

COMMITTED TO CONTINUOUSLY  
IMPROVING SURFACE SAFETY.

# ***National Runway Safety Plan***

**2018-2020**

NRSP RUNWAY SAFETY COUNCIL #47



**Federal Aviation  
Administration**

[www.faa.gov](http://www.faa.gov)

# Executive-Level Statement



*Before rolling for takeoff, all pilots make sure their compass aligns with the known direction of the runway. This critical step reduces risk by helping ensure flight instruments are calibrated properly.*

Like a compass, the National Runway Safety Plan 2018-2020 aligns our strategic priorities with established Safety Risk Management principles. The plan defines how the FAA, airports, and industry partners collaborate and use data-driven, risk-based decision-making to enhance the safety of the National Airspace System.

This is especially important in an era of tightening resources. We are doing more with less by refining data and using automation to improve efficiency. We prefer modifying present resources to introducing new technology as a way to enhance safety mitigations.

Our efforts are local, national, and international in scope. We can pinpoint problems at an airport to a single intersection at a specific time of day, or use millions of data points to identify a systemic problem. Our Runway Safety Enhancement Initiatives apply strategic efforts to mitigate the identified risk.

The Runway Safety Program’s responsibility continues to serve as the focal point for all surface safety initiatives. We are committed to continuously improving runway safety.

A handwritten signature in dark ink, appearing to read 'J. Fee'.

**James Fee**  
**Safety and Technical Training**  
**Runway Safety Group Manager**  
Federal Aviation Administration  
Air Traffic Organization

## TABLE OF CONTENTS

4	Summary
6	Safety Assurance
8	Safety Risk Management
10	Safety Policy
16	Safety Promotion
19	International Leadership



# Summary

The National Runway Safety Plan 2018-2020 builds on the achievements of the National Runway Safety Plan 2015-2017. The most fundamental impact of the first plan has been the successful integration of the Safety Management System principles into the Runway Safety strategy. These principles are: Safety Assurance, Safety Risk Management, Safety Policy, and Safety Promotion.

These principles favor iterative steps in support of data-driven, risk-based decision-making. That's a strategy we will apply during the three years of this plan.

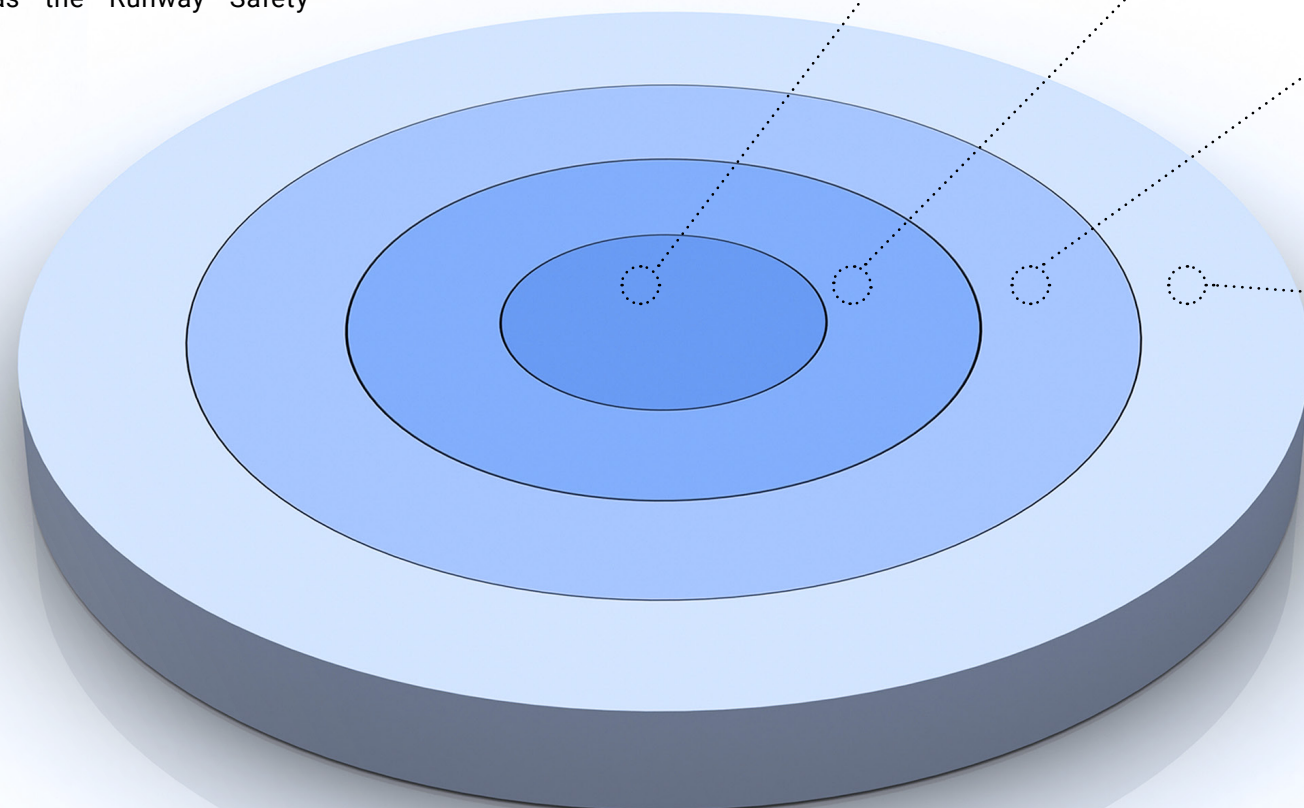
An important example of how that strategy benefits the NAS has been the identification of wrong surface operations as a rising risk and our subsequent focus on finding solutions to mitigate the risk. One of these solutions, Airport Surface Detection Equipment Model X (ASDE-X) Taxiway Arrival Prediction (ATAP) is in use today. We refer to this example throughout the plan to illustrate how the Runway Safety strategy works.

This plan outlines the methods and collaborative organizations, such as the Runway Safety

Council, that have been used in several cases to identify and mitigate safety risks. We identify and discuss three strategic steps. These steps include data collection and analysis, plans and policy, and finally communicating the change.

As with the previous plan, this plan is designed to expand our role as the global leader in runway safety while serving as a resource for anyone interested in aviation safety. For each principle, we describe the current state of applications of the principle and how they fit into the overall strategy. Supplemental documents can be found on the [RUNWAY SAFETY WEBSITE](#).

**The four components of the SMS combine to create a systemic approach to managing and ensuring safety.**



## SAFETY ASSURANCE

Remain the global leader in assuring runway safety enhancement initiatives are effective in maintaining an acceptable level of safety at U.S. airports with an air traffic control tower.

