

Runway Safety

Who is responsible?



**Highest Risk in Aviation –
Most Complex**

Many people, processes, and systems

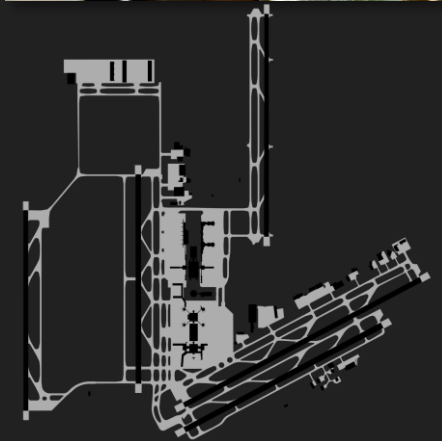
- ANSP's
- REGULATORS
- AIRPORTS
- AIRLINES
- GENERAL AVIATION
- ASSOCIATIONS

FAA established responsible office

- In 2002, FAA determined the ANSP (known as the 'Air Traffic Organization' or 'ATO') was the responsible entity for runway safety in the USA
- They would be responsible for coordinating everyone's activities on the basis of risk management
- In response, the FAA established the Runway Safety Office to address runway safety risks

Internal Alignment

- Flight Standards Service (AFS)
 - FAA'S Operational Safety Regulator
 - Remedial Pilot Training, DPE & CFI Training, FAAST Team TV, Advisory Circulars
- FAA Airports Division (ARP):
 - Airport Geometry, Wildlife Hazards, Runway Safety Areas (RSA)



FAA Approach to External Alignment

- Collaboration Activities:
 - Commercial Aviation Safety Team (CAST)
 - Runway Safety Action Teams (RSAT)
 - Runway Incursion Assessment Team
 - Runway Safety Council
 - Root Cause Analysis Team
 - Airport Construction Advisory Council
 - Surface Safety Initiatives Team
 - Comprehensive Airport Review and Assessment

A Simple Strategy:

Collect.Find.Fix

There are four key elements to FAA's safety strategy:

1. Collect and value information from frontline employees
2. Deploy technology to gather relevant data
3. Analyze and identify risk
4. Take corrective action that removes risk from the National Airspace System (NAS).

A Comprehensive Plan

- The National Runway Safety Plan 2015-2017 contains input from FAA organizations
- The Plan provides:
 - a coordinated vision to achieve common goals and objectives,
 - identifies seven key ATO Safety initiatives and
 - a number of activities the FAA will pursue to improve runway safety

Communications -The Cornerstone for all Safety Initiatives

- Emphasize a collaborative, integrated communications strategy designed to convey the runway safety message effectively to the entire aviation community.
- A comprehensive, clear and convincing message reaching the largest number of aviation stakeholders is a major goal.
- Relationships and partnerships amongst the entire aviation community will make the message understandable at all levels.

COLLABORATION

What does it look like

Commercial Aviation Safety Team (CAST)

Mission/Purpose:

Created in 1997 as an integrated, data-driven strategy to reduce fatality rates. It reduced the fatality risk in the US by 83% in 10 years

Participants:

- Airlines
- Aircraft Manufacturers
- Engine Manufacturers
- Governments/Regulators
- Unions
- Associations
- Observers: ICAO, IATA, EASA, NTSB, etc.

CAST Runway Excursion Safety Enhancements

- CAST Committed to Implementing Eight Runway Excursion Safety Enhancements, such as:
 - Improving Flight Crew Awareness of Their Landing Distance Margin



CAST Reducing Runway Excursion Risk

- Modify Policies, Procedures and Training such as:
 - Airport arrival and departure configuration based on wind conditions
 - Reporting wind measurement and use
 - Training of controllers on factors such as wind conditions, runway conditions and unstable approaches



CAST Reducing Consequences of Runway Excursion Events

- Modify Policies, Procedures and Training such as:
 - Improvement of runway safety areas, such as Engineered Materials Arresting System
 - Improved communication between air traffic control, flight crews, and ARFF personnel after an Runway Excursion event



Runway Safety Action Team (RSAT)

**Cannot solve everything
from HQ**

- Mission/Purpose:

