Safety Management Systems (SMS)

- FAA received comments on proposed rule to require Airport SMS. We made modifications and will issued a revised proposed Airport SMS rule in spring/summer 2015 for further comment period.
- At the close of the comment period, the FAA will have 16 months to determine if it will impose a final rule on airport SMS.
- The FAA encourages airports to voluntarily adopt SMS. We can provide up to $50,000 in AIP grants for airport sponsors to procure SMS software systems.
- On June 1, 2011, we implemented SMS internally for our own procedures at large hub airports, requiring us to follow a Safety Risk Management process for projects that require a FAA approval.
- We are expanding the internal SMS process to medium hubs in FY 2015 and to small hubs in FY 2016.
Runway Safety Area (RSA) Program

• FAA started initiative to improve RSAs to extent practicable in 2000.
• Developed schedule for airports to complete RSA improvements by December 2015.
• Currently, 96% of all runways have been improved to the extent practicable and airports are on track to complete remaining RSAs by end of 2015.
• RSA improvements, land acquisition, relocating, re-aligning or shifting the runway, declared distances or installation of engineered materials arresting systems (EMAS).
• EMAS installations have safely stopped nine overrunning aircraft.
Latest Save…

Cessna 680 Citation, Palm Beach International Airport, October 27, 2013
RSA Work is NEVER in Vain!
Asiana Flight #214, July 6, 2013, San Francisco International Airport (cbsnews.com)
RUNWAY SAFETY AREA (RSA) IMPROVEMENT PROGRAM
CURRENT EMAS STATUS

• 83 EMAS installations at 53 certificated U.S. airports since 1996
• 15 more EMAS installations at 12 airports planned through CY 2015 (Does not include replacements)
Serious Runway Incursions

- 9 Total A/B Errors
- 8 Category A
- 1 Category B

FY 2015 Performance Limit: .395 per million operations

*FY 2015 rates contain estimated activity counts. The Rate is cumulative from month to month.
Key Points

• **The Issue:** Runway Incursions are on the rise

• **Purpose/Objectives:**
  - Focus on executing the actions outlined in the *National Runway Safety Plan 2015-2017*
  - Identify causal factor trends
  - Implement action plans to address runway safety incidents

• **Scope:** *The National Runway Safety Plan* targets all FAA facilities, including FCTs and engages Industry stakeholders with short term initiatives (next 90 days)
**National Runway Safety Plan Short Term Initiatives**

**Prioritization** of *National Runway Safety Plan* initiatives.

- **Within 90 days:** All facilities who have not completed an Local RSAT will complete one.
- Local RSAT Corrective Action Plans will be developed with performance targets and monitored.

**FAA Communications Plan**

— Will provide corporate messaging materials
— Partnering with NATCA and Industry
— Outlines messaging, audience, partners, delivery vehicles, timelines, and deliverables
FAA Outreach Packet

- Videos and Animations
  - **VCARDS** - PSA Style Videos
  - De-identified **Replays and Animations** to simulate recent high-risk incidents and events

- **ATSAP Briefing Sheet**: What’s on your runway?
- **QA Safety Bulletin**: Know Before You Go: Taxiing on Runways
- **Guided Briefings**
- **Package will be sent to industry and FAA ATO**
Runway Incursion Mitigation (RIM)

- Conducted Safety Data Mining effort (2003-2013) of surface events.
- Analysis identified the top airport risks to be Runway Excursions, Runway Incursions and Wildlife Strikes.
- Risk-based analysis produced an initial group of airport geometry locations with a higher potential for RIs
- FY 2015: develop preliminary mitigation alternatives & cost estimates
- FY 2016 and beyond: develop a schedule and budget to address these locations through mitigation steps
  — Capital Improvements
  — Operational Improvements
- Locations will be evaluated yearly based on latest data
TALPA Update

• Excursion at Midway Dec 2005
• FAA Aviation Rulemaking Committee
  — Airplane Manufacturers - Airplane Operators
  — Regulatory Authorities - Airport Operators
  — Other Organizations
• Recommendations for standardization to FAA in 2009
  — Assessing runway conditions
  — Reporting of braking action by pilots
  — Reporting of runway conditions through airport operators
  — Distributing conditions through the NOTAM system and ATC agencies
• Some voluntary implementation across LOBs for 2016 final rollout
TALPA Update

• Published Reportable Contaminants List (JO 7930.2)
  — Inconclusive to some in industry
  — Ongoing effort to provide clarity

• Expanded NOTAM Manager for filing Field Condition (FICON) NOTAMs
  — Technology/system on how conditions will be reported

