hearback/readback errors by educating and informing the controller workforce on different types of hearback/readback errors, how they occur, and examples (both radar and audio) of TRACON, Tower and Enroute operational errors triggered by hearback/readback mistakes. This presentation was completed September 30, 2009.

**Air Traffic Initiatives.** All air traffic controllers are being trained on two changes to air traffic procedures that are scheduled for implementation. The first was Taxi and Ground Movement Procedures, encompassing multiple runway crossing procedures and explicit runway crossing instructions. The second is Line Up and Wait, a phraseology change that substitutes "line up and wait", for "position and hold" is scheduled for implementation end of September 2010.

**Airport Recurrent Training** for all certificated airports in the nation was conducted. This training included initial and recurrent instruction for airport employees (e.g., airport police and airport maintenance workers). As a result of the 2008 FAA's Call to Action, all certificated airports now require recurrent training for non-airport employees (e.g., Fixed Base Operator [FBO] personnel and airline mechanics). The airport conducted initial and recurrent training, and the training curriculum must include at least one of the following:

- Airport familiarization, including airport markings, lighting, and signs
- Procedures for safe and orderly access to, and operations in, movement areas and safety areas by pedestrians and ground vehicles, including provisions identifying the consequences of noncompliance with the procedures
- Airport communications, including radio communication between the air traffic control tower and personnel, and procedures for reporting unsafe airport conditions
- Duties required under the airports certification manual
- Additional subject areas such as aircraft rescue and firefighting, handling and storing of hazardous substances and materials, airport self inspections, wildlife hazard management, or field condition reporting, as appropriate

An Airport Certification Inspector must approve all training, and each airport must provide a syllabus in its Airport Certification Manual.

**Runway safety was emphasized in airline pilot training**. Many airlines incorporated real-world runway incursions into their pilot curriculums. Working with the FAA, the airlines constructed scenarios from actual runway incursions to emphasize the importance of runway safety. Importance was placed on numerous issues such as the following:

- Display and use of airport ground navigation charts.
- Contemporary human factors associated with the introduction of new technologies (e.g., aircraft equipped with advanced avionics displays and electronic flight bags [EFB]).
- Understanding pilot-controller ground instructions and the potential for error during read-back.
- Proper timing for the use of checklists and flight deck briefings during taxi.
- Last minute avionics and flight management system (FMS) input.

**Controllers were trained on runway safety from the pilot's viewpoint;** several U.S. air carriers, in collaboration with the FAA, have offered a one-day air traffic familiarization course for controllers. The controllers spent the day in ground school learning about the responsibilities and pitfalls of working in the cockpit of a transport category aircraft. They also observed a simulator session demonstrating pilot-controller interaction during ground operations.

## Other Initiatives

**A summer pilot initiative** was developed by the FAA's Office of Runway Safety in partnership with the FAA Safety Team (FAAST). This initiative reminded pilots who had not flown during the winter months about the importance of runway safety. The summer awareness initiative, composed of postcards, posters, and e-mails, all emphasized runway safety and targeted roughly 40,000 airmen in the Great Lakes and Northwest Mountain regions.

**A runway safety campaign aimed at general aviation pilots** using placemats to depict airport signs and provide an airport markings quiz was tested at airport restaurants in the Southwestern Region of the United States. The test campaign distributed more than 10,000 placemats. Response to the placemats has been positive and expansion of the campaign to other regions is expected in FY 2010 (Figure 10).

**The Office of Runway Safety's signs and markings vehicle sticker** was updated for the 2009 Experimental Aircraft Association (EAA) AirVenture fly-in. The stickers, intended to be affixed to airport vehicle dashboards, provided a handy airport signage and marker reference for vehicle drivers. Thousands of these stickers were distributed to each of the FAA's nine regional runway safety offices for ongoing disbursement.

**FAA's taxi clearance notes**—in the style of "Post-it® Notes"—were updated during summer 2009. These notes are used to jot down taxi information (e.g., clearances, frequencies, and taxi routes). The taxi clearance post-it became a hit with all pilots and a "sell-out" at FAA pilot briefings, FIRCs, and safety presentations. Each regional runway safety office has been issued extra supplies of the notes for distribution.

Figure 10:
*FAA Safety Handouts*


Figure 11:
*FAA/AOPA Online*


**An update to the AOPA on-line runway safety course** was completed and produced with the support of the FAA Office of Runway Safety and developed with the latest multimedia technology (Figure 11). The comprehensive training and examination are available to AOPA members and non-members. The course includes the following:

- An in-depth guide to airport signs, pavement markings, and lighting
- Re-creations of several real-life runway incidents and accidents
- Valuable real-world insights from air traffic controllers
- Best practices for communication at towered and non-towered airports.

The course presents a multitude of interactive exercises to help pilots hone their skills. It provides airmen with a thorough review of every aspect of runway safety. To date, almost 83,000 pilots have completed the course, and the numbers continue to increase each month.

**The FAA has sponsored its third annual Design Competition for Universities**, which engages undergraduate and graduate students in airport design related issues. Students work individually or in teams choosing one of four Technical Design Challenge categories:

- Airport operation and maintenance
- Runway safety/runway incursions
- Airport environmental interactions
- Airport management and planning.

The competition provides an opportunity for students to address pertinent technical challenges regarding the management, safety, capacity, and efficiency presented to our nation's airports and to recommend innovative solutions. The FAA selects winning designs, and the fourth annual competition is under way.

Figure 12:
***FAA Design Competition***


## More Runway Safety Improvements

### Infrastructure

**Runway Safety Areas (RSA)** are unobstructed zones around the perimeter of the runway to enhance safety in the event of a runway incursion or excursion. An FAA team determined appropriate improvements for each runway. The FAA expects to improve 82 percent of the safety areas identified by the end of 2010.

Engineered Material Arresting System (EMAS) is a soft-ground arrestor system constructed to quickly and safely stop aircraft from overrunning a runway. The FAA developed EMAS in partnership with industry and airport operators. An EMAS bed provides a safety enhancement on runway ends where not enough level, cleared land exists for a standard runway safety area. EMAS has been installed at more than 41 runway ends at 28 airports, with plans to install 15 more EMAS systems at 9 additional airports across the nation. EMAS has proven its value at least six times over, most recently at Charleston, WV, where a regional jet carrying 30 passengers and 3 crew members aborted its takeoff. The aircraft overran the runway and was stopped safely by a recently installed EMAS. The aircraft came to a stop with its wheels buried in the EMAS material, allowing the passengers to exit without injury.

"If it hadn't been for the EMAS, I'm convinced a catastrophic accident would have occurred."

—*West Virginia County Commissioner*
*January 19, 2010.*

### Technology

**Runway Incursion Prevention Device (RIPD)** is an electronic device developed as a memory aid for controllers to help prevent runway incursions. Housed in the tower cab at the ground controller position, RIPD equipment helps enhance runway movement procedures and is coupled with a visual and an audio warning message. The FAA has finalized the operational design and will start implementation. The implementation plan will be a reverse waterfall—that is, starting with smaller airports (without ASDE-X) and moving to the larger facilities. Prototype testing of the RIPD will begin in late 2010.

**Airport Movement Area Safety System (AMASS)** visually and aurally prompts tower controllers to respond to situations that could potentially compromise safety. AMASS, which is an add-on enhancement to the already existing ASDE-3 radar, provides automated alerts and warnings of

Figure 13:
***AMASS System Display***

potential runway incursions and other hazards (Figure 13). The system operates with ground and approach sensor systems to ascertain aircraft locations in approaching and ground movement situations. It uses airport radars, state-of-the-art signal processing, and advanced computer technology to improve airport safety. The value of AMASS was demonstrated in the near-collision of two aircraft at San Francisco in 2007, when the system alerted the air traffic controller 15 seconds before the estimated collision. The FAA installed AMASS at the nation's busiest airports, and the system continues to be an important runway safety tool for controllers.

## Runway Status Lights (RWSL)

Runway Status Lights provide pilots with information about current or immediately anticipated runway occupancy by other aircraft (Figure 14). A RWSL system (Figure 15) derives

Figure 14:
***Runway Status Lights***

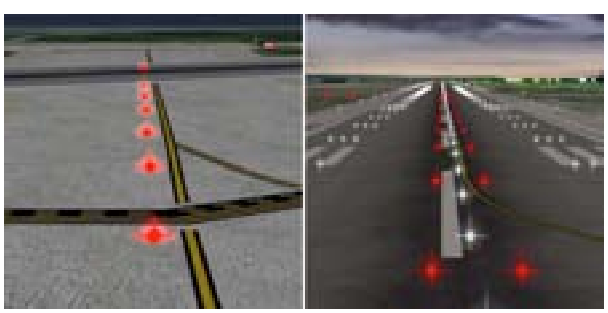
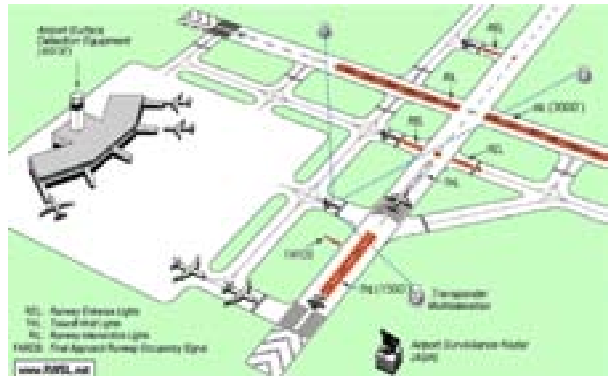


Figure 15:
***Runway Status Lights Concept***



traffic information from surface and approach surveillance systems and illuminates red in-pavement lights that alert the pilot to potentially unsafe situations. Two RWSL components—Runway Entrance Lights (REL) and Takeoff Hold Lights (THL)—are undergoing operational evaluation at Dallas/Ft. Worth International, Los Angeles International, and San Diego International Airports (Table 8). RELs are deployed at a taxiway/runway crossing and illuminate red, signaling to the pilot or driver it is unsafe to enter because traffic is on or approaching the runway. THLs are deployed in the runway by the departure hold zone and illuminate red when an aircraft is in position for departure and the runway is occupied by another aircraft or vehicle. Another RWSL component, Runway Intersection Lights (RIL) for intersecting runways, will be tested at Boston Logan International Airport starting in Summer 2010. RILs are deployed at runway intersections and illuminate red when the runway intersection is or will soon be occupied by an aircraft or vehicle and a conflict exists. RWSL is under consideration by the International Civil Aviation Organization (ICAO) as an international standard.

## Final Approach Runway Occupancy Signal (FAROS)

Pilots landing on runways at night or in poor visibility are often unable to visually determine whether the runway is free of obstructions. This issue can lead to the type of runway incursion called a "land over," in which one aircraft lands on the runway over the top of another aircraft or a vehicle occupying the runway. Like RWSL, FAROS

Table 8:
***Runway Status Lights Deployment Status***

| Runway Status Lights (RWSL) Deployment Sites | Status/Schedule |
|---|---|
| Dallas-Ft. Worth International Airport (Dallas, TX) | Test System Installed |
| San Diego International Airport (San Diego, CA) | Test System Installed |
| Los Angeles International Airport (Los Angeles, CA) | Test System Installed |
| Boston Logan International Airport (Boston, MA) | Test System Installed |
| Orlando International Airport (Orlando, FL) | August 2011 |
| Phoenix Sky Harbor International Airport (Phoenix, AZ) | December 2011 |
| George Bush Intercontinental Airport (Houston, TX) | January 2012 |
| Baltimore-Washington Int'l Thurgood Marshall Airport (Baltimore, MD) | March 2012 |
| Las Vegas McCarran International Airport (Las Vegas, NV) | March 2012 |
| Charlotte Douglas International Airport (Charlotte, NC) | May 2012 |
| Hartsfield-Jackson Atlanta International Airport (Atlanta, GA) | September 2012 |
| Seattle-Tacoma International Airport (Seattle, WA) | April 2013 |
| Chicago O'Hare International Airport (Chicago, IL) | May2013 |
| Washington Dulles International Airport (Chantilly, VA) | May 2013 |
| LaGuardia Airport, (New York, NY) | June 2013 |
| John F. Kennedy International Airport (New York, NY) | April 2014 |
| Denver International Airport (Denver, CO) | May 2014 |
| Minneapolis St. Paul International Airport (Minneapolis, MN) | May 2014 |
| Newark International Airport (Newark, NJ) | June 2014 |
| Detroit Metro Wayne County Airport (Detroit, MI) | August 2014 |
| Philadelphia International Airport (Philadelphia, PA) | October 2014 |
| Ft. Lauderdale/Hollywood Airport (Ft. Lauderdale, FL) | March 2015 |
| San Francisco International Airport (San Francisco, CA) | December 2015 |

is designed to provide a visual alert of runway status to pilots approaching a runway for landing (Figure 16). Pilots are provided runway occupancy status by the flashing Precision Approach Path Indicator (PAPI) lights. As with RWSL, the system derives traffic information from approach and surface surveillance systems and uses active data to feed the alerting signal (flashing the PAPI) when appropriate. The FAA completed operational testing of active FAROS at Dallas/Ft. Worth Airport and is conducting operational evaluation of low-cost FAROS at Long Beach/Daugherty Field Airport in California (Table 9). Currently, the FAA is determining key FAROS sites where the new designs can be installed for operational testing.

Figure 16:
***FAROS System PAPI Lights***

Table 9:
***FAROS Deployment Status***

| FAROS Deployment Sites | Status |
|---|---|
| Dallas-FT. Worth International Airport (Dallas, TX) | Operational Evaluation Concluded |
| Long Beach Daugherty Field Airport (Long Beach, CA) | Operational Evaluation Ongoing |

## Low Cost Ground Surveillance Systems (LCGS)

LCGS will close surveillance technology gaps that exist between large airports that have Airport Surface Detection Equipment (ASDE) systems and small-to-medium size airports that do not. By improving the surface situational awareness of air traffic controllers, LCGS systems will help reduce the risk of ground traffic accidents, incidents, and runway incursions.

Prototype evaluations of two different candidate systems at Spokane International Airport revealed that surface movement radar (SMR) provided the most cost-effective LCGS solution. The FAA awarded four contracts for "pilot" test sites using SMRs (Table 10). LCGS will be evaluated at the pilot site locations before a full-scale investment and deployment decision. Test and evaluation is expected to last at least one year.

Upon completion of the pilot site evaluations and additional investment analysis activities, one or more LCGS vendors may be selected to provide NAS-wide deployment for 30 airport locations.

Additional airport safety related technologies will also be implemented as part of the NextGen plan. These technologies will allow the air traffic system as a whole to move into the next generation of air traffic management with increased safety abilities.

Table 10:
***LCGS Installation Status***

| LCGS Pilot Evaluation Site | Planned Installation Date |
|---|---|
| Manchester Boston Regional Airport (Manchester, NH) | 4Q 2010 |
| San Jose International Airport (San Jose, CA) | 4Q 2010 |
| Long Beach International Airport (Long Beach, CA) | 3Q 2011 |
| Reno/Tahoe International Airport (Reno, NV) | 4Q 2011 |

FAA photo by Jon Ross


# NextGen and Runway Safety

## What Is NextGen?

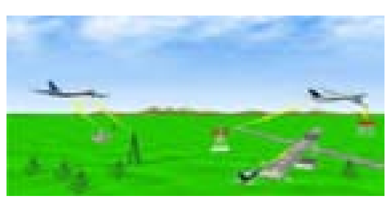
NextGen is a comprehensive overhaul of our National Airspace System to provide increased capacity and better operational performance that reduces congestion, meets projected demand, and is environmentally sound. In a continuous rollout of improvements and upgrades, the FAA is building the capability to safely guide and track air traffic more precisely and efficiently, in turn providing multiple benefits to passengers and operators.

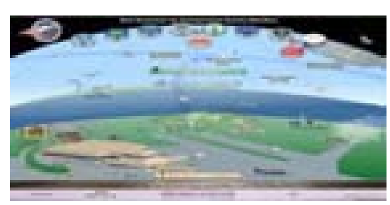
NextGen is a necessary evolution in the air transportation system in the United States (Table 11). Traffic is forecast to increase steadily over the coming decades, making it imperative that NextGen development take place now.

NextGen will make travel more predictable and efficient. For passengers, this will translate to dependable, safe, and secure air travel. For operators, this will translate to more optimized flight operations with improved predictability, reduced carbon footprint, fewer delays, and lower cost. In addition to these gains in operational efficiencies, NextGen will help prevent accidents because advanced safety

Table 11:
***Transformation of the U.S. Air Transportation System***

| Today's National Airspace System | | NextGen |
|---|---|---|
| Ground-based navigation and surveillance | → | Satellite-based navigation and surveillance |
| Air traffic control communications by voice | → | Routine information sent digitally |
| Disconnected information systems | → | Information more readily accessible |
| Cognitive-based air traffic "control" | → | Decision support tools |
| Fragmented weather forecasting | → | Forecasts embedded into decisions |
| Airport operations limited by visibility conditions | → | Operations continue into low visibility conditions |
| Forensic safety systems | → | Prognostic safety systems |
| Focus on major airports | → | Focus on metropolitan areas |
| Inefficient routes and fuel consumption | → | Short flight paths, fuel saving procedures, alternative fuels, reduced noise and emissions |





management features will enable the FAA, with other government agencies and aviation partners, to better predict and identify risks and resolve hazards.

## How Will NextGen Impact Runway Safety?

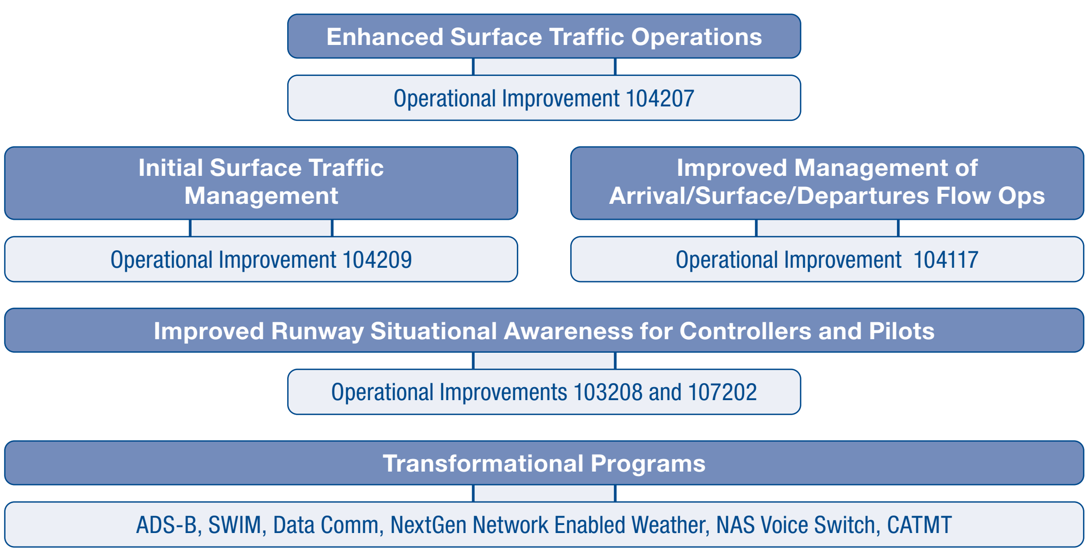
Safe runway operations are related directly to the level of situational awareness maintained by pilots, controllers, and airport operators. Everyone, in turn, relies on a combination of communication, navigation, and surveillance information to conduct safe runway operations. The introduction of NextGen technologies provides increased accuracy, expanded information, and clearer communication among pilots, controllers, and airport operators, and will significantly contribute to increased levels of situational awareness, which will positively impact runway safety.

Advanced technologies can help mitigate some of the contributing factors in runway incursions, such as a breakdown in communications between controllers and pilots, failure of a controller to verify the correct readback of instructions from the pilot, or blocked transmissions. NextGen data communication systems will mitigate these contributing factors by reducing the frequency congestion and removing the potential for miscommunications.

Another factor in runway incursions occurs when pilots misperceive their location on the airport surface. With NextGen, moving maps will be available in the cockpit to improve the pilot's situational awareness during taxi operations. These maps will indicate the aircraft's own position as well as the position of other aircraft and ground vehicles. All of the relevant surface aircraft and vehicle movements also will be shared between controllers and airline flight operations, enabling greater efficiency and safer operations.

Many NextGen Operational Improvements are directly related to runway safety (Figure 17). The FAA developed transformational programs, which include Automatic Dependent Surveillance–Broadcast (ADS-B), System-Wide Information Management (SWIM), Data Communications (Data Comm), NextGen Network Enabled Weather, NAS Voice Switch, and Collaborative Air Traffic Management Technologies (CATMT). These transformational programs and other activities will enable the FAA to achieve the necessary operational improvements.

Figure 17:
***NextGen and Runway Safety Related Operational Improvements***



## NextGen and Runway Safety Technologies Available Today

To increase situational awareness during surface operations, the FAA is currently integrating several runway safety-related technologies, as described below. Although ASDE-X and Electronic Flight Bags with moving maps are not considered NextGen capabilities they are included in this section to help describe the operational space that will evolve into NextGen.