Identify Operating Hazards  
Program Data  
Voluntary Safety Reporting  
Investigations  
Safety Risk Monitoring  
Data Analysis  
Partnership for Safety  
Audits and Evaluations

## SAFETY RISK MANAGEMENT

Implement Runway Safety Enhancement Initiatives that manage or reduce the risk of airport operations.

Analyze, Assess, Mitigate, and Accept Risk  
Develop Monitoring Plan  
Safety Risk Management Documents

## SAFETY POLICY

Establish and maintain policies and procedures to ensure adequate resources are available to accomplish the FAA's near-term and strategic objectives.

SMS Orders  
Safety Guidance  
FAA/ATO Safety Orders  
SMS Manual

## SAFETY PROMOTION

Relentlessly promote best practices, lessons learned, and actionable information obtained from data analysis to our global runway safety stakeholders.

Outreach and Education Products  
Lessons Learned  
Workshops  
Safety Communication



# 1. Safety Assurance

## DATA MONITORING AND ANALYSIS

**Objective:** Remain the global leader in assuring Runway Safety enhancement initiatives are effective in maintaining an acceptable level of safety at U.S. airports with an air traffic control tower.

Absolute safety is elusive, but approachable. We plan to get closer every year. The first step in our strategic approach to safety is to collect and analyze data generated by aviation activity in the National Airspace System (NAS).

Currently, we use data collected from runway incursions (RI) and surface incidents to sort runway incursions into categories established by the International Civil Aviation Organization (ICAO) as A, B, C, and D events. A and B are considered severe and attract the most attention. However, the four categories present a significant limitation; they do not adequately measure the risk to people and property in the NAS. For example, C and D events may at times indicate greater risk.

In response to this limitation, the Surface Safety Metric was created to measure safety performance of the NAS in the runway environment. Unlike existing metrics that focus primarily on RIs, the Surface Safety Metric incorporates all types of relevant runway safety events that occur in the runway environment.

This technique helped us discover the risks posed by a growing number of aircraft taking off, landing, or taxiing on the wrong surface. Our reaction to that discovery will be discussed further in the Safety Risk Management, Safety Policy, and Safety Promotions sections below.

By weighting some categories of data collected involving runway excursions, incursions, and surface incidents, the Surface Safety Metric sorts information for a better understanding of what is driving the most risk in the system. The weighting is based on severity

**Absolute safety is elusive, but approachable.**

and frequency to create a combined risk index. The data showed that because we see and mitigate more incidents, cumulative risk decreases.

[CLICK HERE TO SEE THE SURFACE SAFETY METRIC WEIGHTING SCHEME DOCUMENT.](#)

Beginning in Fiscal Year (FY) 2019, the Surface Safety Metric will be the FAA's main metric for the public reporting of risk in the NAS. It builds on the categories established by ICAO but allows the FAA, through its Safety Management System (SMS), to sort data differently and focus on events with outcomes such as injury and/or aircraft damage, according to their proximity to a fatal accident. By incorporating every type of runway safety event, the Surface Safety Metric reflects the overall safety of the NAS in the runway environment. With the use of this comprehensive metric, the FAA is setting an innovative example that can be shared internationally to increase runway safety worldwide.

### MILESTONES

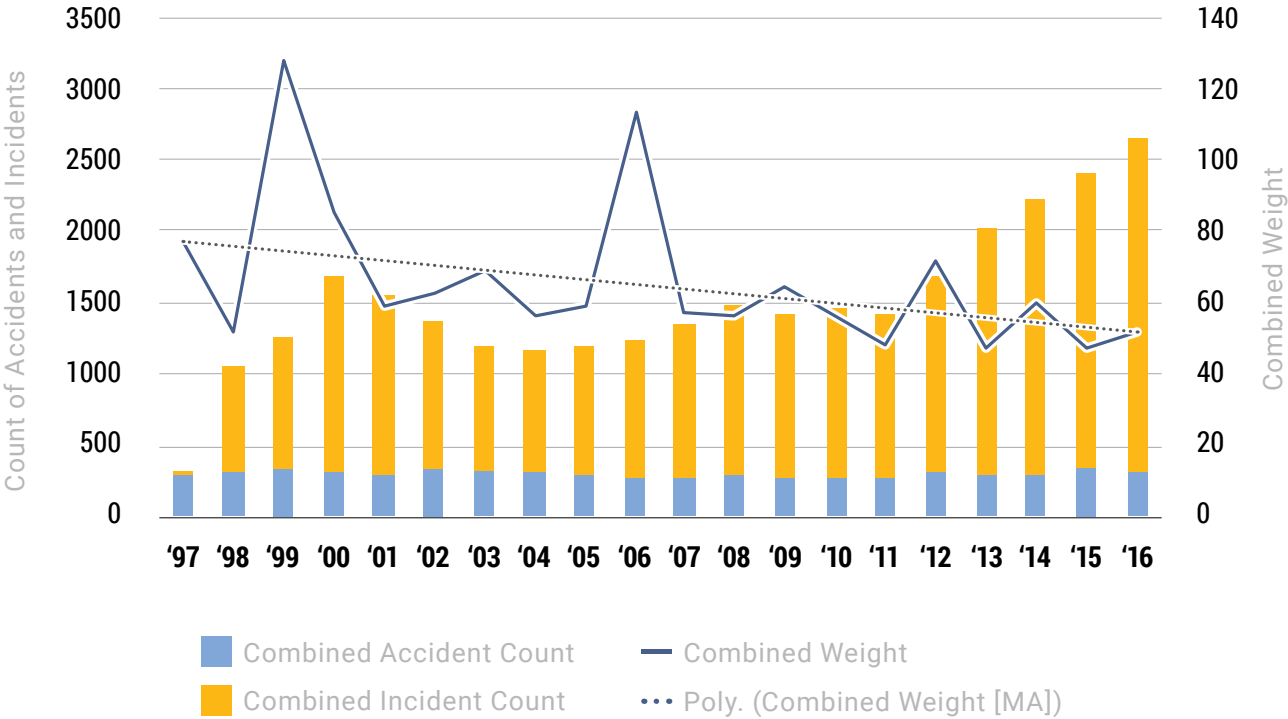


After conducting data analysis on wrong surface events, the Runway Safety Group identified 9 airports across the country with high risk of runway excursions and collisions. During FY20, the RSG conducted Special Focus RSAT meetings at the identified airports to discuss mitigation strategies and to develop a plan of action. Most of these meetings were conducted virtually due to COVID-19 pandemic travel restrictions. See the Safety Promotion section for more information and a list of the SFRSAT airports.



