Overview: FAA Guidance
Part I

Concrete Airport Pavement Workshop
Right Choice, Right Now

November 7-8, 2012
Atlanta, GA

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Presentation Objectives

- FAA Airports Safety & Standards Engineering Division
- Guidance Available at FAA Airports
- Summarize / Provide information on Pavement related Advisory Circulars (AC) and Engineering Briefs (EB)
- Priorities and Direction for FY13 and Beyond
- Availability of Research and Development Products
Airport Engineering Division AAS-100

- Division Manager  John Dermody
- Assistant Manager (primarily for Airports GIS)
- Administrative Assistant
- National Resource Expert on Air Space
- 5 Civil Engineers (2 pavements)
- 3 Electrical/Electronics Engineers
- ACRP Research Engineer (Mechanical)
- Airport Safety Data Program (Program Manager)
- Airports GIS (Computer Scientist)
- Technical Support Contractor (ISI)
FAA Guidance

• FAA guidance is part of the authorizing legislation for airport development using Federal funds.

• FAA airport design, construction, and maintenance guidance are contained in Advisory Circulars, the 150’s series.

• Interim FAA airports engineering guidance is provided in Engineering Briefs.

• FAA airport guidance is available from FAA web sites: http://www.faa.gov/arp/
Establishing or Changing Guidance

- HQ Office Initiates and Prepares Draft.
- Review by HQ Airports Offices.
- Revised Draft Sent for Concurrent Review to FAA Regions and Industry.
  - The Boeing Company and the Airports Consultants Council (ACC) Receive Copies of Draft Changes and Reviews.
  - Tri-Service Airfield Pavement Working Group Team and ASCE T&DI APC Reviews Draft Changes.
- Comments Accepted for 60 days (General).
- Change Finalized.
- FAA Legal Review, Office Director Signs.
What Delays a Change

• Non-Concurrence from HQ Offices.

• Non-Concurrence from FAA Regions.

• Inability to Reconcile Comments from Boeing, ACC, Peer Review Associations, or Industry.

• Substantive Alterations to a Proposed Change May Require New Draft.
Airports Web Site
http://www.faa.gov/arp/
Availability of Airport-Related Research and Development Products

Advisory Circular 150/5000-15A

• **PURPOSE.** This advisory circular (AC) explains how to obtain the latest airport-related research and development (R&D) products funded by the Federal Aviation Administration’s (FAA’s) Airports Organization.

• **SCOPE.** This AC describes R&D products from:
  • The FAA’s Airport Technology Research and Development Branch,
  • The Airport Cooperative Research Program (ACRP),
  • The Innovative Pavement Research Foundation (IPRF), and
  • The Airfield Asphalt Pavement Technology Program (AAPTP).
Airfield Concrete Pavement Technology Program (ACPTP)

ACPTP mission was to provide a unified means of building resources, developing strategies, and implementing programs to address concrete pavement research, technology advancement and transfer, and public education.

Focused on the inherent economic efficiencies, safety, and quality-of-life of Portland cement concrete pavements.

The ACPTP was established through Cooperative Agreement by the Innovative Pavement Research Foundation (IPRF) in 2001 and completed in September 2011; no additional RFPs are planned; all reports will continue to be available on the IPRF website.

Note: This program is/has always been referred to as the IPRF
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Pavement related Advisory Circulars
FY2011 ~ FY2012

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Pavement related Advisory Circulars
FY2012 Work ~ FY2013 AC Plan

5370-10 STANDARD FOR SPECIFYING CONSTRUCTION OF AIRPORTS

5335-05 STANDARD METHOD FOR REPORTING AIRPORT PAVEMENT STRENGTH (PCN)

5380-06 GUIDELINES AND PROCEDURES FOR MAINTENANCE OF AIRPORT PAVEMENTS

5370-14 HOT MIX ASPHALT PAVING HANDBOOK

5370-11 USE OF NONDESTRUCTIVE DEVICES IN THE EVALUATION OF AIRPORT PAVEMENTS

5320-17 AIRFIELD PAVEMENT SURFACE EVALUATION AND RATING (PASER) MANUALS

5380-07 PAVEMENT MANAGEMENT SYSTEM
Advisory Circular 150/5370-10G
FY2012 Work ~ FY2013 AC Plan

AC 150/5370-10 STANDARD FOR SPECIFYING CONSTRUCTION OF AIRPORTS

Complete Draft end of 2nd Quarter FY13
Published end of FY2013

5335-05 STANDARD METHOD FOR REPORTING AIRPORT PAVEMENT STRENGTH (PCN) FY2013
5380-06 GUIDELINES AND PROCEDURES FOR MAINTENANCE OF AIRPORT PAVEMENTS DRAFT FY2013
5370-14 HOT MIX ASPHALT PAVING HANDBOOK FY2013
5370-11 USE OF NONDESTRUCTIVE DEVICES IN THE EVALUATION OF AIRPORT PAVEMENTS FY2014
5320-17 AIRFIELD PAVEMENT SURFACE EVALUATION AND RATING (PASER) MANUALS FY2014
5380-07 PAVEMENT MANAGEMENT SYSTEM FY2014
Priorities and Direction
FY13 and Beyond

ONE Standard Guide Specification for Airfield Pavement

Design Life for Airfield Pavement
20 years to 40 years

FY13 Work – Pavement ACs
ONE Standard Guide Specification for Airfield Pavement

We are Changing Existing Advisory Circular Format to the Construction Specifications Institute (CSI) Format and following / adopting Unified Facilities Guide Specifications (UFGS) format.

