



**U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION**

National Policy

**ORDER  
7050.1A**

**Effective Date:**  
September 16, 2010

**SUBJ:** Runway Safety Program

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1. This order prescribes the Federal Aviation Administration (FAA) runway safety program. This directive establishes policy, assigns responsibility, and delegates authority for ensuring compliance with this order within each organization.
2. On October 1, 2007, the FAA adopted the International Civil Aviation Organization's (ICAO) definition of a runway incursion. Having one agreed upon definition globally increases the likelihood of determining common factors that contribute to runway incursions and surface incidents.
3. The Director of Runway Safety may periodically evaluate national and regional runway safety programs. Evaluations will focus on compliance with this order and the effectiveness of the programs in meeting objectives, strategies and initiatives outlined in the FAA Flight Plan and the National Runway Safety Plan.
4. Our long-term goal is to improve runway safety by decreasing the number and severity of runway incursions and other surface incidents.

  
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Administrator

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## Chapter 1. General Information

- 1. Purpose of This Order.** This order establishes policy, assigns responsibility, and delegates authority for the Federal Aviation Administration's (FAA's) runway safety program. The runway safety program is intended to improve runway safety by decreasing the number and severity of runway incursions and other surface incidents.
- 2. Audience.** This order applies to the Air Traffic Organization, the Office of Airports, Aviation Safety, and Regions and Center Operations.
- 3. Where Can I Find This Order?** The order is available on the MyFAA employee Web site at [https://employees.faa.gov/tools\\_resources/orders\\_notices/](https://employees.faa.gov/tools_resources/orders_notices/).
- 4. Cancellation.** This order cancels FAA Order 7050.1, Runway Safety Program, dated July 24, 2002.
- 5. Explanation of Policy Changes.** Policy changes incorporated into this order include:
  - a.** Air Traffic Organization Terminal Services (ATO-T) is assigned the responsibility to ensure that each airport with an operating FAA or FAA Contract Airport Traffic Control Tower (ATCT) develops and maintains a current Runway Safety Action Plan (RSAP).
  - b.** The requirement for updating RSAPs is changed from once every 24 months to once every 12 months. In order to allow a smooth transition for this change, the following transition timeframes are established:
    - (1) If an RSAP was updated at a Runway Safety Action Team (RSAT) meeting held within nine months of the effective date of this order, the RSAP must be updated within nine months of the effective date of this order or 12 months from the last RSAT meeting date, whichever is later.
    - (2) All RSAPs updated at an RSAT meeting held more than nine months prior to the effective date of this order must be updated within six months of the effective date of this order.
  - c.** Regional Runway Safety Program Managers (RRSPM) report to the Director of Runway Safety. Roles and responsibilities are adjusted accordingly.
  - d.** Responsibility for classifying the severity of runway incursions is transitioned to the Office of Runway Safety (referred to as *Runway Safety* throughout this order).
  - e.** Roles and responsibilities are adjusted to account for the formation of the Air Traffic Organization and the ATO service area offices.
  - f.** The term *surface event* is established which encompasses both surface incidents and runway incursions. The definition of surface incidents is modified to exclude runway incursions.
  - g.** Terminal Services is assigned responsibility to provide support to Runway Safety as part of the Regional Runway Safety Teams. It is anticipated that such support will come through each ATO Service Center.
  - h.** Roles and responsibilities for runway incursion hazard identification and risk analysis are documented in Appendix C of this order.

**6. Definitions. These definitions are applicable to this order only:**

- a. Aircraft.** Any device that is used or intended to be used for flight.
- b. Airport.** An airport with an operating airport traffic control tower (ATCT). Also known as an aerodrome (international term).
- c. Airport Traffic Control Tower (ATCT).** ATCT refers only to FAA operated control towers, including those operated under contract through the FAA Contract Tower (FCT) program. Control towers operated by other organizations are not covered by this order.
- d. Closest proximity.** The closest unintended distance between two aircraft or an aircraft, vehicle or pedestrian involved in a runway incursion. The horizontal distance will be used if all parties are on the ground. The vertical distance will be used only in the case of a direct over flight.
- e. Days.** Time periods specified in days in this order refer to calendar days.
- f. Incorrect presence.** Presence inside the protected area against agency policies or operating guidance.
- g. Movement area.** The runways, taxiways and other surface areas of an airport/heliport which are used for taxiing/hover taxiing, air taxiing, takeoff and landing of aircraft, and which are under control of the operating ATCT. This does not typically include taxi lanes, ramps and parking areas. The movement area is typically defined in a local letter of agreement between the ATCT and airport operator.
- h. Protected area.** The protected area of a surface intended for landing or takeoff includes the area inside the runway hold position markings (e.g. hold line) on paved taxiways or ramps and the designated runway safety area.
- i. Regional Runway Safety Team (RRST):** A team comprised of the regional Runway Safety staff and at least one designated representative of Service Area Quality Control, Service Area Technical Operations, and the Flight Standards and Airports regional divisions. Designated representatives shall assist the RRSPM in executing the runway safety program.
- j. Runway Edge.** The area inside and including the painted runway side stripes or to the edge of the useable runway pavement, if no side stripes are used. See FAA Advisory Circular 150/5340-1, Standards for Airport Markings, for more information on runway markings.
- k. Runway Incursion.** Any occurrence at an aerodrome involving the incorrect presence of an aircraft, vehicle or person on the protected area of a surface designated for the landing and take-off of aircraft.
- l. Runway Safety Area.** A defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot or excursion from the runway. The dimensions of the runway safety area are determined by guidance found in FAA Advisory Circular 150/5300-13, Airport Design.
- m. Runway Safety Action Team (RSAT).** A Runway Safety Action Team (RSAT) convenes to discuss surface movement issues and concerns at a particular airport and formulate a Runway Safety Action Plan (RSAP) to address those concerns. The team must include personnel from the ATCT and airport operator and may include personnel from various FAA lines of business (including Runway Safety) and interested users of the airport. All attendees at the RSAT meeting are considered to be part of the RSAT. A Regional RSAT is led by Runway Safety and a local RSAT is led by the ATCT manager.
- n. Surface event.** An occurrence at an airport involving a pedestrian, vehicle, or aircraft on the defined airport movement area that involves either an incorrect presence, unauthorized movement or occurrence that affects or could affect the safety of flight of an aircraft.