Integrate the capability for the automatic-classification (Autoclass) of surface safety events. The RSG will use technology to isolate low-risk non-conflict category D events and high confidence conflict category C events. This will streamline resources by reducing the number of events that are currently manually entered and processed in runway safety tool. This milestone requires close coordination with FAA Enterprise Information Management and will carry over from FY20 to FY21.

Safety Assurance: Combined Risk and Event Count





## 2. Safety Risk Management

### MITIGATION PLAN DEVELOPMENT

**Objective:** Remain the global leader in implementing mitigation plans and technology that manage or reduce the risk of airport operations.

Once we identify a safety issue, we do something about it. Ensuring the safety and integrity of Runway Safety Areas (RSA) remains one of the FAA's highest priorities.

In response to the risk posed by wrong surface events, we increased the alerting capability of the Airport Surface Detection Equipment Model X (ASDE-X) system, to alert when an approaching aircraft is aligned with a taxiway rather than the assigned runway. (See image on page 9)

After analyzing data on runway excursions and considering their cost to lives and property, we made the case for installing Engineered Material Arresting System (EMAS) at 115 runway ends at 68 airports, with plans for more. EMAS stops aircraft that have gone off the end of the runway, greatly reducing the risk to the aircraft and the people inside.

We also installed Runway Status Lights (RWSL) at 20 airports nationwide. RWSL provide an effective visual indication of an occupied runway or taxiway directly to pilots and vehicle drivers, letting them know it is unsafe to proceed, and greatly reducing the risk of collision.

Over the next years, the focus will be on implementing technology solutions specifically targeting the 475 towered airports that currently have no surface surveillance system. The goal of this "right site-right size" approach is to deploy lower-cost surface safety capabilities intended for smaller airports. The gain is, the systems are affordable because safety benefits are not outweighed by hefty price tags. In addition, the Runway Safety Group will continue to promote runway safety enhancement initiatives that leverage

existing technology, such as ATAP, rather than the added cost of full-on development.

#### Surface Safety Group (SSG)

The Runway Safety Group established the SSG to manage the Surface Safety Portfolio of Initiatives. The SSG is a workgroup of subject matter experts from across FAA lines of business and industry, that convenes on a quarterly basis to develop national surface safety strategies and mitigations. SSG members work collaboratively to discuss and review surface safety initiatives established by the group and through the safety risk management process. All initiatives are documented for accountability in the Surface Safety Initiatives Tracking Document.

#### Regional Runway Safety Plans (RRSP)

Similar to the NRSP, RRSPs, one for each of the nine regions, provide a roadmap with emphasis on regional efforts in support of the NRSP initiatives. RRSP action items are developed locally at quarterly Regional Runway Safety Team (RRST) meetings. These action items are then approved at quarterly Regional Governance Council meetings. Once approved, the RRSP is updated in the NRSP. Click on the links below to view the regional plans:

**ANE** *New England*

**AEA** *Eastern*

**ASO** *Southern*

**AGL** *Great Lakes*

**ACE** *Central*

**ASW** *Southwest*

**ANM** *Northwest Mountain*

**AWP** *Western Pacific*

**AAL** *Alaskan*

## MILESTONES



The Runway Safety Group's objective is to take steps to continuously achieve all initiatives established within the 2020 time frame and beyond. In the spirit of continuing forward, all initiatives are documented for accountability in the [SURFACE SAFETY GROUP \(SSG\) INITIATIVE TRACKING DOCUMENT](#).

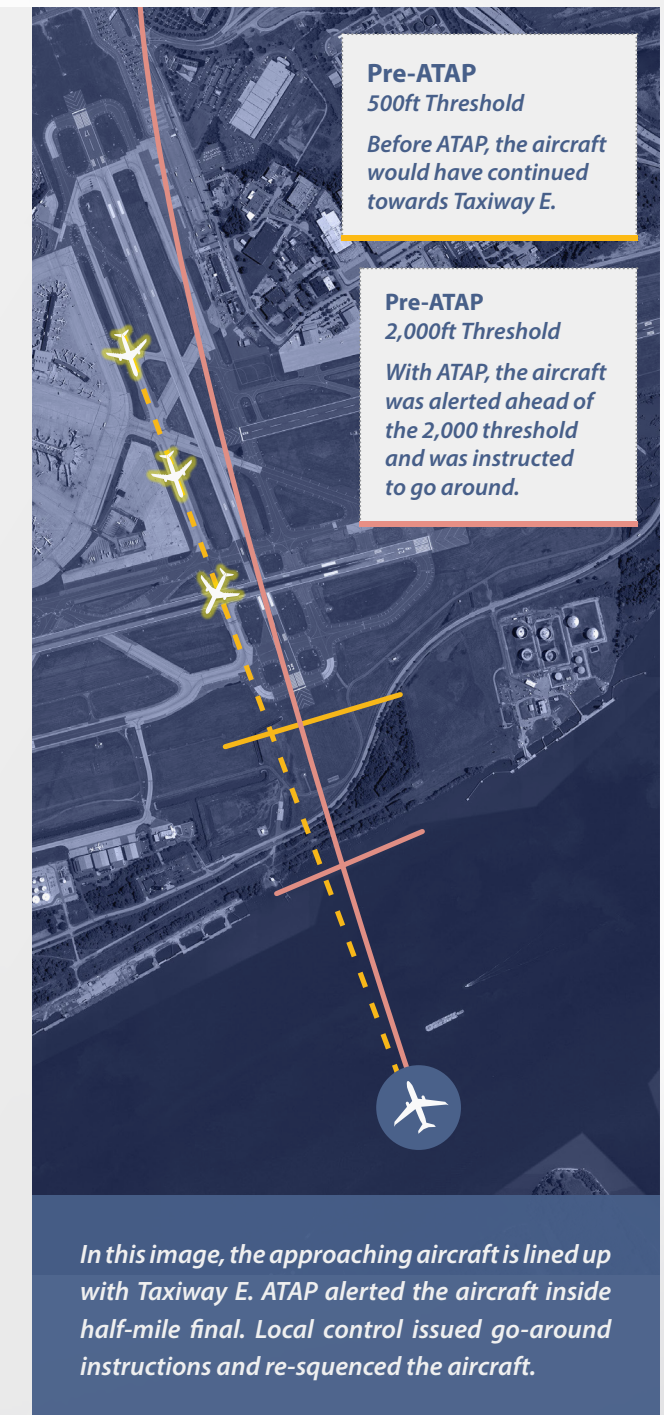
#### ASDE-X Taxiway Arrival Prediction (ATAP) Enhancement

ATAP is an enhancement to the ASDE-X safety logic that adds the capability to alert when an aircraft is aligned with a taxiway. It is currently operational at 18 airports across the country. The FAA expects to complete the deployment of ATAP in FY21.