### Airport Surface Detection Equipment Model X (ASDE-X)

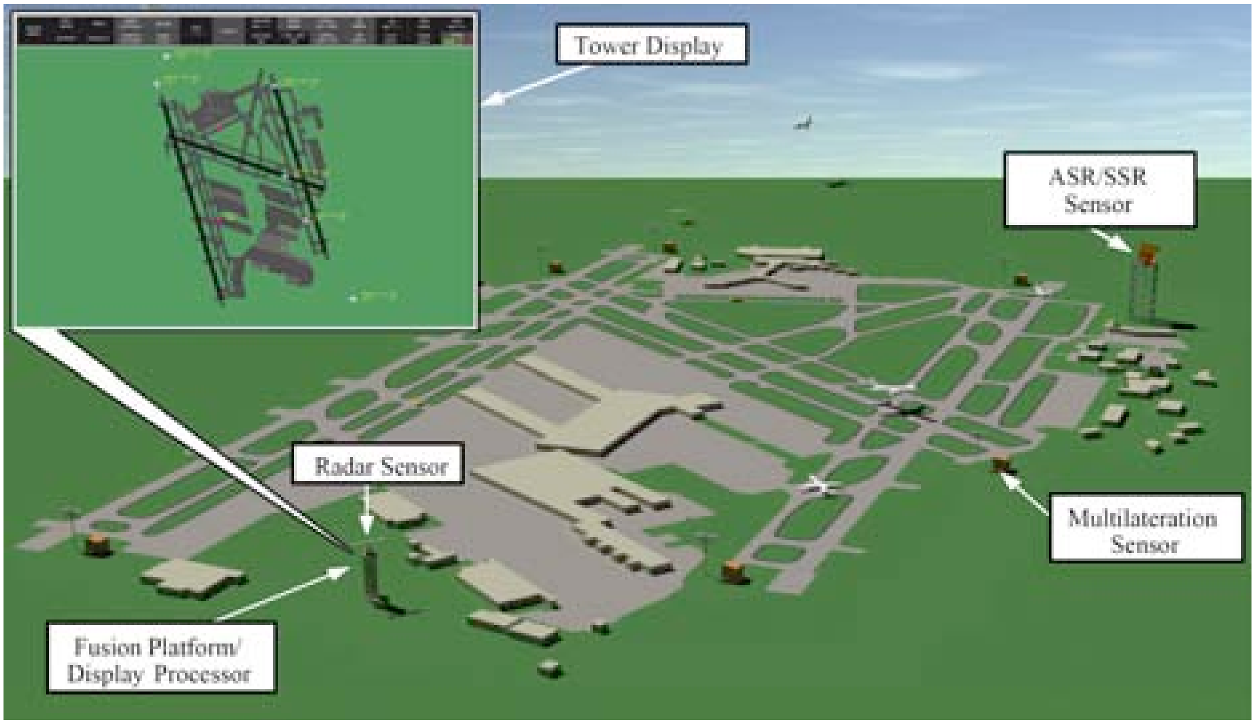
ASDE-X is a tool that provides the position of aircraft and vehicles on the surface, providing alerting functions for air traffic controllers and enhancing their situational awareness (Figure 18). The technology integrates data from various sources (e.g., radars, transponder multilateration systems, and ADS-B) to deliver accurate positioning and identify information to controllers for an improved view of airport surface operations. Tower controllers receive visual and audible alerts of potential conflicts ASDE-X is being deployed at 35 of the busiest airports in the nation (Table 12).

Table 12:
***ASDE-X Deployment Status***

| ASDE-X Deployment Site | Implementation Date |
|---|---|
| MKE (Milwaukee, WI) | 10/30/03 |
| MCO (Orlando, FL) | 09/30/04 |
| PVD (Providence, RI) | 05/16/05 |
| HOU (Houston, TX) | 08/31/05 |
| SEA (Seattle, WA) | 02/24/06 |
| STL (St. Louis, MO) | 05/24/06 |
| ATL (Atlanta, GA) | 06/07/06 |
| BDL (Hartford, CT) | 06/21/06 |
| SDF (Louisville, KY) | 07/19/07 |
| ORD (Chicago, IL) | 08/29/07 |
| CLT (Charlotte, NC) | 08/30/07 |
| IAD (Chantilly, VA) | 04/01/08 |
| DTW (Detroit, MI) | 08/13/08 |
| FLL (Ft. Lauderdale, FL) | 09/09/08 |
| PHX (Phoenix, AZ) | 09/18/08 |
| JFK (New York, NY) | 10/09/08 |
| LAX (Los Angeles, CA) | 01/29/09 |
| EWR Newark, NJ) | 07/15/09 |

| ASDE-X Deployment Site | Implementation Date |
|---|---|
| BOS (Boston, MA) | 07/23/09 |
| MIA (Miami, FL) | 08/26/09 |
| DEN (Denver, CO) | 10/08/09 |
| IAH (Houston, TX) | 10/19/09 |
| MSP (Minneapolis, MN) | 12/11/09 |
| PHL (Philadelphia, PA) | 12/18/09 |
| SLC (Salt Lake City, UT) | 01/20/10 |
| SNA (Orange County, CA) | 02/23/10 |
| DFW (Dallas, TX) | 02/26/10 |
| DCA (Arlington, VA) | 06/01/10 |
| MDW (Chicago, IL) | 08/01/10 |
| SAN (San Diego, CA) | 08/01/10 |
| BWI (Baltimore, MD) | 09/01/10 |
| HNL (Honolulu, HI) | 09/01/10 |
| LGA (New York, NY) | 10/01/10 |
| LAS (Las Vegas, NV) | 04/01/11 |
| MEM (Memphis, TN) | 04/01/11 |

Figure 18:
***ASDE-X Site***




## Electronic Flight Bag (EFB) With Moving Map Displays

Although not a NextGen technology, but rather a technology enabled by NextGen, EFBs with visual maps that update as the aircraft moves provide the pilot with greater situational awareness (Figure 19). The FAA reached agreements with several U.S. airlines to provide funding to help EFB installation programs. Through these agreements, the airlines will provide critical operational data to help the FAA evaluate the safety impact of the technology. This data will be used to make informed decisions on key safety capabilities necessary for the transition to NextGen. The FAA will provide up to $600,000 to each airline to invest in EFBs and surface moving maps for flights to or from test bed airports (Table 13). Each agreement will remain in effect through September 2011.

Figure 19:
***EFB with Moving Map Display***

## NextGen and Runway Safety in the Mid-Term (2012–2018)

To achieve mid-term NextGen capabilities, the FAA and its partners continue to conduct research in several areas relevant to runway safety and runway operations. Some of these areas include runway configuration management, arrival and departure metering, low-visibility surface operations, and simultaneous runway occupancy.

The following descriptions of NextGen capabilities were extracted from current FAA NAS architecture documents and the FAA's NextGen Implementation Plan, March 2010. These descriptions were selected based on their relevance to runway safety operations.

Table 13:
***Airports With Available Moving Map Database***

| Airports |
|---|
| Los Angeles International Airport (Los Angeles, CA) |
| Boston Logan International Airport (Boston, MA) |
| Chicago O'Hare International Airport (Chicago, IL) |
| Newark International Airport (Newark, NJ) |
| Cleveland Hopkins International Airport (Cleveland, OH) |
| Fort Lauderdale International Airport (Fort Lauderdale, FL) |
| George Bush Intercontinental Airport (Houston, TX) |
| Ted Stevens Anchorage International Airport (Anchorage, AK) |
| San Francisco International Airport (San Francisco, CA) |
| Las Vegas McCarran International Airport (Las Vegas, NV) |
| Miami International Airport (Miami, FL) |
| Philadelphia International Airport (Philadelphia, PA) |
| Albuquerque International Sunport (Albuquerque, NM) |
| Daytona Beach International Airport (Daytona, FL) |
| Phoenix Sky Harbor International Airport (Phoenix, AZ) |
| Dallas-Ft. Worth International Airport (Dallas, TX) |
| John F. Kennedy International Airport (New York, NY) |
| Hartsfield-Jackson Atlanta International Airport (Atlanta, GA) |
| LaGuardia Airport, (New York, NY) |
| Seattle-Tacoma International Airport (Seattle, WA) |

## Expand Low Visibility Operations to Achieve Low Visibility Surface Operations (Approach, Landing, and Takeoff[3])

Pilots are often faced with reduced visibility conditions in the air and on the ground, making it difficult to accurately determine location. NextGen initiatives will improve situational awareness during these conditions using a combination of technologies.

Pilots and drivers of ground vehicles will determine their position on an airport using Global Positioning System (GPS), Wide Area Augmentation System (WAAS), and Local Area Augmentation System (LAAS) via ADS-B and Ground-Based Transceiver (GBT) systems with or without surface based surveillance. Location information of aircraft and vehicles on the airport surface will be displayed on moving maps using Cockpit Display of Traffic Information (CDTI) or aided by Enhanced Flight Vision Systems (EFVS), Enhanced Vision Systems (EVS), Synthetic Visions Systems (SVS), or other types of advanced vision or virtual vision technology.

[3] Operational Improvement 107202

### Improved Runway Safety Situational Awareness for Pilots and Controllers[4]

Enhanced surface displays, which will alert controllers when a runway incursion could result, and provide pilots greater awareness of their location on the airport surface, will be developed to improve runway safety. Both ground-based (e.g., RWSL) and cockpit-based runway incursion alerting capabilities (e.g., EFB) also will be available to alert pilots when it is unsafe to enter the runway.

### Initial Surface Traffic Management[5]

FAA automated decision support tools will use departure-scheduling algorithms to manage the flow of surface traffic at high-density airports. These tools will integrate surveillance data that will include weather, departure queues, aircraft flight plan information, runway configuration, expected departure times, and gate assignments. The tools also will provide controllers with surface sequencing and staging lists for departures, along with average departure delays (current and predicted).

### Enhanced Surface Traffic Operations[6]

Data communication between aircraft and controllers will be used to transmit automated airport information, exchange clearances, and instructions, including hold-short instructions. At specified airports, the use of data communications will provide the augmented means of communication between controllers and equipped aircraft. Data communication functions will reduce frequency congestion on the radio, ensuring the successful transmission of more important communications that can provide a safe runway environment.

## NextGen and Runway Safety, Beyond the Mid-Term (2018+)

Long-term NextGen capabilities require continued research into surface situational awareness, taxi route generation and assignment, conformance monitoring, conflict detection, and conflict resolution. Because of the complexity of the NextGen program and the required interdependencies of various technologies, research has already started on many of the improvements that will not mature until after the mid-term time frame.

The following descriptions of NextGen capabilities were extracted from the current FAA NAS architecture and have been selected based on their relevance to runway safety.

### Full Surface Traffic Management With Conformance Monitoring[7]

By using improved surveillance, communication, and automation, safety and efficiency of surface traffic management will be increased. Properly equipped aircraft and ground vehicles will be provided with surface traffic information in real time. Airports and air traffic control centers will be able to view traffic flows and project demand; predict, plan, and manage surface movements; and balance runway assignments. Automated systems will monitor surface operations and update estimated departure clearance times. Surface optimization automation includes activities such as runway configuration and runway snow removal.

### Full Surface Situation Information (SSI)[8]

Automated broadcasting of aircraft and vehicle position to ground and aircraft sensors/receivers will provide a digital display of the airport environment and traffic to pilots, controllers, vehicle operators, and flight operations centers. SSI will complement visual observations of the airport surface by alerting pilots, controllers, and vehicle operators of a possible runway incursion before it happens.

NextGen represents the future state of our national air transportation system. Through a sustained effort, diligent implementation plan, and continued industry partnerships, these enhanced technologies will significantly improve runway safety for the next generation of air traveler.

[4] Operational Improvement 103207

[5] Operational Improvement 104209

[6] Operational Improvement 104207

[7] Operational Improvement 104206

[8] Operational Improvement 102406

# Human Factors in Aviation

## What Is the Human Factors Discipline?

The FAA and its air traffic control system, along with pilots, ground crews, and vehicle operators, function together every day to ensure that safe aircraft movement occurs on the runways and airport surface. This effort requires that everyone be able to transmit and receive accurate and complete information to maintain procedures, have appropriate judgment to make the right decision, and then take action upon that decision—literally hundreds of times every day. Safe runway operations are the objective for every aircraft every time there is a decision process. There is a constant reminder that the vulnerabilities of human error are injected into each decision made.

In the aviation environment, reliable and accurate human performance is equated with achieving high levels of operational safety. With technology evolving at a rapid pace, and safety being our highest priority, the FAA can no longer rely solely on a person's experience, insight, and training to accurately predict human performance. Human Factors, as an engineering and psychology discipline, has been proven to scientifically identify and assess human performance characteristics required to increase performance within the control tower, cockpit, and runway environments.

Pilots, controllers, and airport operations personnel wake up and start every day fully aware of their responsibility of ensuring safe flight. So, what happens between the time they wake up and the time they realize that a runway incursion has just occurred? The answer might be as simple as, they are human.

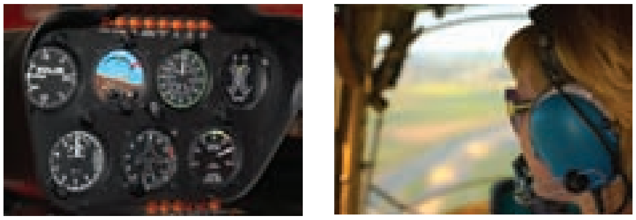
The goal of the Human Factors discipline is to improve operational performance and safety via the study of human strengths and limitations in relation to how people interact with equipment, the environment, and other people.

## Why Is the Study of Human Factors So Important?

It is the gap between humans and systems, when studied, analyzed, and tested that allows human factors specialists to help design systems and procedures that promote maximum human performance by capitalizing on human ability while counterbalancing human limitation. This is the basis for NextGen, a safer future. Increasingly crowded skies mean not only more departures and arrivals but also more decisions by pilots, ground crews, and controllers. This magnifies the opportunity for human error and potentially results in runway incursions.

Aviation safety experts have documented that human performance is a major causal factor in a majority of runway incursions. Nearly

Figure 20:
***Strengths of Machines and Humans***



**machines**

- Continuous alertness (repetitive, routine work)
- Quick response time and application of precise force
- Ability to multi-task
- Ability to store information and erase it completely
- Complex computational capability

**humans**

- Sensory functions
- Perceptual abilities (abstract concepts)
- Flexibility (the ability to improvise)
- Judgment
- Selective recall
- Inductive reasoning

all air traffic control operational errors are either caused by human factors or have some contributory human factors element. In today's complex aviation environment, any mistake can lead to a serious accident. Accurate human processing skills not only are necessary but also need to be continually maintained and sharpened. If the number of runway incursions are to continue to decrease, human factors must be better understood and knowledge more broadly applied.

A recent General Accountability Office (GAO) report confirmed that, according to experts surveyed and some airport officials, the primary causes of runway incursions are human factors issues. These issues may include miscommunication between air traffic controllers and pilots, pilots' lack of situational awareness on the airfield, and air traffic controller/pilot judgment error.

One way to attack these human factors issues is to understand specific human contributions to errors and identify ways to eliminate or minimize their effect on runway incursions. An enormous number of people are involved in daily airport operations—ranging from piloting the aircraft, controlling airspace, and ground crew maintenance to vehicle operations, snow removal, and surface repair. To successfully continue to decrease all runway incursions, we need to understand and evaluate each and every role in the guidance, maintenance, and control for takeoff, landing, and taxiing to identify gaps in process, procedure, equipment, or limitations in the human condition.

## How Human Factors Research Reduces Human Error

Human Factors experts, working alongside system designers and developers, examine the people, equipment, and processes involved in airport operations to gain an in-depth understanding of how each piece of the system works, the interrelationship among various systems, and the interrelationship of each piece with the environment. When designing and building new technology and processes, upgrading existing systems, or developing training materials, a comprehensive understanding of the aviation environment and all available resources is essential for targeting the best solution.

The human has a relationship with everything around him or her—software, hardware, other humans, and the environment. This constitutes the basis for human system error as a result of the inherent inconsistencies and limitations of our human condition. Evaluating human strengths and weaknesses plays an important role in the design of systems and procedures to determine which functions are best performed by a human and which are best suited for a machine.

The ultimate goal of Human Factors in aviation design is to maximize the strengths of both the human and machine for optimum system performance and to avoid the limitations of each (Figure 20). Although this effort sounds easy, designing products for a general population should take into account the varying characteristics of the user population. Unlike a machine that can be almost identically produced, modified, and redesigned to achieve a specific performance metric, humans are born with innate variants (e.g., physical size and shape, strength, reaction time, logical thought and reasoning, color and sound perception, and even a sense of smell). It is precisely these human differences that Human Factors engineers measure and analyze to optimize the human contribution to system performance.

## Human-Hardware Interaction

Throughout the aviation system, humans interact extensively with hardware, including tools (interpreting gauges and information) (Figure 21), aircraft controls and displays (flight management systems in the cockpit), computers and even vehicles and buildings. The potential for human error is easy to see when asking simple questions: Is the outside equipment used for a particular operation as usable in the winter with a gloved hand? Are all the control switches accessible for all heights and sizes of pilots? Does being tall skew what a pilot sees on a display?

Designing visual displays requires in-depth understanding of how humans see and, subsequently, how we process that information. The human eye receives and processes electromagnetic energy in the form of light waves, which are transformed into electrical impulses and sent to the brain's vision center for processing. Capabilities such as detecting speed, direction, color, contrast, and even patterns are processed in the brain. With the aid of our past learning experiences, the brain fosters our recognition and recall. The complex digital instrument panel (Figure 22) demonstrates that the placement of control panels is as important as the colors chosen and the movements within the display (e.g., blinking, graduating color, moving color blocks).

Figure 21:
***Using Hardware on an Aircraft Wheel Base***

Figure 22:
***Using Hardware in the Cockpit***

Figure 23:
***The Human–Information Interface***

## The Human–Information Interface

Human Factors experts are heavily involved with ensuring that all the information pertaining to how the aviation system operates and how it is organized, including all the regulations, safety procedures, operating manuals, and procedural checklists, is presented in an understandable manner in the appropriate format. Although not a device (Figure 23), the information that the pilots are obtaining from a navigational chart is important. Is the information complete, understandable, and accurate? The device itself would be considered hardware.

### The Human–Environment Interface

Humans are also taxed with interacting with their environment, including being sheltered inside buildings or airframes or performing duties outside exposed to the elements. The indoor environment can be impacted by such factors as temperature, noise, level of light, furniture, etc. The controller in Figure 24 is working in a low light internal environment at a comfortable temperature with little distraction. The outside environment can be impacted by such elements as weather, airspace, and airport infrastructure and surfaces. The airframe environment can be affected by additional factors such as equipment usage and communication requirements (Figure 25). Usually humans interact with these interfaces in harmony to produce a working system.

Figure 24:
***Controller Working in a Low Light Environment***

Figure 25:
***Lights, Controls, Displays, and Communication Helps Pilots Overcome Adverse Environments***

## Designing With the Human Factor in Mind

As technological advances continue to provide ever-increasing amounts of complex information, identifying ways to incorporate this information into existing procedures and systems and designing new ones while improving human performance presents a challenge. Improving safety in the runway environment, involving a large number of people, aircraft, and equipment, will require employing Human Factors concepts into the design process to provide for all these moving parts to individually function and interface safely with each other, ensuring the following:

- Runway signage is easily readable
- Taxiways and runways are clearly discernible
- Mechanisms exist for controllers and pilots to clearly communicate and check that each communication was heard correctly
- Ground crews coordinate with controllers and pilots
- Displays relate the information needed in a format easily and quickly understandable by the user
- Equipment controls are clearly labeled with appropriate understandable instructions.

Building systems via a human-centered design principle that takes actual human performance into consideration by maximizing user strengths, minimizing recognized human–machine interface weaknesses, and increasing safety is a function of system usability. Human factors specialists determine the usability criteria throughout the design, development, and prototyping phases to assess the upgraded or new system before bringing it into the field. Usability is a measure of how well a system supports the user's needs, in addition to meeting system goals. Taking this a step further, designing the system around the user is a methodology proven with great success because the design focuses on the function and response of maximizing user capabilities. It eliminates the need to fit the user and the user's limitations around the system and significantly reduces the amount of modification at the end of product development, not to mention the addition of cost and time.

A highly usable human-centered design should reduce the amount of training required, ease the complexity of maintenance, and provide increased safety.

Particularly helpful in raising awareness of the importance of human factors in aviation, especially runway incursions, has been a change in safety culture, where people are increasingly willing to report incidents that might not otherwise have been known. This culture change helps establish how circumstances may have transpired to create a chain of errors that led to an incident so that an effective response can be developed. The willingness of organizations to openly share information about safety incidents and targeted solutions also has begun to help improve the aviation community's understanding of just how important a role human factors plays.

The following anatomy of a runway incursion highlights the significance of the human effect: humans are the greatest single contributing factor in runway incursions.

## Anatomy of a Runway Incursion

This analysis reviews the sequence of events and contributing factors that ultimately led to a Category A runway incursion.

### Scene:

- Time: 21:00 Local
- Weather: Clear
- Air traffic complexity: Low
- Controller time on position: 18 minutes
- Controller time on duty: 7 hours out of an 8-hour shift
- Airport Construction: Taxiway B6 closed for maintenance, Runway 29L also closed.

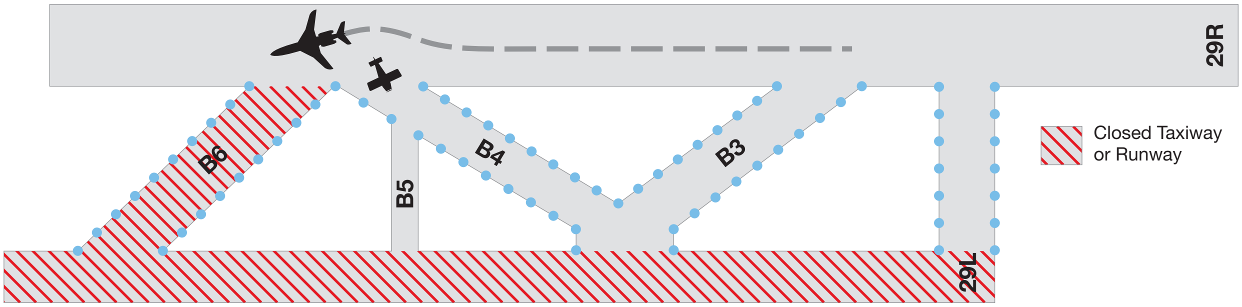
### Event Description:

**9:00 p.m.** The pilot of a six-seat Piper Malibu contacts the control tower and is cleared to land on runway 29R. Behind the Malibu is a 50-seat Canadair Regional Jet (CRJ).

**9:01–9:04 p.m.** The CRJ pilot checks in with the controller and is cleared to land on runway 29R. The controller advises the pilot that he is following a Malibu ahead on a 2-mile final for the runway. The CRJ pilot acknowledges the landing clearance and informs the controller that he has the Malibu in sight.

**9:04–9:07 p.m.** The controller instructs the Malibu to exit the runway at taxiway B3. The Malibu pilot misses B3 and is instructed to exit at taxiway B5. At this time, the CRJ is on a mile final. The Malibu pilot informs the controller that B5 taxiway is

Figure 26:
*Airport Layout Showing the Two Aircraft and Runway Lights*




difficult to locate. However, the controller believes he sees the Malibu turning left at taxiway B5.

9:07 p.m. CRJ lands on runway 29R and, on rollout, swerves to avoid the Malibu, which is still on the runway (Figure 26). The CRJ pilot informs the controller that they, "…had just passed another aircraft still on the runway." The two aircraft came within 15 feet of each other.

## Event Analysis: What Went Wrong?

To fully understand what happened, each participant's role was analyzed. FAA-detailed records were used to construct a timeline. Focusing on the most critical 3 minutes, from 9:04 p.m. to 9:07 p.m., provides additional insight and information. The controller's intention was to provide the best air traffic service to both inbound aircraft. However, poor communication, infrastructure, and other issues all exacerbated the situation.