**o. Surface Incident.** Unauthorized or unapproved movement within the designated movement area (excluding runway incursions) or an occurrence in that same area associated with the operation of an aircraft that affects or could affect the safety of flight.

**p. Vehicle.** Any motorized or powered device designed to move on the surface of the ground including but not limited to cars, trucks, tugs towing aircraft, etc.

**7. Distribution.** This order will be distributed to selected headquarters offices and to all headquarters, regions and/or service area offices in Regions and Center Operations, Flight Standards, Air Traffic Safety Oversight, the Office of Airports, ATO Terminal Services, ATO Technical Operations, the ATO Office of Safety and Office of the Service Center; and to all Airport Traffic Control Towers and Flight Standards District Offices.

## Chapter 2. Roles and Responsibilities

### 1. Office of Runway Safety (Runway Safety).

- a. Serves as the focal point for all FAA runway safety efforts and as the agency's primary representative to industry, national and international aviation bodies on runway safety.
- b. Works with other FAA organizations and the aviation community to improve runway safety.
- c. Develops, coordinates, maintains and executes a National Runway Safety Plan (NRSP), which describes a comprehensive and cohesive runway safety strategy.
- d. Develops policy on the proper classification and risk assessment of surface events, maintains appropriate metrics, and collects and classifies official data on surface events for the FAA.
- e. Determines whether surface events are runway incursions or surface incidents, and classifies the severity of runway incursions.
- f. Conducts quarterly reviews of the Severity Classification Team results.
- g. Conducts analysis of individual incursions and overall runway incursion statistics, documents and publishes information on trends, risk factors and lessons learned.
- h. Identifies runway incursion risks and influences their reduction.
- i. Researches, develops, and distributes products associated with safe surface operations on runways and taxiways.
- j. Collects and publishes information on runway safety best practices for airport operators, pilots and Air Traffic Controllers.
- k. Allocates and manages resources necessary to achieve program objectives.
- l. Monitors hazards involving surface movements identified in the ATO hazard tracking database.
- m. Periodically reviews the effectiveness and impact of procedures, policies and practices on runway safety.
- n. Determines locations for regional RSAT meetings in cooperation with RRST(s).

### 2. Regional Runway Safety Program Managers (RRSPM).

- a. Represents the Director of Runway Safety in activities within the region.
- b. Coordinates all runway safety activities, issues and objectives with the Regional Administrator and regional Line of Business (LOB) team members.
- c. Leads the RRST. (Note: the RRSPM leads those key members assigned to the team on a collateral basis only when they are performing runway safety duties.)
- d. Develops and implements the Regional Runway Safety Plan to support the runway incursion reduction initiatives and strategies in the NRSP.
- e. Analyzes individual surface events and identifies and forwards appropriate follow up actions to the appropriate FAA line of business.
- f. Analyzes data on surface events to identify regional runway safety trends and issues, best practices and lessons learned.

**g.** Initiates and implements runway safety outreach programs and activities, and conducts and participates in activities such as:

- (1) Pilot seminars, Flight Instructor Refresher Clinics (FIRC), flight schools and Aviation College programs.
- (2) Air shows and fly-ins.
- (3) Meetings with the aviation community.
- (4) Runway Safety Action Team meetings.
- (5) Aviation Maintenance Technician Workshops (AMTs) and Certified Flight Instructor/Designated Pilot Examiners Workshops/Conferences (CFIs/DPEs).
- (6) State aviation conferences.
- (7) Regional airport conferences and safety expos.
- (8) Outreach visits to airports, ATCTs and other locations.

**h.** Schedules and accomplishes regional RSATs at airports within and occasionally outside the region as documented in the annual regional runway safety plan. Coordinates RSAT locations and schedules with regional lines of business and provides a draft annual schedule at least 30 days prior to the start of each fiscal year.

**i.** Participates in and/or supports local RSAT meetings.

**j.** Reviews and approves RSAPs resulting from local RSATs in their region.

**k.** Identifies, coordinates, and initiates activities to improve runway safety including those that cross the responsibilities of two or more FAA organizations.

**l.** Measures the effectiveness of implemented recommendations (primarily resulting from RSAPs) intended to reduce runway incursions and surface incidents.

**m.** Participates in Safety Risk Management panels and reviews Safety Risk Management Documents (SRMD) for surface movement risks.

**n.** Collects data on surface events when necessary to support severity classification and/or analysis of individual events or trends.

**o.** Tracks actions from RSAPs.

### **3. Air Traffic Organization Office of Safety.**

**a.** Conducts investigations of reportable surface events in accordance with current FAA policies and procedures, makes recommendations toward mitigations and communicates to Runway Safety lessons learned as a result of investigations.

**b.** Periodically reviews the effectiveness of procedures, policies and practices to gauge the impact on surface movement safety.

**c.** Provides Runway Safety personnel full and unrestricted access to information collected during investigations of surface events. Accelerates investigations when requested by Runway Safety.

**d.** Provides access for Runway Safety personnel at the headquarters and regional levels to all information systems containing information on surface events and surface risks.



#### **4. Air Traffic Organization Terminal Services.**

**a.** Ensures that every airport with an operational FAA ATCT or FAA Contract Tower (FCT) has an RSAP that is updated by a local or regional RSAT meeting at least once every 12 months. If an RSAP cannot be updated on schedule, informs Runway Safety of the justification for, and magnitude of, any delay.

**b.** Communicates annually the status of all RSAPs to the ATO Office of Safety.

**c.** Conducts local RSAT meetings, coordinates local RSAT schedules with the appropriate RRSPM, and develops/updates RSAPs.

**d.** Coordinates actions assigned in local RSAPs with the organizations assigned those actions.

**e.** Details staff to work on a full-time basis in Runway Safety.

**f.** Designates staff to work with each RRSPM on a collateral basis or, in some cases, on a full-time detail. Those designated individuals will be part of the RRST, and must participate in all regional RSAT meetings.

**g.** Reports and investigates surface events in accordance with agency directives, makes recommendations toward prevention of such incidents, and communicates lessons learned from investigations to Runway Safety.