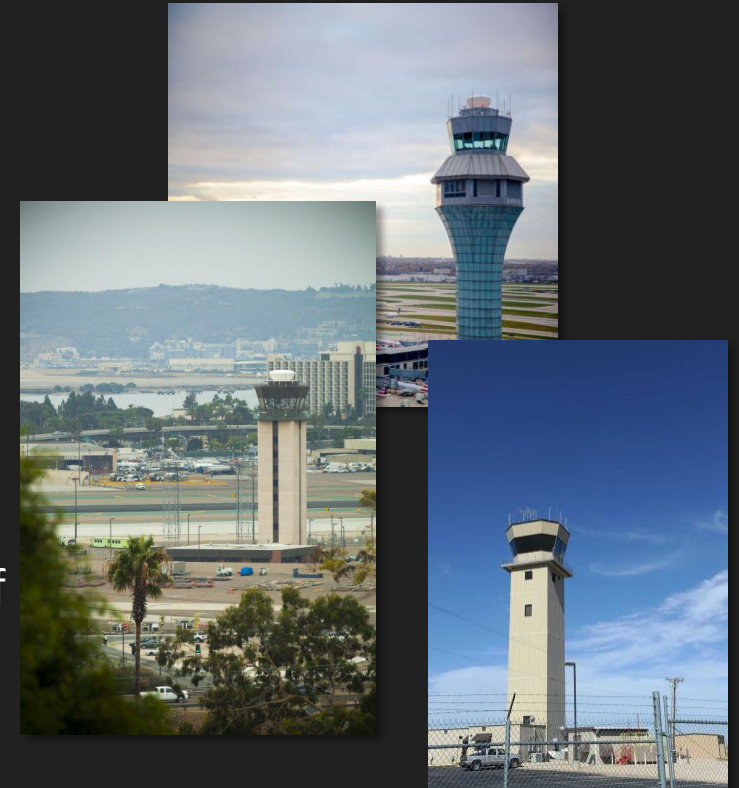
Local and Regional evaluations to identify and mitigate airport specific risks that lead to human error that results in runway incursions/excursions

- Participants:

- ANSP Representatives
- Flight Standards
- Airport Operations
- Airport Tenants/Users
- Technical Operations
- Others as appropriate

RSAT Activities

- RSATs convene annually to discuss surface movement issues and concerns at all FAA and federal contract-towered airports.
 - 1039 RSAT meetings in 2013 and 2014
 - 651 action items resulted from these meetings
 - RSATs have resulted in the identification and mitigation of safety issues at all FAA and federal contract-towered airports