• Drafting 150/5200-30, Airport Winter Safety & Operations
  — Will explain to the airport operator on how to use the “Matrix”
  — Will provide more details on contaminant identification

• First draft of 150/5200-28, Notices to Airmen (NOTAMs)
  — Public/Industry commented received Dec 2014
  — Names NOTAM Manager as the primary tool to support the “Matrix” and the future contaminant NOTAM sentence
# Runway Condition Assessment Matrix (RCAM)

<table>
<thead>
<tr>
<th>Runway Condition Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry</td>
<td>6</td>
</tr>
<tr>
<td>Frost</td>
<td></td>
</tr>
<tr>
<td>Wet (Includes damp and less than 1/8 inch depth</td>
<td></td>
</tr>
<tr>
<td>of water)</td>
<td></td>
</tr>
<tr>
<td>Less than 1/8 inch (3mm) depth of:</td>
<td>5</td>
</tr>
<tr>
<td>Slush</td>
<td></td>
</tr>
<tr>
<td>Dry Snow</td>
<td></td>
</tr>
<tr>
<td>Wet Snow</td>
<td></td>
</tr>
<tr>
<td>-15°C and Colder outside air temperature:</td>
<td>4</td>
</tr>
<tr>
<td>Compacted Snow</td>
<td></td>
</tr>
<tr>
<td>Slippery When Wet (wet runway)</td>
<td></td>
</tr>
<tr>
<td>Dry Snow or Wet Snow (Any depth) over Compacted</td>
<td></td>
</tr>
<tr>
<td>Snow</td>
<td></td>
</tr>
<tr>
<td>1/8 inch depth or greater of:</td>
<td>3</td>
</tr>
<tr>
<td>Dry Snow</td>
<td></td>
</tr>
<tr>
<td>Wet Snow</td>
<td></td>
</tr>
<tr>
<td>Warmer than -15°C outside air temperature:</td>
<td></td>
</tr>
<tr>
<td>Compacted Snow</td>
<td></td>
</tr>
<tr>
<td>1/8 inch depth or greater of:</td>
<td>2</td>
</tr>
<tr>
<td>Water</td>
<td></td>
</tr>
<tr>
<td>Slush</td>
<td></td>
</tr>
<tr>
<td>Ice</td>
<td>1</td>
</tr>
<tr>
<td>Wet Ice</td>
<td></td>
</tr>
<tr>
<td>Water on top of Compacted Snow</td>
<td></td>
</tr>
<tr>
<td>Dry Snow or Wet Snow over Ice</td>
<td>0</td>
</tr>
</tbody>
</table>

## Downgrade Assessment Criteria

<table>
<thead>
<tr>
<th>Mu (p)</th>
<th>Vehicle Deceleration Or Directional Control Observation</th>
<th>Pilot Reported Braking Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good to Medium</td>
<td>Braking deceleration is noticeably reduced for the wheel braking effort applied OR directional control is noticeable reduced.</td>
<td>Medium</td>
</tr>
<tr>
<td>Good</td>
<td>Braking deceleration is normal for the wheel braking effort applied AND directional control is normal.</td>
<td>--</td>
</tr>
<tr>
<td>Medium</td>
<td>Braking deceleration OR directional control is between Good and Medium.</td>
<td>Good to Medium</td>
</tr>
<tr>
<td>Poor</td>
<td>Braking deceleration is significantly reduced for the wheel braking effort applied OR directional control is significantly reduced.</td>
<td>Poor</td>
</tr>
<tr>
<td>Nil</td>
<td>Braking deceleration is minimal to non-existent for the wheel braking effort applied OR directional control is uncertain.</td>
<td>Nil</td>
</tr>
</tbody>
</table>

### ACI-NA Operations and Technical Affairs Committee Conference, Vancouver, BC, March 2015

RCAM Version 2014.1
NTSB Safety Recommendations

Airports Division currently has 11 open NTSB safety recommendations. They include:

• 2000 Burbank Runway Excursion (03-011/012)
  — EMAS
  — Runway Safety Area improvements

• 2008 Wiley Post Airport bird strike (09-073/075)
  — Wildlife hazard assessments
  — Improve strike reporting

• 2010 Hudson River – Assessments, on board technology.
NTSB Safety Recommendations (Continued)

• 2012 Roswell experimental aircraft (G650) crash
  — Sufficient personnel
• 2013 Asiana 777 crash San Francisco International (14-047/048/049/050/051)
  — ARFF staffing
  — ARFF training
  — Use of high-reach extendable turret
  — Mutual aid command and control
FAA Review of Construction Plans & Specifications