Include all Parts of AC 150/5370-10

Support garnered from FAA personnel, Airport Consultants Council (ACC), ASCE T&DI Airfield Pavement Committee, and representatives from the Concrete and Asphalt Associations

Ongoing efforts of Tri-Service / FAA Airfield Pavements Engineers Formal meetings during the Annual Meeting at TRB
Design Life for Airfield Pavement
20 years to 40 years
Design Life for Airfield Pavement
20 years to 40 years

Initiated in FY 2011
2011 ARP Business Plan Core Activity for Airport Standards
Draft Project Management Plan by ANG-E26 Developed

Work started in FY 2012
Final Draft Project Management Plan Approved by AAS-100
REDAC Briefed at Spring and Fall Meetings
Technical Support and Support of Needed Funding Levels
Outreach – Briefs – Presentations

Funding starts in FY 2013
AAS-100 Memo Requesting Support to Complete “Fact Finding Tour”
Multi Year Plan for AC 150/5370-10

FY 2011 ‘F’

FY 2012 Meetings, Comments, Presentations; Industry, Suppliers, Agencies, Internal; ‘G’ delayed due to funding

FY 2013 ‘G’

FY 2014 Other ACs closely related; Daft CSI format – long review time to assure technically correct from one format to the other

FY 2015 CSI Format
P-501-3.4. Concrete Mix Design Laboratory

Contractor’s laboratory used to develop the concrete mix design shall meet the requirements of ASTM C 1077.

Laboratory accreditation must be current and listed on the accrediting authority’s website. All test methods required for developing the concrete mix design must be listed on the lab accreditation.

A copy of the laboratory’s current accreditation and accredited test methods shall be submitted to the Engineer prior to start of construction.

P-501-5.1. Acceptance Testing Laboratory – Same
Updates information on testing protocol of aggregate for reactivity and use of cementitious materials related to reactivity requirements

(1) 501-2.1 and 610-2.1: Reactivity tests will be tested for expansion at 28-days (30-days from casting).

(2) 501-2.1: Deleted Engineers Note referring to Engineering Brief No. 70

(3) 501-2.3 and 610-2.6: Additional requirements added for use of Class F fly ash when mitigating alkali-silica reactivity and deleted use of Class C fly ash.
501-2.3 CEMENTITIOUS MATERIALS
a. Flyash or Natural Pozzolan. Flyash shall meet the requirements of ASTM C 618, Class F or N with the exception of loss of ignition, where the maximum shall be less than 6 percent. [The following tests in Supplementary Optional Physical Requirements of Table 3 contained in ASTM C 618 shall apply: Select the appropriate tests when project specific conditions or exposures dictate (Increase of drying shrinkage of mortar bar); (Effectiveness in Contributing to Sulfate Resistance Procedure A) or (Effectiveness in Contributing to Sulfate Resistance Procedure B). Select either sulfate resistance test, but not both.] Class F or N flyash for use in mitigating alkali-silica reactivity shall have a Calcium Oxide (CaO) content of less than 13 percent and a total equivalent alkali content less than 3 percent. Flyash such as is produced in furnace operations using liming materials or soda ash (sodium carbonate) as an additive shall not be acceptable. The Contractor shall furnish the previous three most recent, consecutive ASTM C-618 reports for each source of flyash proposed in the mix design, and shall furnish each additional report as they become available during the project. The reports can be used for acceptance or the material may be tested independently by the Engineer.
501-2.3 CEMENTITIOUS MATERIALS
a. Flyash or Natural Pozzolan.

Class C flyash may be proposed on a case-by-case basis where innocuous aggregates are used and the pavement is not subjected to airfield pavement de-icers. Any use of Class C flyash is subject to the approval of the engineer and FAA. A modification to standards will be required.
Modify changes from last relative to ASR
Calcium Oxide (CaO) content of less than 13 percent
Total Equivalent Alkali content less than 3 percent

? Industry problem – new regulations for scrubbing coal stacks
(source of flyash) causes a dramatic increase in Alkali – so high,
flyash may not be able to be used in the future - - - VERY NEAR
future. Therefore 3% will change but not sure what or how.

Class C flyash may be proposed
Use Chart/Table in UFGS which eliminates discussing C, F, N
Modify changes from last relative to ASR

- Total Equivalent Alkali content < 3 percent
- Use Chart/Table in UFGS eliminates discussing C, F, N

Aggregate Optimization (Alternate “combined” grading)

Flex Strength: Beam/Beam or Beam/Cylinder Correlations

??
Thank You

Questions / Discussion

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