Policy, Training, Outreach

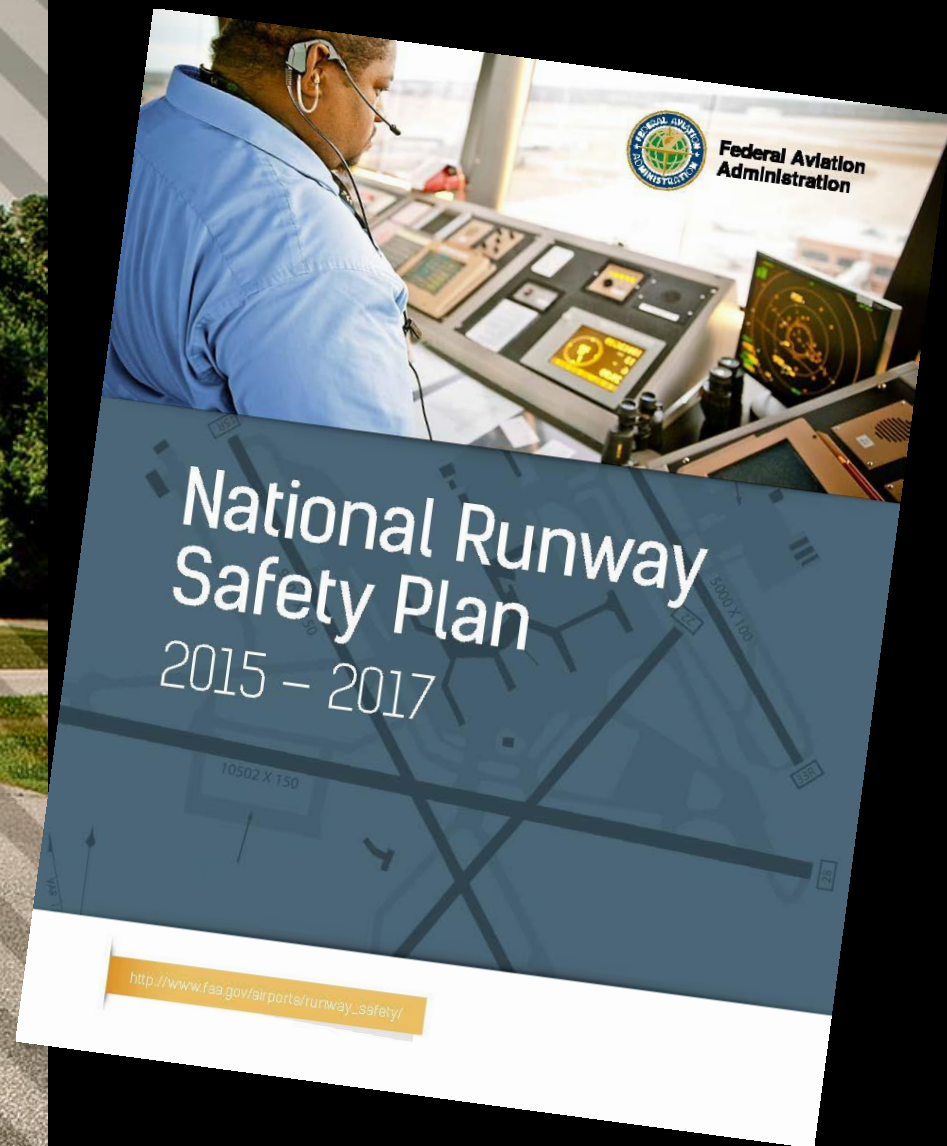
- Converging Runway Operations Policy
- Airport Recurrent Driver Training
- Air Traffic Controller Recurrent Training
- Aircraft Owners & Pilots Association Online Training
- Pilot Training and Outreach

Air Traffic Control Procedures

- People and Equipment in the Runway Safety Area
 - Improved awareness for proper and safe procedures for controlling situations where aircraft and equipment might be inside an Runway Safety Area (RSA).
- Approach Hold Procedures
 - Obstacle Identification Surfaces, Obstacle Free Zones, Runway Safety Areas, and Clearways
 - Taxi and Ground Movement Operations

Objectives

National Runway Safety Plan 2015-2017



National Safety Runway Plan (NSRP) Objectives

- Integration of runway safety efforts consistent with the maturation of the FAA's Safety Management System
- Establishment of a National Focus Airports Program
- Development of runway safety metrics which identify and rate the effectiveness of the agency's runway safety risk assessment efforts
- FAA intra-organizational alignment to improve runway safety
- Further develop internal and external communication and stakeholder engagement strategies to include collaborative training, local leadership and the expanded use of mobile technology and social media

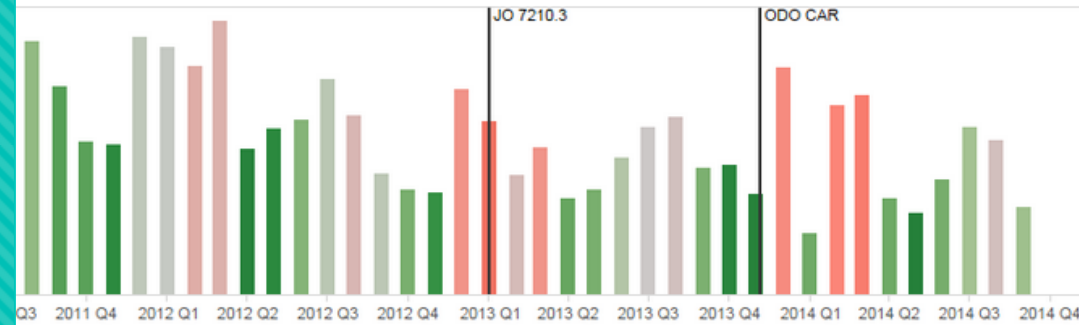
Risk-Based Decision Making

- Build on safety management principles to proactively address emerging safety risk by using consistent, data-informed approaches to make smarter, system-level, risk-based decisions
- FAA SMS risk-based decision making
- Collect, Find, Fix