• ARP team developed a checklists for reviews to:
  — Check conformance to approved scope of work
  — Verify that work meets AIP eligibility and justification
  — Check conformance to FAA design and construction standards

• The FAA P&S Review is Not:
  — A quality control check for Engineer of Record
  — To validate technical engineering calculations
  — To give technical direction to Engineer of Record
  — To relieve Engineer of Record from professional duty related to P&S
  — An approval of any Mods of Standards

• October 1, 2015 – Program managers & Engineers are required to follow P&S review guidance for all AIP projects.
20:1 Issue Overview

- On November 15, 2013, a joint FAA memorandum was issued to provide Interim Policy Guidance for the mitigation of penetrations to the 20:1 Visual Area Surface.

- The interim policy guidance became effective on January 6, 2014 and contains a risk-based approach with varying action timeframes relative to the amount of penetration to the 20:1 surface.

- In November 2013, the ARP Regional Division Managers sent an email out to all of the NPIAS airports to emphasize their responsibility to regularly review and maintain clearance to all their approach and departure surfaces (beyond just the 20:1 surface).

- In the notice to the airport owners/ sponsors, the FAA highly recommends Airport Sponsors take a proactive approach by reviewing all approach surfaces in advance of any flight check schedule to ensure they are clear.
20:1 Issue Overview- Continue

- The FAA has now received comments from RTCA and we are revising the Interim Policy on 20:1

- Preferred method for the airport sponsor to report updated tree heights through AGIS is highlighted in Engineering Brief #91, “Management of Vegetation in the Airport Environment”

- In order to promote transparency to the Airport Sponsor and other stakeholders, AAS worked with our Technical Support Contractor to develop a visual tool within our Airports GIS platform to render a 3-dimensional view of the 20:1 visual area surface showing all FAA known obstacle penetrations

- The tool is now available nationwide. The automation version connectivity to Flight Procedures Team is currently available to the Eastern Service Area and will be expanded to everyone in the near future.
Airspace Evaluation Tool - 20:1 SAV (Phase I)
But… it’s not all about the 20:1 surface!

- Although penetrations to the 20:1 surface result in the most severe impacts, we need to collectively protect all approach and departure surfaces to the extent practicable.
- The FAA Flight Procedures Team (FPT) will be ensuring public safety by applying restrictions to approaches.
- The Airport Sponsor and FAA Airports Organization (ARP) need to work together to preserve the utility, capacity and efficiency of each runway, wherever practicable.
- Identifying obstacles and actions to clear the surfaces need to begin within our normal airport planning initiatives - well before you receive a notice from the FPT.
- Discussion about clearing surfaces needs to occur regularly at FAA ARP and Airport Sponsor meetings.
- The Airport Sponsor’s proposed plan of action for obstacles needs to be reviewed/ updated regularly by the Sponsor and communicated to the FAA.
How can the FAA help?

- We will continue to enhance tools in AGIS to visually show the surfaces so there should be no surprises

- ARP Regional and Airports District Offices (ADOs) can help with all the planning, environmental, programming and engineering aspects

- Get to know the appropriate personnel within your Flight Procedures Team (FPT)

- FAA ADOs will review requests for funding on a case-by-case basis for eligible and justified projects similar to all other ACIP projects

- Ensure you are collecting all survey data required under FAA AC 150/5300-16, 17 and 18 for your AIP projects. New survey data will help the FAA replace outdated info in our databases.
Protection for One Engine Inoperative Operations

**Issue:**
- Part 121 Operators must ensure there is a safe, alternate departure route in the event of engine loss on departure.
- Increasing construction around airports is encroaching on the airspace, restricting acceptable OEI takeoff paths, especially at urban airports. Many times operators must off-load fuel, passengers, and/or cargo to meet OEI requirements.

**Project:**
- AOSC completed a successful pilot project that demonstrated the local airport can work with its users and local community and develop a single OEI path and that path can be protected to the extents of Part 77.

**Status:**
- FAA Proposal was published in Federal Register in April 2014.
- Received hundreds of comments from across the US.
- AOSC is answering the comments for a decision in Fall 2015.
Thermal Exhaust Plumes

Issue:

- In 1999, a safety concern was raised at OXC that in some instance exhaust plumes could cause disruption to flights.
- In addition, California Energy Commission and others were requesting guidance on constructing power plants near airports.

Project:

- AOSC tasked to study the impact plumes may have on flight safety both from lost of control and health effects.
- Follow-on task was created to develop a predicted exhaust plume model by Mitre based on the exhaust characteristics, local weather, and type of aircraft.

