



Agenda Item 5 Review of other technical matters

**UNITED STATES FEDERAL AVIATION ADMINISTRATION (FAA) SPONSORED
PAVEMENT MAINTENANCE AND REHABILITATION TRAINING WORKSHOPS FOR THE
CARIBBEAN REGION**

(Presented by the United States of America)

SUMMARY

The ability of an airport authority to maintain and rehabilitate pavements in a cost effective manner is critical to ensuring an airports overall financial and operational condition. In recognition of these pavement needs among Caribbean airports, the Federal Aviation Administration has conducted two airport pavement maintenance and rehabilitation training workshops in the region. The first workshop was conducted in Georgetown, Guyana on September 21-22, 2009 and the second workshop was conducted in St. John's, Antigua on October 12-13, 2009.

The pavement workshops are designed to teach attendees about the fundamental maintenance and rehabilitation issues associated with asphalt and concrete pavements. Section 2 of this paper contains more detailed information on the course content. Organizations interested in organizing, funding, or participating in future pavement workshops are encouraged to contact the FAA for further information.

References:

- Annex 14, Vol. I Aerodrome Design and Operations

***Strategic
Objectives***

This working paper is related to Strategic Objective D.

1. Introduction

1.1 Airport pavements are subject to significant levels of distress from aircraft operations and changing environmental conditions. The accumulation of these factors over the years often increases the speed at which airport pavements deteriorate. Given the current economic downturn and resulting financial impact to airports around the world, the ability to maintain and rehabilitate pavements in a cost effective manner is critical to preserving the overall financial and operational condition of an airport.

1.2 The United States Federal Aviation Administration (FAA) recognizes the need for airport operators to quickly and efficiently resolve any pavement issues that may arise. Through FAA's participation in the Caribbean Aviation Safety and Security Oversight System (CASSOS), many discussions have taken place regarding the pavement issues facing airports throughout the Caribbean region. In response to this awareness, FAA has conducted two airport pavement maintenance and rehabilitation training workshops in the Caribbean region. The first workshop was conducted in Georgetown, Guyana on September 21-22, 2009 and the second workshop was conducted in St. John's, Antigua on October 12-13, 2009. These workshops are designed to teach airport maintenance personnel the fundamental issues associated with maintaining and rehabilitating concrete and asphalt pavements.

2. Workshop objectives and content

2.1 The pavement workshop focuses on providing participants with the information that they need to select, design, and construct effective airfield pavement maintenance and rehabilitation (M&R) treatments. At the end of the workshop, successful participants will understand types of airfield pavements and how they deteriorate, and the different types of pavement M&R treatments. The workshop is scheduled to last two days, and includes a combination of classroom instruction and hands-on training sessions.

2.2 A general outline of the workshop content is shown below:

- Pavements 101: Pavement Types and Materials
 - Types of pavements
 - Pavement materials
 - How pavements are designed
 - Introduction to maintenance and rehabilitation
 - Preventive maintenance concepts

- Pavements 102: Pavement Distresses and Performance
 - Typical hot mix asphalt [HMA] distresses
 - Typical Portland cement concrete [PCC] distresses
 - Techniques for pavement evaluation
 - Overall pavement performance

- Distress identification workshop

- HMA Crack Sealing
 - Overview of HMA crack sealing
 - Applications
 - Design
 - Material selection
 - Equipment
 - Construction sequence
 - Troubleshooting

- PCC Joint Resealing and Crack Sealing
 - Overview of PCC joint resealing and crack sealing
 - Applications
 - Design
 - Material selection
 - Equipment
 - Construction sequence
 - Troubleshooting

- PCC Partial Depth Repair
 - Overview of PCC spall repair
 - Applications
 - Material selection
 - Equipment
 - Construction sequence
 - Troubleshooting

- HMA Patching
 - Overview of HMA pothole repair
 - Applications
 - Cold mix vs. hot mix
 - Construction sequence

- PCC Full-Depth Repair/Slab Replacement
 - Overview of PCC full-depth repair/slab replacement
 - Applications
 - Design
 - Material selection
 - Construction sequence
 - Troubleshooting

- PCC Slab Stabilization and Slab Jacking
 - Overview of PCC slab stabilization and slab jacking
 - Applications
 - Materials
 - Treatment Selection Workshop

- Improving HMA Overlay Performance
 - Overlay design concepts
 - Typical overlay performance
 - Pre-overlay repairs
 - Reflection cracking control

- Improving PCC Overlay Performance
 - PCC overlay types
 - Overlay design concepts
 - PCC overlay performance

- HMA Surface Treatments
 - Fog and sand seals
 - Surface rejuvenators
 - Slurry seals and micro-surfacing

3. Workshop participation

3.1 The pavement workshop is tailored to instruct airport maintenance staff, facilities managers, and engineering, and other technical staff responsible for the specification, design, construction, or inspection of airfield pavement M&R treatments.

4. Conclusion

4.1 A given pavement condition has a direct impact on the financial and operational capabilities of an airport. Airport authorities must therefore invest a large amount of time, training, and effort to making sure their pavements are in sound condition. Proper pavement care and maintenance ensures that the airport infrastructure can meet current and future demands of aviation activity. The ability of an airport authority to perform these maintenance and rehabilitation actions in a cost-effective manner is especially critical during these lean economic times. The FAA has a strong commitment to helping the Caribbean airport community and other GREPECAS Member States. The completed pavement maintenance and rehabilitation training workshops have proven to be very helpful to the region.

4.2 Organizations interested in organizing, funding, or participating in future pavement workshops are encouraged to contact the FAA for further information.