**h.** Designates a management official to assist each RRSPM in resolving runway safety issues.

**i.** Provides for the participation of Runway Safety personnel in onsite surface event investigations when requested.

**j.** Provides Runway Safety personnel full and unrestricted access to information collected during investigations of surface events, and communicates lessons learned from investigations to Runway Safety. Accelerates investigations when requested by Runway Safety.

**k.** Provides data such as voice recordings, ground surveillance system playback and other data to Runway Safety upon request.

**l.** Supports Runway Safety in identifying and reducing runway incursion risks and developing runway safety strategies and initiatives to be included in the FAA Flight Plan and/or NRSP. Identifies and executes action items in support of these plans.

**m.** Provides timely response (normally within 30 days) and gives due consideration to recommendations from Runway Safety for changes to agency standards that could help to reduce runway incursion risks.

**n.** Forwards system-wide concerns or hazards identified during the investigation and analysis of individual surface events to Runway Safety.

**o.** Analyzes statistics for reportable surface events, identifies trends and common risk factors, and makes recommendations to reduce the number and severity of runway incursions and other surface incidents.

**p.** Publishes an analysis of trends for Air Traffic Control Surface Events and an action plan to address common hazards at least annually.

**q.** Provides at least two team members for regional RSAT meetings and for other activities at airports with an ATCT as requested by the RRSPM. One member must be from the local ATCT or District staff and one from outside the district (Quality Control staff, for example). Provides additional team members, to the extent possible, with recent operational experience on ground and/or local control positions. Resolves appropriate action items in RSAPs.

**r.** Provides primary and alternate members of the runway incursion severity classification team.

s. Ensures that management and the field workforce are briefed periodically on runway safety best practices and requirements. Use of RRST members to conduct such briefings is encouraged.

t. Supports the RRSPM in development and accomplishment of regional plans and initiatives to reduce the risk of surface incidents and runway incursions.

u. Invites Runway Safety personnel to participate in all Safety Risk Management panels that evaluate changes in airport or Air Traffic procedures resulting from physical changes to airport runways, taxiways or the Airport Operations Area. Provides copies of any Safety Risk Management Documents or Decision Memorandums for such changes to Runway Safety for review prior to final approval.

## **5. Air Traffic Organization Technical Operations Services.**

a. Details staff to work on a full-time basis in Runway Safety when the number of Vehicle or Pedestrian Deviations (VPD) involving Technical Operations employees increases more than 100 percent over the previous year, and the Director of Runway Safety makes a request for assistance.

b. Provides Runway Safety personnel full access to information collected during investigations of surface events involving Technical Operations personnel or personnel contracted by Technical Operations. Accelerates investigations when requested by Runway Safety.

c. Supports Runway Safety in identifying and reducing runway incursion risks and developing runway safety strategies and initiatives to be included in the FAA Flight Plan and/or NRSP. Identifies and executes action items in support of these plans.

d. Provides timely response (normally within 30 days) and due consideration to recommendations from Runway Safety for changes to agency standards that could help to reduce runway incursion risk.

e. Supports the RRSPM(s) in the development of regional plans to reduce the risk of surface events.

f. Designates staff within the service area to work with the RRSPM on a collateral basis or, in some cases, on a full-time detail. These individuals will be part of the regional runway safety team.

g. Designates a management official within the Service Area office to assist the RRSPM in resolving runway safety issues.

h. Provides at least one team member for RSAT activities at the local and regional level. Accepts and executes action items in local and regional RSAPs, as appropriate.

i. Provides feedback to Runway Safety on surface events involving Technical Operations personnel to help document possible lessons learned.

j. Analyzes, tracks, and makes recommendations to improve National Airspace System facilities and services that have an impact on safe surface movement, including communications, navigation, and surveillance systems. Assesses recommendations through identified safety risk management procedures.

k. Ensures that the field workforce is briefed periodically on runway safety best practices and requirements. Use of RRST members to conduct such briefings is encouraged.

l. Reviews Regional Runway Safety Plans annually when requested by the RRSPM.

## **6. Office of Airports.**

a. Details one staff specialist to work on a full-time basis in Runway Safety when the number of VPDs increases more than twenty percent over the previous year, and the Director of Runway Safety makes a request for assistance.

- b.** Provides Runway Safety personnel full and unrestricted access to information collected in investigations of surface events. Accelerates investigations when requested by Runway Safety (requests will normally apply only to possible Category A or B runway incursions).
- c.** Provides for the participation of Runway Safety personnel in onsite surface event investigations when requested.
- d.** Supports Runway Safety in identifying and reducing runway incursion risks and developing runway safety strategies and initiatives to be included in the FAA Flight Plan and/or NRSP. Identifies and executes action items in support of these plans.
- e.** Provides timely response (normally within 30 days) and due consideration to recommendations from Runway Safety for changes to agency airport standards that could help reduce runway incursion risks.
- f.** Supports the RRSPMs in the development of regional plans to reduce the risk of surface events.
- g.** Designates regional staff to work with the RRSPMs on a collateral basis. These individuals will be part of the RRST.
- h.** Designates a regional management official to assist the RRSPM in resolving runway safety issues.
- i.** Provides at least one team member for regional RSAT meetings and other activities at airports with an ATCT. Completes appropriate action items in RSAPs.
- j.** Participates in local RSAT meetings when possible.
- k.** Tracks and analyzes overall VPD statistics, identifies trends and common risk factors and makes recommendations to reduce the number and severity of runway incursions and other surface incidents.
- l.** Publishes an analysis of trends for surface events involving VPDs and an action plan to address common hazards at least annually.
- m.** Conducts investigations of VPDs, makes recommendations toward prevention of VPDs, and communicates to Runway Safety lessons learned and system-wide hazards identified as a result of investigations.
- n.** Provides primary and alternate members to the runway incursion severity classification team.
- o.** Collects information on runway incursions from airport owners and operators when requested by Runway Safety. This may include incursions which are not VPDs. These requests will be coordinated with the Office of Airport Safety and Standards.
- p.** Coordinates changes to runways and taxiways at towered airports with the RRSPM at an appropriate point in the planning and design process.
- q.** Ensures that management and the field workforce are briefed periodically on runway safety best practices and requirements. Use of RRST members to conduct such briefings is encouraged.
- r.** Reviews Regional Runway Safety Plans annually.

