ACI-NA Operations and Technical Affairs Committee

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April 2014
Agenda

• 20 to one Approach Penetrations
• One Engine Inoperative (OEI)
• Hot Spots/Problematic Geometry
• Runway Protection Zones (RPZs)
• Ground Operations Draft A/C
• Apron Safety
• Safety Management Systems (SMS)
• Vehicle Pedestrian Deviations (VPDs)
• Runway Safety Areas (RSAs)
20-1 Issue Overview

- Penetrations of the airports approach surfaces were discovered at several high visibility airports.
- Further review found thousands of potential (not yet verified by airport owner/sponsor) obstacles at NAS airports.
- Once identified, current FAA policy was to immediately adjust (i.e. raise minima, restrict night operations) impacted approaches to maintain safe operations.
- A Tiger team was convened to develop consistent risk-based interim policy guidance across all line of business.
- ARP to engage airport owners/sponsor to emphasize their responsibility to regularly review the approach surfaces supporting their airport.
- The FAA’s interim policy received comments from the Tactical Operations Committee (TOC) of the Radio Technical Commission for Aeronautics (RTCA) and other members of industry.
- The interim policy is under review, only minor changes expected.
20-1 Issue Overview

- The interim policy 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.

- The process includes an initial step to request that the Airport Sponsor verify the validity of each penetration before any action is taken. Verified penetrations of the 20:1 surface by more than 11 feet are considered a high risk and require immediate restrictions to the procedure.

- 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”
Attachment 1. 20:1 RISK ASSESSMENT

HIGH RISK
(more than 11 feet)
- Immediately restrict IAP visibility to at least 1 SM. If unlighted, restrict night operations (e.g., using a Notice to Airmen (NOTAM), or a Procedure Amendment).
- Submit compliance plan as soon as possible but no later than 30 days.
- IAP restrictions will remain until penetration(s) are mitigated.

MEDIUM RISK
(more than 3 feet and up to 11 feet)
- No immediate IAP actions.
- Submit compliance plan as soon as possible but no later than 30 days.
- Mitigate penetrations as soon as possible but not to exceed 180 days.

LOW RISK
(3 feet or less)
- No immediate IAP actions.
- Submit compliance plan as soon as possible but no later than 30 days.
- Mitigate penetrations as soon as possible but not to exceed one year.

IAP - Instrument Approach Procedure
SM - Statute Mile

11/5/2013
20:1 Surface Analysis and Visualization
AGIS Tool – In Pilot Testing
Considering Capacity Impacts from One Engine Inoperative (OEI) Procedures

- Normal Takeoff Operations
  - Considers all engines operative
  - Path of takeoff protected by FAA Obstruction Evaluation Process

- One Engine Inoperative
  - Air carrier operators must ensure there is a safe, alternate departure route in the event of engine loss on departure.

- Multiple paths internal to air carrier (proprietary)
  - Since they are proprietary, paths are not available to external parties (developers, zoning officials, etc.) and therefore cannot readily be considered in zoning decisions
One Engine Inoperative (OEI) Overview

- **Existing FAA Policy under Obstruction Evaluation process**
  - Long-standing policy, normal operations
  - Capacity derogation only considers number of flights impacted
  - Does not consider economic impact on reducing passengers, cargo or fuel

- **Problem:**
  - Encroachment of development around airports
  - Impacts airport capacity and efficiency
  - Airlines develop their own separate OEI paths
  - A potential “taking” of usable runway

- **Proposed Change to FAA Policy – balanced approach**
- **Seeking public input**
Considering Capacity Impacts from One Engine Inoperative (OEI) Procedures (cont’d)

- Ever-increasing construction around major airports is encroaching on the airspace, further restricting viable takeoff paths for airlines’ OEI procedures.

- Airlines sometimes have to reduce fuel, passengers, or cargo in order to be able to clear obstructions in the event of an engine failure on takeoff under FAA rules.

- Example—estimated summertime flight impacts at DCA:

<table>
<thead>
<tr>
<th>Aircraft</th>
<th>Required Weight Reduction</th>
<th>Equivalent Passengers</th>
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<tr>
<td>A320</td>
<td>3,800 to 5,700 lbs</td>
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<tr>
<td>A321</td>
<td>8,600 to 9,300 lbs</td>
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<td>2,700 to 5,000 lbs</td>
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<tr>
<td>MD80</td>
<td>2,200 to 2,900 lbs</td>
<td>10-13</td>
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<td>etc.</td>
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</table>
Current airline OEI paths

Obstructions

Common OEI path to avoid obstacles

Prohibited Area

Ronald Reagan Washington National (DCA)
FAA’s Proposed Action on OEI

- Publish a *Federal Register* notice – Today, April 24, 2014!
- Encourage airport owners to work with the airlines and neighboring communities to jointly define a **published** OEI departure area for each runway end.
- FAA could then use the new OEI surface to help protect against encroachment.
- FAA needs the airport and airline industry to **provide comments** to the Federal Register Notice. (60 day period).
- Industry day planned at FAA HQ in Washington D.C. on Tuesday, May 20, 2014.
Top Risk Item

Runway Incursions

Hot-Spots
Standard Intersection Details

Avoid This!