**The ATAP alert capability is also being modified for operation at Airports Surface Safety Capability (ASSC) airports.**

**As of January 2020, ATAP has been enabled at the following locations:**

- **ATL** Hartsfield-Jackson Atlanta International, GA
- **BDL** Bradley International, CT
- **BOS** Logan International, MA
- **BWI** Baltimore/Washington International, MD
- **CLT** Charlotte Douglas International, NC
- **DFW** Dallas/Fort Worth International, TX
- **DTW** Detroit Metro Airport, MI
- **FLL** Ft. Lauderdale-Hollywood International, FL
- **IAH** George Bush Intercontinental, TX
- **LAX** Los Angeles International, CA
- **MCO** Orlando International, FL
- **MSP** Minneapolis-Saint Paul International, MN
- **ORD** O'Hare International, IL
- **PHL** Philadelphia International, PA
- **SAN** San Diego International, CA
- **SDF** Louisville International, KY
- **SEA** Seattle-Tacoma International, WA
- **STL** St. Louis Lambert International, MO







### 3. Safety Policy CHANGES

**Objective:** Establish and maintain policies and procedures to ensure adequate resources are available to accomplish the FAA’s near-term and strategic objectives.

We are currently formalizing our process of involving stakeholders to enhance runway safety. Runway safety stakeholders include airports, the aviation industry, and the FAA’s airports, safety and air traffic lines of business. They currently meet as the Runway Safety Council to discuss policy and mitigation, but this process needs to be formalized in an updated FAA Order 7050.1.

A formalized process will establish the RSC as the main vehicle to initiate the process of reviewing runway safety performance. These reviews will determine if existing safety barriers are effective, and if not, initiate teams to develop the implementation of the Runway Safety Enhancement Initiatives to mitigate that risk.

Our process is data-driven, policy-focused risk-

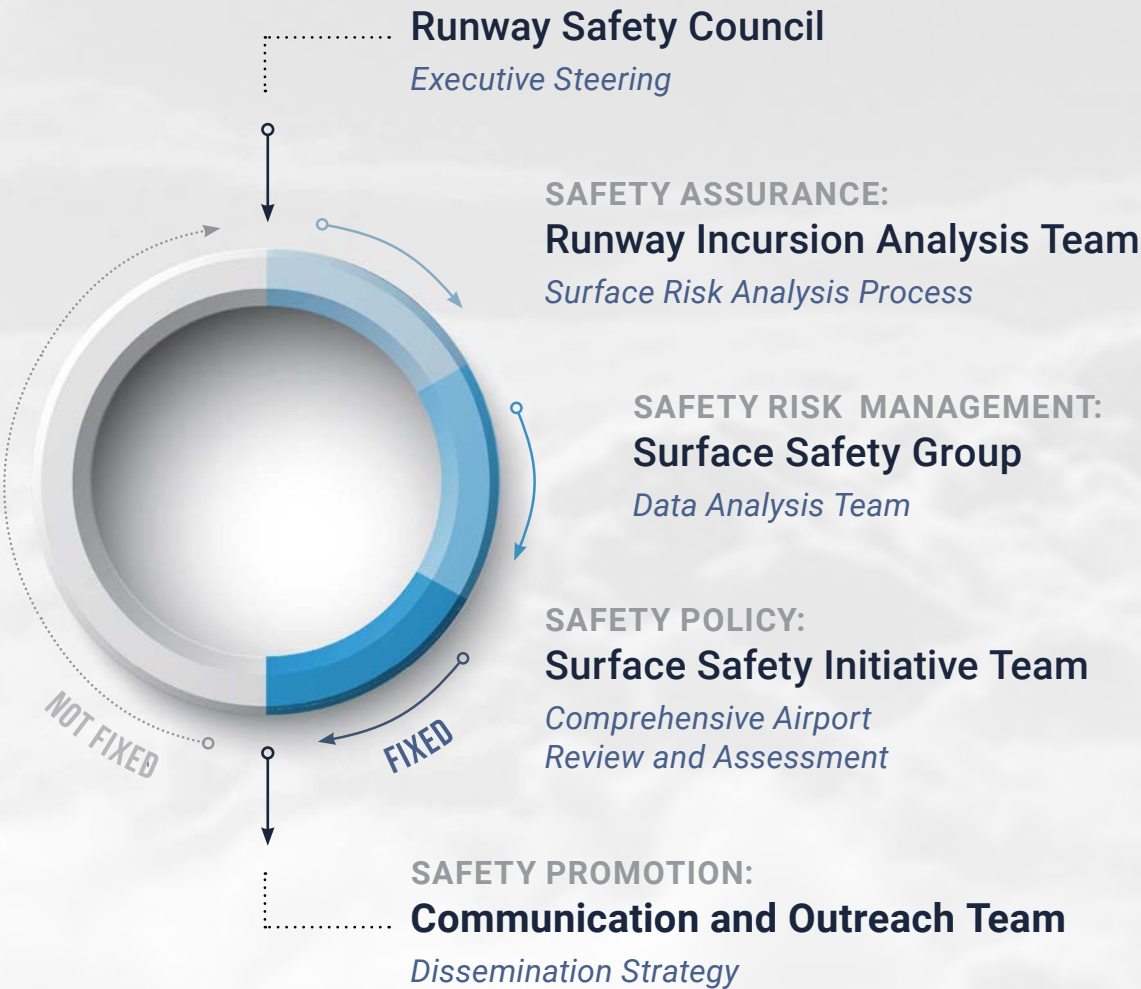
based decision making and data management that defines stakeholders and their roles, responsibilities, and expectations in managing runway safety risks. Within this process, each team works independently but in distinct steps that easily move programs and initiatives to completion.

This is the process that was used to modify ASDE-X to mitigate the risk of wrong surface operations. After RSM data collection identified wrong surface operations as a driver of significant risk in the system for FY 2018, SRM developed Taxiway Arrival Prediction (ATAP) in ASDE-X.

The ASDE-X ATAP modification is in use today. It demonstrates that RSEIs are properly aligned with SMS principles.

## How We Are Collaborating

- What is our Safety Performance?
- Are existing barriers adequate?
- Determine a fix and a plan.
- Share information.



### MILESTONE

The Runway Safety Group will begin supporting investment decisionmaking in FY21 through a six-step process that reviews risks and monitors the effectiveness of mitigation. This activity is carrying over to FY2021.





## Current and Past Project Status

### RUNWAY SAFETY AREA (RSA) AND ENGINEERED MATERIAL ARRESTING SYSTEM (EMAS)

**Benefits of EMAS technology:**  
*Reduces the Severity of Runway Excursions*

The EMAS technology improves safety benefits in cases where land is not available, or not possible to have the standard 1,000-foot overrun. A standard EMAS installation can stop an aircraft from overrunning the runway at approximately 80 miles per hour. An EMAS arrestor bed can be installed, even if less than a standard RSA length is available.