## **7. Flight Standards Service.**

- a.** Details staff to work on a full-time basis in Runway Safety.
- b.** Provides Runway Safety personnel full and unrestricted access to information collected in investigations of surface events. Accelerates investigations when requested by Runway Safety.

c. Provides for the participation of Runway Safety personnel in onsite surface event investigations when requested.

d. Supports Runway Safety in identifying and reducing runway incursion risk and developing runway safety strategies and initiatives to be included in the FAA Flight Plan and/or NRSP. Identifies and executes action items in support of these plans.

e. Provides timely response (normally within 30 days) and gives due consideration to recommendations from Runway Safety for changes to agency standards that could reduce runway incursion risks.

f. Supports the RRSPMs in development of regional plans to reduce the risk of surface events.

g. Designates regional staff to work with the RRSPM on a collateral basis or, in some cases, on a full-time detail. These individuals will be part of the RRST and participate in regional RSAT meetings.

h. Regional Division Managers will work to assist the RRSPM in resolving runway safety issues that involve the division and ensure that Flight Standards resolves appropriate action items in RSAPs.

i. Provides at least one team member for regional and local RSAT meetings and other activities at airports with an ATCT.

j. Tracks and analyzes statistics for pilot deviations (PD) and incidents involving non-pilots taxiing aircraft, identifies trends and common risk factors and makes recommendations to reduce the number and severity of runway incursions and other surface incidents.

k. Conducts investigations of PDs and incidents involving non-pilots taxiing aircraft, makes recommendations toward prevention of such incidents, and communicates to Runway Safety lessons learned and system-wide hazards identified as a result of investigations.

l. Publishes an analysis of trends for surface events involving PDs and an action plan to address common hazards at least annually.

m. Publicizes local runway safety issues by posting hot spot charts, runway safety bulletins, runway safety event notices and other material on the FAA Safety Team (FAAST) website and other distribution channels when requested by Runway Safety.

n. Schedules, facilitates, supports, and holds runway safety outreach meetings with pilot groups, flight schools, and other aviation organizations or companies, as appropriate, in cooperation with Runway Safety.

o. Provides primary and alternate members to the runway incursion severity classification team.

p. Collects information on runway incursions from pilots and other aviation personnel when requested by Runway Safety. This may include getting pilot statements for incursions that are not pilot deviations.

q. Ensures that management and the field workforce are briefed periodically on runway safety best practices and requirements. Use of RRST members to conduct such briefings is encouraged.

r. Reviews Regional Runway Safety Plans annually.

## **8. Regions and Center Operations.**

a. Serves as an advocate and spokesperson for the runway safety program within the regions and fosters collaboration and support among the regional divisions and service area offices.

b. Facilitates and supports collaboration and partnership between the RRSPMs and aviation departments of state and local governments on runway safety matters.

- c.** Supports outreach efforts to the aviation community on runway safety.
- d.** Provides input to the RRSPMs in development of regional runway safety plans, and supports initiatives identified in the regional plans.
- e.** Provides input to the Director of Runway Safety during periodic evaluations on the effectiveness of the regional and national runway safety programs.
- f.** Provides real time information to the RRSPMs on surface events through the Regional Operations Centers.
- g.** Reviews Regional Runway Safety Plans annually.

### Chapter 3. National and Regional Runway Safety Plans

**1. National Runway Safety Plan.** The National Runway Safety Plan (NRSP) is developed by Runway Safety, and presents a single national strategy for the reduction of runway incursions and surface incidents. The plan is coordinated across FAA organizations, and involves airport operators and airspace system users. The plan identifies and prioritizes activities and objectives the FAA will undertake to improve runway safety. The NRSP does not replace or supersede the FAA Flight Plan or the various organizations' business plans. The purpose of the national plan is to provide an overall strategy and ensure that all organizations are working together in a coordinated manner towards common goals and objectives. When developing the plan, Runway Safety will:

- a. Coordinate with affected FAA organizations at the national level during its development and subsequent revisions.
- b. Seek input from representative organizations in the aviation community.
- c. Identify activities designed to improve runway safety. In addition to the activity description, the plan will include the following information:
  - (1) The organization(s) responsible for the task.
  - (2) Resources (staffing and funding) necessary to accomplish the task.
  - (3) Source(s) of the resources: e.g., FAA organization(s), outside organization.
  - (4) A time frame for accomplishing the work.
  - (5) Proposed metrics for measuring the effectiveness of the activities.
- d. Disseminate the plan whenever updated. All updates will be posted on the national website.

**2. Regional Runway Safety Plans.** Regional Runway Safety Plans are developed by the RRSPM, with input from the Regional Administrator, and present a regional strategy for reduction of runway incursions and surface incidents. The regional plan will execute the priorities and activities identified in the NRSP. RRSPMs will develop their plans with the assistance of the RRST. The plan will include activities and objectives that affect or involve multiple FAA organizations. When developing and coordinating the plan, the RRSPM will:

- a. Identify various activities designed to improve runway safety. In addition to the activity, the plan will identify:
  - (1) The organization(s) responsible for the task.
  - (2) Resources (staffing and funding) necessary to accomplish the task.
  - (3) Source(s) of the resources: e.g., FAA organization(s), outside organization(s).
  - (4) A time frame for accomplishing the task.
  - (5) Proposed metrics for measuring the effectiveness of the activities.
- b. Coordinate the plan with all members of the RRST and the Regional Administrator, and get concurrence from the regional Airports and Flight Standards Division Managers, and the Area Director for Terminal Operations. Identify the duties and time commitments expected from their representatives participating on the RRST that are included in the plan. Submit the completed plan to the Director of Runway Safety for final approval.

**c.** Prepare plans on an annual basis as determined by the Director of Runway Safety. The plans will be finalized prior to the start of each fiscal year. The RRST will reevaluate the plan six months after initial approval, identify needed changes and submit a revision to the Director of Runway Safety for coordination and approval if necessary.