### Analysis of Time Period 9:04–9:05 p.m.

Human Error: Malibu pilot missing taxiway B3

- The Malibu pilot was unable to make the turn onto taxiway B3. He might have been unfamiliar with the airport and might not have planned ahead and reduced speed in time for the exit. General aviation pilots often fly alone; consequently, it is extremely important for the single pilot to not only thoroughly review airport charts and diagrams but also establish runway exit and taxi plans.

Human Error: Poor communications between the controller and Malibu pilot

- The Malibu pilot did not advise the controller that he missed taxiway B3. The controller took the initiative and instructed the Malibu to exit at taxiway B5, which did not connect directly to the runway.

Figure 27:
*Aerial View of Runway as It Was at the Time of the Runway Incursion*

## Analysis of Time Period 9:05–9:06 p.m.

**Human Error:** Malibu pilot unable to locate taxiway B5

- The Malibu pilot could not locate B5 because he might have been unfamiliar with the airport, might not have had an airport diagram, and the taxiway was not lighted.

**Human Error:** Loss of situational awareness

- Although not an error, specifically assigning B3 and B5 as runway exits caused the unfamiliar Malibu pilot to spend more time and energy trying to comply with Air Traffic Control (ATC) instructions than maintaining situational awareness. Just as a driver of a car slows to look for a street sign in an unfamiliar area, the Malibu pilot spent more time on the runway looking for the correct exit. The controller planned for the Malibu to spend as little time on the runway as possible because of the CRJ being on short final. If the controller had issued an instruction to exit at the first available taxiway, this event might never have happened.
- The controller assumes the issue is resolved when he thinks he sees the Malibu turning onto taxiway B5. Neither the pilot nor the controller communicates or confirms that the Malibu was clear of the runway.

**Infrastructure:** Taxiway B5 not intersecting with runway 29R, nonstandard markings, and B6 closed for construction.

- Taxiway B5 did not intersect with the runway (Figure 27). Also, taxiway B6 was closed for construction at the time, this left only taxiways B4 or B5 available for exiting the runway. Furthermore, B5 did not have any taxiway lights; instead, it had reflectors that were a different color than the anticipated taxiway lights. Unless a plane is directly facing reflectors with its lights on, reflectors are not visible. Taxiway B5 is narrower than a normal taxiway and could be confused with a service road.

## Analysis of Time Period 9:06-9:07 p.m.

**Human Error:** Loss of situational awareness

- The Malibu pilot and controller were unaware that the aircraft was still on the runway. The controller did not confirm that the runway was clear before the CRJ landed. If the controller had known the Malibu was still on the runway, he would have issued go-around instructions to the CRJ. Only on landing did the CRJ pilot confirm that the Malibu was still on the runway.

Figure 28:
*Aerial View of Runway Showing Improvements to the Runway Layout*


## What Has the Airport Done Since the Serious Incursion?

As a result of this runway incursion, the FAA tasked RSAT teams, certified inspectors, pilot representatives, and FAAST team members to provide a list of improvements that could help prevent a similar incident from recurring. This list includes the following:

- Demolition of taxiway B5 (Figure 28)
- New runway signs and markings
- Pilot presentations, which include the following:
  - The importance of being familiar with the airport layout. Having a current airport diagram in the cockpit, being aware and understanding the Airport Traffic Information System (ATIS)/Notice to Airmen (NOTAM) information relating to the current condition of the airport, and having a plan for your runway/taxiway routing on the airport
  - Emphasis on the importance of taxiing clear of any movement areas and requesting air traffic assistance when confused on an airport surface
  - The importance of understanding air traffic control instructions
  - What signs/markings and lighting are indicating to pilots
- Tower personnel briefings, which included reemphasizing the importance of runway scanning and maintaining situational awareness.

The issues addressed above are related specifically to procedures, processes, and technologies that are in place today. The FAA has implemented hearback/readback programs, certification and recertification classes, and a multitude of efforts all directed toward addressing the human communication factor. However, for better or worse, humans are an integral part of the aviation system. We make communications systems, signs, reflectors, and lights, design the best aircraft, and train the best pilots and controllers; however, until we successfully tackle the human factor, we will always be bound by our limitations. By analyzing runway incursions to identify causal factors, the FAA will be able to understand and leverage not only strengths and weaknesses but also design technologies and procedures to optimize the human factor.

# International Leadership in Runway Safety

Through the FAA International Aviation Office (API) and the ATO International Office (AJG-4), the FAA contributes to multiple national and international cooperation initiatives aimed at improving aviation safety, in general, and runway safety, in particular. Each year, the FAA provides direct and indirect technical assistance and training to regulators and air navigation service providers in more than 100 countries, expanding the network of collaborative partners.

Figure 29:
***FAA International Runway Safety Partners***


Participation in international aviation standards-setting committees, for example, is one of the key activities through which FAA provides significant leadership in runway safety related issues. Entities such as the RTCA, Inc., a federal advisory committee to the FAA, manages several committees and working groups dedicated to developing consensus-based recommendations that become technical input for FAA standards. The Joint RTCA-European Organization for Civil Aviation Equipment (EUROCAE) Special Committee (SC-217/ EUROCAE WG-44) on terrain and airport databases will develop recommendations relevant to runway safety topics such as user requirements for aerodrome mapping databases, user requirements for terrain and obstacle databases, and terrain and aerodrome mapping database exchange standards.

## FAA Is a Key Participant in ICAO

Close coordination with the International Civil Aviation Organization (ICAO) has been instrumental for the FAA in its efforts to increase global awareness of runway safety issues. As the FAA progresses toward next-generation technologies, working with ICAO will become increasingly important as U.S. aviation intersects with global aviation on a larger scale.

## The FAA Supports and Participates in Multiple ICAO Panels

- **Aerodromes Panel**—works to develop global consensus on runway safety related issues such as the use of visual aids for the Advanced Surface Movement Guidance and Control System (A-SMGCS) and runway surface friction measurement and reporting for the prevention of runway incursions.
- **Operations Panel and Aeronautical Surveillance Panel**—address topics that impact runway safety (e.g., developing standards and recommended practices governing the operation and use of synthetic vision systems and ADS-B).
- **Operational Data Link Panel**—deals with runway safety relevant topics such as developing standards and recommended practices, procedures, and guidance materials to support the implementation of emerging data link technology. Increased use of data communication is an essential element of the NextGen vision for runway operations.

The FAA supports ICAO's Regional Planning and Implementation Groups (RPIG) activities related to runway safety. In April 2009, representatives from the FAA's Office of Runway Safety delivered technical presentations during ICAO's Asia Pacific Runway Safety Program Seminar in Bangkok, Thailand. The FAA also is a key participant in the Caribbean and South American Regional Planning and Implementation Group (GREPECAS).

## Adopting International Phraseology

As the global aviation community strives to develop a common understanding for safe air travel, the FAA and ICAO continue to promote global safety through standardization of international phraseology—the language of instructions that air traffic controllers and pilots use to communicate during all flight phases, including taxi, takeoff, cruise, and arrival. Pilots from every corner of the globe are used to hearing different instructions to mean the same action, and trying to hear and repeat different instructions in a foreign language is a barrier to runway safety. However, changing phraseology is not as simple as requesting pilots and controllers to change the words they use.

In November of 2001, ICAO changed the instruction "Taxi to holding point" to "Taxi to holding position" (which instructs pilots to taxi to a particular point on the airport surface and await clearance to enter the runway). However, it had been noted that US pilots flying overseas frequently confused the new ICAO "Taxi to holding position" for the FAA's "Taxi into position and hold" (which instructs the pilot to taxi onto the runway and wait for their takeoff clearance). ICAO's equivalent of "Taxi into position and hold" is "line up and wait."

NOTE: When the FAA saw that ICAO's "Taxi to holding position" had the potential for confusing pilots with the FAA's "Taxi into position and hold," the FAA proactively changed its phraseology to "Position and hold"; soon after, ICAO reverted to the original phraseology of "Taxi to holding point."

Continuing the effort to improve safety, accuracy and global harmonization, the FAA is retiring "***Taxi into position and hold***," and adopting "***Line up and wait***," so all pilots, foreign and domestic, will globally hear and understand the same instruction.

Although phraseology changes might seem simple, they are not taken lightly. Any change to phraseology affects the safety of the aviation system. An extensive awareness campaign has been planned and will be rolled out in accordance with the released changes in the safest manner.

## FAA Collaborates on Runway Safety With International Aviation Stakeholders

Runway safety issues are addressed within the context of FAA's overall direct collaboration with regulators such as the European Aviation Safety Authority (EASA) and Transport Canada. Organizations such as the Airports Council International (ACI), IATA, International Federation of Airline Pilot Associations (IFALPA), and Flight Safety Foundation (FSF) also promote and support runway safety from their stakeholders' perspective. The FAA maintains an active collaborative relationship with these organizations as part of its overall international leadership efforts.

## FAA and EUROCONTROL's Collaboration in Runway Safety

FAA and EUROCONTROL, the European Organization for the Safety of Air Navigation, have had a memorandum of cooperation in place since 1986. This memorandum covers air traffic management (ATM) research, strategic ATM analysis, technical and operational harmonization, and alignment of safety and environmental factors.

This cooperation with EUROCONTROL has been beneficial for both organizations and has resulted in increased information sharing and technology development. For example, since 2003, with participation from the FAA, EUROCONTROL has published the European Action Plan for the Prevention of Runway Incursions. Subsequently, this work was used as input to the collaboration among FAA, EUROCONTROL, and Air Services Australia to support the production of the 2007 ICAO's Manual for the Prevention of Runway Incursions.

FAA and EUROCONTROL cooperated in developing the Integrated Risk Picture (IRP) analysis using detailed modeling of causal factors involved in incidents and accidents. This analysis is the output of a "risk model" representing risks of aviation accidents, with particular emphasis on air traffic management contributions. IRP integrates individual safety assessments to determine the combined effects that proposed ATM improvements might have on safety. This type of collaborative development accelerates the standardization of safety improvements worldwide.

[10] EUROCONTROL website; A Systemic Model of ATM Safety: The Integrated Risk Picture. Eric Perrin, Barry Kirwan, EUROCONTROL, France, Ron Stroup, FAA, US, and ICAO

## FAA and CAST

For the past several years, the Commercial Aviation Safety Team (CAST) has successfully brought together key domestic and international stakeholders from industry and government to develop and implement a prioritized safety agenda. The FAA has implemented several CAST safety enhancements regarding runway incursion prevention, including updating air traffic controller training programs; establishing standard operating procedures for ground operations for Federal Aviation Regulations (FAR), Part 121 and Part 135 operators; and establishing and disseminating recommended practices for ground operations for general aviation pilots.

## International Safety Data Sharing

The Aviation Safety Information Analysis and Sharing (ASIAS) program, another FAA–CAST initiative, produces additional direct benefits for runway safety. Under ASIAS, the FAA and the aviation community have initiated a safety analysis and data sharing program that proactively analyzes the extensive data received from the FAA, airline safety programs, manufacturers, and others to advance aviation safety. As cited at the 2008 annual US/Europe International Aviation Safety Conference, ASIAS enables the aviation community to identify systemic risks and evaluate those identified risks by estimating probabilities, assessing severities, uncovering event precursors, and diagnosing event causation; formulate interventions; and monitor the effects of those interventions.

International safety data sharing efforts such as the CAST/ICAO Common Taxonomy Team (CICTT) contribute to FAA's runway safety initiatives. CICTT includes experts from a numerous different areas that are all tasked with developing common taxonomies and definitions for aviation accident and incident reporting systems. Common taxonomies and definitions establish an industry standard language thereby improving the quality of information and communication. With this common language, the aviation community's capacity to focus on common safety issues is greatly enhanced.

### FAA and Chinese Aviation Authorities

Continuing its support of international runway safety goals, the FAA is working with Chinese aviation authorities to help them implement CAST safety enhancements. China has implemented a runway safety program, which began soon after its 2007 ICAO audit. The program is continuing to focus on airport signage and markings and increasing education and training objectives. The FAA and the Houston airport are supporting a training program for Chinese personnel focusing on multi-runway operations.

### FAA's Future Leadership Role

The FAA has developed strong ties with the international community and is continuing to provide leadership as the future of air transportation comes upon us. The world is becoming more connected than ever before, which places unprecedented urgency on the need for common international standards ranging from communication to navigation and surveillance. These common standards will help address the expected increases in air transport capacity with an increase in the level of aviation safety and runway safety.

## Runway Incursion Data for FY 2006 through FY 2009 by Airport[1] (Sorted Alphabetically by State)

**ALABAMA**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Birmingham International Airport, Birmingham (BHM) | ASO | 2006 | | | | 2 | 2 | 4 | 2.81 | 1 |
| | | 2007 | | 1 | | | 1 | 2 | 1.45 | 3 |
| | | 2008 | | | | 2 | | 2 | 1.51 | 1 |
| | | 2009 | | | | | 1 | 1 | 0.91 | 1 |
| Huntsville International - Carl T. Jones Airport, Huntsville (HSV) | ASO | 2006 | | | | | 2 | 2 | 2.07 | |
| | | 2007 | | | | | 2 | 2 | 2.11 | 2 |
| | | 2008 | | | | | 2 | 2 | 2.22 | 1 |
| | | 2009 | | | | | 2 | 2 | 2.60 | 1 |
| Mobile Downtown Airport, Mobile (BFM) | ASO | 2006 | | | | | 2 | 2 | 2.43 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | 1 | 1 | 2 | 2.42 | |
| Mobile Regional Airport, Mobile (MOB) | ASO | 2006 | | | | 1 | 4 | 5 | 4.72 | |
| | | 2007 | | | | 1 | 2 | 3 | 3.17 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | 1 | | 1 | 0.93 | |
| Montgomery Regional Airport Dannelly Field, Montgomery (MGM) | ASO | 2006 | | | | | 1 | 1 | 1.38 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |
| Tuscaloosa Regional Airport, Tuscaloosa (TCL) | ASO | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | 1 | | 1 | 1.88 | |
| | | 2009 | | | | | | | | |

**ALASKA**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Bethel Airport, Bethel (BET) | AAL | 2006 | | | | 1 | 1 | 2 | 2.00 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 2 | 2 | 2.03 | |
| | | 2009 | | | | | | | | |
| Fairbanks International Airport, Fairbanks (FAI) | AAL | 2006 | | | | 2 | 7 | 9 | 8.02 | |
| | | 2007 | | | | 2 | 5 | 7 | 6.47 | 2 |
| | | 2008 | | | | | 6 | 6 | 5.27 | 1 |
| | | 2009 | | | | | 8 | 8 | 6.60 | 3 |

[1]Annual RI Rate is per 100,000 operations

**ALASKA – Continued**

| Airport, City (Airport Code) | Region | Fiscal Year | Collision | Severity A | Severity B | Severity C | Severity D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Juneau International Airport, Juneau (JNU) | AAL | 2006 | | | | | | | | |
| | | 2007 | | | | 2 | 4 | 6 | 6.34 | |
| | | 2008 | | | | | 1 | 1 | 1.13 | |
| | | 2009 | | | | 2 | | 2 | 2.37 | 1 |
| King Salmon Airport, King Salmon (AKN) | AAL | 2006 | | | | | | | | |
| | | 2007 | | | | 1 | | 1 | 2.91 | |
| | | 2008 | | | | | 2 | 2 | 20.30[1] | |
| | | 2009 | | | | | | | | |
| Merrill Field, Anchorage (MRI) | AAL | 2006 | | | | | 7 | 7 | 3.80 | 3 |
| | | 2007 | | | | | 9 | 9 | 5.00 | |
| | | 2008 | | | | 1 | 11 | 12 | 7.03 | 1 |
| | | 2009 | | | | 1 | 12 | 13 | 7.77 | 3 |
| Ted Stevens Anchorage International Airport, Anchorage (ANC)[2] | AAL | 2006 | | | | 3 | 10 | 13 | 4.27 | 4 |
| | | 2007 | | 1 | | 3 | 5 | 9 | 3.00 | 2 |
| | | 2008 | | | | 3 | 7 | 10 | 3.48 | 1 |
| | | 2009 | | | | 7 | 4 | 11 | 4.30 | 6 |

[1]AKN had only 9,853 operations in FY08, as compared to 34,000-40,000+ the previous three fiscal years.

[2]Includes Lake Hood Seaplane Base (LHD)

**ARIZONA**

| Airport, City (Airport Code) | Region | Fiscal Year | Collision | Severity A | Severity B | Severity C | Severity D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Chandler Municipal Airport, Chandler (CHD) | AWP | 2006 | | | | 1 | | 1 | 0.37 | |
| | | 2007 | | | | | 1 | 1 | 0.38 | |
| | | 2008 | | | | 2 | | 2 | 0.79 | 2 |
| | | 2009 | | | | 1 | 2 | 3 | 1.46 | |
| Ernest A. Love Field, Prescott (PRC) | AWP | 2006 | | | | 1 | 3 | 4 | 1.76 | |
| | | 2007 | | | | 4 | | 4 | 1.73 | 1 |
| | | 2008 | | | | 4 | 3 | 7 | 2.74 | 1 |
| | | 2009 | | | | 9 | 6 | 15 | 5.88 | 1 |
| Falcon Field, Mesa (FFZ) | AWP | 2006 | | | | | 2 | 2 | 0.76 | |
| | | 2007 | | | | 6 | 2 | 8 | 2.79 | |
| | | 2008 | | 1 | 1 | 7 | 5 | 14 | 4.26 | |
| | | 2009 | | | | | 2 | 2 | 0.72 | 2 |
| Flagstaff Pulliam Airport, Flagstaff (FLG) | AWP | 2006 | | | | | 1 | 1 | 2.17 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |

**ARIZONA – Continued**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Glendale Municipal Airport, Glendale (GEU) | AWP | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | 1 |
| | | 2008 | | | | 1 | | 1 | 0.72 | |
| | | 2009 | | | | | 1 | 1 | 0.87 | 1 |
| Grand Canyon National Park Airport, Tusayan (GCN) | AWP | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | 1 | 1 | 1.08 | |
| Laughlin/Bullhead International Airport, Bullhead City (IFP) | AWP | 2006 | | | | | 2 | 2 | 7.20 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | 1 | | | 1 | 4.56 | |
| | | 2009 | | | | | 1 | 1 | 4.73 | |
| Phoenix Deer Valley Airport, Phoenix (DVT) | AWP | 2006 | | 1 | | 1 | 2 | 4 | 1.00 | |
| | | 2007 | | | | 1 | 2 | 3 | 0.76 | 1 |
| | | 2008 | | | | 1 | 1 | 2 | 0.55 | |
| | | 2009 | | 1 | | 8 | 8 | 17 | 4.16 | 6 |
| Phoenix Goodyear Airport, Goodyear (GYR) | AWP | 2006 | | | | 1 | 1 | 2 | 1.43 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | 1 | | 1 | 0.56 | |
| Phoenix-Mesa Gateway Airport, Mesa (IWA) | AWP | 2006 | | | | 5 | 2 | 7 | 2.55 | |
| | | 2007 | | | | 1 | | 1 | 0.33 | |
| | | 2008 | | | | | 5 | 5 | 1.96 | |
| | | 2009 | | | | 2 | 4 | 6 | 3.18 | 1 |
| Phoenix Sky Harbor International Airport, Phoenix (PHX) | AWP | 2006 | | 2 | | 1 | 1 | 4 | 0.73 | |
| | | 2007 | | | | 1 | | 1 | 0.18 | |
| | | 2008 | | | | 2 | 3 | 5 | 0.96 | 2 |
| | | 2009 | | | | 1 | 6 | 7 | 1.52 | 2 |
| Scottsdale Airport, Scottsdale (SDL) | AWP | 2006 | | | | 1 | 1 | 2 | 0.99 | 1 |
| | | 2007 | | | | 1 | | 1 | 0.53 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |
| Tucson International Airport, Tucson (TUS) | AWP | 2006 | | 1 | | 3 | | 4 | 1.42 | 1 |
| | | 2007 | | | | 2 | 1 | 3 | 1.16 | |
| | | 2008 | | | | 2 | | 2 | 0.86 | 1 |
| | | 2009 | | | | 9 | 22 | 31 | 17.09 | 2 |

**ARKANSAS**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Adams Field, Little Rock (LIT) | ASW | 2006 | | | | 1 | 3 | 4 | 2.74 | 1 |
| | | 2007 | | | | 3 | 1 | 4 | 2.82 | |
| | | 2008 | | | | | 1 | 1 | 0.76 | 1 |
| | | 2009 | | | | | | | | |
| Ft. Smith Regional Airport, Ft. Smith (FSM) | ASW | 2006 | | | | | | | | |
| | | 2007 | | | | | 1 | 1 | 1.42 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | 1 | 1 | 2.22 | 1 |
| Texarkana Regional Airport Webb Field, Texarkana (TXK) | ASW | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 1 | 1 | 3.64 | |
| | | 2009 | | | | | 1 | 1 | 3.50 | |

**CALIFORNIA**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Atwater-Castle Airport, Atwater (MER) | AWP | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | 1 | | | 4 | 5 | 3.76 | |
| | | 2009 | | | | | 5 | 5 | 5.81 | 2 |
| Bob Hope Airport, Burbank (BUR) | AWP | 2006 | | | | 2 | 4 | 6 | 3.13 | 1 |
| | | 2007 | | | | 1 | 3 | 4 | 2.11 | 1 |
| | | 2008 | | | | | 1 | 1 | 0.81 | |
| | | 2009 | | | | | | | | |
| Brackett Field, La Verne (POC) | AWP | 2006 | | | | 1 | 3 | 4 | 3.15 | 2 |
| | | 2007 | | | | | 1 | 1 | 1.01 | 6 |
| | | 2008 | | | | 3 | 3 | 6 | 4.98 | |
| | | 2009 | | | | 1 | 1 | 2 | 1.89 | 5 |
| Brown Field Municipal Airport, San Diego (SDM) | AWP | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | 1 | | | | 1 | 0.85 | |
| | | 2009 | | | | | | | | |
| Buchanan Field, Concord (CCR) | AWP | 2006 | | | | | | | | 1 |
| | | 2007 | | | | 1 | 1 | 2 | 2.17 | |
| | | 2008 | | | | 1 | 3 | 4 | 4.21 | |
| | | 2009 | | | | | 1 | 1 | 1.11 | 1 |
| Camarillo Airport, Camarillo (CMA) | AWP | 2006 | | | | 2 | 3 | 5 | 3.34 | 8 |
| | | 2007 | | | | | 2 | 2 | 1.37 | 2 |
| | | 2008 | | | | | 2 | 2 | 1.31 | 4 |
| | | 2009 | | | | 2 | | 2 | 1.26 | 6 |