(c) Taxiway intersection exceeds "3-node" concept
Taxiway / Runway - Interface

• **Optimum design is right-angle**
  - No less than 45 degrees
  - Exception for High Speed Exits

• **Not Recommended:**
  - Y-shaped taxiway crossing
  - Taxiway crossing a High Speed exit
  - Taxiway connecting to V-shaped runways
  - Aligned taxiway (Prohibited)
  - Direct access from a ramp/terminal to the runway
  - High-speed exits leading directly onto another runway

Avoid This!

(d) Taxiway intersecting two or more runways
Hot Spots – Remove aligned taxiways

(e) Aligned taxiway between two closely spaced runway ends
Hot Spots

1. Taxiway intersection exceeds "3-node" concept
2. Taxiway intersecting a high-speed exit from runway.
Entrance Taxiway

- Avoid wide expanses beyond taxiway design tables
- Islands provide location for elevated signage
- Standard orientation is 90 degrees
- Standard length to accommodate longest fuselage
- Curve “outer-edge” to mitigate wrong runway landing
- No Taxi-Island
Intersections with Hot Spots
Problematic Taxiway Geometry

Current effort in FY13 and FY14:
• Creating a Geospatial Database Inventory of Runway Incursion & Hot spot locations
• Prioritization based on frequency and severity
• Sortable by airport size and activity

FY14 and beyond:
• Evaluate locations to determine options and recommend improvements
Runway Protection Zone (RPZ)

- **Definition:** To enhance the protection of people and property on the ground.
- **Central Portion of the Runway Protection Zone (RPZ)**
- **Controlled Activity Area of the RPZ**
- **RPZ may be mitigated by Declared Distances**
- **When threshold is displaced there may be two RPZ on Runway End; Approach and Departure**

- **Permissible RPZ use listed in 13A:**
  - Farming that meets the minimum buffers as shown in Table 3-10 of 13A.
  - Irrigation channels as long as they do not attract birds.
  - Airport service roads, as long as they are not public roads and are directly controlled by the airport operator.
  - Underground facilities, as long as they meet other design criteria, such as RSA requirements, as applicable.
  - Unstaffed NAVAIDs and facilities, such as equipment for airport facilities that are considered fixed-by-function in regard to the RPZ
RPZ Evaluation Process

• To ensure national consistency, FAA HQ ARP reviews projects where the land use within the RPZ is not on the permissible list.

• We anticipate that future guidance will be issued by the FAA to assist in the evaluation of land use within RPZs.
Draft Advisory Circular 150/5210-20A, Ground Vehicle Operations and Mechanic Taxiing or Towing an Aircraft on Airports.5210-20A

– 5210-20A
  • Recently closed for comment on revisions
  • After adjudication of comments, document available around the end of the fiscal year 2014

– Major Changes
  • AC 150/5210-20A – now expanding to anyone taxiing or towing an aircraft on the airport respectively
  • Operator or Certificate Holder should provide a training curriculum that cover drivers as well as anyone taxiing or towing an aircraft
  • Include in the training program vehicle operations on ramp and apron areas
  • Violation of Rules—Penalties and Suspension of Driving or mechanic (anyone) taxiing or towing an aircraft Privileges
  • Vehicle Operator and Mechanic (Anyone) taxiing or towing and aircraft Requirements

– Airports are encouraged to Restrict Airside Access
  • Methods for controlling access to the airside will vary depending on the type and location of the airport.
Apron Safety

- **Recommendations for Airport Operators**
  - Conduct a comprehensive review of the Airport Driver’s Training Program
  - Incorporate items from ACRP’s Synthesis 29, Ramp Safety Practices
  - Where practical, reduce the number of non-essential vehicle operators
  - When able consider periodic vehicle spot checks by airport operator
  - Consider adding to driver’s training program information on ramp/gate area vehicle operations include direction of travel and speed limits
  - Consider more emphasis on vehicle and equipment utilizing chalks or other pre-positioned stopping devices before backing toward airplanes

- **Best practices for vehicle drivers on the ramp or gate area**
  - Operate within established speed limits for the ramp area
  - Use spotter(s) when backing vehicles/equipment toward airplanes
  - Deploy chalks/stopping devices before backing toward airplanes
  - Increase vigilance on ramp during periods of reduced visibility
  - Avoid using eye wear that creates conditions where objects are overly shaded which may impair ones ability to gage distances
  - Focus attention and have your “head up” and “eyes out” of the vehicle
SMS Update