**d.** Ensure that resource requirements for execution of the plan are incorporated into the Runway Safety budget.

## Chapter 4. Runway Safety Action Plans and Runway Safety Action Teams

**1. Overview.** Each airport with an operational ATCT (including FCTs) must develop and maintain a documented Runway Safety Action Plan (RSAP). These plans should be site-specific and present strategies to mitigate the risk of runway incursions. In addition to addressing problems, each Runway Safety Action Team (RSAT) should look for best practices that could be documented and shared with the aviation community. At least once every 12 months, a local or regional RSAT will convene to review and/or update the plan as necessary.

**a. Responsibilities.** The overall responsibility to establish and maintain RSAPs rests with Terminal Services.

(1) The ATCT manager will convene a local RSAT and document an RSAP with appropriate support from service area personnel and/or the Regional Runway Safety Program Office.

(2) Regional RSAT meetings are the responsibility of Runway Safety and are led by the Regional Runway Safety Program Office. RSAPs resulting from regional RSAT meetings will be documented by the Regional Runway Safety Program Office. When considering locations for regional RSATs, priority will be given to airports with the highest risks of runway incursions as determined by Runway Safety with input from the regional runway safety team.

(3) Runway Safety will track the status of action items contained in all RSAPs.

**b. Reporting Requirements.** The Vice President of Terminal Services will communicate the status of RSAPs at least annually to the Vice President of the ATO Office of Safety. The report will include whether each airport has a plan and the date of the last RSAT meeting at which the plan was updated.

**c. Coordination of Regional and Local Runway Safety Action Team Meetings.**

(1) RRSPMs will inform the appropriate Terminal Operations Director, Flight Standards and Terminal Services personnel of scheduled regional RSAT meetings. They will also be identified in the regional runway safety plan.

(2) Terminal Operations will coordinate with and inform the RRSPMs of all scheduled local RSAT meetings at least 30 days prior to the date of the meeting.

**2. Runway Safety Action Plans (RSAPs).** RSAPs are developed by the Regional Runway Safety Program Office for regional RSAT meetings, and by the ATCT manager for local RSAT meetings.

**a. Facility Plan Preparation.** As a minimum, the plan must include the following:

(1) A list of participants, their affiliation, and a general overview of the team meeting.

(2) Runway safety concerns, issues, or problems at the airport. These may include existing as well as prospective ones.

(3) Best Practices. A local or regional RSAT may determine that an operational practice observed at an airport is a best practice that should be shared with other locations. Each RSAP shall include a section on best practices, if any, in use at that particular airport.

(4) Specific Action Items. Action items should be airport specific and linked to a runway safety concern, issue or problem at the airport. Consensus is required for assignment of an action item, in particular from the organization responsible for accomplishing the action. Acceptance of an RSAP action item is voluntary. Proposed action items where consensus is not reached may be documented as recommendations at the discretion of the RRSPM or ATCT manager. Action items should fall within the authority of the local,



regional or service area level. The RRSPM will forward action items that require national implementation to the Director of Runway Safety. Action items for nonstandard facilities or procedures will be investigative only (i.e., investigate use of) until approval is obtained from the regional or service area office organization of the FAA that has the authority to grant waivers or modifications to the standard. Action items may include, but are not limited to:

(a) Changes in physical features/facilities of the airfield.

(b) Air Traffic Control Procedures.

(c) Airfield access requirements.

(d) Pilot/vehicle operator awareness.

(5) A proposed implementation schedule for each action item.

(6) The party/parties responsible for implementing each action item.

(7) Identification of the party responsible for safety risk assessment of proposed changes.

(8) A review of the action items and their status from the last RSAP, and a review of their effectiveness in the judgment of the RSAT team.

**b. Plan Concurrence.** The Regional Runway Safety Program Office will obtain concurrence from team members having action items as a result of a regional meeting, and Terminal Services or their designee will obtain concurrence from team members having action items as a result of a local meeting. An absence of a response within the requested timeframe (typically 30 days) will be considered concurrence. Team members are required to coordinate acceptance of actions with their parent organizations. If a team member non-concurs with an action item after the formal RSAT meeting, the non-concurrence and the justification for it shall be documented in the RSAP.

**c. Review.** RSAPs resulting from local RSATs must be forwarded to the RRSPM. The RRSPM reviews and approves all RSAPs (from both regional and local RSATs) to ensure they meet the requirements of this order and associated standard operating procedures. This will normally be accomplished within 67 days of the meeting. Approval of the local RSAP by the RRSPM signifies that the RSAP meets the requirements contained in this order, and not necessarily agreement with the specific actions contained in the plan. The RRSPM may choose to provide feedback on action items, as appropriate, as part of the approval process. Local RSAPs should be forwarded to the RRSPM by the ATCT manager within 45 days of the RSAP meeting.

**d. Distribution.** Approved RSAPs will be distributed to all team members. In addition, RSAPs developed as a result of a Regional RSAT meeting will be distributed to the following:

(1) Director, Runway Safety.

(2) Area Director, Terminal Operations.

(3) Regional Administrator.

(4) Flight Standards and Airports Division Managers.

(5) Airport Manager or Director.

(6) ATCT Manager and Terminal Operations District Manager.

(7) Members of the RRST.

**e. Tracking.** The Regional Runway Safety Program Office shall track action items assigned in RSAPs.

**3. Regional Runway Safety Action Team (RSAT) Meetings.** Regional meetings will be conducted by the RRSPM or his/her designee. Locations will be determined by Runway Safety.

**a. Notification.** The Regional Runway Safety Program Office will normally notify airport management and local air traffic at least 30 days in advance of a Regional RSAT meeting to be conducted at the airport.

**b. Team Composition.** In addition to local airport and air traffic personnel, airport users and major tenants, Regional RSATs will normally include representatives from the following organizations:

- (1) ATCT management.
- (2) Flight Standards (including members of the FAA Safety Team).
- (3) Office of Airports.
- (4) Technical Operations.
- (5) Regional Runway Safety Program Office
- (6) Terminal Operations.
- (7) Other stakeholders, as deemed appropriate by the RRSPM.

**4. Local Runway Safety Action Team (RSAT) Meetings.** The ATCT manager (or designee), in coordination with airport management, will conduct local meetings.

**a. Notification.** The RRSPM must be notified at least 30 days in advance of upcoming local RSAT meetings. This will permit Runway Safety to participate in, or otherwise support, the local meeting if available.