**CALIFORNIA – Continued**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Charles M. Schulz - Sonoma County Airport, Santa Rosa (STS) | AWP | 2006 | | | | | 1 | 1 | 0.84 | |
| | | 2007 | | | | | 1 | 1 | 0.75 | |
| | | 2008 | | | | | 1 | 1 | 0.93 | |
| | | 2009 | | | | | 1 | 1 | 1.10 | |
| Chico Municipal Airport, Chico (CIC) | AWP | 2006 | | | | 1 | | 1 | 2.20 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 1 | 1 | 1.81 | |
| | | 2009 | | | | | | | | |
| Chino Airport, Chino (CNO) | AWP | 2006 | | | | | 7 | 7 | 4.20 | 3 |
| | | 2007 | | | | | 4 | 4 | 2.39 | 2 |
| | | 2008 | | | | | 2 | 2 | 1.45 | |
| | | 2009 | | | | 1 | 3 | 4 | 2.52 | 2 |
| El Monte Airport, El Monte (EMT) | AWP | 2006 | | | | | | | | 1 |
| | | 2007 | | | | | | | | 1 |
| | | 2008 | | | | 1 | | 1 | 1.17 | 1 |
| | | 2009 | | | | | | | | 1 |
| Fresno Yosemite International Airport, Fresno (FAT) | AWP | 2006 | | | | 1 | | 1 | 0.65 | |
| | | 2007 | | | 1 | | | 1 | 0.64 | |
| | | 2008 | | 1 | | | 1 | 2 | 1.25 | |
| | | 2009 | | | | 1 | 4 | 5 | 3.85 | |
| Fullerton Municipal Airport, Fullerton (FUL) | AWP | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | 1 | 1 | 2 | 2.87 | |
| | | 2009 | | | | | | | | |
| General William J. Fox Airfield, Lancaster (WJF) | AWP | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | 1 | | 1 | 1.69 | |
| Gillespie Field, San Diego/El Cajon (SEE) | AWP | 2006 | | 1 | | | 3 | 4 | 1.44 | |
| | | 2007 | | | | | | | | 1 |
| | | 2008 | | | | | 1 | 1 | 0.39 | 1 |
| | | 2009 | | | | | 2 | 2 | 0.09 | |
| Hawthorne Municipal Airport, Hawthorne (HHR) | AWP | 2006 | | | | 1 | 3 | 4 | 6.44 | |
| | | 2007 | | | | 1 | | 1 | 1.45 | |
| | | 2008 | | | | 1 | 1 | 2 | 3.48 | |
| | | 2009 | | | | | 3 | 3 | 5.97 | |
| Hayward Executive Airport, Hayward (HWD) | AWP | 2006 | | | | | | | | 1 |
| | | 2007 | | | | | 1 | 1 | 0.74 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | 2 | 3 | 5 | 4.10 | |

**CALIFORNIA – Continued**

| | | | Severity | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Airport, City (Airport Code)** | **Region** | **Fiscal Year** | **Collision** | **A** | **B** | **C** | **D** | **Total RIs** | **Annual RI Rate** | **Other Events, Non-RIs** |
| John Wayne Airport - Orange County, Santa Ana (SNA) | AWP | 2006 | | | | 3 | 1 | 4 | 1.10 | |
| | | 2007 | | | | 9 | 9 | 18 | 5.15 | 3 |
| | | 2008 | | | | 8 | 2 | 10 | 3.05 | 5 |
| | | 2009 | | | | 2 | 5 | 7 | 2.43 | 4 |
| Livermore Municipal Airport, Livermore (LVK) | AWP | 2006 | | | | | | | | 1 |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | 1 | 1 | 2 | 1.20 | |
| | | 2009 | | | | 2 | 1 | 3 | 2.15 | |
| Long Beach Airport - Daugherty Field, Long Beach (LGB) | AWP | 2006 | | | | 2 | 4 | 6 | 1.67 | 2 |
| | | 2007 | | | 1 | 5 | 7 | 13 | 3.26 | 2 |
| | | 2008 | | | | 6 | 5 | 11 | 3.05 | |
| | | 2009 | | | | 5 | 6 | 11 | 3.62 | 1 |
| Los Angeles International Airport, Los Angeles (LAX) | AWP | 2006 | | 1 | 1 | 6 | 2 | 10 | 1.53 | 1 |
| | | 2007 | | | 2 | 6 | 13 | 21 | 3.12 | |
| | | 2008 | | | | 3 | 6 | 9 | 1.37 | 1 |
| | | 2009 | | | | 3 | 5 | 8 | 1.47 | |
| McClellan-Palomar Airport, Carlsbad (CRQ) | AWP | 2006 | | | | 3 | | 3 | 1.52 | |
| | | 2007 | | | | 2 | | 2 | 0.93 | |
| | | 2008 | | | | 1 | 2 | 3 | 1.55 | 2 |
| | | 2009 | | | | 2 | 2 | 4 | 2.29 | 1 |
| Meadows Field, Bakersfield (BFL) | AWP | 2006 | | | | | 1 | 1 | 0.51 | 1 |
| | | 2007 | | | | | 2 | 2 | 0.93 | |
| | | 2008 | | | | | 1 | 1 | 0.52 | |
| | | 2009 | | | | | 2 | 2 | 1.61 | 1 |
| Metropolitan Oakland International Airport, Oakland (OAK) | AWP | 2006 | | | | 2 | 3 | 5 | 1.50 | 2 |
| | | 2007 | | | | 1 | 1 | 1 | 0.29 | |
| | | 2008 | | | | 1 | | 1 | 0.34 | |
| | | 2009 | | | | 2 | | 2 | 0.84 | |
| Monterey Peninsula Airport, Monterey (MRY) | AWP | 2006 | | | | 2 | 2 | 4 | 4.34 | |
| | | 2007 | | | | | 1 | 1 | 1.17 | |
| | | 2008 | | | | 2 | 1 | 3 | 3.72 | 2 |
| | | 2009 | | | | 1 | 3 | 4 | 5.88 | 6 |
| Montgomery Field, San Diego (MYF) | AWP | 2006 | | | | | 1 | 1 | 0.43 | 1 |
| | | 2007 | | 1 | | 2 | 2 | 5 | 2.24 | |
| | | 2008 | | | | 1 | 3 | 4 | 1.69 | |
| | | 2009 | | | | | 1 | 1 | 0.49 | |
| Napa County Airport, Napa (APC) | AWP | 2006 | | | | 3 | 2 | 5 | 4.30 | 1 |
| | | 2007 | | 1 | | 1 | 4 | 6 | 4.89 | 1 |
| | | 2008 | | | | 2 | 5 | 7 | 5.80 | |
| | | 2009 | | | | | 2 | 2 | 1.91 | |

**CALIFORNIA – Continued**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Norman Y. Mineta San Jose International Airport, San Jose (SJC) | AWP | 2006 | | | | 2 | 7 | 9 | 4.19 | 1 |
| | | 2007 | | | | 4 | 5 | 9 | 4.34 | 2 |
| | | 2008 | | | | | 8 | 8 | 4.06 | |
| | | 2009 | | | | 2 | 8 | 10 | 5.92 | |
| Ontario International Airport, Ontario (ONT) | AWP | 2006 | | | | 1 | 2 | 3 | 2.20 | |
| | | 2007 | | | | 1 | 2 | 3 | 2.07 | 1 |
| | | 2008 | | | | | 2 | 2 | 1.48 | |
| | | 2009 | | | | | 4 | 4 | 3.98 | 2 |
| Oxnard Airport, Oxnard (OXR) | AWP | 2006 | | | | | 1 | 1 | 1.13 | |
| | | 2007 | | | | | 2 | 2 | 2.63 | |
| | | 2008 | | | | 2 | 3 | 5 | 5.57 | 1 |
| | | 2009 | | | | 2 | 1 | 3 | 4.84 | |
| Palm Springs International Airport, Palm Springs (PSP) | AWP | 2006 | | | 1 | 2 | 4 | 7 | 7.64 | 1 |
| | | 2007 | | | | 2 | 5 | 7 | 7.75 | 4 |
| | | 2008 | | | | | 3 | 3 | 3.99 | 1 |
| | | 2009 | | | | | 3 | 3 | 4.03 | |
| Palmdale Regional Airport, Palmdale (PMD) | AWP | 2006 | | | | | | | | |
| | | 2007 | | | | | 1 | 1 | 2.97 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |
| Palo Alto Airport of Santa Clara County, Palo Alto (PAO) | AWP | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | 3 | 2 | 5 | 2.86 | |
| | | 2009 | | | | | | | | |
| Ramona Airport, Ramona (RNM) | AWP | 2006 | | | | | | | | |
| | | 2007 | | | | | 1 | 1 | 0.59 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |
| Redding Municipal Airport, Redding (RDD) | AWP | 2006 | | | | | | | | |
| | | 2007 | | | | | 1 | 1 | 1.30 | |
| | | 2008 | | | | | 1 | 1 | 1.47 | |
| | | 2009 | | | | | | | | |
| Reid-Hillview Airport of Santa Clara County, San Jose (RHV) | AWP | 2006 | | | | 1 | | 1 | 0.59 | |
| | | 2007 | | | | | 1 | 1 | 0.66 | |
| | | 2008 | | | | | | | | 1 |
| | | 2009 | | | | | 1 | 1 | 0.78 | |
| Riverside Municipal Airport, Riverside (RAL) | AWP | 2006 | | | 1 | | | 1 | 1.20 | |
| | | 2007 | | | | | 2 | 2 | 2.47 | |
| | | 2008 | | | | 3 | | 3 | 4.03 | |
| | | 2009 | | | | | | | | |

**CALIFORNIA – Continued**

| Airport, City (Airport Code) | Region | Fiscal Year | Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Severity | | | | | | | |
| Sacramento Executive Airport, Sacramento (SAC) | AWP | 2006 | | | | 1 | 2 | 3 | 2.65 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | 1 | 1 | 1.09 | |
| Sacramento International Airport, Sacramento (SMF) | AWP | 2006 | | | | | 1 | 1 | 0.57 | |
| | | 2007 | | | | | 1 | 1 | 0.58 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | 1 | | 1 | 0.76 | |
| Sacramento Mather Airport, Sacramento (MHR) | AWP | 2006 | | | | | 1 | 1 | 1.25 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |
| Salinas Municipal Airport, Salinas (SNS) | AWP | 2006 | | | | 1 | | 1 | 1.36 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 2 | 2 | 2.49 | |
| | | 2009 | | | | 1 | | 1 | 1.32 | 1 |
| San Carlos Airport, San Carlos (SQL) | AWP | 2006 | | | | | | | | |
| | | 2007 | | | | | 2 | 2 | 1.38 | |
| | | 2008 | | | | 1 | 1 | 2 | 1.39 | 1 |
| | | 2009 | | | | 1 | | 1 | 0.92 | |
| San Diego International Airport - Lindbergh Field, San Diego (SAN) | AWP | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | 3 |
| | | 2008 | | | 1 | 1 | 1 | 3 | 1.26 | |
| | | 2009 | | | | | 1 | 1 | 0.49 | |
| San Francisco International Airport, San Francisco (SFO) | AWP | 2006 | | | | 3 | 5 | 8 | 2.23 | |
| | | 2007 | | 1 | | 3 | 3 | 7 | 1.89 | 1 |
| | | 2008 | | | | 11 | 9 | 20 | 5.08 | |
| | | 2009 | | | | 3 | 5 | 8 | 2.12 | |
| San Luis County Regional Airport, San Luis Obispo (SBP) | AWP | 2006 | | | | | 1 | 1 | 1.09 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | 1 | 1 | 1.16 | |
| Santa Barbara Municipal Airport, Santa Barbara (SBA) | AWP | 2006 | | | | 2 | 2 | 4 | 2.92 | |
| | | 2007 | | | | 2 | | 2 | 1.62 | |
| | | 2008 | | | | 1 | 3 | 4 | 3.38 | |
| | | 2009 | | | | 1 | 4 | 5 | 4.69 | |
| Santa Maria Public Airport - Capt G. Allen Hancock Field, Santa Maria (SMX) | AWP | 2006 | | | | 2 | | 2 | 3.12 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | 1 |
| | | 2009 | | | | 1 | 1 | 2 | 3.51 | |

**CALIFORNIA – Continued**

| Airport, City (Airport Code) | Region | Fiscal Year | Collision | Severity A | Severity B | Severity C | Severity D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Santa Monica Municipal Airport, Santa Monica (SMO) | AWP | 2006 | | | | | 6 | 6 | 4.39 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | 1 | | 1 | 0.87 | |
| Stockton Metropolitan Airport, Stockton (SCK) | AWP | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | 1 | 1 | 1.64 | 1 |
| Van Nuys Airport, Van Nuys (VNY) | AWP | 2006 | | | | 2 | | 2 | 0.51 | 1 |
| | | 2007 | | | | | 4 | 4 | 1.05 | |
| | | 2008 | | | | 3 | 3 | 6 | 1.54 | |
| | | 2009 | | | | | | | | |
| Victorville/Southern California Logistics Airport, Victorville (VCV) | AWP | 2006 | | | | | 2 | 2 | 3.00 | 1 |
| | | 2007 | | | | | 1 | 1 | 1.63 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |
| Whiteman Airport, Los Angeles (WHP) | AWP | 2006 | | | | | 1 | 1 | 0.96 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | 1 | | 1 | 1.38 | |
| | | 2009 | | | | | | | | |
| Yuba County Airport, Marysville (MYV) | AWP | 2006 | | | | | 1 | 1 | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |
| Zamperini Field, Torrance (TOA) | AWP | 2006 | | | | 1 | | 1 | 0.67 | |
| | | 2007 | | 1 | | 2 | 2 | 5 | 2.97 | 3 |
| | | 2008 | | | | | 2 | 2 | 1.28 | 1 |
| | | 2009 | | | | | 1 | 1 | 0.73 | 3 |

**COLORADO**

| Airport, City (Airport Code) | Region | Fiscal Year | Collision | Severity A | Severity B | Severity C | Severity D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Centennial Airport, Denver (APA) | ANM | 2006 | | | | 1 | 4 | 5 | 1.55 | |
| | | 2007 | | | | 3 | 5 | 8 | 2.42 | |
| | | 2008 | | | | 3 | 2 | 5 | 1.51 | |
| | | 2009 | | 1 | | 2 | 6 | 9 | 3.32 | 2 |
| Colorado Springs Municipal Airport, Colorado Springs (COS) | ANM | 2006 | | | | 1 | | 1 | 0.67 | |
| | | 2007 | | | | 1 | | 1 | 0.66 | 1 |
| | | 2008 | | | | | 1 | 1 | 0.67 | |
| | | 2009 | | | | 1 | 1 | 2 | 1.37 | |

**COLORADO – Continued**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Denver International Airport, Denver (DEN) | ANM | 2006 | | | | | 1 | 1 | 0.17 | |
| | | 2007 | | 2 | | 2 | 3 | 7 | 1.14 | 1 |
| | | 2008 | | | | 3 | 1 | 4 | 0.63 | |
| | | 2009 | | | | 1 | 2 | 3 | 0.49 | 1 |
| Eagle County Regional Airport, Eagle (EGE) | ANM | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | 1 | | 1 | 2.33 | 1 |
| | | 2009 | | | | 1 | | 1 | 3.19 | |
| Front Range Airport, Aurora (FTG) | ANM | 2006 | | 1 | | | | 1 | 1.13 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | 1 | | 1 | 1.30 | |
| | | 2009 | | | 1 | | 4 | 5 | 6.88 | 1 |
| Pueblo Memorial Airport, Pueblo (PUB) | ANM | 2006 | | | | | 1 | 1 | 0.88 | |
| | | 2007 | | | | 1 | 3 | 4 | 2.76 | |
| | | 2008 | | | | 3 | 8 | 11 | 6.81 | |
| | | 2009 | | | | 1 | 1 | 2 | 1.31 | |
| Rocky Mountain Metropolitan/ Jefferson County Airport, Broomfield (BJC) | ANM | 2006 | | | | | 1 | 1 | 5.99 | |
| | | 2007 | | | | 4 | 1 | 5 | 2.98 | 1 |
| | | 2008 | | | | 1 | 2 | 3 | 1.95 | 1 |
| | | 2009 | | | | 1 | 2 | 3 | 2.44 | 3 |
| Sardy Field, Aspen (ASE) | ANM | 2006 | | | | 1 | 1 | 2 | 4.50 | |
| | | 2007 | | | | | 1 | 1 | 2.33 | |
| | | 2008 | | | | | 2 | 2 | 4.30 | 3 |
| | | 2009 | | | | | | | | 4 |
| Walker Field, Grand Junction (GJT) | ANM | 2006 | | | | 1 | | 1 | 1.35 | |
| | | 2007 | | | | | | | | 1 |
| | | 2008 | | | | 1 | 1 | 2 | 2.79 | |
| | | 2009 | | | | | 2 | 2 | 3.40 | |

**CONNECTICUT**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Bradley International Airport, Windsor Locks (BDL) | ANE | 2006 | | | | 2 | 1 | 3 | 2.00 | |
| | | 2007 | | | | 1 | | 1 | 0.69 | 1 |
| | | 2008 | | | | 1 | 3 | 4 | 3.09 | |
| | | 2009 | | | | 1 | | 1 | 0.93 | |
| Danbury Municipal Airport, Danbury (DXR) | ANE | 2006 | | | | | | | | |
| | | 2007 | | | | | 1 | 1 | 1.30 | |
| | | 2008 | | | | 1 | 1 | 2 | 2.42 | |
| | | 2009 | | | | | | | | |

**CONNECTICUT – Continued**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Hartford-Brainard Airport, Hartford (HFD) | ANE | 2006 | | | | | | | | 1 |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |
| Sikorsky Memorial Airport, Bridgeport (BDR) | ANE | 2006 | | | | | | | | |
| | | 2007 | | | | 3 | 2 | 5 | 5.84 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |
| Tweed-New Haven Airport, New Haven (HVN) | ANE | 2006 | | | | | | | | |
| | | 2007 | | | | | 1 | 1 | 1.76 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |
| Waterbury-Oxford Airport, Oxford (OXC) | ANE | 2006 | | | | | 1 | 1 | 1.91 | |
| | | 2007 | | | | | 1 | 1 | 1.64 | 2 |
| | | 2008 | | | | | 1 | 1 | 1.92 | 1 |
| | | 2009 | | | | | | | | 2 |

**DELAWARE**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| New Castle County Airport, Wilmington (ILG) | AEA | 2006 | | | | | | | | |
| | | 2007 | | | | | 1 | 1 | 0.78 | |
| | | 2008 | | | | | | | | 1 |
| | | 2009 | | | | | 1 | 1 | 1.76 | |

**DISTRICT OF COLUMBIA**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Ronald Reagan Washington National Airport, Arlington, VA (DCA) | AEA | 2006 | | | | 2 | 2 | 4 | 1.44 | 1 |
| | | 2007 | | | | 1 | 2 | 3 | 1.07 | |
| | | 2008 | | | | 3 | 2 | 5 | 1.79 | |
| | | 2009 | | | | 1 | | 1 | 0.36 | |

**FLORIDA**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | Severity: A | Severity: B | Severity: C | Severity: D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Craig Municipal Airport, Jacksonville (CRG) | ASO | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | 1 | 1 | 0.87 | |
| Daytona Beach International Airport, Daytona Beach (DAB) | ASO | 2006 | | 1 | | 1 | | 2 | 0.78 | 1 |
| | | 2007 | | 1 | | 4 | 1 | 6 | 1.98 | 1 |
| | | 2008 | | 1 | | 2 | 5 | 8 | 2.39 | 2 |
| | | 2009 | | | | 6 | 1 | 7 | 2.11 | 1 |
| Ft. Lauderdale Executive Airport, Ft. Lauderdale (FXE) | ASO | 2006 | | | | 3 | 9 | 12 | 6.14 | 9 |
| | | 2007 | | | | 4 | 1 | 5 | 2.54 | 4 |
| | | 2008 | | | | 6 | 6 | 12 | 6.42 | 11 |
| | | 2009 | | | | 5 | 2 | 7 | 4.57 | 6 |
| Ft. Lauderdale/Hollywood International Airport, Ft. Lauderdale (FLL) | ASO | 2006 | | | | 2 | 6 | 8 | 2.66 | 1 |
| | | 2007 | | 1 | | 3 | 6 | 10 | 3.28 | |
| | | 2008 | | | | 1 | 2 | 3 | 0.98 | |
| | | 2009 | | | | 3 | 7 | 10 | 3.76 | 1 |
| Gainesville Regional Airport, Gainesvilled (GNV) | ASO | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | 1 |
| | | 2009 | | | | | | | | |
| Jacksonville International Airport, Jacksonville (JAX) | ASO | 2006 | | | | | | | | |
| | | 2007 | | | | | 1 | 1 | 0.83 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | 1 | 1 | 1.02 | |
| Kendall-Tamiami Executive Airport, Miami (TMB) | ASO | 2006 | | | | 2 | 3 | 5 | 2.54 | 1 |
| | | 2007 | | | 1 | 3 | 4 | 8 | 3.21 | |
| | | 2008 | | | | 3 | 2 | 5 | 1.61 | 1 |
| | | 2009 | | | | 2 | 1 | 3 | 1.29 | |
| Kissimmee Gateway Airport, Orlando (ISM) | ASO | 2006 | | | | 1 | 3 | 4 | 2.69 | |
| | | 2007 | | | | 2 | 2 | 4 | 2.38 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | 1 | | 1 | 0.79 | |
| Lakeland Linder Regional Airport, Lakeland (LAL) | ASO | 2006 | | | | | | | | |
| | | 2007 | | | | | 2 | 2 | 1.41 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |
| Melbourne International Airport, Melbourne (MLB) | ASO | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | 1 | | 1 | 0.68 | |

