Office of Airport Safety and Standards

Airport Lighting Program

Federal Aviation Administration

To: Illuminating Engineering Society
Aviation Lighting Committee
Government Contacts Subcommittee

By: Michael O'Donnell, Director
Office of Airport Safety and Standards

Date: April 19, 2011
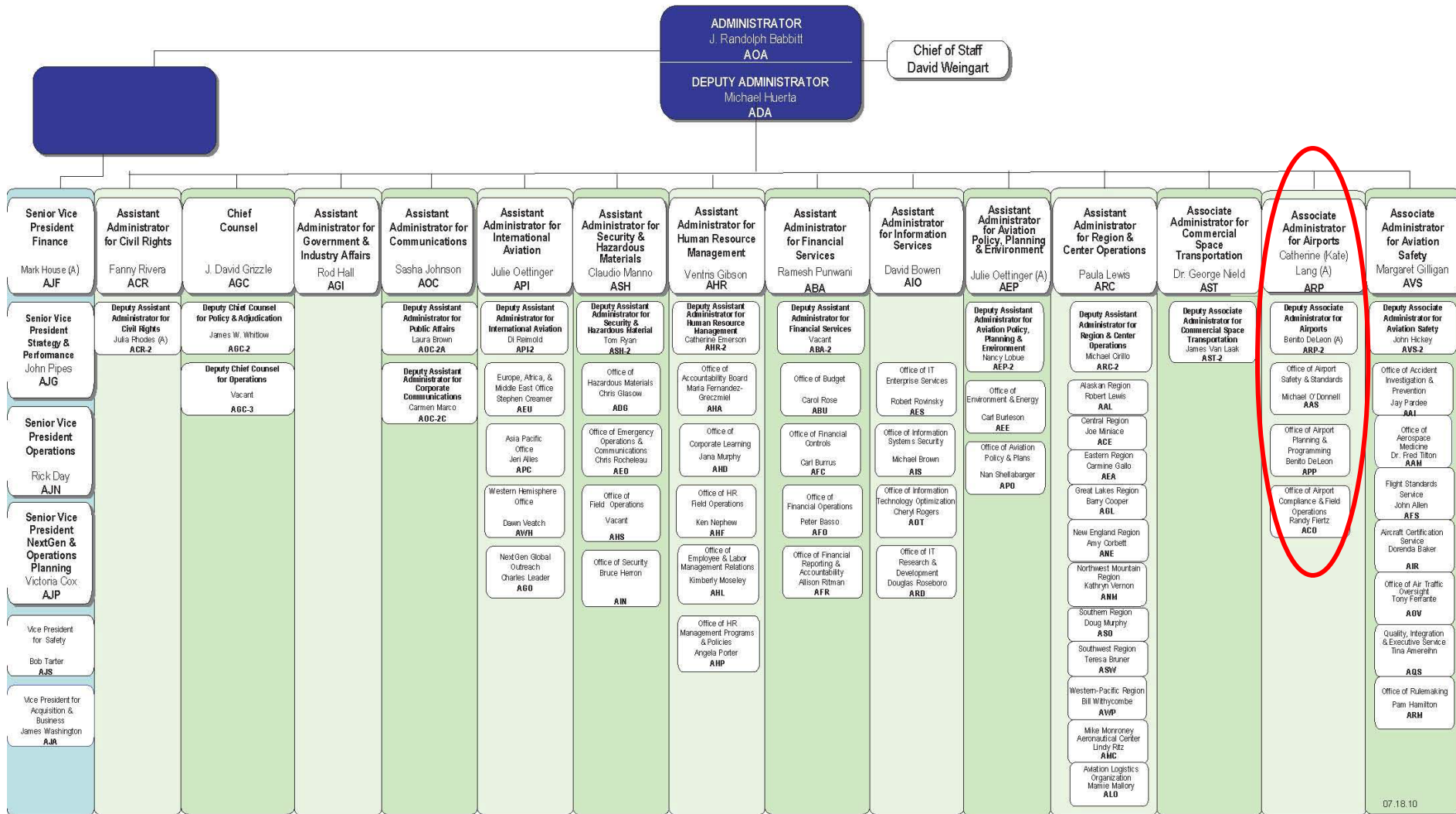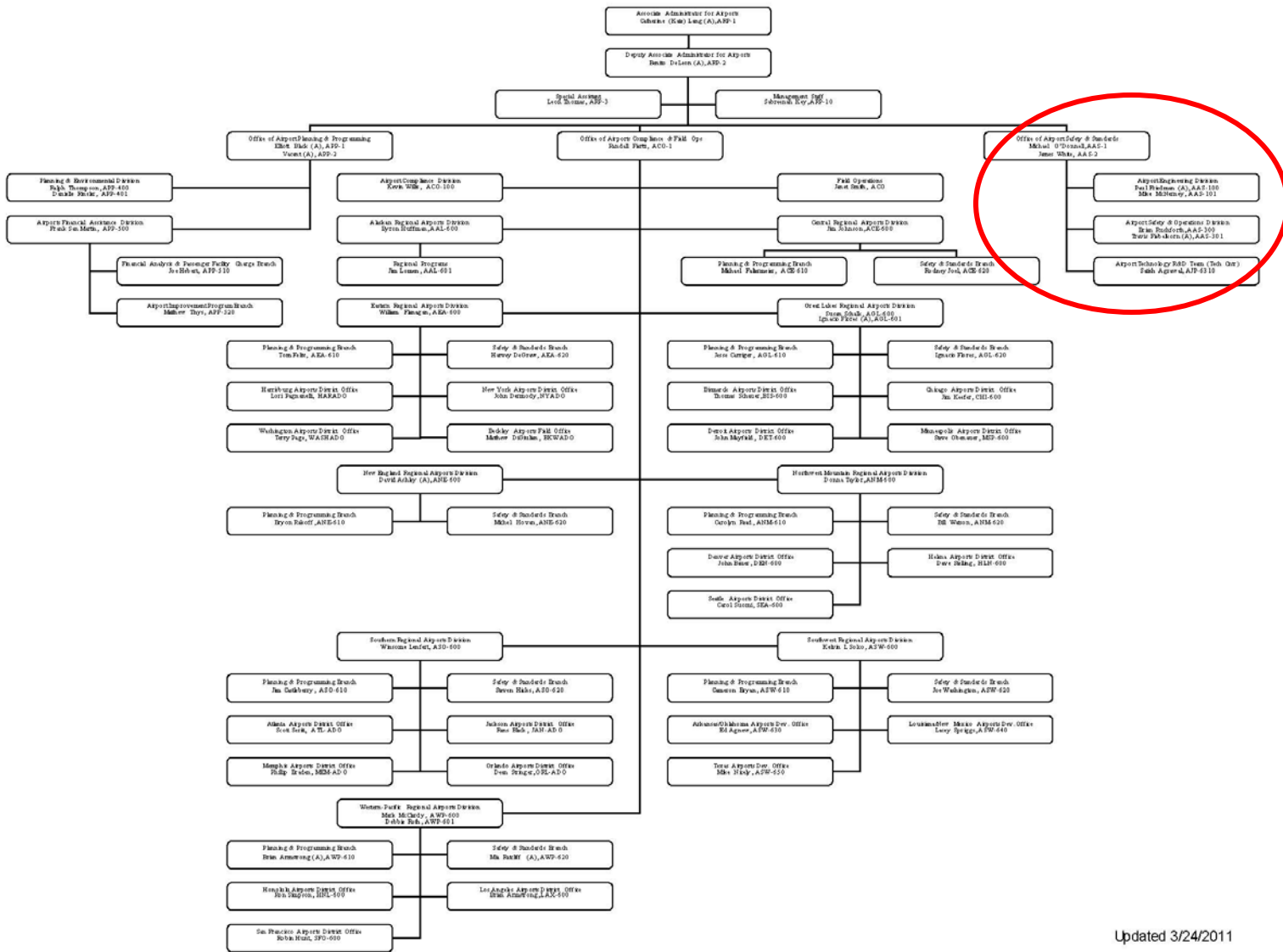Washington, DC