**b. Team Composition.** As a minimum, the team must have representation from the local Airport Traffic Control Tower (ATCT) and airport management. The following organizations will also be invited:

- (1) Local Technical Operations personnel.
- (2) Any organizations that have drivers who operate on the Airport Operations Area (AOA).
- (3) Airport tenants and other users.
- (4) Regional Runway Safety Program Office.
- (5) Airport District Office.
- (6) The Flight Standards District Office and FAA Safety Team.
- (7) Other stakeholders as deemed appropriate by the airport and/or ATCT manager.
- (8) Appropriate ATO Service Center Personnel.

## Appendix A. Runway Incursion and Surface Incident Determinations

**1. Purpose.** This appendix provides a process for determining whether a surface event is a runway incursion or surface incident.

**2. Guidelines for the Determination of Runway Incursions and Surface Incidents.** Runway Safety is responsible for determining whether an occurrence at an aerodrome is a runway incursion or surface incident. The following guidelines are used in these determinations:

**a.** Only surface events at airports with an operating ATCT are recorded and classified as runway incursions and surface incidents. The FAA Air Traffic Organization does not control surface movement where an ATCT is not present or operational.

**b.** Any operation intended to take place on a runway surface, such as takeoff or landing that is conducted on a taxiway or ramp, will be classified as a surface incident.

**c.** Events involving wildlife on the airport surface are not classified as runway incursions or surface incidents.

**d.** Surface events may involve aircraft that are not touching the ground. Examples might include helicopters hover taxiing or an aircraft arriving or departing which is very near the surface. At the discretion of the Director of Runway Safety, such events may be classified as runway incursions or surface incidents if the aircraft is still over the runway, runway protected area or taxiway and has not reached a safe maneuvering altitude.

**3. Types of Surface Events.** Surface events are classified into the following types:

**a. Air Traffic Control Surface Event.** A surface event attributed to ATCT action or inaction.

**b. Pilot Deviation (PD).** A surface event caused by a pilot or other person operating an aircraft under its own power (see FAA Order 8020.11, Aircraft Accident and Incident Notification, Investigation and Reporting, for the official definition).

**c. Vehicle or Pedestrian Deviation (VPD).** A surface event caused by a vehicle driver or pedestrian (see FAA Order 8020.11, Aircraft Accident and Incident Notification, Investigation and Reporting, for the official definition).

**d. Other.** Surface events which cannot clearly be attributed to a mistake or incorrect action by an air traffic controller, pilot, driver or pedestrian will be classified as "other". These events would include incursions caused by equipment failure or other factors.

**4. Determination Process.** Runway Safety will analyze all surface events when initially reported and make a preliminary determination of whether the event is a runway incursion or surface incident. Runway Safety will then gather all available data and confirm the proper determination of each surface event. Data collected may include statements from those involved, surveillance and/or voice data, etc. Once sufficient data is available, the event will be determined to be an Air Traffic Control surface event, pilot deviation, vehicle or pedestrian deviation or other. The determination of runway incursions will be confirmed and made final by the Director of Runway Safety at the same time the severity ranking is finalized. The preliminary determination and classification of surface incidents will become final after 90 days unless data is received which justifies a second review.

## Appendix B. Runway Incursion Severity Classification

- 1. Purpose.** This appendix provides a process for assessing and classifying the severity of runway incursions.
- 2. Severity Classifications.** Runway Incursions are assessed by Runway Safety and classified by the severity of the event. The Severity Classifications are:
  - a. Accident.** An incursion that results in a collision. For the purposes of tracking incursion performance, an accident will be treated as a Category A runway incursion.
  - b. Category A.** A serious incident in which a collision was narrowly avoided.
  - c. Category B.** An incident in which separation decreases and there is a significant potential for collision, which may result in a time critical corrective/evasive response to avoid a collision.
  - d. Category C.** An incident characterized by ample time and/or distance to avoid a collision.
  - e. Category D.** An incident that meets the definition of a 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.
  - f. Category E.** An incident in which insufficient or conflicting evidence of the event precludes assigning another category.
- 3. Severity Examples.** A representative example for each type of runway incursion is provided here to help the reader understand the severity categories. These examples are for information only and are not meant to affect the severity ranking definitions or process.
  - a. Category A.** An air traffic controller cleared an aircraft for takeoff, mistakenly believing that an aircraft that had previously landed had exited and cleared the runway. During takeoff roll, the aircraft heard the previous aircraft notify the ATCT that they were still on the runway. The aircraft aborted takeoff and has to swerve to one side of the runway to miss hitting the aircraft by 10 feet.
  - b. Category B.** Local Control (LC) cleared a Diamond DV20 for takeoff. When the DV20 was rotating, LC observed a Cessna C182 entering the runway without authorization approximately 1050 feet down field from where the DV20 rotated. The DV20 over flew the C182 by 150 feet, the closest proximity reported.
  - c. Category C.** A Boeing B737 landed and exited at a high speed taxiway. The B737 pilot was instructed to hold short of adjacent runway, and the pilot acknowledged hold short instructions. An Airbus A330 was cleared for takeoff on the adjacent runway full length. The 737 pilots missed the hold line and pulled onto the runway and stopped. The A330 rotated 3600 feet prior to the 737 entry point to the runway and overflew the 737 by 400 feet. The A330 rotated normally and was not aware of the incursion by the B737.
  - d. Category D.** An aircraft is instructed to hold short of the runway but crosses the hold line by mistake. No other aircraft are in the area.
  - e. Category E.** An aircraft reports a pedestrian on the runway on takeoff. Estimates of the closest proximity from the pilot and pedestrian differ significantly and there is no way to confirm which is correct, as the incident occurred at night and was not observable from the ATCT.

**4. Factors Affecting Severity Classification.** Factors affecting the severity of a runway incursion are listed below.

**a. Proximity of the aircraft and/or vehicle.** The closest proximity is taken from the most reliable source available. When an aircraft flies directly over another aircraft or vehicle, then the closest vertical proximity should be used. When both aircraft are on the ground, the proximity that is used to classify the severity of the runway incursion is the closest horizontal proximity. In incidents in which the aircraft are on intersecting runways, the distance from each aircraft to the intersection is used. It should be noted that in some instances, one party involved in an incursion may intentionally choose to close the distance between itself and the other vehicle, pedestrian or aircraft. In such cases, the closest unintended proximity should be used in the ranking process.