Engineered Materials means high-energy absorbing materials of selected strength, which will reliably and predictably deform under the weight of an aircraft.

#### SAFETY ASSURANCE

**Event:** Hollywood Burbank Airport, CA: Southwest Airlines Flight 1455, year 2000. In this accident, the aircraft overran the runway during landing, stopping at a nearby gas station. Major property damage/ two people seriously injured. *See Image 1 on page 13*

**Action:** Accident investigation and after-action recommendations.

#### SAFETY RISK MANAGEMENT

**Event:** Mitigations were put in place with EMAS at this airport and others, as a result to this accident.

**Action:** EMAS stops aircraft that have overrun the runway, reducing risk to property and people.

#### SAFETY POLICY

**Event:** EMAS installation successfully mitigates runway safety risk issue.

**Action:** Order put in place on installation of EMAS

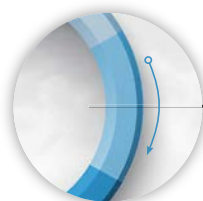
#### SAFETY PROMOTION

**Event:** Order for standard EMAS installation communicated throughout the NAS.

**Action:** Promotion on the planning, design, installation, and maintenance of EMAS in runway safety areas (RSA). *See Image 2 on page 13*

#### NEXT STEPS

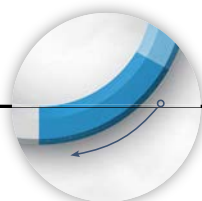
FAA national initiative known as the Runway Incursion Mitigation (RIM) program has identified risk factors that might contribute to runway incursions and is developing strategies.



#### Runway Incursions (RI)

**Status: Safety Risk Management**

Category A, B, and C runway incursions under assessment to identify enhancements to existing mitigations to reduce A and B significant events.



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

**Status: Safety Policy**

The ASDE-X taxiway landing alert enhancement mitigation completed final testing in January 2018. Runway Safety's objective is to enable the capability to all 35 ASDE-X airports by the end of Q3 FY2020.



Image 1

**Image 1:**

After EMAS was installed, a Citation overran the same runway, and came to a safe stop within the airport.

Photo credit: FAA



Image 2

**Image 2:**

On March 5, 2000, Southwest flight 1455, a Boeing 737, overran a runway at Burbank Glendale Pasadena Airport in Burbank, California, and into a gas station.

Photo credit: NTSB

## MOVING INTO THE FUTURE

The FAA continues to work on runway safety technologies from proof of concept, through research and development, and then acquisition. The agency is currently conducting tests of alternative lower cost airport surface detection technology and the application of these technologies to improve pilot, controller, and vehicle driver situational awareness. Some right site-right size initiatives under development are:

**Small Airport Surveillance Sensor (SASS):** SASS is a low-cost secondary (beacon) surveillance system to provide improved controller situational awareness and safety and efficiency at smaller towered airports. This technology alerts controllers of an occupied runway. Technology transfer to industry is targeted for 2020.

**Runway Incursion Prevention Shortfall Analysis (RIPSA):** RIPSA is aimed at reinforcing protection of the RSA by using "direct to pilot" safety solutions capable of providing localized detection capabilities for all aircraft or vehicles at runway incursion hotspot locations, such as hold short lines and runway intersections. The program is currently developing requirements for soliciting and procuring technologies for RIPSA test systems, that will be evaluated over a period of 2-3 years.

# Runway Incursion Mitigation (RIM)

The Runway Incursion Mitigation (RIM) program is built on more than ten years’ worth of runway incursion data. Over 12,500 runway incursions, and 7,500 non-standard runway/ taxiway intersections at more than 500 airports have been georeferenced and assessed by the FAA and incorporated into a Geographic Information System (GIS) Database that, when applicable, associates incursions with non-standard geometry sites and known hot spots.

The RIM Program made significant progress since launching in 2015. As of August 2020, 53 RIM locations implemented site-specific enhancements including taxiway reconfigurations and changes to lighting, markings, and aircraft operations. Table 1 shows the most recent mitigation projects completed in FY19 and FY20 to-date. Airport planners and designers rely on FAA’s RIM mitigation guidance materials and support from FAA Regional program contacts.

The array of completed mitigation projects at U.S. airports illustrate the success of taxiway design element guidance paired with expertise and support from stakeholders. One airport, for instance, had experienced 15 runway incursions between 2008 and 2014 at a RIM location that was also a designated

THIS PROGRAM’S MANAGEMENT OF HIGH-RISK AREAS UNDERSCORES THE FAA’S MISSION TO PROVIDE THE SAFEST, MOST EFFICIENT AEROSPACE SYSTEM IN THE WORLD.

hot spot. With FAA support, that airport addressed geocodes including #6: Two runway thresholds in close proximity and #18: Unexpected holding position marking along a taxiway. After completing the projects necessary to meet current standards, the area’s hot spot was removed, and no runway incursions have occurred there since its mitigation. Its configuration before and after are pictured below.