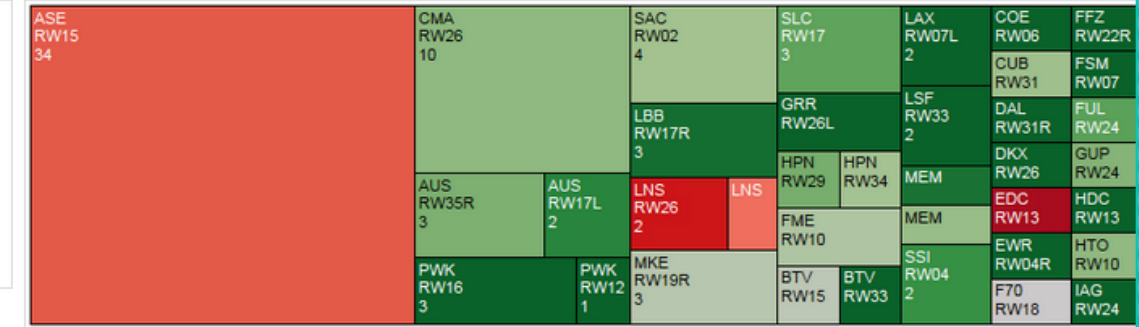


Opposite Direction Operations Dashboard

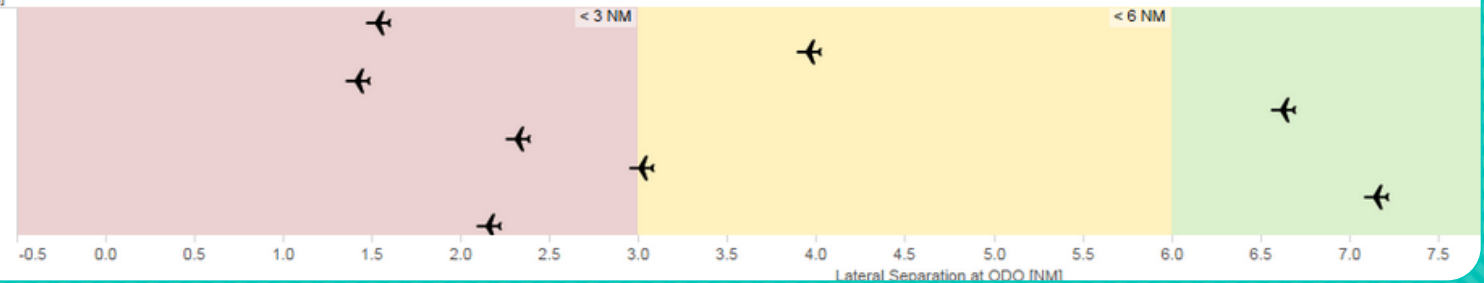
Filter Missed Approaches: (All)



Airport Runway ODO Count - Click to Filter Airport



Departure Aircraft Type	Arrival Runway	Arrival Aircraft ID	Arrival Aircraft Type	Lateral Separation at ODO [NM]	Vertical Separation at ODO [ft]	Lateral Separation at CPA [NM]	Vertical Separation at CPA [ft]
C210	03	N26648	C172	1.54	64	0.54	607
FA20	19	RAX701	E110	3.95	772	1.29	964
C172	20	N286SA	C172	1.41	175	0.36	132
C402	24	CNS252	PC12	6.63	525	1.82	295
C337	33	BYWD2	C172	2.32	948	2.07	998
PA28	22	N6806E	C172	3.02	507	0.87	384
B738	07R	RVF899	DH8A	7.15	571	4.80	974
LJ40	15	N102PA	E50P	2.16	735	2.16	735