**b. Geometry of the encounter.** Certain encounters are inherently more severe than others. For example, encounters with two aircraft on the same runway are more severe than incidents with one aircraft on the runway and one aircraft approaching the runway. Similarly, head-on encounters are more severe than aircraft moving in the same direction.

**c. Evasive or corrective action.** When evasive or corrective action is taken to avoid a collision, the magnitude of the maneuver is an important consideration in classifying the severity. This includes, but is not limited to, hard braking action, swerving, rejected take-off, early rotation on take-off, and go-around. The more severe the maneuver, the higher its contribution to the severity rating. For example, encounters involving a rejected take-off in which the distance rolled is 300 feet are more severe than those in which the distance rolled is less than 30 feet.

**d. Available reaction time.** Encounters that allow little time to react to avoid a collision are more severe than encounters in which there is ample time available to respond. For example, in incidents involving a go-around, the approach speed of the aircraft and the distance to the runway at which the go-around was initiated needs to be considered in the severity classification. This means that an incident involving a heavy aircraft initiating a go-around at the runway threshold is more severe than one that involves a small aircraft initiating a go-around on a one-mile final.

**e. Environmental conditions, weather, visibility and surface conditions.** Conditions that degrade the quality of the visual information available to the pilot and controller, such as poor visibility, increase the variability of the pilot and controller response and, as such, may increase the severity of the incursion. Similarly, conditions that degrade the stopping performance of the aircraft or vehicle, such as wet or icy runways, should also be considered.

**f. Factors that affect system performance.** Factors that affect system performance, such as communication failures (e.g. "open mike") and communication errors (e.g. the controller's failure to correct an error in the pilot's read back), also contribute to the severity of the incident.

**5. Data Collection for Severity Classification.** Surface events are reported by the Airport Traffic Control Tower where the event occurred. Other FAA directives provide the guidance and requirements for reporting these events. Only the data collection process needed to classify incursions is discussed here.

**a. Initial Data Collection.** ATCT personnel report Surface Events in accordance with FAA directives. Once surface events are reported, the events are tracked by Runway Safety until the determination and classification process is completed.

**b. Detailed data collection.** When additional data is required to classify a surface event, the request is forwarded to the RRSPM. The RRSPM will ensure all data requested by the classification team is provided. In order to support the RRSPM in this data collection effort:

(1) Terminal Services will ensure that RRSPMs receive, or have access to, the following data for each event as soon as practical, but typically not later than five days following the event:

- (a) Voice recordings for all ATCT positions involved in a surface event.
- (b) Ground Surveillance data for all incursions involving more than one aircraft (at locations where that capability was available during the event).
- (c) Other surveillance data recordings or replays, if requested and available.
- (d) FAA forms used for reporting the event (initial and final).
- (e) Airport and ATC data to include an airport diagram with appropriate distances, including closest proximity and distance when aircraft sent around.

(2) Flight Standards will provide the RRSPM a copy of any pilot statements. These materials should be made available as soon as possible, but not later than 10 business days of possible Category A and B surface events.

(3) The Office of Airports will provide the RRSPM with the preliminary and final results of investigations into VPDs as soon as they are available, but not later than 10 business days for possible Category A and B surface events. This will include driver or pedestrian statements if available.

**c. Onsite Data Collection.** Although Runway Safety does not conduct investigations, in the case of a serious event Runway Safety personnel may join official investigators in the onsite investigation process. They may join these efforts to offer expertise, and ensure that adequate data is collected from all parties involved in the surface event including airport operators, pilots and Air Traffic Control personnel. FAA organizations responsible for investigating surface events shall cooperate with Runway Safety personnel who are directed to participate in surface event investigations to the fullest extent possible.

**6. Data Required for Severity Classifications.** Data on all of the factors affecting the severity of a runway incursion must be available prior to classifying the incursion. The need to have a complete set of data available should be balanced with the reality that some data may not be available for some time. In general, the more severe the incursion, the more data will be needed to accurately classify the severity of the incursion. The following guidelines on required data are established:

**a.** Preliminary reports will typically be sufficient to rank incursions involving only one aircraft. The appropriate preliminary FAA form (see par. 5 (b) (1)), coupled with available airport information, may be used to complete classification of these events.

**b.** Other than (a) above, incursions for which replays or recordings of ground surveillance data is available will not be classified without this data.

**c.** Other than (a) above, voice recordings should be made available to the classification team before an incursion is classified. Runway Safety may choose to waive this requirement if the recordings will not be available for an extended time and they believe the incursion involved very little risk of a potential collision.

**d.** Other than (a) above, all classifications require an airport diagram and appropriate distances including closest proximity and distance when an aircraft sent around.

**7. Severity Classification Team.** The severity classification team determines runway incursion severity classification in accordance with the procedures in this document. The team is comprised of one or more members from each of the following core organizations: Air Traffic Organization Terminal Services, Flight Standards (AFS), and the Office of Airports (ARP). Each of these organizations shall assign a minimum of two people to the classification team, a primary and backup representative. Qualifications of the assigned

personnel must be reviewed and approved by the Director of Runway Safety. The background of each line of business representative will be:

- a. Flight Standards.** Personnel will be qualified aviation safety inspectors or equivalent experience with either general aviation and/or air carrier background and field experience. Their knowledge should be broad enough to cover the various aircraft types, models, and performance characteristics.
- b. Office of Airports.** Personnel will have background as qualified airport certification safety inspectors, or have a background in airport operations.
- c. Air Traffic Organization Terminal Services.** Personnel will have experience working as Certified Professional Controllers in one or more FAA Airport Traffic Control Towers.