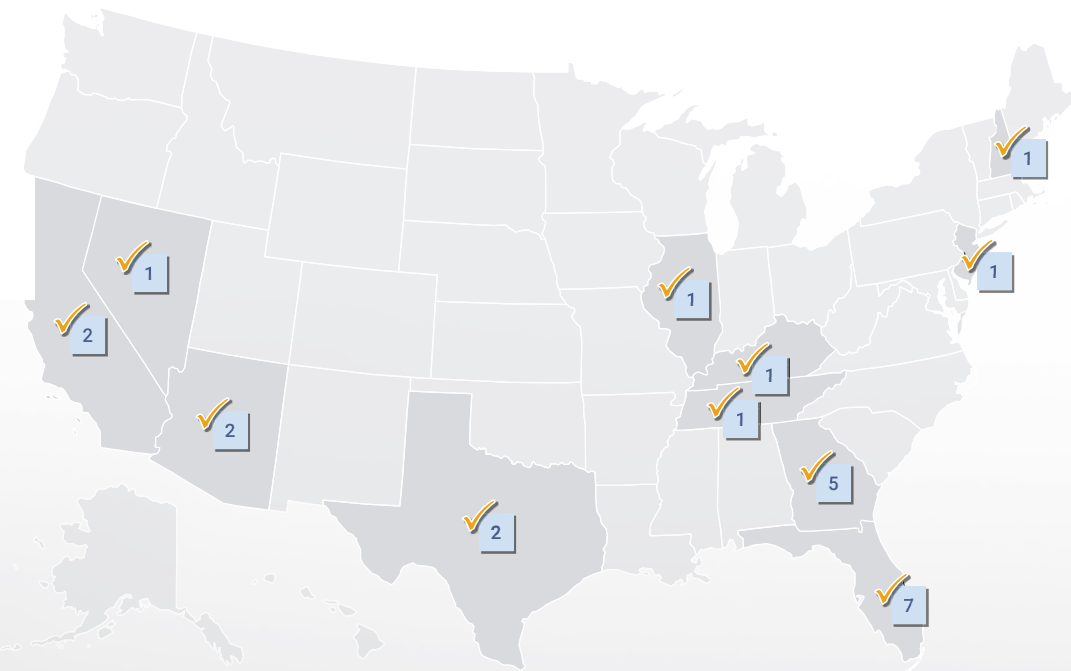


Before Configuration  
November 22, 2011

After Configuration  
January, 2017

21 U.S. Airports with one or more mitigated RIM locations (Fiscal years 2019 - 2020)

Number of mitigated RIM locations by state



RIM Locations (Table 1)  
Fiscal years 2019 - 2020

Airport Name	Code	Rim Location Description	Mitigation Type	Date Completed
Miami International Airport, FL	MIA	RWY 9-27 / RWY T8 Intersection	Taxiway/Runway Geometry Reconfiguration	8/16/2020
Phoenix-Mesa-Gateway Airport, AZ	AZA	TWY V / TWY B / TWY K / RWY 12R Intersection	Taxiway/Runway Geometry Reconfiguration	7/16/2020
Reno Tahoe International Airport, NV	RNO	Intersection of TWY L & RWY 16L/34R and TWY C & RWY 7/25	Taxiway/Runway Geometry Reconfiguration	7/11/2020
Chicago O'Hare International Airport, IL	ORD	TWY T / TWY SS / Approach Path RWY 9R	Taxiway/Runway Geometry Reconfiguration	6/1/2020
Hartsfield Jackson Atlanta International Airport, GA	ATL	RWY 8R – 26L / TWY C, D Intersections	Operational/Procedural	5/29/2020
Hartsfield Jackson Atlanta International Airport, GA	ATL	RWY 9L – 27R / TWY D Intersection, south side	Operational/Procedural	5/29/2020
Orlando Executive Airport, FL	ORL	RWY 7 / TWY E4 Intersection	Taxiway/Runway Geometry Reconfiguration	5/6/2020
DeKalb Peachtree Airport, GA	PDK	RWY 3L / TWY A Intersection	Signage, Marking, and/or Lighting	12/31/2019
DeKalb Peachtree Airport, GA	PDK	RWY 21R / TWY G Intersection	Signage, Marking, and/or Lighting	12/31/2019
Teterboro Airport, NJ	TEB	Intersection of Taxiway L & Runway 6/24	Taxiway/Runway Geometry Reconfiguration	11/22/2019
Dallas Love Field Airport, TX	DAL	Runway 13L - 31R / Taxiway B5 Intersection	Taxiway/Runway Geometry Reconfiguration	10/31/2019
Manchester Airport, NH	MHT	Hold short bars on TWYs P and U at intersection with approach end of RWY 35	Taxiway/Runway Geometry Reconfiguration	9/24/2019
Fulton County Airport – Brown Field, GA	FTY	Intersection of RWY 8/26 and TWY K	Taxiway/Runway Geometry Reconfiguration	9/1/2019
Sarasota/Bradenton International Airport, FL	SRQ	Intersections of Runways 4/22, 14/32, and Taxiways A, B, C, and D	Taxiway/Runway Geometric Reconfiguration, Signage, Marking, and/or Lighting Change(s), Technological Enhancements	8/8/2019
Smyrna Airport, TN	MQY	Convergence of TWYs B, C, and D at the approach end of RWY 19	Signage, Marking, and/or Lighting	5/29/2019
Phoenix Deer Valley Airport, AZ	DVT	Hold short bar at intersection of TWY A4 and approach end of RWY 7L	Taxiway/Runway Geometry Reconfiguration	5/7/2019
Bowman Field Airport, KY	LOU	Hold bar on TWY J at the intersection with RWY 6/24	Signage, Markings, and/or Lighting	5/1/2019
Van Nuys Airport, CA	VNY	Intersection of TWY C/B and approach end of RWY 16L	Signage, Marking, and/or Lighting	3/31/2019
Miami Executive Airport, FL	TMB	Hold bar on TWY A at approach end of RWY 9L	Taxiway/Runway Geometry Reconfiguration; Signage, Marking, and/or Lighting Change(s)	3/29/2019
Midland International Air and Space Port Airport, TX	MAF	Hold bar on TWY A at approach end of RWY 10	Taxiway/Runway Geometry Reconfiguration	1/1/2019
Miami International Airport, FL	MIA	Intersection of RWY 8R/26L and TWY M5	Taxiway/Runway Geometry Reconfiguration; Signage, Marking, and/or Lighting	11/16/2018
Orlando Sanford International Airport, FL	SFB	Hold short bar on RWY 18/36 south of RWY 9R	Taxiway/Runway Geometry Reconfiguration	10/15/2018
Orlando Sanford International Airport, FL	SFB	TWY R under approach path for RWY 9R	Taxiway/Runway Geometry Reconfiguration	10/15/2018
Long Beach Airport (Daugherty Field), CA	LGB	Intersection of Approach end of RWY 26L and TWYs D and F	Taxiway/Runway Geometry Reconfiguration	10/11/2018

All towered airports are evaluated each year to monitor changes or mitigations at known non-standard geometry locations and to identify new areas in need of mitigation.

LEARN MORE AT THE RIM WEBSITE.



## 4. Safety Promotion OUTREACH AND EDUCATION

**Objective:** Relentlessly promote best practices, lessons learned, and actionable information obtained from data analysis to our global runway safety stakeholders.

A crucial step in runway safety mitigation efforts is for stakeholders to discuss what is being done. Communication connects data analysis to policy and policy to stakeholders, which include pilots and air traffic controllers. Enhanced safety requires effective communication to those most affected by surface events.

A campaign about the taxiway alert system is following the strategy of how Runway Safety promotes safety initiatives and changes. We use multiple outreach methods, such as audiovisual training productions, exhibitions at Communicating for Safety (CFS), and participation at Oshkosh.

The Runway Safety Program works relentlessly to promote changes made nationally to runway safety performance measures. We have also focused strategic communication products to provide local runway information and guidance obtained from data analysis.

Promotional activities and products that examine problems at specific airports have proven to be effective in the promotion of local issues. These products provide broad-level instructional tools to frontline audiences such as pilots, controllers, and vehicle drivers.