**FLORIDA - Continued**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Miami International Airport, Miami (MIA) | ASO | 2006 | | 1 | | 3 | 1 | 5 | 1.30 | |
| | | 2007 | | | | 5 | 3 | 8 | 2.07 | |
| | | 2008 | | | | 3 | 5 | 8 | 2.12 | |
| | | 2009 | | | | 4 | 4 | 9 | 2.56 | |
| North Perry Airport, Hollywood (HWO) | ASO | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | 2 | | 3 | 3 | 8 | 4.63 | 3 |
| Opa Locka Airport, Miami (OPF) | ASO | 2006 | | | | | | | | |
| | | 2007 | | | | 2 | 3 | 5 | 4.32 | |
| | | 2008 | | | | 1 | 2 | 3 | 3.06 | 3 |
| | | 2009 | | | | 2 | 1 | 3 | 3.38 | 2 |
| Orlando Executive Airport, Orlando (ORL) | ASO | 2006 | | 1 | | 1 | 3 | 5 | 3.05 | |
| | | 2007 | | | | 2 | | 2 | 1.32 | |
| | | 2008 | | | | 2 | 3 | 5 | 3.57 | |
| | | 2009 | | | | 4 | 2 | 6 | 5.33 | |
| Orlando International Airport, Orlando (MCO) | ASO | 2006 | | | | 1 | | 1 | 0.28 | |
| | | 2007 | | | | 3 | 4 | 7 | 1.93 | 1 |
| | | 2008 | | | | | 1 | 1 | 0.27 | 2 |
| | | 2009 | | | | | 3 | 3 | 0.97 | |
| Orlando Sanford International Airport, Orlando (SFB) | ASO | 2006 | | | | 2 | 2 | 4 | 1.29 | 1 |
| | | 2007 | | | | 3 | 9 | 12 | 3.84 | 1 |
| | | 2008 | | | | 5 | 6 | 11 | 4.91 | |
| | | 2009 | | | 1 | 2 | 4 | 7 | 3.18 | |
| Page Field, Ft. Myers (FMY) | ASO | 2006 | | | | | 1 | 1 | 1.28 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | 1 | 1 | 1.35 | |
| Palm Beach International, West Palm Beach (PBI) | ASO | 2006 | | | | 3 | 2 | 5 | 2.58 | 10 |
| | | 2007 | | | | 2 | 1 | 3 | 1.57 | 15 |
| | | 2008 | | | 1 | | 6 | 7 | 3.89 | 6 |
| | | 2009 | | | | 1 | 6 | 7 | 4.92 | 2 |
| Panama City-Bay County International Airport, Panama City (PFN) | ASO | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 1 | 1 | 1.03 | |
| | | 2009 | | | | | | | | |
| Pensacola Regional Airport, Pensacola (PNS) | ASO | 2006 | | | | 1 | 1 | 2 | 1.74 | |
| | | 2007 | | | | 1 | | 1 | 0.92 | |
| | | 2008 | | | | 2 | | 2 | 1.83 | |
| | | 2009 | | | | 1 | 1 | 2 | 2.07 | |

**FLORIDA - Continued**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity<br>Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Sarasota-Bradenton International Airport, Sarasota (SRQ) | ASO | 2006 | | | | 1 | | 1 | 0.61 | |
| | | 2007 | | | | | 1 | 1 | 0.70 | |
| | | 2008 | | | | | 2 | 2 | 1.46 | |
| | | 2009 | | | | | | | | |
| Southwest Florida International Airport, Ft. Myers (RSW) | ASO | 2006 | | 1 | | | | 1 | 1.08 | 1 |
| | | 2007 | | | | 2 | 5 | 7 | 7.49 | 1 |
| | | 2008 | | | | | 1 | 1 | 1.10 | 1 |
| | | 2009 | | | | | 1 | 1 | 1.18 | |
| Space Coast Regional Airport, Titusville (TIX) | ASO | 2006 | | | | | | | | 1 |
| | | 2007 | | | | | 1 | 1 | 0.59 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |
| St. Augustine Airport, St. Augustine (SGJ) | ASO | 2006 | | | | 1 | 1 | 2 | 1.74 | |
| | | 2007 | | | | 2 | 1 | 3 | 2.87 | |
| | | 2008 | | | | 1 | 2 | 3 | 3.22 | |
| | | 2009 | | | | | | | | |
| St. Lucie County International, Ft. Pierce (FPR) | ASO | 2006 | | | | | 1 | 1 | 0.97 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 2 | 2 | 1.32 | |
| | | 2009 | | | | | | | | |
| St. Petersburg-Clearwater International Airport, St. Petersburg (PIE) | ASO | 2006 | | | | | 1 | 1 | 0.49 | |
| | | 2007 | | | | | 5 | 5 | 2.66 | |
| | | 2008 | | 1 | 1 | | 1 | 3 | 1.77 | |
| | | 2009 | | | | | | | | |
| Tallahassee Regional Airport, Tallahassee (TLH) | ASO | 2006 | | 1 | | | | 1 | 0.99 | |
| | | 2007 | | | | | 1 | 1 | 1.03 | |
| | | 2008 | | | | | 1 | 1 | 1.07 | |
| | | 2009 | | | | | | | | |
| Tampa International Airport, Tampa (TPA) | ASO | 2006 | | | 1 | | 5 | 6 | 2.33 | |
| | | 2007 | | | | | 1 | 1 | 0.38 | |
| | | 2008 | | | | 2 | 2 | 4 | 1.61 | 1 |
| | | 2009 | | | | 1 | 1 | 2 | 0.98 | |
| Vero Beach Municipal Airport, Vero Beach (VRB) | ASO | 2006 | | | | | | | | |
| | | 2007 | | | | | 2 | 2 | 1.36 | |
| | | 2008 | | | | 2 | 3 | 5 | 2.91 | 1 |
| | | 2009 | | 1 | | 1 | | 2 | 1.23 | 1 |
| Whitham Field, Stuart (SUA) | ASO | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 3 | 3 | 4.45 | |
| | | 2009 | | | | | 1 | 1 | 1.68 | |

**GEORGIA**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Athens Ben Epps Airport, Athens (AHN) | ASO | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 1 | 1 | 2.15 | |
| | | 2009 | | | | | | | | |
| Augusta Regional Airport at Bush Field, Augusta (AGS) | ASO | 2006 | | | | | | | | |
| | | 2007 | | | | | 3 | 3 | 10.09 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |
| Cobb County-McCollum Field, Marietta (RYY) | ASO | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | 1 | | 1 | 1.03 | |
| | | 2009 | | | | | | | | |
| Columbus Metropolitan Airport, Columbus (CSG) | ASO | 2006 | | | | | | | | 1 |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | 1 | 1 | 3.01 | |
| Dekalb-Peachtree Airport, Atlanta (PDK) | ASO | 2006 | | | | 4 | 3 | 7 | 3.39 | |
| | | 2007 | | | | 7 | 2 | 9 | 4.03 | 1 |
| | | 2008 | | 1 | | 1 | 7 | 9 | 4.57 | |
| | | 2009 | | 1 | | 5 | 10 | 16 | 10.13 | |
| Fulton County Airport, Atlanta (FTY) | ASO | 2006 | | | | | 1 | 1 | 0.92 | |
| | | 2007 | | | | | 2 | 2 | 1.64 | |
| | | 2008 | | | | 2 | 1 | 3 | 2.72 | |
| | | 2009 | | | | | | | | |
| Gwinnett County-Briscoe Field, Lawrenceville (LZU) | ASO | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | 1 |
| | | 2009 | | | | | | | | |
| Hartsfield-Jackson Altlanta International Airport, Atlanta (ATL) | ASO | 2006 | | | | 9 | 2 | 11 | 1.14 | 1 |
| | | 2007 | | | | 11 | 5 | 16 | 1.62 | |
| | | 2008 | | | | 14 | 8 | 22 | 2.23 | |
| | | 2009 | | | | 8 | 7 | 15 | 1.54 | |
| Middle Georgia Regional Airport, Macon (MCN) | ASO | 2006 | | | | | | | | |
| | | 2007 | | | | | 1 | 1 | 3.65 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |

**GEORGIA - Continued**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Savannah/Hilton Head International Airport, Savannah (SAV) | ASO | 2006 | | | | | | | | |
| | | 2007 | | | | 1 | 3 | 4 | 3.95 | 1 |
| | | 2008 | | | | 2 | 2 | 4 | 4.02 | 1 |
| | | 2009 | | | | | 2 | 2 | 2.21 | |
| Southwest Georgia Regional Airport, Albany (ABY) | ASO | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | 1 | 1 | 3.46 | |

**GUAM**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Guam International Airport, Agana (GUM) | AWP | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 2 | 2 | 3.38 | |
| | | 2009 | | | | | 1 | 1 | 1.68 | |

**HAWAII**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Hilo International Airport, Hilo (ITO) | AWP | 2006 | | | | 1 | 2 | 3 | 3.13 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 1 | 1 | 1.19 | |
| | | 2009 | | | | | | | | |
| Honolulu International Airport, Honolulu (HNL) | AWP | 2006 | | | | 2 | 3 | 5 | 1.57 | 1 |
| | | 2007 | | | | 2 | 6 | 8 | 2.78 | |
| | | 2008 | | | 1 | 1 | 1 | 3 | 1.04 | 1 |
| | | 2009 | | 1 | | 2 | 2 | 5 | 1.80 | 2 |
| Kahului Airport, Kahului (OGG) | AWP | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 1 | 1 | 0.74 | |
| | | 2009 | | | | 1 | | 1 | 0.84 | |
| Kalaeloa Airport, Kapolei (JRF) | AWP | 2006 | | | | | 1 | 1 | 0.67 | 1 |
| | | 2007 | | | | | 1 | 1 | 0.80 | |
| | | 2008 | | | | 1 | | 1 | 3.28[1] | |
| | | 2009 | | | | | | | | |
| Kona International at Keahole Airport, Kailua/Kona (KOA) | AWP | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | 1 |
| | | 2009 | | | | | 1 | 1 | 0.90 | |

[1]JRF only had 30,000+ operations in FY08, compared to 125,000-157,000+ operations in the previous three fiscal years.

**IDAHO**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Boise Air Terminal - Gowen Field, Boise (BOI) | ANM | 2006 | | | | 1 | 1 | 2 | 1.16 | |
| | | 2007 | | | | 2 | 1 | 3 | 1.62 | |
| | | 2008 | | | | 4 | 1 | 5 | 3.19 | |
| | | 2009 | | | | | | | | |
| Friedman Memorial Airport, Hailey (SUN) | ANM | 2006 | | 2 | | | | 2 | 4.83 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 1 | 1 | 2.77 | |
| | | 2009 | | | | | 1 | 1 | 3.42 | |
| Idaho Falls Regional Airport, Idaho Falls (IDA) | ANM | 2006 | | | | | 3 | 3 | 7.09 | |
| | | 2007 | | | | | 2 | 2 | 4.48 | 1 |
| | | 2008 | | | | 1 | 6 | 7 | 16.21 | |
| | | 2009 | | | | | 2 | 2 | 4.75 | 1 |
| Pocatello Regional Airport, Pocatello (PIH) | ANM | 2006 | | | | | 1 | 1 | 2.20 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |

**ILLINOIS**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Abraham Lincoln Capital Airport, Springfield (SPI) | AGL | 2006 | | | | 1 | 1 | 2 | 3.89 | |
| | | 2007 | | | | 2 | 3 | 5 | 10.93 | |
| | | 2008 | | | | 1 | 6 | 7 | 17.70 | 1 |
| | | 2009 | | | | | 7 | 7 | 22.74 | 1 |
| Aurora Municipal Airport, Aurora (ARR) | AGL | 2006 | | | | | | | | |
| | | 2007 | | | | 1 | | 1 | 1.47 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |
| Central Illinois Regional Airport, Bloomington-Normal (BMI) | AGL | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 2 | 2 | 5.70 | |
| | | 2009 | | | | 1 | | 1 | 3.50 | |
| Chicago Executive Airport, Prospect Heights/Wheeling (PWK) | AGL | 2006 | | 1 | | 1 | | 2 | 1.87 | |
| | | 2007 | | | | 1 | | 1 | 0.84 | 1 |
| | | 2008 | | | | 3 | 1 | 4 | 3.94 | |
| | | 2009 | | | | | | | | 1 |
| Chicago Midway International Airport, Chicago (MDW) | AGL | 2006 | | | | 1 | 1 | 2 | 0.68 | |
| | | 2007 | | 1 | | | 2 | 3 | 0.98 | 1 |
| | | 2008 | | | | 2 | 4 | 6 | 2.13 | |
| | | 2009 | | | | 4 | 2 | 6 | 2.46 | |

ILLINOIS – Continued

| Airport, City (Airport Code) | Region | Fiscal Year | Collision | Severity A | Severity B | Severity C | Severity D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Chicago O'Hare International Airport, Chicago (ORD) | AGL | 2006 | | 2 | 1 | 6 | 10 | 19 | 1.98 | |
| | | 2007 | | 1 | | 11 | 4 | 16 | 1.71 | |
| | | 2008 | | | 1 | 9 | 5 | 15 | 1.66 | |
| | | 2009 | | | | 6 | 5 | 11 | 1.33 | |
| Dupage Airport, West Chicago (DPA) | AGL | 2006 | | | | 1 | | 1 | 0.97 | |
| | | 2007 | | | | | 1 | 1 | 0.97 | |
| | | 2008 | | | | 1 | | 1 | 1.01 | |
| | | 2009 | | | | 1 | | 1 | 1.14 | 1 |
| Greater Peoria Regional Airport, Peoria (PIA) | AGL | 2006 | | | | | 2 | 2 | 3.67 | 1 |
| | | 2007 | | | | | 3 | 3 | 5.92 | |
| | | 2008 | | | | 1 | | 1 | 1.93 | |
| | | 2009 | | | | 1 | | 1 | 2.28 | |
| Greater Rockford Airport, Rockford (RFD) | AGL | 2006 | | | | 2 | 2 | 4 | 5.35 | |
| | | 2007 | | | | 1 | 2 | 3 | 3.89 | 1 |
| | | 2008 | | | | 1 | 1 | 2 | 3.00 | 1 |
| | | 2009 | | | | | 1 | 1 | 1.95 | |
| Quad City International Airport, Moline (MLI) | AGL | 2006 | | | | 1 | 1 | 2 | 3.78 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | 1 | | 1 | 4 | 6 | 11.98 | 1 |
| | | 2009 | | | | 2 | 7 | 9 | 19.39 | |
| St. Louis Downtown Airport, Cahokia/St. Louis (CPS) | AGL | 2006 | | | | 1 | 2 | 3 | 1.94 | |
| | | 2007 | | | | | 1 | 1 | 0.87 | |
| | | 2008 | | | | | 2 | 2 | 1.74 | |
| | | 2009 | | | | 1 | | 1 | 0.84 | |
| Waukegan Regional Airport, Waukegan (UGN) | AGL | 2006 | | | | | | | | |
| | | 2007 | | | | 1 | 1 | 2 | 2.89 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |
| Willard Airport - University of Illinois, Champaign/Urbana (CMI) | AGL | 2006 | | | | 1 | 1 | 2 | 1.68 | |
| | | 2007 | | | | 2 | | 2 | 1.84 | |
| | | 2008 | | | | 2 | | 2 | 1.98 | |
| | | 2009 | | | | 2 | 2 | 4 | 4.43 | |

**INDIANA**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Columbus Municipal Airport, Columbus (BAK) | AGL | 2006 | | | | | 2 | 2 | 5.03 | |
| | | 2007 | | | | | 2 | 2 | 5.07 | |
| | | 2008 | | | | | 1 | 1 | 2.54 | |
| | | 2009 | | | | | | | | |
| Delaware County Airport - Johnson Field, Muncie (MIE) | AGL | 2006 | | | | 1 | | 1 | 3.84 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |
| Evansville Regional Airport, Evansville (EVV) | AGL | 2006 | | | | 1 | | 1 | 1.53 | |
| | | 2007 | | | | | 2 | 2 | 2.87 | |
| | | 2008 | | | | 2 | | 2 | 3.11 | 1 |
| | | 2009 | | | | | | | | |
| Ft. Wayne International Airport, Ft. Wayne (FWA) | AGL | 2006 | | | | 4 | 1 | 5 | 6.77 | |
| | | 2007 | | | | 1 | 2 | 3 | 4.18 | |
| | | 2008 | | | | | 1 | 1 | 1.51 | |
| | | 2009 | | | | | | | | |
| Gary/Chicago International Airport, Gary (GYY) | AGL | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | 1 | 1 | 2.86 | 2 |
| Indianapolis International Airport, Indianapolis (IND) | AGL | 2006 | | | | | 3 | 3 | 1.40 | 1 |
| | | 2007 | | | | | | | | 1 |
| | | 2008 | | | | 2 | | 2 | 0.99 | 2 |
| | | 2009 | | | | | | | | |
| Monroe County Airport, Bloomington (BMG) | AGL | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 1 | 1 | 2.91 | |
| | | 2009 | | | | | | | | |
| Purdue University Airport, Lafayette (LAF) | AGL | 2006 | | | | 1 | | 1 | 0.87 | |
| | | 2007 | | | | | 1 | 1 | 0.87 | |
| | | 2008 | | | | | 1 | 1 | 0.93 | |
| | | 2009 | | | | | | | | |
| Terre Haute International Airport - Hulman Field, Terre Haute (HUF) | AGL | 2006 | | | | | 3 | 3 | 4.10 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | 1 | 1 | 2.43 | |
| South Bend Regional Airport, South Bend (SBN) | AGL | 2006 | | | | 1 | | 1 | 1.67 | |
| | | 2007 | | 1 | | | | 1 | 1.89 | 1 |
| | | 2008 | | | | 1 | | 1 | 2.00 | 2 |
| | | 2009 | | | | | | | | |

**IOWA**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Des Moines International Airport, Des Moines (DSM) | ACE | 2006 | | | | 2 | 1 | 3 | 2.78 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | 3 | 1 | 4 | 4.12 | 1 |
| | | 2009 | | | | 1 | 4 | 5 | 5.55 | |
| Dubuque Regional Airport, Dubuque (DBQ) | ACE | 2006 | | | | | 1 | 1 | 1.83 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |
| Sioux Gateway Airport - Col. Bud Day Field, Sioux City (SUX) | ACE | 2006 | | | | 2 | 1 | 3 | 1.58 | |
| | | 2007 | | | | 1 | | 1 | 4.14 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |
| Waterloo Municipal Airport, Waterloo (ALO) | ACE | 2006 | | | | | | | | |
| | | 2007 | | | | | 1 | 1 | 3.42 | |
| | | 2008 | | | | | 2 | 2 | 7.92 | 1 |
| | | 2009 | | | | | 2 | 2 | 7.81 | |

**KANSAS**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Forbes Field, Topeka (FOE) | ACE | 2006 | | | | | 1 | 1 | 2.27 | 1 |
| | | 2007 | | | | | 1 | 1 | 2.57 | 1 |
| | | 2008 | | | | | | | | 2 |
| | | 2009 | | | | | | | | 3 |
| Garden City Regional Airport, Garden City (GCK) | ACE | 2006 | | | | | | | | |
| | | 2007 | | | | | 1 | 1 | 4.67 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |
| Johnson County Executive Airport, Olathe (OJC) | ACE | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | 1 |
| New Century AirCenter Airport, Olathe (IXD) | ACE | 2006 | | | | 1 | 1 | 2 | 3.66 | |
| | | 2007 | | | | | 2 | 2 | 3.47 | 1 |
| | | 2008 | | | | | 2 | 2 | 3.55 | |
| | | 2009 | | | | | | | | |
| Philip Billard Municipal Airport, Topeka (TOP) | ACE | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 1 | 1 | 1.64 | |
| | | 2009 | | | | | | | | |

**KANSAS – Continued**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Total SIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Salina Municipal Airport, Salina (SLN) | ACE | 2006 | | | | | | | | |
| | | 2007 | | | | 1 | | 1 | 1.25 | |
| | | 2008 | | | | 1 | | 1 | 1.42 | |
| | | 2009 | | | | | | | | |
| Wichita Mid-Continent Airport, Wichita (ICT) | ACE | 2006 | | | | 1 | 3 | 4 | 2.30 | 1 |
| | | 2007 | | | | 1 | 5 | 6 | 3.66 | |
| | | 2008 | | | | | 1 | 1 | 0.65 | |
| | | 2009 | | | | | 2 | 2 | 1.31 | 1 |

**KENTUCKY**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Blue Grass Airport, Lexington (LEX) | ASO | 2006 | | | | | 1 | 1 | 1.25 | 2 |
| | | 2007 | | | | | 1 | 1 | 1.23 | 1 |
| | | 2008 | | | | 3 | | 3 | 3.91 | |
| | | 2009 | | | | 1 | 1 | 2 | 3.00 | 1 |
| Bowman Field, Louisville (LOU) | ASO | 2006 | | | | | | | | |
| | | 2007 | | | | 1 | | 1 | 1.00 | |
| | | 2008 | | | | 1 | 3 | 4 | 4.56 | |
| | | 2009 | | | | | 1 | 1 | 1.34 | |
| Louisville International Airport -Standiford Field, Louisville (SDF) | ASO | 2006 | | | | 1 | | 1 | 0.56 | 2 |
| | | 2007 | | | | 2 | 1 | 3 | 1.69 | 1 |
| | | 2008 | | | | 2 | | 2 | 1.20 | 1 |
| | | 2009 | | | | | | | | |
| Owensboro-Davies County Airport, Owensboro (OWB) | ASO | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | 1 |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |

**LOUISIANA**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Acadiana Regional Airport, New Iberia (ARA) | ASW | 2006 | | | | | | | | |
| | | 2007 | | | | | 1 | 1 | 0.71 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |
| Baton Rouge Metropolitan Airport, Baton Rouge (BTR) | ASW | 2006 | | | | | 1 | 1 | 1.64 | |
| | | 2007 | | | | 2 | | 2 | 2.22 | |
| | | 2008 | | | | | 5 | 5 | 6.37 | 1 |
| | | 2009 | | | | | 1 | 1 | 1.58 | 1 |