**8. Surface Event Classification.** The severity classification team will normally classify events on a weekly basis. At least one team member from each core organization must participate in all classifications. Team members may participate either in person or via electronic means such as a teleconference, video conference or an online discussion. Team members will consider all relevant data and use their best judgment to determine which of the severity categories best fit the incursion. Events will be classified under the following guidelines:

- a.** Each organization will provide one vote. Consensus on classification among team members is highly desirable but not required. Consensus among team members from the same organization is required before a vote is held.
- b.** Classification may be deferred if the team believes additional data is needed to accurately rank the event.
- c.** If the team cannot achieve consensus upon classification, the event will be forwarded to the Director of Runway Safety who will provide a final classification.
- d.** The Director of Runway Safety may authorize the use of automated tools to assist the team in classifying the severity of the runway incursions. Such tools must be validated and the authorization must be provided in writing prior to the use of the tool.
- e.** In order to promote consistency in the process, the following guidelines are established:
  - (1) A runway incursion involving only a single aircraft, pedestrian, or vehicle is assigned a default severity ranking of Category D. An aircraft which is 1 mile or more from the runway threshold is not considered to be involved in a runway incursion.
  - (2) If the aircraft, vehicle, or pedestrian causing a surface event crossed the runway holding position marking (hold line) but stopped more than 100 feet from the runway edge, the event is expected to be assigned a severity ranking of Category C.
  - (3) If both aircraft and/or vehicles are within the edges of the runway and the closest unintended proximity is no less than 2000 feet horizontal or in the case of an over flight, no less than 200 feet vertical, the event is expected to be assigned a severity ranking of Category C.
  - (4) If any part of an aircraft, and an aircraft, vehicle, or pedestrian is on or above the runway surface and the closest unintended proximity is within 100 feet horizontal or vertical, the event is expected to be assigned a severity ranking of Category A.
- f.** There may be insufficient data to provide a severity ranking for a surface event. These events will be assigned a severity classification of E.

**9. Recording Final Assessment Ratings.** The Severity Classification Team will maintain a record of all proceedings to include, at a minimum, the members participating in each classification, the events reviewed, the recommended severity classification and data pertinent to the classification. All events which have been classified will be forwarded to the Director of Runway Safety. All event classifications are considered preliminary until the Director ensures the severity classification meets all requirements set forth in this order. The event is considered finalized once the Director has completed the review.

**10. Distribution of Severity Classification Results.** Runway Safety will distribute results of the severity classification process to appropriate FAA offices.

**11. Severity Classification Reviews.** In order to ensure that severity classification is consistent with the class definitions and the procedures and policies in this order, the Director of Runway Safety will appoint a team independent of the Severity Classification Team to conduct quarterly reviews of the team's work. These reviews will examine the consistency in ranking between similar events and will document instances in which policies and procedures were not followed. Severity Classification Team members will be briefed on the results at the conclusion of each review.



## Appendix C. Surface Event Hazard Identification and Risk Analysis

- 1. Purpose.** This appendix documents roles and responsibilities for identifying, analyzing, and tracking hazards which contribute to runway incursion risk.
- 2. Background.** ATO policy governing the identification of hazards and the analysis and mitigation of risk in the National Airspace System (NAS) is documented in FAA Order 1000.37 ATO Safety Management System. The “Safety Assurance” part of the SMS includes the processes used to evaluate and ensure safety of the NAS, including evaluations, data tracking, and analysis. Runway Incursions are considered “safety events” that must be analyzed in order to identify new hazards/risks and to assess existing safety controls.
- 3. Individual Surface Event Investigation and Analysis.** Runway incursions are reported by an ATCT facility and investigated and analyzed based on the type of incursion, in accordance with agency policies. All incursions are investigated regardless of perceived severity. In general, the responsibilities for investigation and analysis are as follows:
  - a. Air Traffic Control Surface Events.** ATCT facilities investigate surface events that are attributed to Air Traffic Control. In accordance with the ATO SMS Policy, if analysis of the event identifies a safety concern, the facility must take action using the Safety Risk Management process to implement mitigating actions as required. If the facility identifies a potential system-wide safety concern, the ATCT manager must forward that information to the Director of Terminal Safety and Operations, the ATO Office of Safety Quality Assurance and Runway Safety through appropriate channels.
  - b. Pilot Deviations (PD).** Surface events caused by PDs are investigated by the Flight Standards Service. Based on the results of the investigations, Flight Standards may assign corrective action to the pilot or operator involved. If risks or hazards under the control of the ATO or the airport are identified, Flight Standards notifies the responsible organization. If the Flight Standards investigator identifies a potential system-wide safety concern, the investigator must forward that information to Runway Safety, ATO Office of Safety Quality Assurance and appropriate Flight Standards headquarters organization.
  - c. Vehicle or Pedestrian Deviations (VPD).** Surface events caused by vehicles or pedestrians are investigated by the FAA Office of Airports. Based on the results of the investigation, Airports may assign corrective actions to the airport involved. If risks or hazards are identified that are under the control of the ATCT, the Office of Airports notifies the ATCT manager. If the airport investigator identifies a potential system-wide safety concern, they must forward that information to the Office of Airport Safety and Standards, ATO Office of Safety Quality Assurance and Runway Safety through appropriate channels.
  - d. Office of Runway Safety.** Runway Safety examines every surface event for potential hazards at both regional and national levels.
    - (1) At the regional level, the RRSPM and staff examine each surface event based on initial reports and the results of investigations conducted by the responsible agency organization. If the RRSPM believes follow up actions are necessary to mitigate hazards, the RRSPM provides recommendations to the appropriate FAA line of business.
    - (2) At the national level, Runway Safety documents the details of each surface event in the national surface event database. Individual events may be selected for in depth analysis of causal factors. Recommendations that arise from causal factor analysis are referred to the appropriate entity (e.g., FAA line of business, aviation organization, air carrier operator, airport business) for accomplishment.

**4. Surface Event Trend Analysis and Mitigation.** Trend analysis and mitigation efforts include:

**a. Regional Trend Analysis.** The RRSPM is responsible for analyzing surface event trends for their region. Mitigations that are generated from analysis of trends for an individual airport are tracked in a national database.

**b. National Trend Analysis.**

(1) Runway Incursions are grouped into Air Traffic Control Surface Events, pilot deviations and vehicle or pedestrian deviations. The organization responsible for oversight and investigation of each type of incursion is responsible for analyzing trends and looking for common causal factors. Terminal Services, Flight Standards and the Office of Airports must complete and publish an analysis of runway incursion trends and an action plan to address common hazards at least once per year. A copy of the action plan must be provided to the Director of Runway Safety.

(2) Runway Safety is responsible for overall trend analysis and tracking of mitigation.