Overview

- **FAA / ARP Organization**

- **ARP / AAS Functions**

- **R&D Program**
  - New Airport Lighting Technologies

- **Runway Status Lights (RWSL) Program**

- **Recent AAS Publications**

- **Current AAS Lighting Issues**

- **Future AAS Plans / Publications**

FAA Organizational Chart

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Office of the Associate Administrator for Airports

Updated 3/24/2011

The Office of Airports (ARP)

- **ARP Functions:**
  - Planning and Programming
  - Financial Assistance
  - Safety and Standards

- **Office of Airport Safety and Standards (AAS)**
  - Airport Engineering
  - Operational Safety and Inspections

AAS Activities

- **Standards and Guidance**
  - Advisory Circulars (ACs) / Engineering Briefs (EBs) / CertAlerts

- **Engineering Standards**
  - Airport/Heliport/Seaplane Base Design and Construction
  - Pavement Design and Management
  - Lighting, Marking, and Signs
  - New Technology / Research & Development (R&D)
  - Airports Geographic Information Systems (GIS)

- **Safety and Operations**
  - Part 139 Certification Program
  - Aircraft Rescue and Fire Fighting
  - Wildlife Hazard Mitigation

Airports Research & Development (R&D) Program

- **Internal**
  - FAA WJH Technical Center

- **External**
  - Airport Cooperative Research Program (ACRP)

- **Purpose of research**
  - Support FAA goals of improving airport, safety, capacity, efficiency, and environment
  - Research leads to new or updated advisory circulars, engineering specifications, or guidance
  - Airports accepting AIP funds required to use FAA advisory circulars and specifications.