**LOUISIANA – Continued**

| Airport, City (Airport Code) | Region | Fiscal Year | Collision | Severity A | Severity B | Severity C | Severity D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Chennault International Airport, Lake Charles (CWF) | ASW | 2006 | | | | | 1 | 1 | 2.11 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 1 | 1 | 3.32 | |
| | | 2009 | | | | | | | | |
| Lafayette Regional Airport, Lafayette (LFT) | ASW | 2006 | | | | | | | | |
| | | 2007 | | | | | 1 | 1 | 1.42 | 1 |
| | | 2008 | | | | 2 | | 2 | 2.65 | 3 |
| | | 2009 | | | | 2 | 1 | 3 | 3.69 | |
| Lake Charles Regional Airport, Lake Charles (LCH) | ASW | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | 4 |
| | | 2009 | | | | | | | | |
| Lakefront Airport, New Orleans (NEW) | ASW | 2006 | | | | | | | | |
| | | 2007 | | | | | 2 | 2 | 3.25 | |
| | | 2008 | | | | | | | | 1 |
| | | 2009 | | | | | 1 | 1 | 1.99 | |
| Louis Armstrong New Orleans International Airport, New Orleans (MSY) | ASW | 2006 | | | | 3 | | 3 | 2.78 | |
| | | 2007 | | | | 1 | 1 | 2 | 1.68 | |
| | | 2008 | | | | 3 | 2 | 5 | 3.70 | 3 |
| | | 2009 | | | | | 2 | 2 | 1.69 | |
| Monroe Regional Airport, Monroe (MLU) | ASW | 2006 | | | | | | | | |
| | | 2007 | | | | 1 | | 1 | 2.25 | 1 |
| | | 2008 | | | | | 2 | 2 | 4.41 | 1 |
| | | 2009 | | | | 1 | 4 | 5 | 11.87 | 1 |
| Shreveport Downtown Airport, Shreveport (DTN) | ASW | 2006 | | | | | 1 | 1 | 1.73 | |
| | | 2007 | | | | | 2 | 2 | 3.45 | 1 |
| | | 2008 | | | | | 3 | 3 | 5.44 | |
| | | 2009 | | | | | 3 | 3 | 5.43 | 1 |
| Shreveport Regional Airport, Shreveport (SHV) | ASW | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 1 | 1 | 1.81 | |
| | | 2009 | | | | | | | | |

**MAINE**

| | | | Severity | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Airport, City (Airport Code)** | **Region** | **Fiscal Year** | **Collision** | **A** | **B** | **C** | **D** | **Total RIs** | **Annual RI Rate** | **Other Events, Non-RIs** |
| Bangor International Airport, Bangor (BGR) | ANE | 2006 | | | | | 2 | 2 | 2.64 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 1 | 1 | 1.51 | |
| | | 2009 | | | | | | | | |
| Portland International Jetport, Portland (PWM) | ANE | 2006 | | | | | 5 | 5 | 6.60 | |
| | | 2007 | | | | 1 | | 1 | 1.34 | |
| | | 2008 | | | | 1 | | 1 | 1.36 | |
| | | 2009 | | | | | | | | |

**MARYLAND**

| | | | Severity | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Airport, City (Airport Code)** | **Region** | **Fiscal Year** | **Collision** | **A** | **B** | **C** | **D** | **Total RIs** | **Annual RI Rate** | **Other Events, Non-RIs** |
| Andrews Air Force Base, Camp Springs (ADW) | AEA | 2006 | | | | | | | | |
| | | 2007 | | 1 | | | | 1 | 1.54 | |
| | | 2008 | | | | | 1 | 1 | 1.27 | |
| | | 2009 | | | | 2 | | 2 | 2.05 | 1 |
| Balitmore-Washington Thurgood Marshall International Airport, Baltimore (BWI) | AEA | 2006 | | | | | | | | |
| | | 2007 | | | | 1 | 2 | 3 | 0.99 | |
| | | 2008 | | | 1 | 2 | 2 | 5 | 1.75 | |
| | | 2009 | | | | 5 | 1 | 6 | 2.26 | |
| Easton/Newnam Field, Easton (ESN) | AEA | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | 3 | 2 | 5 | 12.39 | |
| | | 2009 | | | | | 4 | 4 | 8.33 | |
| Salisbury-Ocean City Wicomico Regional Airport, Salisbury (SBY) | AEA | 2006 | | | | | | | | |
| | | 2007 | | | | 1 | | 1 | 2.74 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |

**MASSACHUSETTS**

| | | | Severity | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Airport, City (Airport Code)** | **Region** | **Fiscal Year** | **Collision** | **A** | **B** | **C** | **D** | **Total RIs** | **Annual RI Rate** | **Other Events, Non-RIs** |
| Beverly Municipal Airport, Beverly (BVY) | ANE | 2006 | | | | | | | | |
| | | 2007 | | | | | 1 | 1 | 1.44 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |
| General Edward Lawrence Logan International Airport, Boston (BOS) | ANE | 2006 | | | | 7 | 10 | 17 | 4.12 | 2 |
| | | 2007 | | | | 4 | 5 | 9 | 2.19 | 1 |
| | | 2008 | | | | 9 | 8 | 17 | 4.42 | |
| | | 2009 | | | | 7 | 2 | 9 | 2.50 | 1 |

**MASSACHUSETTS – Continued**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Hanscomb Field, Bedford (BED) | ANE | 2006 | | | | 2 | | 2 | 1.18 | |
| | | 2007 | | | | 3 | 3 | 6 | 3.54 | |
| | | 2008 | | | | 1 | | 1 | 0.56 | |
| | | 2009 | | | | | 1 | 1 | 0.54 | |
| Lawrence Municipal Airport, Lawrence (LWM) | ANE | 2006 | | | | 1 | | 1 | 1.24 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | 1 | 1 | 1.83 | 1 |
| Martha's Vineyard Airport, Vineyard Haven (MVY) | ANE | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | 1 | | 1 | 1.99 | |
| | | 2009 | | | | | | | | |
| Nantucket Memorial Airport, Nantucket (ACK) | ANE | 2006 | | | | | | | | |
| | | 2007 | | | | | 1 | 1 | 0.65 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |
| New Bedford Regional Airport, New Bedford (EWB) | ANE | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | 1 | 1 | 2 | 3.13 | |
| Norwood Memorial Airport, Norwood (OWD) | ANE | 2006 | | | | | | | | 1 |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |
| Worcester Regional Airport, Worcester (ORH) | ANE | 2006 | | | | | | | | |
| | | 2007 | | | | | 1 | 1 | 1.54 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |

**MICHIGAN**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Ann Arbor Municipal Airport, Ann Arbor (ARB) | AGL | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 1 | 1 | 1.45 | |
| | | 2009 | | | | 1 | 1 | 2 | 3.60 | |
| Battle Creek International Airport, Kalamazoo (AZO) | AGL | 2006 | | | | 2 | 2 | 4 | 5.39 | |
| | | 2007 | | | | 1 | 1 | 2 | 3.16 | 1 |
| | | 2008 | | | | | 1 | 1 | 1.61 | 1 |
| | | 2009 | | | | 2 | 5 | 7 | 14.06 | 1 |

**MICHIGAN – Continued**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Bishop International Airport, Flint (FNT) | AGL | 2006 | | | | | 1 | 1 | 1.12 | 1 |
| | | 2007 | | | | 2 | | 2 | 2.35 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | 1 | 3 | 4 | 6.74 | 1 |
| Capital City Airport, Lansing (LAN) | AGL | 2006 | | | | | | | | 3 |
| | | 2007 | | | | | 1 | 1 | 1.27 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | 1 | | 1 | 2.40 | |
| Coleman A. Young - Detroit City Airport, Detroit (DET) | AGL | 2006 | | | | | 2 | 2 | 2.57 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 1 | 1 | 1.67 | |
| | | 2009 | | | | | | | | |
| Detroit Metropolitan Wayne County Airport, Romulus (DTW) | AGL | 2006 | | | | 2 | 4 | 6 | 1.23 | |
| | | 2007 | | | | 2 | 4 | 6 | 1.27 | |
| | | 2008 | | | | 8 | 3 | 11 | 2.35 | |
| | | 2009 | | | | 1 | 3 | 4 | 0.91 | 7 |
| Gerald R. Ford International Airport, Grand Rapids (GRR) | AGL | 2006 | | | | | 1 | 1 | 0.89 | |
| | | 2007 | | | | | 1 | 1 | 0.97 | |
| | | 2008 | | | | 1 | | 1 | 1.00 | |
| | | 2009 | | | | | | | | |
| Jackson County-Reynolds Field Airport, Jackson (JXN) | AGL | 2006 | | | | 2 | 1 | 3 | 6.25 | |
| | | 2007 | | | | | 3 | 3 | 6.36 | |
| | | 2008 | | | | | 1 | 1 | 1.97 | 1 |
| | | 2009 | | | | | | | | |
| MBS International Airport, Saginaw (MBS) | AGL | 2006 | | | | | 2 | 2 | 4.94 | |
| | | 2007 | | | | 1 | 2 | 3 | 7.88 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | 1 | 1 | 3.22 | 1 |
| Muskegon County Airport, Muskegon (MKG) | AGL | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | 1 |
| Oakland County International Airport, Pontiac (PTK) | AGL | 2006 | | 1 | | | 4 | 5 | 2.56 | |
| | | 2007 | | | | 1 | 2 | 3 | 1.43 | |
| | | 2008 | | | | | 3 | 3 | 1.76 | 1 |
| | | 2009 | | | | 1 | 3 | 4 | 2.78 | 2 |
| Sawyer International Airport, Marquette (SAW) | AGL | 2006 | | | | | | | | 1 |
| | | 2007 | | | | | | | | 1 |
| | | 2008 | | | | | 1 | 1 | 4.64 | 1 |
| | | 2009 | | | | | | | | |

**MICHIGAN – Continued**

| | | | Severity | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Airport, City (Airport Code)** | **Region** | **Fiscal Year** | **Collision** | **A** | **B** | **C** | **D** | **Total RIs** | **Annual RI Rate** | **Other Events, Non-RIs** |
| W. K. Kellogg Airport, Battle Creek (BTL) | AGL | 2006 | | | | | 1 | 1 | 1.97 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |
| Willow Run Airport, Ypsilanti (YIP) | AGL | 2006 | | | | 1 | | 1 | 1.12 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |

**MINNESOTA**

| | | | Severity | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Airport, City (Airport Code)** | **Region** | **Fiscal Year** | **Collision** | **A** | **B** | **C** | **D** | **Total RIs** | **Annual RI Rate** | **Other Events, Non-RIs** |
| Anoka County - Blaine Airport, Blaine (ANE) | AGL | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | 1 | 3 | 4 | 5.64 | |
| | | 2009 | | | | | | | | 1 |
| Crystal Airport, Minneapolis (MIC) | AGL | 2006 | | | | | 1 | 1 | 1.52 | |
| | | 2007 | | | | 1 | 2 | 3 | 5.65 | 1 |
| | | 2008 | | | | 1 | 2 | 3 | 5.62 | |
| | | 2009 | | | | 2 | 2 | 4 | 9.66 | |
| Duluth International Airport, Duluth (DLH) | AGL | 2006 | | 1 | | | | 1 | 1.53 | |
| | | 2007 | | | | | 2 | 2 | 2.88 | |
| | | 2008 | | | | | 1 | 1 | 1.53 | |
| | | 2009 | | | | | | | | |
| Flying Cloud Airport, Minneapolis, (FCM) | AGL | 2006 | | | | 2 | 1 | 3 | 2.11 | 1 |
| | | 2007 | | | | | 1 | 1 | 0.85 | |
| | | 2008 | | | | 2 | 3 | 5 | 4.24 | |
| | | 2009 | | | | 4 | 11 | 15 | 12.56 | |
| Minneapolis-St. Paul International/ Wold-Chamberlain Airport, Minneapolis (MSP) | AGL | 2006 | | | | 5 | 1 | 6 | 1.25 | |
| | | 2007 | | | | 2 | 1 | 3 | 0.66 | 1 |
| | | 2008 | | | | | 1 | 1 | 0.22 | |
| | | 2009 | | | | 5 | 3 | 8 | 1.82 | |
| Rochester International Airport, Rochester (RST) | AGL | 2006 | | | | | | | | |
| | | 2007 | | | | 1 | | 1 | 1.74 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |
| St. Cloud Regional Airport, St. Cloud (STC) | AGL | 2006 | | | | | 5 | 5 | 9.57 | |
| | | 2007 | | | | | 5 | 5 | 9.44 | 1 |
| | | 2008 | | | | | 1 | 1 | 2.56 | |
| | | 2009 | | | | | | | | |

**MINNESOTA – Continued**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| St. Paul Downtown Airport - Holman Field, St. Paul (STP) | AGL | 2006 | | | | | 2 | 2 | 1.53 | 1 |
| | | 2007 | | | | | | | | 4 |
| | | 2008 | | | | | 2 | 2 | 1.79 | 1 |
| | | 2009 | | | | | | | | |

**MISSISSIPPI**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Golden Triangle Regional Airport, Columbus (GTR) | ASO | 2006 | | | | | 1 | 1 | 2.66 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 2 | 2 | 6.21 | |
| | | 2009 | | | | | | | | |
| Gulfport-Biloxi International Airport, Gulfport (GPT) | ASO | 2006 | | 1 | | | 1 | 2 | 3.14 | 1 |
| | | 2007 | | | | | 2 | 2 | 3.83 | |
| | | 2008 | | | | | 1 | 1 | 1.83 | |
| | | 2009 | | | | | | | | |
| Jackson International Airport, Jackson (JAN) | ASO | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | 1 | 1 | 2 | 2.96 | |
| | | 2009 | | | | | | | | |
| Mid Delta Regional Airport, Greenville (GLH) | ASO | 2006 | | | | | 1 | 1 | 2.99 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 1 | 1 | 3.96 | |
| | | 2009 | | | | | 1 | 1 | 3.92 | |
| Tupelo Regional Airport, Tupelo (TUP) | ASO | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | 1 | 1 | 1.63 | |

**MISSOURI**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Charles B. Wheeler Downtown Airport, Kansas City (MKC) | ACE | 2006 | | | | 6 | 4 | 10 | 12.36 | |
| | | 2007 | | | | | 1 | 1 | 1.48 | |
| | | 2008 | | | | 1 | | 1 | 1.27 | |
| | | 2009 | | | | | | | | |
| Jefferson City Memorial Airport, Jefferson City (JEF) | ACE | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | 1 | 1 | 3.86 | |

**MISSOURI – Continued**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Joplin Regional Airport, Joplin (JLN) | ACE | 2006 | | | | | 1 | 1 | 2.88 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 3 | 3 | 12.92 | |
| | | 2009 | | | | | | | | |
| Kansas City International Airport, Kansas City (MCI) | ACE | 2006 | | | | | 2 | 2 | 1.13 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 1 | 1 | 0.53 | 1 |
| | | 2009 | | | | | 1 | 1 | 0.66 | 2 |
| Lambert-St. Louis International Airport, St. Louis (STL) | ACE | 2006 | | | | 1 | 1 | 2 | 0.70 | |
| | | 2007 | | | | 3 | 1 | 4 | 1.54 | |
| | | 2008 | | | | 1 | 2 | 3 | 1.17 | |
| | | 2009 | | | | 1 | 2 | 3 | 1.39 | 1 |
| Spirit of St. Louis Airport, St. Louis (SUS) | ACE | 2006 | | | | | 3 | 3 | 2.12 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | 1 | | 1 | 0.89 | 1 |
| | | 2009 | | | | | | | | |
| Springfield-Branson National Airport, Springfield (SGF) | ACE | 2006 | | | | | 1 | 1 | 1.26 | |
| | | 2007 | | | | 1 | 4 | 5 | 6.71 | |
| | | 2008 | | | | | | | | 1 |
| | | 2009 | | | | | | | | 1 |

**MONTANA**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Billings Logan International Airport, Billings (BIL) | ANM | 2006 | | | | | 3 | 3 | 2.90 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | 1 | 4 | 5 | 5.24 | |
| | | 2009 | | | | 1 | 4 | 5 | 5.98 | 2 |
| Gallatin Field, Bozeman (BZN) | ANM | 2006 | | | | | 3 | 3 | 3.69 | |
| | | 2007 | | | | 1 | 1 | 2 | 2.54 | |
| | | 2008 | | | | | 2 | 2 | 2.55 | |
| | | 2009 | | | | 2 | 2 | 4 | 5.61 | |
| Glacier Park International Airport, Kalispell (GPI) | ANM | 2006 | | | | | | | | |
| | | 2007 | | | | 1 | | 1 | 1.82 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | 2 | | 2 | 7.02 | |
| Great Falls International Airport, Great Falls (GTF) | ANM | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | 1 |

**MONTANA – Continued**

| | | | Severity | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Airport, City (Airport Code)** | **Region** | **Fiscal Year** | **Collision** | **A** | **B** | **C** | **D** | **Total RIs** | **Annual RI Rate** | **Other Events, Non-RIs** |
| Helena Regional Airport, Helena (HLN) | ANM | 2006 | | | | | 1 | 1 | 1.78 | 1 |
| | | 2007 | | | 1 | | 1 | 2 | 3.40 | 1 |
| | | 2008 | | | | | 1 | 1 | 1.61 | |
| | | 2009 | | | | | | | | |
| Missoula International Airport, Missoula (MSO) | ANM | 2006 | | | | | | | | |
| | | 2007 | | | | | 1 | 1 | 1.84 | 1 |
| | | 2008 | | | | 1 | 1 | 2 | 4.72 | |
| | | 2009 | | | | 1 | 1 | 2 | 5.14 | |

**NEBRASKA**

| | | | Severity | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Airport, City (Airport Code)** | **Region** | **Fiscal Year** | **Collision** | **A** | **B** | **C** | **D** | **Total RIs** | **Annual RI Rate** | **Other Events, Non-RIs** |
| Central Nebraska Regional Airport, Grand Island (GRI) | ACE | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 1 | 1 | 4.97 | |
| | | 2009 | | | | | | | | |
| Eppley Airfield, Omaha (OMA) | ACE | 2006 | | | | 1 | 5 | 6 | 4.29 | |
| | | 2007 | | | | 1 | 2 | 3 | 2.21 | 1 |
| | | 2008 | | | | | 7 | 7 | 5.64 | |
| | | 2009 | | | | | 2 | 2 | 1.78 | 4 |
| Lincoln Municipal Airport, Lincoln (LNK) | ACE | 2006 | | | | 1 | | 1 | 1.17 | 1 |
| | | 2007 | | | | | 1 | 1 | 1.25 | 1 |
| | | 2008 | | | | 1 | | 1 | 1.39 | 1 |
| | | 2009 | | | | | 3 | 3 | 4.49 | |

**NEVADA**

| | | | Severity | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Airport, City (Airport Code)** | **Region** | **Fiscal Year** | **Collision** | **A** | **B** | **C** | **D** | **Total RIs** | **Annual RI Rate** | **Other Events, Non-RIs** |
| Elko Regional Airport, Elko (EKO) | AWP | 2006 | | | | | 4 | 4 | 6.81 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |
| Henderson Executive Airport, Las Vegas (HND) | AWP | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | 1 | | 1 | 1.52 | 1 |
| | | 2009 | | | | | 2 | 2 | 3.30 | 1 |

**NEVADA – Continued**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity | | | | | Total RIs | Annual RI Rate | Total SIs |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Collision | A | B | C | D | | | |
| McCarran International Airport, Las Vegas (LAS) | AWP | 2006 | | | | 5 | 3 | 8 | 1.29 | |
| | | 2007 | | | | 2 | 6 | 8 | 1.30 | |
| | | 2008 | | | | 6 | 6 | 12 | 1.98 | 1 |
| | | 2009 | | | | 5 | 8 | 13 | 2.53 | |
| Reno/Tahoe International Airport, Reno (RNO) | AWP | 2006 | | 1 | | 1 | 5 | 7 | 3.70 | 2 |
| | | 2007 | | | | 6 | 7 | 13 | 5.93 | 2 |
| | | 2008 | | | | 1 | 1 | 2 | 1.11 | 2 |
| | | 2009 | | | | 1 | 1 | 2 | 1.94 | 1 |
| North Las Vegas Airport, Las Vegas (VGT) | AWP | 2006 | | | | 8 | 9 | 17 | 11.19 | |
| | | 2007 | | | | 11 | 13 | 24 | 14.79 | |
| | | 2008 | | | | 2 | 11 | 13 | 9.37 | 7 |
| | | 2009 | | | | 1 | 6 | 7 | 5.02 | 2 |

**NEW HAMPSHIRE**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity | | | | | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Collision | A | B | C | D | | | |
| Boire Field, Nashua (ASH) | ANE | 2006 | | | | 1 | | 1 | 0.85 | 1 |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 1 | 1 | 1.18 | |
| | | 2009 | | | | | | | | |
| Lebanon Municipal Airport, Lebanon (LEB) | ANE | 2006 | | | | | | | | |
| | | 2007 | | | | | 1 | 1 | 1.59 | 1 |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | 1 |
| Manchester Airport, Manchester (MHT) | ANE | 2006 | | | | | | | | |
| | | 2007 | | | | 2 | 1 | 3 | 3.24 | |
| | | 2008 | | | | | 16 | 16 | 19.87 | |
| | | 2009 | | | | | 5 | 5 | 7.06 | |

**NEW JERSEY**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity | | | | | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Collision | A | B | C | D | | | |
| Atlantic City International Airport, Atlantic City (ACY) | AEA | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | 1 |
| | | 2008 | | | | 1 | 5 | 6 | 6.44 | |
| | | 2009 | | | | | 1 | 1 | 1.00 | |
| Essex County Airport, Caldwell (CDW) | AEA | 2006 | | | | | 3 | 3 | 2.74 | |
| | | 2007 | | | | 2 | 3 | 3 | 4.99 | 1 |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | 1 | 2 | 3 | 3.52 | |

**NEW JERSEY – Continued**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Total SIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Morristown Municipal Airport, Morristown (MMU) | AEA | 2006 | | | | | | | | |
| | | 2007 | | | | | 2 | 2 | 1.14 | |
| | | 2008 | | | | | 1 | 1 | 0.72 | |
| | | 2009 | | | | | | | | |
| Newark Liberty International Airport, Newark (EWR) | AEA | 2006 | | | | 7 | 2 | 9 | 2.12 | |
| | | 2007 | | | | | 3 | 3 | 0.67 | 1 |
| | | 2008 | | | 1 | 2 | 5 | 8 | 1.80 | |
| | | 2009 | | | | 5 | 5 | 10 | 2.38 | |
| Teterboro Airport, Teterboro (TEB) | AEA | 2006 | | | | 3 | 5 | 8 | 4.73 | |
| | | 2007 | | 1 | | 5 | 3 | 9 | 4.45 | 1 |
| | | 2008 | | | 1 | 2 | 1 | 4 | 2.14 | |
| | | 2009 | | | | 1 | 3 | 4 | 2.79 | |
| Trenton Mercer Airport, Trenton (TTN) | AEA | 2006 | | | | | 1 | 1 | 1.63 | 1 |
| | | 2007 | | | | | 2 | 2 | 2.18 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | 1 |