- **Internal SMS Efforts**
  - FAA Order 5200.11, Office of Airports SMS – expanding to medium and small hubs – 2014 & 2015 respectively
  - Voluntary Reporting System approved by ARP-1 and NATCA
  - New SOP developed to compliment our ARP SMS Desk Reference
  - Third in-residence SRM Practitioners Course set for Jul 2014 (for ARP employees)

- **External SMS Efforts (Rulemaking and Guidance)**
  - SNPRM and 2nd draft of SMS AC sent to OST in November 2013
  - Once OST clears, documents get sent to OMB
  - OST maintains schedule and makes available on www.dot.gov

- **Airports are encouraged to voluntarily implement SMS**
  - AIP Program Guidance Letter 13-06 details eligibility for SMS Manuals, Implementation Plans, and SMS software
Vehicle/Pedestrian Deviations (VPDs)

National NTE Target - One per 3.676 million operations.

- Total VPDs to date (4/17/14) is 109, compared to 115 in FY 13.
- Two Category “B” VPD Runway Incursions so far in FY14 (max is 3):
  - MSP - Airport truck got lost during snow/poor viz. Runway is used frequently as a taxiway.
  - CLE - Airport vehicle entered a runway during nighttime training.
RUNWAY SAFETY AREAS (RSAs)

“That not later than December 31, 2015, the owner or operator of an airport certificated under 49 U.S.C. 44706 shall improve the airport’s runway safety areas to comply with the Federal Aviation Administration design standards required by 14 CFR part 139…”

Further, an OIG report on the FAA runway safety program made recommendations on the FAA runway safety program including FAA Owned NAVAIDS in RSAs.
Thank you!

Comments and Questions

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<thead>
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<td>Airport Design, Taxiway Design</td>
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<tr>
<td>AC 150/5300-18B, Change 1</td>
<td>General Guidance and Specifications for Submission of Aeronautical Surveys to NGS: Field Data Collection and Geographic Information System (GIS) Standards</td>
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<td>AC 150/5340-30H</td>
<td>Design and Installation Details for Airport Visual Aids</td>
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<td>Architectural, Engineering, and Planning Consultant Services for Airport Grant Projects</td>
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<td>Standards for Airport Sign Systems (add Appch Hold and TWY nomenclature)</td>
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<td>Standards for Airport Markings (Add Appch Hold)</td>
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<td>Specification for Runway and Taxiway Signs (Orange Const Signs?)</td>
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<td>Airport Access by People with Disability</td>
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<td>Standards for Specifying Construction of Airports</td>
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<td>Operational Safety on Airports During Construction (Orange Const Signs?)</td>
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# AAS-100 FY-13 Published AC Updates

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<td>Announcement of Availability of Airport-Related Research and Development Products</td>
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<td>150/5300-14B</td>
<td>Design of Aircraft Deicing Facilities</td>
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<td>150/5320-5D</td>
<td>Surface Drainage Design</td>
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<td>150/5340-1L</td>
<td>Standards for Airport Markings</td>
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<td>150/5340-5C</td>
<td>Segmented Circle Airport Marker System</td>
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<td>150/5345-27D</td>
<td>Specification for Wind Cone Assemblies</td>
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<td>150/5345-42F</td>
<td>Specification for Airport Light Bases, Transformer Housings, Junction Boxes, and Accessories</td>
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<td>150/5345-7E</td>
<td>Specification for L-824 Underground Electrical Cable for Airport Lighting Circuits</td>
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<td>Airport Signing and Graphics</td>
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<td>Hot Mix Asphalt Paving Handbook</td>
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<td>150/5395-1</td>
<td>Seaplane Bases</td>
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Advisory Circular Updates

- **Advisory Circular 150/5300-13A, change 1**
  - Expected to be released in February 2014

- **This change covers:**
  - Expanded taxiway fillet design information
  - Adjustment to Taxiway Design Group limits
  - New approach / departure reference code designations to replace runway reference code (RRC)
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 – in Development**
  - 5370-10G Construction Specifications – Public Comments Complete
    - 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) – Publication Imminent
    - Better clarification of procedures (ICAO Compliant)
  - 5380-06 Maintenance of Airport Pavements – FY 14
  - 5380-07 Airport Pavement Management – FY 14

- **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,”
Advisory Circular Updates

• **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
Advisory Circular Updates

• Revised Advisory Circular AC 150/5320-5D
  Airport Surface Drainage Design
    – Updated reference links
    – Removed redundant guidance
    – Clarified Wildlife guidance relevance
Advisory Circular Updates

• **Advisory Circular AC 150/5300-18B Change 1 Airports GIS Surveys**

• **Signing is Imminent**
  - No schema changes only clarifications
  - Adds directionality for hold lines
  - Changes CAD standards for line weights and colors to match national standards

• **Expect AC 150/5300-18C with schema changes in about 1 year**
  - Compatible with AIXM 5.2 and FAA data model OV7
  - Adds start and end date for all features (temporality)
  - Translation program to be developed.