Airport Lighting
Enhanced Taxiway Center Lights

Old Standard

Alternating Yellow and Green

New Standard

A principle change in AC 150/5340-30B, *Design and Installation Details for Airport Visual Aids*, August 2006.

http://www.faa.gov/airports_airtraffic/airports/resources/advisory_circulars/

Airport Lighting

LED Threshold Lighting

Standard Incandescent

LED Version
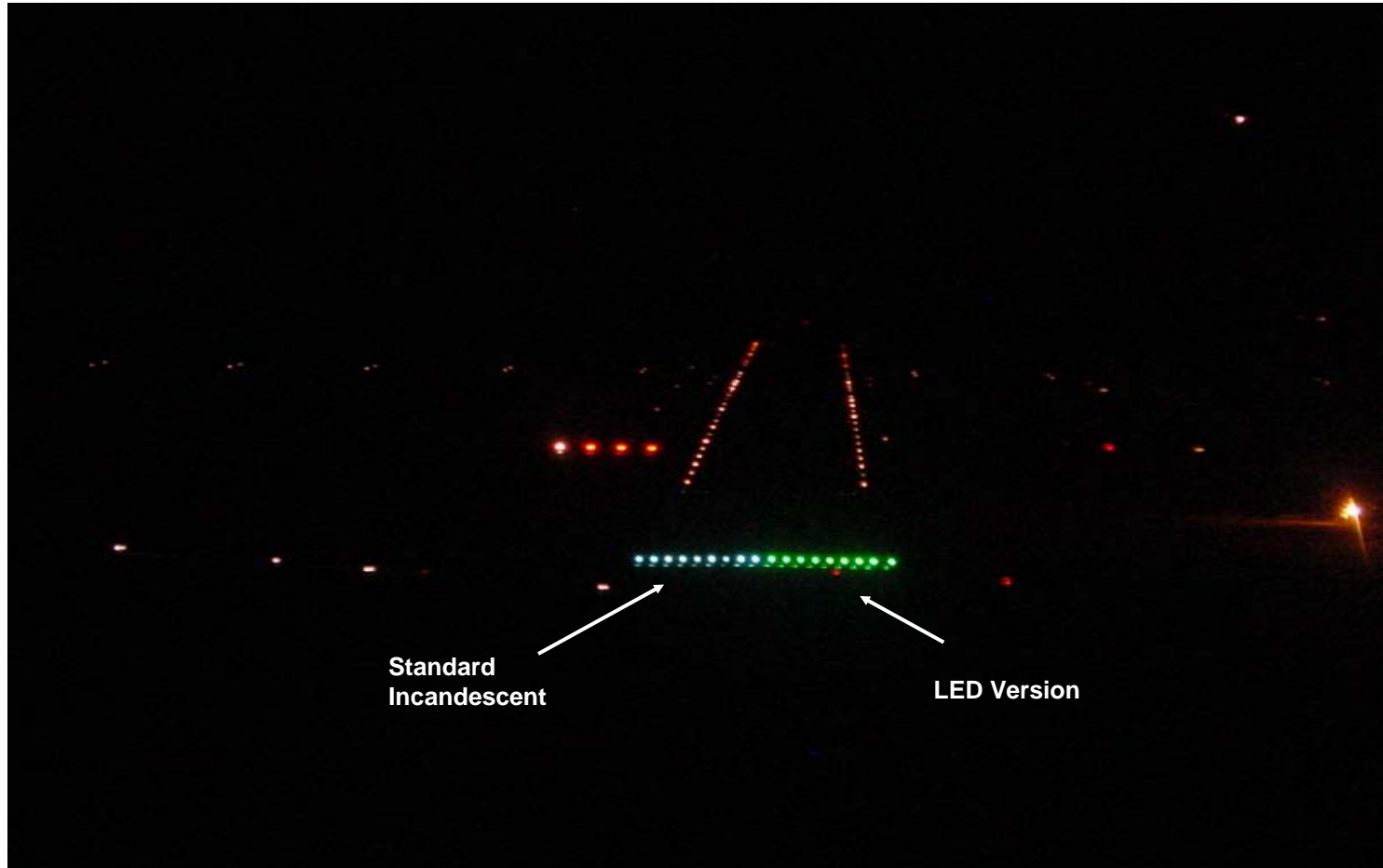
Airport Lighting

Remote Airfield Lighting

Retro-Reflective panels

Runway Status Lights (RWSL) Program
Purpose and Goals

- Support FAA's Flight Plan goal to "Increase safety":
  - Objective: Reduce the risk of runway incursions
  - Continue developing, testing, evaluating, and deploying test systems at four designated airports