Data Dashboards Developed


























National Runway Safety Plan 2015-2017

Communication and Stakeholder Engagement Strategies

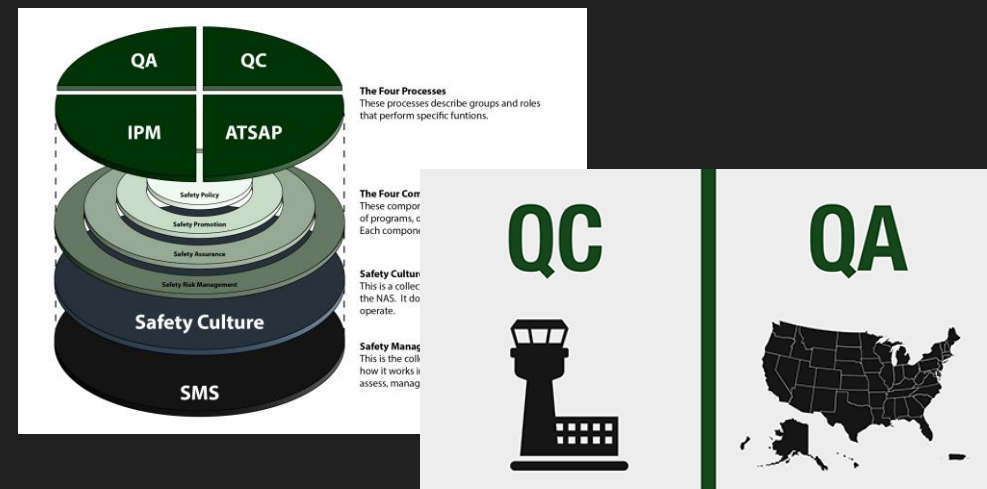
- The tenets of the SMS will apply to all runway safety communication and engagement initiatives and messages



SMS Safety Promotions

COLLECT		FIND			FIX	
 REPORT	 DIGITAL	 COMPILE	 ANALYZE	 IDENTIFY	 ACTION	 MONITOR
OR 	VR 	QA 	PFS 	QC 	QA 	RS 
PFS 	QC 	RS 	CISP 	FRM 	PFS 	TOP 
RS 	FRM 				FRM 	RT 

Collect, Find, Fix: Safety Programs



Information Graphics and Animation

Digital Media Outreach



Case Studies

OUT OF CONTROL

ACASESTUDY

On July 16, 1999, John F. Kennedy Jr.'s Piper Saratoga light aircraft crashed off the coast of Martha's Vineyard, in Massachusetts. It was a lazy summer night and he was operating with Visual Flight Rules (VFR) from New Jersey over the Atlantic Ocean to the vineyard without advisories from Air Traffic Control. Martha's Vineyard Tower and Cape Approach Controllers were unaware of the aircraft accident until they began receiving phone calls from friends and family of the overdue aircraft.

During the next several days, the regular summer-time crowd on the Cape and islands began to swell with the arrival of the massive search and rescue effort, members of the media, and additional tourists. From an air traffic perspective, we saw our seasonal heavy air traffic volume increase with media and coast guard aircraft everywhere.

"MASSIVE SEARCH AND RESCUE"

"CONTROLLERS WERE UNAWARE OF THE AIRCRAFT ACCIDENT"

CHAOS = SAFETY

I was a Front Line Manager at Cape App the events that unfolded after the crash of chaotic. When chaos ensues, safety is at risk.

On July 21, the wreckage was located and the burial at sea was quietly planned for the following day. I received a phone call from the facility that we would have a Temporary Flight Restriction (TFR) keep the media out and that I was to request who into the facility. That was the last voice I heard from support team that I heavily relied on.

My air traffic manager was on annual leave in the come in that day. All calls for Overtime (OT) went to one person that the region had sent down was on airport with the National Transportation Safety Board (NTSB).

As the sun rose, what was supposed to be a typical busy summer turned into a wall of media aircrafts encircling the area. Continuous calls from Congressional offices and FAA authorities insisted that we remove the media aircrafts from the TFR but our attempts to warn pilots on all frequencies to do so were unsuccessful. My only option was to plug into the overhead to coordinate with our small team to open every position possible. I then put the Secretary at the Supervisor desk to answer the continually ringing phones and had a non-certified Support Specialist try to track the TFR violators for the team. We managed to get through the day without any accidents or incidents; however, due to being short-handed, we were required to put unqualified personnel in important positions and have the controllers on the boards working harder than ever for a prolonged period of time, certainly put the airspace at risk for another event.