**NEW MEXICO**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Albuquerque International Sunport, Albuquerque (ABQ) | ASW | 2006 | | | | 2 | 1 | 3 | 1.54 | 1 |
| | | 2007 | | | | 1 | 3 | 4 | 2.14 | |
| | | 2008 | | | | 2 | | 2 | 1.78 | |
| | | 2009 | | | | 2 | 2 | 4 | 2.49 | |
| Four Corners Regional Airport, Farmington (FMN) | ASW | 2006 | | | | | | | | |
| | | 2007 | | | | 1 | | 1 | 0.96 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | 1 | 1 | 1.47 | |
| Roswell Industrial Air Center Airport, Roswell (ROW) | ASW | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 1 | 1 | 1.89 | |
| | | 2009 | | | | | | | | |

## NEW YORK

| | | | Severity | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Airport, City (Airport Code)** | **Region** | **Fiscal Year** | **Collision** | **A** | **B** | **C** | **D** | **Total RIs** | **Annual RI Rate** | **Other Events, Non-RIs** |
| Albany International Airport, Albany (ALB) | AEA | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | 1 |
| | | 2008 | | | | 1 | | 1 | 1.64 | |
| | | 2009 | | | | 1 | | 1 | 1.07 | |
| Binghamton Regional Airport, Binghamton (BGM) | AEA | 2006 | | | | | 1 | 1 | 3.65 | 1 |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 1 | 1 | 4.39 | 1 |
| | | 2009 | | | | | 1 | 1 | 4.60 | 1 |
| Buffalo Niagra International Airport, Buffalo (BUF) | AEA | 2006 | | | | | | | | |
| | | 2007 | | | | 1 | | 1 | 0.73 | 1 |
| | | 2008 | | | | 1 | | 1 | 0.72 | |
| | | 2009 | | | | | 2 | 2 | 1.51 | |
| Dutchess County Airport, Poughkeepsie (POU) | AEA | 2006 | | | | 1 | | 1 | 0.88 | |
| | | 2007 | | | | | 1 | 1 | 1.87 | |
| | | 2008 | | | | | 2 | 2 | 2.32 | 1 |
| | | 2009 | | | | | 2 | 2 | 3.52 | |
| Elmira/Corning Regional Airport, Elmira (ELM) | AEA | 2006 | | | | 1 | 1 | 2 | 5.16 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 1 | 1 | 2.67 | |
| | | 2009 | | | | | | | | |
| Greater Rochester International Airport, Rochester (ROC) | AEA | 2006 | | | | 1 | 1 | 2 | 1.45 | |
| | | 2007 | | | 1 | | 7 | 8 | 6.69 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | 2 | 2 | 1.87 | |
| Ithaca Tompkins Regional Airport, Ithaca (ITH) | AEA | 2006 | | | | | | | | 1 |
| | | 2007 | | | | | 1 | 1 | 2.52 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |
| John F. Kennedy International Airport, New York (JFK) | AEA | 2006 | | | | 4 | 2 | 6 | 1.59 | 1 |
| | | 2007 | | | | 2 | 1 | 3 | 0.66 | |
| | | 2008 | | | | 9 | 2 | 11 | 2.43 | |
| | | 2009 | | | | 2 | 6 | 7 | 1.62 | |
| La Guardia Airport, New York (LGA) | AEA | 2006 | | | | 2 | | 2 | 0.49 | |
| | | 2007 | | | | 5 | | 5 | 1.25 | |
| | | 2008 | | | | 2 | 1 | 3 | 0.77 | |
| | | 2009 | | | | 2 | 2 | 4 | 1.54 | |
| Long Island MacArthur Airport, Islip (ISP) | AEA | 2006 | | 1 | | | 1 | 2 | 1.85 | 2 |
| | | 2007 | | | | 1 | | 1 | 0.54 | 1 |
| | | 2008 | | | | | 1 | 1 | 0.55 | |
| | | 2009 | | | | | | | | |

**NEW YORK – Continued**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Niagra Falls International Airport, Niagra Falls (IAG) | AEA | 2006 | | | | | 5 | 5 | 12.42 | |
| | | 2007 | | | | | 6 | 6 | 15.22 | |
| | | 2008 | | | | | 1 | 1 | 3.95 | |
| | | 2009 | | | | | 2 | 2 | 5.32 | |
| Oneida County Airport, Utica (UCA) | AEA | 2006 | | | | | 2 | 2 | 3.80 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |
| Republic Airport, Farmingdale (FRG) | AEA | 2006 | | | | 1 | | 1 | 0.52 | |
| | | 2007 | | | | 1 | 1 | 2 | 1.49 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | 2 | 1 | 3 | 1.75 | |
| Stewart International Airport, Newburgh (SWF) | AEA | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | 2 | | 2 | 2.35 | |
| | | 2009 | | | | 1 | 1 | 2 | 4.43 | |
| Syracuse Hancock International Airport, Syracuse (SYR) | AEA | 2006 | | | | 1 | | 1 | 0.86 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | 1 | 1 | | 2 | 1.98 | 1 |
| | | 2009 | | | | | | | | 1 |
| Westchester County Airport, White Plains (HPN) | AEA | 2006 | | | | 1 | | 1 | 0.52 | |
| | | 2007 | | | | 1 | | 1 | 0.49 | |
| | | 2008 | | | | 1 | 4 | 5 | 2.66 | |
| | | 2009 | | | | 1 | | 1 | 0.58 | |

**NORTH CAROLINA**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Asheville Regional Airport, Asheville (AVL) | ASO | 2006 | | | | | | | | 1 |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | 1 |
| | | 2009 | | | | | | | | |
| Charlotte/Douglas International Airport, Charlotte (CLT) | ASO | 2006 | | | | 2 | 5 | 7 | 1.38 | 2 |
| | | 2007 | | | | 3 | 4 | 7 | 1.34 | 1 |
| | | 2008 | | | | 3 | 4 | 7 | 1.29 | 1 |
| | | 2009 | | 1 | | 3 | 3 | 7 | 1.36 | |
| Hickory Regional Airport, Hickory (HKY) | ASO | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | 1 | | 1 | 3.25 | |

**NORTH CAROLINA – Continued**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Piedmont Triad International Airport, Greensboro (GSO) | ASO | 2006 | | | | | 1 | 1 | 0.87 | 2 |
| | | 2007 | | | | 1 | | 1 | 0.91 | 2 |
| | | 2008 | | | | | 2 | 2 | 1.98 | |
| | | 2009 | | | | | 3 | 3 | 3.62 | 1 |
| Raleigh-Durham International Airport, Raleigh (RDU) | ASO | 2006 | | | | 1 | | 1 | 0.41 | 4 |
| | | 2007 | | | | 1 | 2 | 3 | 1.19 | 18 |
| | | 2008 | | | | 3 | 2 | 5 | 2.97 | 6 |
| | | 2009 | | | | | | | | |
| Smith Reynolds Airport, Winston Salem (INT) | ASO | 2006 | | | | | | | | |
| | | 2007 | | | | | 1 | 1 | 1.68 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |
| Wilmington International Airport, Wilmington (ILM) | ASO | 2006 | | | | | 1 | 1 | 1.22 | 1 |
| | | 2007 | | | | 1 | | 1 | 1.17 | |
| | | 2008 | | | | 2 | 1 | 3 | 4.19 | |
| | | 2009 | | | | | | | | |

**NORTH DAKOTA**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Bismarck Municipal Airport, Bismark (BIS) | AGL | 2006 | | | | | 1 | 1 | 1.99 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 2 | 2 | 4.19 | |
| | | 2009 | | | | | | | | |
| Grand Forks International Airport, Grand Forks (GFK) | AGL | 2006 | | | | 1 | 3 | 4 | 1.76 | |
| | | 2007 | | | | | 2 | 2 | 0.89 | 1 |
| | | 2008 | | | | 1 | 1 | 2 | 0.87 | 4 |
| | | 2009 | | | | 3 | 2 | 5 | 1.51 | 3 |
| Hector International Airport, Fargo (FAR) | AGL | 2006 | | | | | 2 | 2 | 2.82 | |
| | | 2007 | | | | | 2 | 2 | 2.74 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | 2 | 2 | 2.43 | |
| Minot International Airport, Minot (MOT) | AGL | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 1 | 1 | 2.84 | |
| | | 2009 | | | | | 1 | 1 | 2.68 | |

**OHIO**

| | | | Severity | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Airport, City (Airport Code) | Region | Fiscal Year | Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
| Akron-Canton Regional Airport, Akron (CAK) | AGL | 2006 | | | | 1 | 1 | 2 | 1.86 | |
| | | 2007 | | | | | 2 | 2 | 1.92 | |
| | | 2008 | | | | | 2 | 2 | 1.98 | |
| | | 2009 | | | | | 2 | 2 | 2.48 | |
| Bolton Field, Columbus (TZR) | AGL | 2006 | | | | | | | | 1 |
| | | 2007 | | | | | 1 | 1 | 2.16 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | 2 | 2 | 8.06 | |
| Burke Lakefront Airport, Cleveland (BKL) | AGL | 2006 | | | | | | | | |
| | | 2007 | | | | | 2 | 2 | 2.75 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |
| Cincinnati/Northern Kentucky International Airport, Cincinnati (CVG) | ASO | 2006 | | | | 1 | 1 | 2 | 0.55 | |
| | | 2007 | | | | 1 | | 1 | 0.32 | |
| | | 2008 | | | | | | | | 1 |
| | | 2009 | | | | | 1 | 1 | 0.43 | 2 |
| Cincinnati-Lunkin Airport, Cincinnati (LUK) | AGL | 2006 | | | | | 1 | 1 | 1.47 | |
| | | 2007 | | | | 1 | | 1 | 1.38 | |
| | | 2008 | | | | 2 | 3 | 5 | 7.93 | 1 |
| | | 2009 | | | | | 1 | 1 | 1.64 | |
| Cleveland-Hopkins International Airport, Cleveland (CLE) | AGL | 2006 | | 1 | | 3 | 2 | 6 | 2.39 | |
| | | 2007 | | | | 7 | 6 | 13 | 5.27 | |
| | | 2008 | | | 1 | 5 | 8 | 14 | 5.77 | 1 |
| | | 2009 | | | | 5 | 3 | 8 | 3.93 | |
| James M. Cox Dayton International Airport, Dayton (DAY) | AGL | 2006 | | | | | 2 | 2 | 1.78 | |
| | | 2007 | | | | | 1 | 1 | 1.33 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | 1 | | 1 | 1.49 | |
| Mansfield Lahm Regional Airport, Mansfield (MFD) | AGL | 2006 | | | | 2 | 1 | 3 | 8.46 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | 2 | 2 | 8.81 | |
| Ohio State University Airport, Columbus (OSU) | AGL | 2006 | | | | | | | | |
| | | 2007 | | | | | 5 | 5 | 5.99 | |
| | | 2008 | | | | 2 | 2 | 4 | 5.79 | 1 |
| | | 2009 | | | | | | | | |
| Port Columbus International Airport, Columbus (CMH) | AGL | 2006 | | | | | 3 | 3 | 1.55 | |
| | | 2007 | | | | | 2 | 2 | 1.15 | 1 |
| | | 2008 | | | | | | | | 2 |
| | | 2009 | | | | | 3 | 3 | 2.04 | |

**OHIO – Continued**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Toledo Express Airport, Toledo (TOL) | AGL | 2006 | | | | | 1 | 1 | 1.51 | |
| | | 2007 | | | | | 2 | 2 | 3.35 | 1 |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | 2 | 2 | 3.19 | |
| Youngstown-Warren Regional Airport, Youngstown (YNG) | AGL | 2006 | | | | 1 | 1 | 2 | 2.69 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | 1 | 3 | 4 | 6.51 | 1 |
| | | 2009 | | | | | 2 | 2 | 3.55 | |

**OKLAHOMA**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Ardmore Municipal Airport, Ardmore (ADM) | ASW | 2006 | | | | | 1 | 1 | 3.36 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |
| Enid Woodring Regional Airport, Enid (WDG) | ASW | 2006 | | | 1 | | | 1 | 3.29 | |
| | | 2007 | | | | | | | | 1 |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |
| Richard Lloyd Jones Jr. Airport, Tulsa (RVS) | ASW | 2006 | | | | 1 | 3 | 4 | 1.58 | 1 |
| | | 2007 | | | | 1 | 3 | 4 | 1.49 | |
| | | 2008 | | | | | 1 | 1 | 0.29 | 1 |
| | | 2009 | | | | | | | | |
| Stillwater Regional Airport, Stillwater (SWO) | ASW | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | 2 | 1 | 3 | 5.30 | |
| Tulsa International Airport, Tulsa (TUL) | ASW | 2006 | | | | | 1 | 1 | 0.70 | |
| | | 2007 | | | | 2 | 2 | 4 | 2.95 | 2 |
| | | 2008 | | | | 2 | 2 | 4 | 2.96 | |
| | | 2009 | | | | 1 | 1 | 2 | 1.70 | |
| University of Oklahoma Westheimer Airport, Norman (OUN) | ASW | 2006 | | | | | | | | |
| | | 2007 | | | | | 1 | 1 | 1.46 | 1 |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |

**OKLAHOMA – Continued**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Wiley Post Airport, Oklahoma City (PWA) | ASW | 2006 | | | | | 1 | 1 | 1.25 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 1 | 1 | 1.35 | |
| | | 2009 | | | | | | | | 1 |
| Will Rogers World Airport, Oklahoma City (OKC) | ASW | 2006 | | | | | 4 | 4 | 3.65 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 1 | 1 | 0.75 | |
| | | 2009 | | | | | | | | |

**OREGON**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Eastern Oregon Regional Airport at Pendleton, Pendleton (PDT) | ANM | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | 1 |
| Mahlon Sweet Field Airport, Eugene (EUG) | ANM | 2006 | | | | 1 | 1 | 2 | 2.18 | |
| | | 2007 | | | | | 2 | 2 | 2.32 | 1 |
| | | 2008 | | | | 1 | 3 | 4 | 5.37 | 1 |
| | | 2009 | | | | | 2 | 2 | 2.71 | |
| McNary Field, Salem (SLE) | ANM | 2006 | | | | | 1 | 1 | 1.54 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 1 | 1 | 1.56 | |
| | | 2009 | | | | 1 | | 1 | 1.95 | 1 |
| Portland International Airport, Portland (PDX) | ANM | 2006 | | | | 1 | | 1 | 0.38 | |
| | | 2007 | | | | | | | | 2 |
| | | 2008 | | | | 4 | 1 | 5 | 1.97 | |
| | | 2009 | | | | 1 | 1 | 2 | 0.88 | |
| Portland-Hillsboro Airport, Portland (HIO) | ANM | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | 1 |
| | | 2008 | | | | 2 | 1 | 3 | 1.16 | |
| | | 2009 | | | | 3 | | 3 | 1.30 | |
| Portland-Troutdale Airport, Portland (TTD) | ANM | 2006 | | | | | 3 | 3 | 4.34 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | 1 | | 1 | 1.65 | 1 |
| | | 2009 | | | | 2 | 1 | 3 | 3.95 | 2 |
| Roberts Field, Redmond (RDM) | ANM | 2006 | | | | | | | | |
| | | 2007 | | | | 2 | | 2 | 2.17 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | 1 | 3 | 4 | 7.18 | |

**PENNSYLVANIA**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Allegheny County Airport, West Mifflin (AGC) | AEA | 2006 | | | | | | | | |
| | | 2007 | | | | | 1 | 1 | 1.22 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |
| Capital City Airport, Harrisburg (CXY) | AEA | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | 1 | 1 | 3.94 | |
| Erie International Airport - Tom Ridge Field, Erie (ERI) | AEA | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | 1 |
| Harrisburg International Airport, Harrisburg (MDT) | AEA | 2006 | | | | | | | | |
| | | 2007 | | | | 1 | | 1 | 1.39 | |
| | | 2008 | | | | | 1 | 1 | 1.47 | |
| | | 2009 | | | | | | | | |
| Lancaster Airport, Lititz (LNS) | AEA | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | 1 | | 1 | 1.12 | |
| Lehigh Valley International Airport, Allentown (ABE) | AEA | 2006 | | | | | | | | |
| | | 2007 | | | | | 1 | 1 | 0.82 | |
| | | 2008 | | 1 | | | 1 | 2 | 1.64 | |
| | | 2009 | | | | | 2 | 2 | 1.92 | |
| Northeast Philadelphia Airport, Philadelphia (PNE) | AEA | 2006 | | | | 3 | 1 | 4 | 3.87 | |
| | | 2007 | | | | | 2 | 2 | 1.96 | |
| | | 2008 | | | | 2 | 1 | 3 | 3.37 | 2 |
| | | 2009 | | | | 1 | 1 | 2 | 2.81 | |
| Philadelphia International Airport, Philadelphia (PHL) | AEA | 2006 | | | | 7 | | 7 | 1.35 | |
| | | 2007 | | | | 4 | 3 | 7 | 1.39 | |
| | | 2008 | | | | 9 | 5 | 14 | 2.81 | 1 |
| | | 2009 | | | | 2 | 8 | 10 | 2.10 | |
| Pittsburgh International Airport, Pittsburgh (PIT) | AEA | 2006 | | | | | | | | |
| | | 2007 | | | | | 1 | 1 | 0.45 | |
| | | 2008 | | | | 3 | | 3 | 1.69 | |
| | | 2009 | | | | 1 | | 1 | 0.67 | |
| Reading Regional Airport - Carl A. Spaatz Field, Reading (RDG) | AEA | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | 1 |
| | | 2008 | | 1 | | | 2 | 3 | 3.29 | |
| | | 2009 | | | | | 1 | 1 | 1.10 | 2 |

**PENNSYLVANIA – Continued**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Wilkes-Barre/Scranton International Airport, Avoca (AVP) | AEA | 2006 | | | | | | | | |
| | | 2007 | | | | | 1 | 1 | 1.27 | |
| | | 2008 | | | | | 2 | 2 | 2.85 | |
| | | 2009 | | | | | | | | |
| Williamsport Regional Airport, Williamsport (IPT) | AEA | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | 2 | 2 | 9.17 | |

**PUERTO RICO**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Aguadilla - Rafael Hernandez Airport, Aguadilla (BQN) | ASO | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 2 | 2 | 3.66 | |
| | | 2009 | | | | | 2 | 2 | 3.22 | |
| Fernando Luis Ribas Dominicci Airport, San Juan (SIG) | ASO | 2006 | | | | | | | | 1 |
| | | 2007 | | | | | | | | 1 |
| | | 2008 | | | | | | | | 1 |
| | | 2009 | | | | 1 | | 1 | 1.05 | |
| Luis Munoz Marin International Airport, San Juan (SJU) | ASO | 2006 | | | | 1 | 3 | 4 | 2.22 | 6 |
| | | 2007 | | | | | 2 | 2 | 1.52 | 4 |
| | | 2008 | | | | 1 | 1 | 2 | 1.93 | 4 |
| | | 2009 | | | | 2 | 3 | 5 | 2.95 | |

**RHODE ISLAND**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Theodore Francis Green State Airport, Providence (PVD) | ANE | 2006 | | | | 3 | | 3 | 2.83 | 1 |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | 2 | 1 | 3 | 3.23 | |
| | | 2009 | | | | 1 | 1 | 2 | 2.37 | |

**SOUTH CAROLINA**

| | | | Severity | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Airport, City (Airport Code)** | **Region** | **Fiscal Year** | **Collision** | **A** | **B** | **C** | **D** | **Total RIs** | **Annual RI Rate** | **Other Events, Non-RIs** |
| Charleston International Airport, Charleston (CHS) | ASO | 2006 | | | | 2 | 2 | 4 | 3.62 | 3 |
| | | 2007 | | | | 2 | | 2 | 1.79 | |
| | | 2008 | | | | 2 | 3 | 5 | 4.45 | |
| | | 2009 | | | | | 2 | 2 | 1.99 | |
| Columbia Metropolitan Airport, Columbia (CAE) | ASO | 2006 | | | | | 4 | 4 | 4.87 | 1 |
| | | 2007 | | | | 2 | 2 | 4 | 4.13 | 1 |
| | | 2008 | | | | 1 | 2 | 3 | 3.26 | 1 |
| | | 2009 | | | | 1 | 1 | 2 | 2.84 | |
| Donaldson Center Airport, Greenville (GYH) | ASO | 2006 | | | | | | | | |
| | | 2007 | | | | 1 | 2 | 3 | 6.56 | |
| | | 2008 | | | | | 1 | 1 | 2.58 | |
| | | 2009 | | | | | | | | |
| Florence Regional Airport, Florence (FLO) | ASO | 2006 | | | | | 2 | 2 | 6.73 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 1 | 1 | 3.56 | |
| | | 2009 | | | | | 1 | 1 | 4.69 | |
| Greenville Spartanburg International Airport, Greer (GSP) | ASO | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | 1 | | 1 | 2.02 | |
| Myrtle Beach International Airport, Myrtle Beach (MYR) | ASO | 2006 | | | | | | | | |
| | | 2007 | | | | | 1 | 1 | 1.85 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |

**SOUTH DAKOTA**

| | | | Severity | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Airport, City (Airport Code)** | **Region** | **Fiscal Year** | **Collision** | **A** | **B** | **C** | **D** | **Total RIs** | **Annual RI Rate** | **Other Events, Non-RIs** |
| Joe Foss Field, Sioux Falls Regional Airport, Sioux Falls (FSD) | AGL | 2006 | | | | 1 | 3 | 4 | 4.55 | |
| | | 2007 | | | | | 2 | 2 | 2.39 | |
| | | 2008 | | | | 2 | 1 | 3 | 4.47 | 1 |
| | | 2009 | | | | | 2 | 2 | 3.23 | 1 |
| Rapid City Regional Airport, Rapid City (RAP) | AGL | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | 1 | 2 | 3 | 6.96 | 1 |
| | | 2009 | | | | | | | | |

**TENNESSEE**

| Airport, City (Airport Code) | Region | Fiscal Year | Collision | Severity A | Severity B | Severity C | Severity D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Lovell Field, Chattanooga (CHA) | ASO | 2006 | | | | | | | | 1 |
| | | 2007 | | | | 1 | | 1 | 1.27 | |
| | | 2008 | | | | | 1 | 1 | 1.34 | |
| | | 2009 | | | | 1 | | 1 | 1.73 | |
| McGhee Tyson Airport, Knoxville (TYS) | ASO | 2006 | | | | 1 | 1 | 2 | 1.52 | |
| | | 2007 | | | | 2 | 2 | 4 | 3.76 | 1 |
| | | 2008 | | | | | 6 | 6 | 4.79 | |
| | | 2009 | | | | 1 | 4 | 5 | 8.63 | |
| Memphis International Airport, Memphis (MEM) | ASO | 2006 | | | | 2 | 2 | 4 | 1.24 | 1 |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | 3 | | 3 | 0.81 | 2 |
| | | 2009 | | | | | | | | |
| Nashville International Airport, Nashville (BNA) | ASO | 2006 | | | | 2 | 1 | 3 | 1.41 | 1 |
| | | 2007 | | | | 3 | 4 | 7 | 3.27 | 1 |
| | | 2008 | | | | 1 | | 1 | 0.53 | |
| | | 2009 | | | | 1 | 6 | 7 | 4.00 | 1 |
| Smyrna Airport, Smyrna (MQY) | ASO | 2006 | | | | | 1 | 1 | 1.68 | 1 |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |
| Tri-Cities Regional Airport, Blountville (TRI) | ASO | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | 1 | 1 | 1.85 | |