- Part of FAA's Response to NTSB Recommendation A-00-66:
  - "Require, at all airports with scheduled passenger service, a ground movement safety system that will prevent runway incursions; the system should provide a direct warning capability to flight crews. In addition, demonstrate through computer simulations or other means that the system will, in fact, prevent incursions".

Runway Status Lights (RWSL) Program
Components

1. Runway Entrance Lights (RELs)

2. Takeoff Hold Lights (THLs)

3. Runway Intersection Lights (RILs)

4. Enhanced Final Approach Runway Occupancy Signal (eFAROS)

Runway Status Lights (RWSL) Program
Components

Runway Entrance Lights (RELs)

- **Message: High speed traffic on runway**

- **Flight and ground crew actions: Do not cross hold line or enter or cross runway**

Takeoff Hold Lights (THLs)

- **Message: Traffic on the runway**

- **Fightcrew Action: Do not takeoff!**

Runway Status Lights (RWSL) Program
Components

Runway Intersection Lights (RILs)

- **Message: Traffic on the runway**
- **Fightcrew Action: Do not takeoff!**

Enhanced Final Approach Runway Occupancy Signal (eFAROS)

- **Message: Flashing PAPI for traffic on the runway**
- **Flightcrew Action: Increase runway scan and prepare for go-around!**

Runway Status Lights (RWSL) Program
Future Plans

- **FAA's RWSL R&D Program:**
  - RWSL systems installed and operational at four airports:
    - DFW: RELs, THLs, eFAROS (starting April/May 2011)
    - SAN: RELs only
    - LAX: RELs, THLs
    - BOS: RELs, THLs, RILs

- **FAA's implementation program:**
  - 23 U.S. OEP airports.
  - Only REL and THL installations funded at this time
  - First site commissioning 2011
  - eFAROS implementations start CY-2011

Recently Published Advisory Circulars (ACs) and Engineering Briefs (EBs)

- 5340-18F, Standards for Airport Sign Systems (08/16/10)

- 5345-44J, Specification for Runway and Taxiway Signs (09/29/10)

- 5340-30E, Design and Installation Details for Airport Visual Aids (09/29/10)

- 5345-53C Airport Lighting Equipment Certification Program

- 5345-12F, Specification for Airport and Heliport Beacons (9/24/10)

- 5345-51B, Specification for Discharge-Type Flashing Light Equipment (09/08/10)

- EB 67C, Light Sources Other than Incandescent and Xenon for Airport and Obstruction Lighting Fixtures (1/7/2011)

Current Lighting Issues and Plans

- **Solar powered airfield lighting**
  - Evaluating the technology
  - Plan: Publication of "Technical Guidance for Evaluating Selected Solar Technologies on Airports" in Nov. 2010.

- **LED specifications**
  - Compatibility with legacy infrastructure?
  - Plan: EB67C update

- **LED procurement**
  - AIP Applicability?
  - Plan: ARP development of life-cycle cost evaluation guidance.

- **LED and EFVS/NVG compatibility**
  - Reports of pilot confusion
  - Plan: R&D project to study issues.

Future Lighting ACs and EBs – Currently in Development

Advisory Circulars:

- **5340-30F, Design and Installation Details for Airport Visual Aids**
  - Will be out for public comment soon
  - Revision will incorporate NTSB recommendations
- **5345-28G, PAPI Systems,**
  - Released for public comment on 2/16
  - Revision applied various EB-67 criteria
- **5345-39C, Specification L-853, Runway and Taxiway Retroreflective Markers**
  - Released for public comment on 3/21
- **5345-47B, Isolation Transformers for Airport Lighting Systems**
  - Released for public comment on 4/5
- **5345-56B, Airport Lighting Control and Monitoring System (ALCMS)**
  - Released for public comment on 3/29
  - Revision incorporates NTSB recommendations

Engineering Briefs:

- **EB-84 for ALCMS Security (Draft)**
- **EB-85 for Snow Plow Rings (Draft)**
- **EB-86 L-824 Electrical Power Cable (Draft)**

Thank You

Please visit:

http://www.faa.gov/ airports/

For more information