"WHEN CHAOS ENSUES SAFETY IS AT RISK"

SAFETY IS A RESPONSIBILITY THAT CAN'T BE OVERLOOKED

LESSONS LEARNED:

The lesson for me was that when a major national event happens at any facility, and certainly in a small facility, we must send help from Facility management should have scheduled the day before only an hour and a half could have sent plenty personnel to augment our operation. We are having to handle the event without resources being provided to another one from occurring. That is responsible for safety in this situation that motivates me every day to provide crucial support to our facilities when they are having

"PROVIDE CRUCIAL AND TIMELY SUPPORT"



TIM AREL

PERSONAL EXPERIENCE

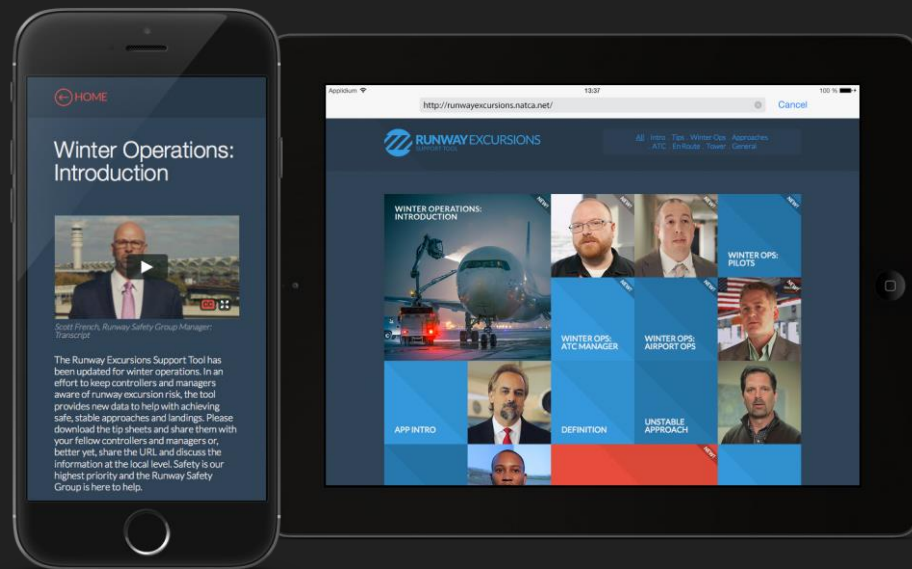
Tim Arel is Deputy Vice President of ATO Safety and Technical Training.

As a former Controller and ATC Manager, Tim has first-hand knowledge and experience with safety events. He understands how chaotic and disruptive these events can be to air traffic operations.

He was instrumental in developing the ATO Response Teams and Processes to assist QC Managers in accurately reporting and reacting to serious events.

Tim is a native of New England and (unfortunately) a member of the Red Sox Nation.

Runway Excursions Campaign



Mobile App



Print Campaign

Focus Partnerships on Creating Safer Runways

- Focus existing partnerships with industry groups, unions and transportation authorities on the Administrator's initiative of creating safer runways through risk assessment and risk mitigation