2020

### MILESTONES

The interactive Runway Safety Pilot Simulator website is continuously updated with new animations and videos that provide unique technical training to pilots at beginner, medium and advanced levels. The latest video is the third release of a three-part animated series titled "The Anatomy of Wrong Surface Event".

[CLICK HERE TO OPEN THE RUNWAY SAFETY PILOT SIMULATOR](#)



The Runway Safety Action Team (RSAT) Tool is a resources hub to improve the effectiveness of RSATs by providing an interactive search tool for national runway safety related events. Runway Safety aims to complete the 4-year history and FY20 events in September 2020.

2020

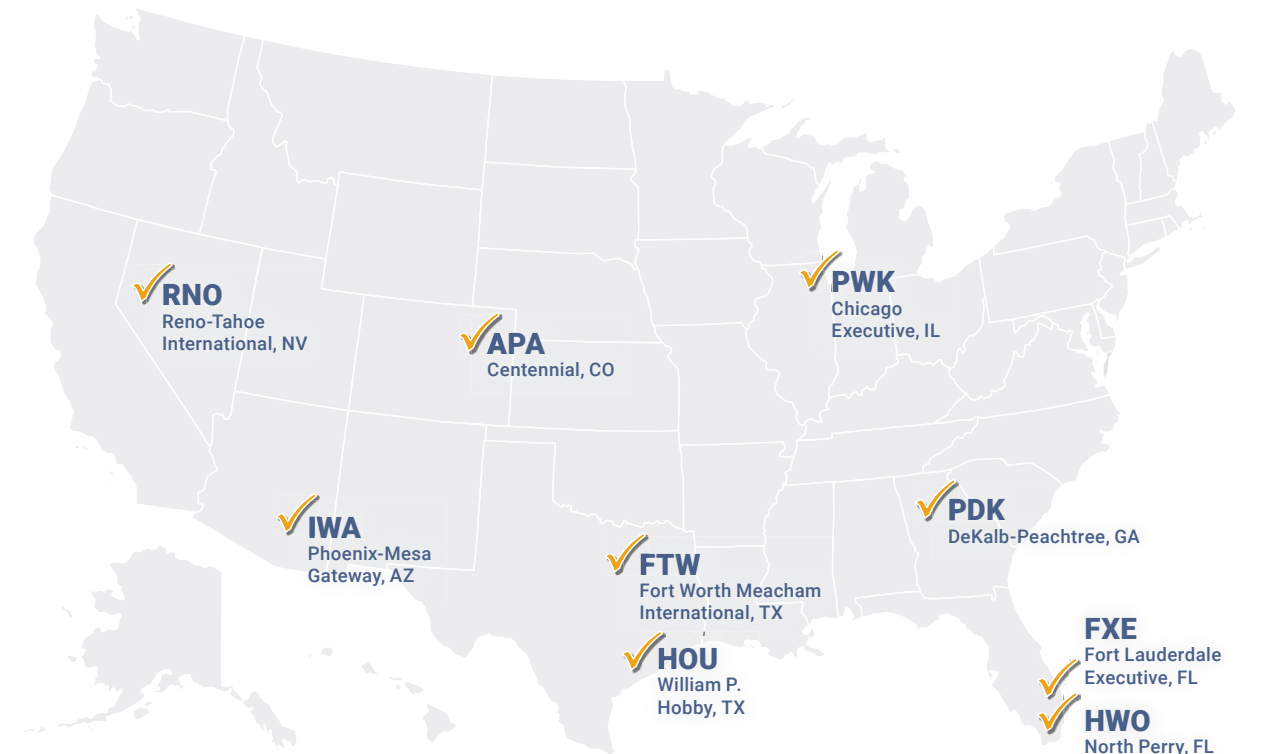
The Runway Safety Group is conducting an ongoing collaboration with the FAA Office of Communications to produce a series of airport-specific surface safety videos for local pilots titled "From the Flight Deck". Currently, more than 20 videos are available on the FAA website, and several videos are currently under development.

[CLICK HERE TO WATCH THE "FROM THE FLIGHT DECK" VIDEOS](#)

## Special Focus Runway Safety Action Team (SFRSAT) Meetings

The purpose of the Special Focus Runway Safety Action Team (SFRSAT) meetings is to drive an engaging discussion on the factors that are contributing to wrong surface events at each airport, assess if current local mitigations are adequate, and develop recommendations and solutions. Safety professionals from all major airport interests are invited to attend, with presentations from the FAA Runway Safety Group, National Air Traffic Controllers Association (NATCA), and other safety advocates.

The FY19 SFRSATs and action plans are all documented in the Special Focus Runway Safety Action Team Report. This report was updated in July 2020. The FY20 SFRSATs will be documented in a similar report.



### COMMUNICATION & PROMOTION:

✓ Completed FY20 SFRSAT

The Runway Safety group is working closely with the Flight Standards liaison on improving outreach and promotional efforts through different channels. A recent example of this collaboration is the introduction of the Runway Safety Pilot Simulator as an official **FAASTEAM WINGS** course, a proficiency program that allows pilots to earn credits while improving their aviation skills and knowledge through a number of initiatives.

Runway Safety and FAAS team team up to promote aviation safety through the Safety Program Airmen Notification System (SPANS), FAAS Blast email updates, as well as other methods of mass communication to improve the level of runway safety awareness and enable our surface safety mission. This is an ongoing effort and collaboration.



## FAA Runway Safety Global Outreach

As the world's economies continue to globalize, so too does the aviation industry.

Air traffic data reflects that the fastest growing segment of air traffic is international. As foreign pilots are increasingly flying into the United States and national pilots fly into foreign operating systems, the FAA's Runway Safety strategy is to reduce confusion and risk in the international system by working with foreign and multinational partners to harmonize procedures and ensure interoperability.

As an international leader in runway safety efforts, the FAA has a responsibility to the global aviation community to share safety initiatives and lessons learned to reduce runway safety risk around the world.

Key partners in this international strategy include ICAO, the Civil Air Navigation Services Organization (CANSO), the International Air Transport Association, Airports Council International (ACI), and foreign regulators.



### Runway Safety Workshops

Countries with representatives that have attended FAA Runway Safety Workshops.

- Benin
- Botswana
- Cote d'Ivoire
- Democratic Republic of Congo
- Ethiopia
- Ghana
- Liberia
- Namibia
- Niger
- Nigeria
- Rwanda
- Senegal
- Sierra Leone
- South Africa
- Tanzania
- Togo
- Uganda
- Zambia



### International Delegations Visiting FAA

List of International Delegations that have visited a FAA Runway Safety Council Meeting, as well as IAD, DCA, and/or BWI airports to observe FAA ASDE-X, Runway Status Lights, and EMAS technology.