Status:

- Overall risk of disruption of flight is very unlikely, but there is a unique hazard in critical phases of flight near airports.
- Mitre Plume Model Published at: https://www.mitre.org/research/technology-transfer/technology-licensing/exhaust-plume-analyzer
- Update to Advisory Circular (AC)150/5190-4, Airport Land Use Compatibility Planning, to address the compatibility of exhaust plumes near airports and provide guidance on how to use the Exhaust Plume Model.
Wildlife – FAA Regulatory Guidance

**AC 150/5200-32B** REPORTING WILDLIFE AIRCRAFT STRIKES. May 31, 2013 (May 31, 2013)

**AC 150/5200-36A** Qualifications for Wildlife Biologist Conducting Wildlife Hazard Assessments and Training Curriculums for Airport Personnel Involved in Controlling Wildlife Hazards on Airports

**AC 150/5200-33B** HAZARDOUS WILDLIFE ATTRACTIONTS ON OR NEAR AIRPORTS 8/28/2007, under review.

**PROTOCOL FOR THE CONDUCT AND REVIEW OF WHSVs, WHAs, WHMPs and CONTINUAL MONITORING** – under review (5200-38)

*** ALL PART 139 AIRPORTS HAVE CONDUCTED OR INITIATED A WHA ***
Wildlife – Partnerships, Memorandums of Understanding/Agreement

- MOU - Between the FAA and the Department of the Interior United States Fish and Wildlife Service Regarding Implementation of Executive Order 13186, “Responsibilities of Federal Agencies to Protect Migratory Birds” (Update by end of 2015)
- Interagency Agreement Between the FAA and USDA / APHIS / Wildlife Services. Updated 4 Year Agreement (June 24, 2014) for USDA, Smithsonian Institute Feather I.D. Lab and ERAU Aircraft-Wildlife Strikes (Current)
- MOU - Between the FAA and the Department of the Interior United States Fish and Wildlife Service Regarding Implementation of Executive Order 13186, “Responsibilities of Federal Agencies to Protect Migratory Birds” (Current)
Resources and Outreach

Wildlife Hazard Management at Airports manual
* Currently being revised for 2015

National Wildlife Strike Database Annual Report

FAA Wildlife Hazard Mitigation Web Site
http://wildlife.faa.gov

New ACRP Manuals on Wildlife Hazard Management at Airports

Strike Posters
30,000+ mailed to industry (2011, 2012 & 2014)
## Advisory Circulars – In Progress

<table>
<thead>
<tr>
<th>Document Type/No.</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC 150/5220-10</td>
<td>Guide Specification for Water/Foam Aircraft Rescue and Fire Fighting Vehicles</td>
</tr>
<tr>
<td>AC 150/5300-18C</td>
<td>Guidance and Specifications for Submission of Aeronautical Surveys to NGS (Major Change based upon NAV Lean data Model)</td>
</tr>
<tr>
<td>AC 150/5300-19</td>
<td>Airport Data and Information Program</td>
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<tr>
<td>AC 150/5320-12D</td>
<td>Measurement, Construction, and Maintenance of Skid Resistant Airport Pavement Surfaces</td>
</tr>
<tr>
<td>AC 150/5340-30I</td>
<td>Design and Installation Details for Airport Visual Aids</td>
</tr>
<tr>
<td>AC 150/5360-14</td>
<td>Airport Access by Individuals with Disabilities</td>
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<tr>
<td>AC 150/5370-2</td>
<td>Operational Safety on Airports During Construction</td>
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<td>AC 150/5370-10H</td>
<td>Standards for Specifying Construction of Airports</td>
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<tr>
<td>AC 150/5395-1</td>
<td>Seaplane Bases</td>
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<tr>
<td>AC 150/5210-15</td>
<td>Airport Rescue and Fire Fighting Station Building Design</td>
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<tr>
<td>AC 150/5320-15</td>
<td>Management of Airport Industrial Waste</td>
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<tr>
<td>AC 150/5345-42G</td>
<td>Specification for Airport Light Bases, Transformer Housings, Junction Boxes, and Accessories</td>
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<tr>
<td>AC 150/5345-46D</td>
<td>Specifications for Runway and Taxiway Light Fixtures</td>
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<td>AC 150/5345-44</td>
<td>Specification for Runway and Taxiway Signs</td>
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<td>AC 150/5345-49C</td>
<td>Specifications for Runway and Taxiway Light Fixtures</td>
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<tr>
<td>AC 150/5345-50B</td>
<td>Specification for Portable Runway and Taxiway Lights</td>
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<tr>
<td>AC 150/5370-13A</td>
<td>Off-Peak Construction of Airport Pavements Using Hot Mix Asphalt</td>
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<td>AC 150/5370-16</td>
<td>Rapid Construction of Rigid (Portland Cement Concrete) Airfield Pavements</td>
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<td>AC 150/5370-12</td>
<td>Quality Control of Construction for Airport Grant Projects</td>
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<td>AC 150/5370-11</td>
<td>Use of Non-Destructive Testing in Evaluation of Airport Pavements</td>
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<tr>
<td>AC 150/5320-6</td>
<td>Airport Pavement Design and Evaluation</td>
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<tr>
<td>AC 150/5340-18</td>
<td>Standards for Airport Sign Systems</td>
</tr>
<tr>
<td>AC 150/5325-4</td>
<td>Runway Length Requirements for Airport Design</td>
</tr>
</tbody>
</table>
Revised Advisory Circular AC 150/5300-14C  
Design of Aircraft Deicing Facilities (ADF)