General Aviation Online Pilot Training

- AOPA-FAA Developed Training for GA Pilots on Runway Safety





General Aviation Outreach at Airshows

Air Venture and Sun N Fun

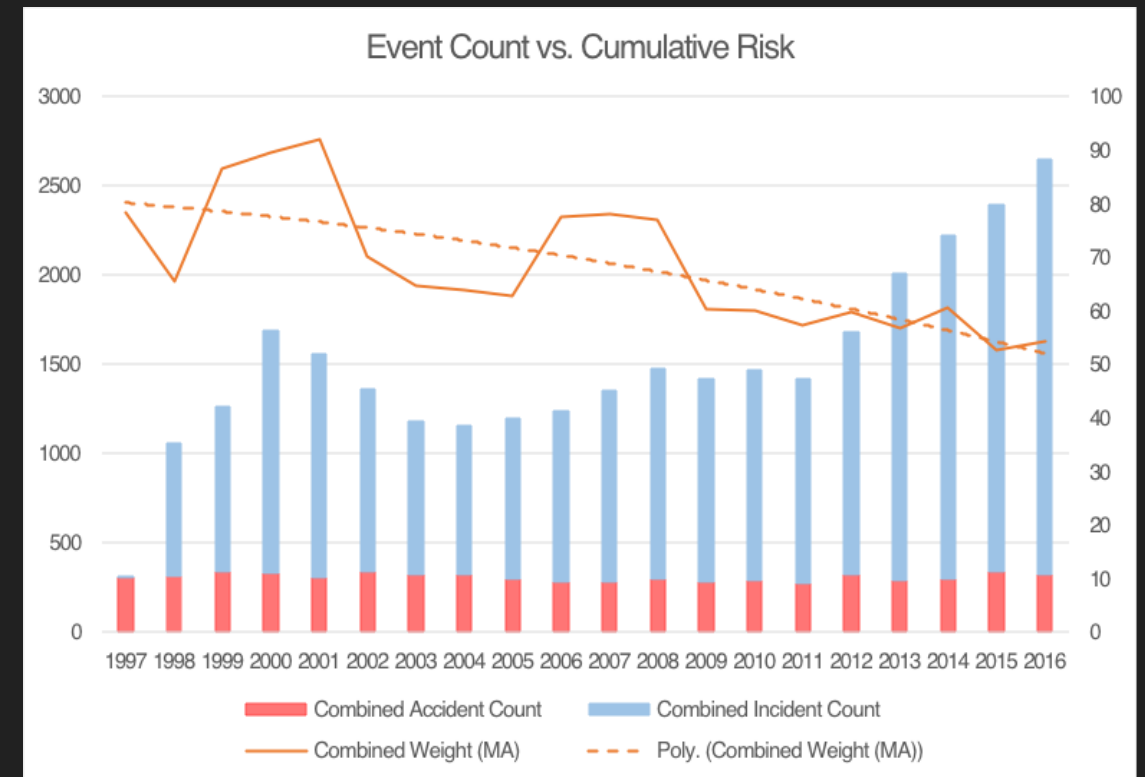
National Runway Safety Plan 2015-2017

Airline Pilot and Air Traffic Controller Training

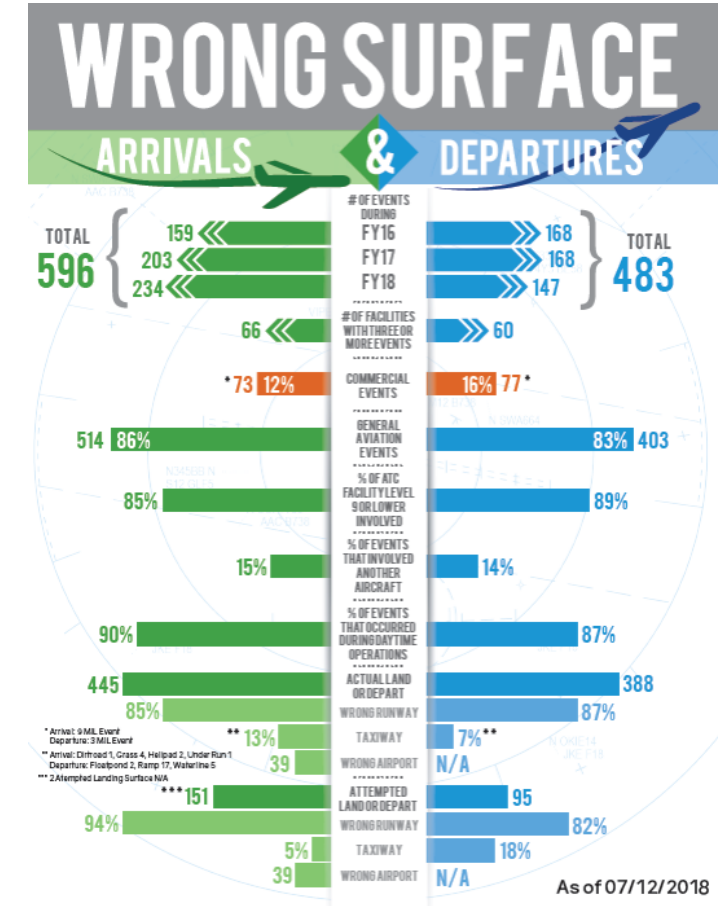


Safety Assurance: U.S. Combined Risk & Event Count

- Observations:
 - Risk decreased
 - Reports increased
 - Accidents relatively constant over time



Emerging Risks





Working Together to Improve Runway Safety



Review and Discussion