**TEXAS**

| Airport, City (Airport Code) | Region | Fiscal Year | Collision | Severity A | Severity B | Severity C | Severity D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Abilene Regional Airport, Abilene (ABI) | ASW | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | 1 | | 1 | 1.14 | |
| | | 2009 | | | | | 1 | 1 | 1.48 | |
| Addison Airport, Dallas (ADS) | ASW | 2006 | | | | 3 | | 3 | 2.24 | |
| | | 2007 | | | | 3 | | 3 | 2.28 | 1 |
| | | 2008 | | | | 5 | 6 | 11 | 7.45 | 5 |
| | | 2009 | | | | 6 | 5 | 11 | 9.68 | 1 |
| Amarillo International Airport, Amarillo (AMA) | ASW | 2006 | | | | | | | | |
| | | 2007 | | | | | 1 | 1 | 1.30 | |
| | | 2008 | | | | 1 | 1 | 2 | 2.42 | |
| | | 2009 | | | | | | | | |

**TEXAS – Continued**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Arlington Municipal Airport, Arlington (GKY) | ASW | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 1 | 1 | 0.74 | |
| | | 2009 | | | | 1 | 1 | 2 | 2.40 | |
| Austin-Bergstrom International Airport, Austin (AUS) | ASW | 2006 | | | | | | | | |
| | | 2007 | | | | 1 | | 1 | 0.49 | |
| | | 2008 | | | | 1 | | 1 | 0.46 | |
| | | 2009 | | | | 1 | | 1 | 0.56 | |
| Brownsville/South Padre Island International Airport, Brownsville (BRO) | ASW | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | 2 |
| | | 2009 | | | | | | | | |
| Corpus Christi International Airport, Corpus Christi (CRP) | ASW | 2006 | | | | | | | | |
| | | 2007 | | | | | 1 | 1 | 1.14 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | 1 | 5 | 6 | 5.94 | 1 |
| Dallas Executive Airport, Dallas (RBD) | ASW | 2006 | | | | | | | | |
| | | 2007 | | 1 | | | | 1 | 0.69 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |
| Dallas Love Field, Dallas (DAL) | ASW | 2006 | | | | | | | | |
| | | 2007 | | | | 1 | 1 | 2 | 0.89 | |
| | | 2008 | | | | 5 | 4 | 9 | 3.90 | |
| | | 2009 | | | | 2 | 11 | 13 | 7.35 | 1 |
| Dallas/Ft. Worth International Airport, Dallas (DFW) | ASW | 2006 | | | | 4 | 1 | 5 | 0.80 | |
| | | 2007 | | | | 8 | 5 | 13 | 1.89 | |
| | | 2008 | | 1 | | 7 | 5 | 13 | 1.94 | |
| | | 2009 | | | | 14 | 3 | 17 | 2.67 | |
| David Wayne Hooks Memorial Airport, Houston (DWH) | ASW | 2006 | | | | 1 | 3 | 4 | 1.51 | |
| | | 2007 | | | | 1 | 1 | 2 | 0.85 | |
| | | 2008 | | | | | 4 | 4 | 1.86 | |
| | | 2009 | | | | | 2 | 2 | 0.90 | |
| Denton Airport, Denton (DTO) | ASW | 2006 | | | | | 1 | 1 | 1.20 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 1 | 1 | 0.85 | |
| | | 2009 | | | | | | | | 1 |
| East Texas Regional Airport, Longview (GGG) | ASW | 2006 | | | | | 7 | 7 | 6.95 | |
| | | 2007 | | | | | 3 | 3 | 3.38 | |
| | | 2008 | | | | | 3 | 3 | 3.26 | |
| | | 2009 | | | | | 3 | 3 | 3.59 | |

**TEXAS – Continued**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Easterwood Field Airport, College Station (CLL) | ASW | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | 1 | 1 | 2.05 | |
| El Paso International Airport, El Paso (ELP) | ASW | 2006 | | | | 1 | | 1 | 0.99 | |
| | | 2007 | | | | 1 | | 1 | 0.98 | |
| | | 2008 | | | | 2 | 2 | 4 | 4.12 | |
| | | 2009 | | | | | 1 | 1 | 1.03 | |
| Ft. Worth Alliance Airport, Ft. Worth (AFW) | ASW | 2006 | | | | | 1 | 1 | 1.11 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 1 | 1 | 1.44 | |
| | | 2009 | | | | | | | | |
| Ft. Worth Meacham International Airport, Ft. Worth (FTW) | ASW | 2006 | | | | 2 | 2 | 4 | 4.81 | 1 |
| | | 2007 | | | | 1 | 1 | 1 | 0.99 | 1 |
| | | 2008 | | | | 1 | 1 | 2 | 1.60 | 1 |
| | | 2009 | | | 1 | 1 | 8 | 10 | 8.16 | |
| George Bush Intercontinental Airport, Houston (IAH) | ASW | 2006 | | | | 2 | | 2 | 0.33 | |
| | | 2007 | | | | | | | | 1 |
| | | 2008 | | | | 3 | 3 | 6 | 1.01 | |
| | | 2009 | | | | 1 | 1 | 2 | 0.37 | |
| Georgetown Municipal Airport, Georgetown (GTU) | ASW | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | 1 | | 1 | 1.57 | |
| Grand Prairie Municipal Airport, Grand Praire (GPM) | ASW | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | 1 | | 1 | 0.49 | |
| | | 2009 | | | | | 1 | 1 | 0.61 | |
| Laredo International Airport, Laredo (LRD) | ASW | 2006 | | | | | 1 | 1 | 1.92 | 1 |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | 1 | 1 | 2.06 | |
| Lubbock International Airport, Lubbock (LBB) | ASW | 2006 | | | | | 1 | 1 | 1.08 | |
| | | 2007 | | | | 2 | 3 | 5 | 5.64 | |
| | | 2008 | | | | 1 | 5 | 6 | 7.72 | 1 |
| | | 2009 | | | | | 3 | 3 | 3.88 | |
| McKinney Municipal Airport/Collin County Regional, McKinney (TKI) | ASW | 2006 | | | | | 1 | 1 | 0.96 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | 1 | | 1 | 1.07 | |

**TEXAS – Continued**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Midland International Airport, Midland (MAF) | ASW | 2006 | | | | | 1 | 1 | 1.19 | |
| | | 2007 | | | | 2 | | 2 | 2.35 | |
| | | 2008 | | | | 1 | 1 | 2 | 2.36 | |
| | | 2009 | | | | | 2 | 2 | 3.08 | 1 |
| San Antonio International Airport, San Antonio (SAT) | ASW | 2006 | | | | 1 | 2 | 3 | 1.40 | |
| | | 2007 | | | | 3 | 3 | 6 | 2.84 | |
| | | 2008 | | | | 2 | 5 | 7 | 3.15 | |
| | | 2009 | | | | 3 | 7 | 10 | 5.14 | |
| Scholes International Airport, Galveston (GLS) | ASW | 2006 | | | | 1 | 4 | 5 | 7.46 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |
| Southeast Texas Regional Airport, Beaumont (BPT) | ASW | 2006 | | | | | | | | |
| | | 2007 | | | | | 2 | 2 | 5.31 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | 1 | 1 | 3.70 | |
| Stinson Municipal Airport, San Antonio (SSF) | ASW | 2006 | | | | | | | | |
| | | 2007 | | | | | 1 | 1 | 0.67 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |
| Sugar Land Regional Airport, Houston (SGR) | ASW | 2006 | | | | | | | | |
| | | 2007 | | | | 1 | | 1 | 1.16 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |
| TSTC Waco Airport, Waco (CNW) | ASW | 2006 | | | | | | | | |
| | | 2007 | | | | | 2 | 2 | 4.74 | |
| | | 2008 | | | | 2 | | 2 | 5.74 | 1 |
| | | 2009 | | | | | | | | |
| Tyler Pounds Regional Airport, Tyler (TYR) | ASW | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 1 | 1 | 1.78 | |
| | | 2009 | | | | | | | | |
| Valley International Airport, Harlingen (HRL) | ASW | 2006 | | | | 1 | 1 | 2 | 3.79 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | 1 | | 1 | 1.79 | |
| | | 2009 | | | | | | | | 1 |
| Waco Regional Airport, Waco (ACT) | ASW | 2006 | | | | 1 | 1 | 2 | 5.41 | |
| | | 2007 | | | | 1 | | 1 | 2.73 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | 1 | | 1 | 3.23 | |

**TEXAS – Continued**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| William P. Hobby Airport, Houston (HOU) | ASW | 2006 | | | | | 7 | 7 | 2.93 | 1 |
| | | 2007 | | | | 4 | 2 | 6 | 2.50 | |
| | | 2008 | | | | 4 | 5 | 9 | 4.02 | |
| | | 2009 | | | | 5 | 4 | 9 | 4.40 | |

**UTAH**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Ogden-Hinckley Airport, Ogden (OGD) | ANM | 2006 | | | | 2 | | 2 | 1.67 | |
| | | 2007 | | | | | 2 | 2 | 1.86 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | 1 | 1 | 1.13 | |
| Provo Municipal Airport, Provo (PVU) | ANM | 2006 | | 1 | | 3 | 3 | 7 | 4.22 | 1 |
| | | 2007 | | | | 2 | 2 | 4 | 3.00 | |
| | | 2008 | | | | | 3 | 3 | 2.43 | |
| | | 2009 | | | | | | | | 1 |
| Salt Lake City International Airport, Salt Lake City (SLC) | ANM | 2006 | | | | 4 | | 4 | 0.94 | 1 |
| | | 2007 | | | | 1 | 2 | 3 | 0.71 | |
| | | 2008 | | | | | 4 | 4 | 0.99 | |
| | | 2009 | | | | | 5 | 5 | 1.34 | |

**VERMONT**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Burlington International Airport, Burlington (BTV) | ANE | 2006 | | | | | 2 | 2 | 2.10 | 1 |
| | | 2007 | | | | 1 | 1 | 2 | 2.06 | |
| | | 2008 | | | | 1 | 1 | 2 | 2.10 | |
| | | 2009 | | | | 2 | 1 | 3 | 3.96 | |

**VIRGIN ISLANDS**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Cyril E. King Airport, Charlotte Amalie (STT) | ASO | 2006 | | | | | | | | |
| | | 2007 | | 1 | | | | 1 | 1.18 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |

**VIRGINIA**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity | | | | | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Collision | A | B | C | D | | | |
| Lynchburg Regional Airport - Preston Glenn Field, Lynchburg (LYH) | AEA | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | 1 | | 1 | 1.62 | |
| | | 2009 | | | | | | | | |
| Manassas Regional Airport, Manassas (HEF) | AEA | 2006 | | | | | 1 | 1 | 0.81 | |
| | | 2007 | | | | | 2 | 2 | 1.82 | |
| | | 2008 | | | | | 1 | 1 | 0.87 | |
| | | 2009 | | | | | | | | |
| Norfolk International Airport, Norfolk (ORF) | AEA | 2006 | | | | | | | | |
| | | 2007 | | | | 1 | 2 | 2 | 2.21 | |
| | | 2008 | | | | | 1 | 1 | 0.85 | |
| | | 2009 | | | | | | | | |
| Richmond International Airport, Richmond (RIC) | AEA | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 1 | 1 | 0.82 | |
| | | 2009 | | | | | 3 | 3 | 2.78 | |
| Roanoke Regional Airport - Woodrum Field, Roanoke (ROA) | AEA | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 1 | 1 | 1.45 | |
| | | 2009 | | | | | | | | |
| Washington Dulles International Airport, Chantilly (IAD) | AEA | 2006 | | | | | 1 | 1 | 0.23 | 1 |
| | | 2007 | | | | 4 | | 4 | 0.93 | |
| | | 2008 | | | 1 | | 4 | 5 | 1.24 | 2 |
| | | 2009 | | | | 7 | 2 | 9 | 2.44 | 1 |

**WASHINGTON**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity | | | | | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Collision | A | B | C | D | | | |
| Bellingham International Airport, Bellingham (BLI) | ANM | 2006 | | | | 1 | | 1 | 1.33 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | 1 | | 1 | 1.55 | |
| | | 2009 | | | | | | | | |
| Boeing Field - King County International Airport, Seattle (BFI) | ANM | 2006 | | | | | 1 | 1 | 0.34 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | 1 | 1 | 0.33 | |
| | | 2009 | | | | | 2 | 2 | 0.75 | |
| Felts Field, Spokane (SFF) | ANM | 2006 | | | 1 | | 1 | 2 | 3.06 | |
| | | 2007 | | | | 2 | | 2 | 2.76 | |
| | | 2008 | | | | 1 | | 1 | 1.51 | 1 |
| | | 2009 | | | | 1 | | 1 | 1.52 | |

**WASHINGTON – Continued**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Grant County International Airport, Moses Lake (MWH) | ANM | 2006 | | | | | 1 | 1 | 1.25 | 1 |
| | | 2007 | | | | | 3 | 3 | 4.24 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | 1 | 1 | 2 | 2.90 | 1 |
| Olympia Airport, Olympia (OLM) | ANM | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | 1 |
| | | 2009 | | | | | 1 | 1 | 1.45 | |
| Renton Municipal Airport, Renton (RNT) | ANM | 2006 | | | | | | | | |
| | | 2007 | | | | 1 | | 1 | 1.06 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | 1 | 1 | 2 | 2.40 | |
| Seattle-Tacoma International Airport, Seattle (SEA) | ANM | 2006 | | | | 2 | 1 | 3 | 0.88 | 2 |
| | | 2007 | | | | 3 | 3 | 6 | 1.74 | 7 |
| | | 2008 | | | | 5 | 2 | 7 | 1.99 | 1 |
| | | 2009 | | | | 4 | 2 | 6 | 1.87 | 2 |
| Snohomish County Paine Field, Everett (PAE) | ANM | 2006 | | | | 1 | 1 | 2 | 1.41 | |
| | | 2007 | | | | 1 | 2 | 3 | 2.28 | |
| | | 2008 | | | | 1 | 2 | 3 | 2.11 | |
| | | 2009 | | | | 7 | 5 | 12 | 10.52 | |
| Spokane International Airport, Spokane (GEG) | ANM | 2006 | | | | | | | | |
| | | 2007 | | | | 1 | | 1 | 1.32 | |
| | | 2008 | | | | 1 | | 1 | 1.14 | |
| | | 2009 | | | | | | | | |
| Tacoma Narrows Airport, Tacoma (TIW) | ANM | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | 1 |
| | | 2009 | | | | 1 | 1 | 2 | 3.73 | |
| Tri-Cities Airport, Pasco (PSC) | ANM | 2006 | | | | 1 | 1 | 2 | 3.31 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | 2 | 2 | 4 | 6.86 | |
| | | 2009 | | | | | 1 | 1 | 2.30 | |
| Walla Walla Regional Airport, Walla Walla (ALW) | ANM | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | 2 | 2 | 6.50 | |
| Yakima Air Terminal/McAllister Field, Yakima (YKM) | ANM | 2006 | | | | | | | | |
| | | 2007 | | | | | 3 | 3 | 6.26 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | 2 | 2 | 4.07 | 2 |

**WEST VIRGINIA**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Mid-Ohio Valley Regional Airport, Parkersburg (PKB) | AEA | 2006 | | | | | | | | |
| | | 2007 | | | | | 1 | 1 | 2.56 | |
| | | 2008 | | | | 1 | 1 | 2 | 5.90 | |
| | | 2009 | | | | | | | | |
| Tri-State Airport - Milton J. Ferguson Field, Huntington (HTS) | AEA | 2006 | | | | | | | | |
| | | 2007 | | | | | 2 | 2 | 6.28 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |
| Yeager Airport, Charleston (CRW) | AEA | 2006 | | | | | | | | |
| | | 2007 | | | | | 2 | 2 | 2.63 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | | | | |

**WISCONSIN**

| Airport, City (Airport Code) | Region | Fiscal Year | Severity: Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
|---|---|---|---|---|---|---|---|---|---|---|
| Austin Straubel International Airport, Green Bay (GRB) | AGL | 2006 | | | | | | | | |
| | | 2007 | | | | | 1 | 1 | 1.18 | |
| | | 2008 | | | | 1 | | 1 | 1.14 | |
| | | 2009 | | | | | | | | |
| Central Wisconsin Airport, Mosinee (CWA) | AGL | 2006 | | | | | | | | |
| | | 2007 | | | | 1 | | 1 | 4.66 | |
| | | 2008 | | | | | 1 | 1 | 4.50 | |
| | | 2009 | | | | | | | | |
| Chippewa Valley Regional Airport, Eau Claire (EAU) | AGL | 2006 | | | | | | | | |
| | | 2007 | | | | | 3 | 3 | 9.43 | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | 1 | 1 | 3.17 | 1 |
| Dane County Regional Airport -Truax Field, Madison (MSN) | AGL | 2006 | | | | 1 | 1 | 2 | 1.76 | |
| | | 2007 | | | | 1 | 4 | 5 | 3.99 | 1 |
| | | 2008 | | | | 2 | 2 | 4 | 3.54 | |
| | | 2009 | | | | 3 | 3 | 6 | 6.11 | |
| General Mitchell International Airport, Milwaukee (MKE) | AGL | 2006 | | | | 3 | 14 | 17 | 8.27 | 1 |
| | | 2007 | | | | 10 | 14 | 24 | 11.98 | 3 |
| | | 2008 | | 1 | | 6 | 7 | 14 | 7.25 | 1 |
| | | 2009 | | | | 5 | 3 | 8 | 4.87 | |
| Lawrence J. Timmerman Airport, Milwaukee (MWC) | AGL | 2006 | | | | | | | | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | | | | | |
| | | 2009 | | | | | 1 | 1 | 2.71 | |

**WISCONSIN – Continued**

| | | | Severity | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Airport, City (Airport Code) | Region | Fiscal Year | Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
| Outagamie County Airport, Appleton (ATW) | AGL | 2006 | | | | | 4 | 4 | 8.86 | |
| | | 2007 | | | | | 2 | 2 | 4.37 | 2 |
| | | 2008 | | | | | 2 | 2 | 4.62 | 1 |
| | | 2009 | | | | | 1 | 1 | 2.89 | 2 |
| Southern Wisconsin Regional Airport, Janesville (JVL) | AGL | 2006 | | | | 3 | | 3 | 5.46 | |
| | | 2007 | | | | | | | | |
| | | 2008 | | | | 1 | | 1 | 2.14 | |
| | | 2009 | | | | | | | | |
| Waukesha County Airport, Waukesha (UES) | AGL | 2006 | | | | | | | | |
| | | 2007 | | | | 1 | 3 | 4 | 6.71 | 1 |
| | | 2008 | | | | | | | | 1 |
| | | 2009 | | | | 1 | 1 | 2 | 3.26 | |
| Wittman Regional Airport, Oshkosh (OSH) | AGL | 2006 | | | | 1 | 1 | 2 | 2.18 | |
| | | 2007 | | | | | 2 | 2 | 2.35 | |
| | | 2008 | | | | 1 | 2 | 3 | 3.68 | |
| | | 2009 | | 1 | | 1 | 1 | 3 | 3.28 | |

**WYOMING**

| | | | Severity | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Airport, City (Airport Code) | Region | Fiscal Year | Collision | A | B | C | D | Total RIs | Annual RI Rate | Other Events, Non-RIs |
| Jackson Hole Airport, Jackson Hole (JAC) | ANM | 2006 | | | | | | | | |
| | | 2007 | | | | | 1 | 1 | 3.28 | 2 |
| | | 2008 | | | | | 1 | 1 | 3.23 | 1 |
| | | 2009 | | | | | 1 | 1 | 3.45 | |
| Natrona County International Airport, Casper (CPR) | ANM | 2006 | | | | | | | | 1 |
| | | 2007 | | | | | 1 | 1 | 2.48 | |
| | | 2008 | | | | 1 | 2 | 3 | 7.75 | |
| | | 2009 | | | | 2 | | 2 | 5.31 | |

**Message from the Director of Runway Safety**

Dear Colleague:

I am pleased to report steady progress in the runway safety arena. The numbers of serious runway incursions have decreased significantly since FY00 when the total reached 67. In FY09, the number decreased to 12—an 82 percent reduction.

Our progress is the direct result of many factors, not the least of which is the many healthy partnerships we have developed with industry groups. In spring 2009, the Aircraft Owners and Pilots Association (AOPA) included an FAA runway safety DVD and brochure in its monthly magazine, which reached more than 400,000 AOPA members—the vast majority of the active pilots in the United States. Shortly thereafter, the National Association of Flight Instructors (NAFI) included a similar package in its monthly publication, which is read by its membership of several thousand flight instructors. In conjunction with the FAA's Runway Safety Program, AOPA more recently produced an online runway safety course; public safety announcements; airport "hot spot" diagrams and a facility specific webinar.

The Air Line Pilots Association (ALPA) has actively participated in the Runway Safety Council (RSC) since its inception with a senior ALPA official serving as the panel's initial co-chair. And the Air Transport Association (ATA), which represents the nation's major air carriers, has provided a standing invitation to the Office of Runway Safety to regularly brief the organization's safety committee.

Other industry groups, including the American Association of Airport Executives, the National Association of State Aviation Officials, the Regional Airline Association, the National Business Aviation Association, and the Experimental Aviation Association, also have provided invaluable support to our office and are helping to convey the runway safety message to their members which comprise every facet of the aviation industry.

To stay ahead of the never-ending runway safety challenge, these partnerships must continue to be nurtured, and our office will proceed vigorously on that course.

One aspect of runway safety continues to be a source of concern: two thirds of runway incursions still involve pilots' error—a level that has remained unchanged for many years. Most of those airmen are general aviation pilots. We must continue to work diligently to address this challenge. Again, our industry partnerships will be invaluable in that continuing effort.

Stay focused. Follow instructions. Taxi carefully.

Wes Timmons

**Wes Timmons**
Director, FAA Office of Runway Safety

**FAA**
**Air Traffic Organization**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