- New design criteria for a deicing pad used by 3 aircraft - *composite grouping*. Requires painting a 3rd Vehicle Safety Zones, not 2.

- Clarified Part 139 *Snow and Ice Control Plan* includes non-gate centralized ADFs as Priority 1 under *AC 150/5200-30, Airport Winter Safety and Operations*. Part 139 compliance within 1 year

- Acknowledged industry practice that a control center (snow desk) building is a basic component for a centralized ADF
Revised Advisory Circular AC 150/5395-1A
Seaplane Bases

- Restructured according to (1) off-shore facilities, (2) shoreline facilities, and when justified (3) on-shore facilities

- Clarified basic components of a public-use seaplane base as a suitable water operating area with approach/departure paths, a sea lane, taxi channel(s), anchorage area, and a shoreline ramp or pier
Advisory Circular Updates

• AC 150/5360-12F, Airport Signing and Graphics
  — This AC incorporates the recommendations and guidelines developed under Airport Cooperative Research Program (ACRP) Report 52, Wayfinding and Signing Guidelines for Airport Terminals and Landside, completed in 2011.

• AC 150/5345-27E, FAA Specification for Wind Cone Assemblies
  — The equipment qualification requirements to be furnished under the Federal grant assistance program for airports has been revised.
  — The photometric requirements for internally lighted wind cones are now applied to both Size 1 and Size 2 windsocks.

• AC 150/5340-5D, Segmented Circle Airport Marker System
  — The system qualification requirements under Federal grant assistance programs has been revised.
  — Clarification of the siting requirement for landing strip and traffic pattern indicators.
Advisory Circular Updates

• Pavement Related Advisory Circulars
  — 5370-10G Construction Specifications
    – P-401 – Added Gyratory Method
    – Added Seal Coats and Surface Treatments
    – Added Mobilization, Construction Warranty and Construction Close out
    – Added Wildlife Exclusion Fence
  — 5335-5C Airport Pavement Strength (PCN)
    – Better clarification of procedures (ICAO Compliant)
  — 5380-06 Maintenance of Airport Pavements
  — 5380-07 Airport Pavement Management
Advisory Circular Updates

• Pavement Related Engineering Briefs – in Development
  — Review of approximately 25 Pavement related EB’s for cancellation due to being “superseded by 5370-10,” “Not Allowed or Obsolete,”

• Pavement Related Advisory Circulars - Updated
  — 5370-14B Hot Mix Asphalt Paving Handbook
  — 5000-15B Announcement of Availability of Airport-Related Research and Development Products

• Pavement Related Engineering Briefs - Cancelled
  — DRAFT EB7X Rejuvenation Product Qualification Procedure and Requirements-Draft
  — DRAFT EB 68 Four Component Coal-Tar Sealer Rejuvenator
Advisory Circular Updates

• Revised Advisory Circular AC 150/5345-42G Specification for Airport Light Bases, Transformer housings, Junction Boxes, and Accessories
  — Updated reference links
  — Prohibition exothermic welds on galvanized steel bases
  — Torque testing of adjustable light cans

• Revised Advisory Circular AC 150/5320-5D Airport Surface Drainage Design
  — Updated reference links
  — Removed redundant guidance
  — Clarified Wildlife guidance relevance
Comments and Questions?

Michael J. O’Donnell, A.A.E.
Director, Airport Safety and Standards
Michael.j.odonnell@faa.gov
202-267-8776