- Israel
- Macedonia
- Montenegro
- Russia
- Serbia
- Slovenia
- Spain
- Trinidad
- Tobago
- Turkey



### ICAO Runway Safety Go Team

- Israel
- Kyrgyzstan
- Montenegro
- Panama

## International Leadership

### International Delegations

Sharing runway safety knowledge with the international aviation community

In FY 2018, the FAA Runway Safety Group hosted international delegations from Trinidad and Tobago, Montenegro, and Spain. During their visit, the members of each delegation observed Runway Safety Program initiatives at Washington Dulles, Washington National, and Baltimore International airports. The delegations were also invited to attend the Runway Safety Council Meeting #37.

In 2018, international delegations visited the Baltimore-Washington International Airport (BWI) air traffic control tower equipment room to observe runway status lights features.



### UN WORLD FOOD PROGRAM

Supporting runway safety in humanitarian air operations

As the international humanitarian relief community continues to grow, the FAA has identified the importance of providing technical expertise to support the United Nations World Food Program Global Aviation Safety Conference, which addresses the unique aviation safety challenges related to the provision of emergency relief efforts.

As the largest contributor to the World Food Program (WFP) budget, it is important for the United States to be effective in delivering critical safety recommendations and enhancements to the WFP aviation safety community. The WFP cannot accomplish their mission unless they are able to provide aid in times of national disaster or conflict. The FAA Runway Safety Program strives to support aviation operations, such as safe planning and departing from remote and primitive runway conditions, in order to accomplish this critical humanitarian path.

The FAA also participated in the 9th Global Humanitarian Aviation Conference & Exhibition in Lisbon, Portugal, in October 2017, where the Runway Safety Group presented risk reduction safety enhancements during takeoff and landing.



### ICAO GLOBAL RUNWAY SAFETY SUMMIT

Working to reduce runway excursions and runway incursions at a global level

The ICAO Runway Safety Program (RSP) Partners established a Runway Safety Action Plan Working Group (RSAP-WG) which was co-chaired by FAA Runway Safety Program. The working group aims to review RSP achievements, objectives and priorities, and develop the ICAO Global Runway Safety Action Plan.

A core component of the RSAP-WG was the FAA Runway Safety Metric methodology. This plan was unveiled at the Second Global Runway Safety Symposium in Lima, Peru, in November 2017.

Through a review and analysis of runway safety occurrence data and risk analysis, the RSAP-WG identified runway excursions and runway incursions as the main high risk occurrence categories. This Global Runway Safety Action Plan provides recommended actions for all runway safety stakeholders, with the aim of reducing the global rate of runway excursions and runway incursions.



# National Runway Safety Plan Completed Milestones FY18 - FY20



## Safety Assurance: Data Monitoring and Analysis

**Validation of the Surface Safety Metric:** The Surface Safety Metric was approved as an FAA safety performance measure

**Publication of the Surface Safety Metric as the FAA's official public reporting benchmark:** By including various types of surface accidents and incidents, the Surface Safety Risk Metric provides a better picture of the NAS by weighting accidents and incidents based on their closeness to fatal accidents and not by simply counting occurrences. This metric directly benefits the flying public as it represents the potential for fatal accidents on runways and taxiways in the airport surface operations environment.

**Data Analysis on wrong surface events:** After conducting data analysis on wrong surface events, the Runway Safety Group identified 9 airports across the country with high risk of runway excursions and collisions. During FY20, the RSG conducted Special Focus RSAT meetings at the identified airports to discuss mitigation strategies and to develop a plan of action. Most of these meetings were conducted virtually due to COVID-19 pandemic travel restrictions. See the Safety Promotion section for more information and a list of the SFRSAT airports.



## Safety Policy: Changes

**Identify key components of a risk-based runway safety policy:** Through its risk-based approach, the Runway Safety Group successfully identified that wrong surface events have runway safety collision risks, which will allow the FAA to apply risk severity ratings to these events, incorporating them into the runway incursion categorization process. Adding wrong surface events to this categorization process will allow the FAA to generate a more appropriate RSM weight for each one of these events, and include them in overall trend analysis of runway safety within the NAS. For more information, see the [RUNWAY SAFETY METRIC DOCUMENT](#).

**Work with stakeholders to draft policy changes:** Runway Safety developed an analysis framework that provides the program the data and evidence needed to support investment decision making through a 6-step process that reviews risks and monitors the effectiveness of mitigations.



## Safety Promotion: Outreach and Education

**Publish and promote the Runway Safety Pilot Simulator:** The interactive Pilot Simulator scenarios tool was released to provide unique technical training to pilots at beginner, medium and advanced levels. It will be promoted among all organizations and updated semi-annually. For more information, see the [RUNWAY SAFETY PILOT SIMULATOR](#).

**Enhance Runway Safety Action Team effectiveness:** The Runway Safety Action Team (RSAT) Tool is designed as a resources hub to improve the effectiveness of RSATs by providing an interactive search tool for national runway safety related events.

**SFRSAT:** The Runway Safety Group completed all Special Focus Runway Safety Action Team (SFRSAT) meetings from FY19. Due to the impact of the COVID-19 pandemic, several FY20 SFRSATs were conducted as virtual meetings. The purpose of these meetings is to drive an engaging discussion on the factors that are contributing to wrong surface events at each airport, assess if current local mitigations are adequate, and develop recommendations and solutions. Safety professionals from all major airport interests are invited to attend, with presentations from the FAA Runway Safety Group, National Air Traffic Controllers Association (NATCA), and other safety advocates.

**Development of an interactive search tool for safety related events:** The Runway Safety Action Team (RSAT) Tool is a resources hub to improve the effectiveness of RSATs by providing an interactive search tool for national runway safety related events. Runway Safety aims to complete the 4-year history and FY20 events in September 2020.



## Safety Risk Management: Mitigation Plan and Development

**Achieve all goals described as Runway Safety Initiatives:** Our objective is to take steps to continuously achieve all initiatives established within the 2020 time frame and beyond. In the spirit of continuing forward, all initiatives are documented for accountability in the [SURFACE SAFETY GROUP \(SSG\) INITIATIVES TRACKING DOCUMENT](#) (See attachments pane for the document).



# ***For More Information:***

**JAMES FEE**

**Safety and Technical Training, Runway Safety Group Manager**

Federal Aviation Administration, Air Traffic Organization

202-267-4572 | [james.fee@faa.gov](mailto:james.fee@faa.gov)

800 Independence Avenue, SW

Washington, DC 20591

*Published by ATO Safety and Technical Training*



U.S. Department  
of Transportation

**Federal Aviation  
Administration**

[www.faa.gov](http://www.faa.gov)