

Office of Airport Safety and Standards Update

To: IESALC

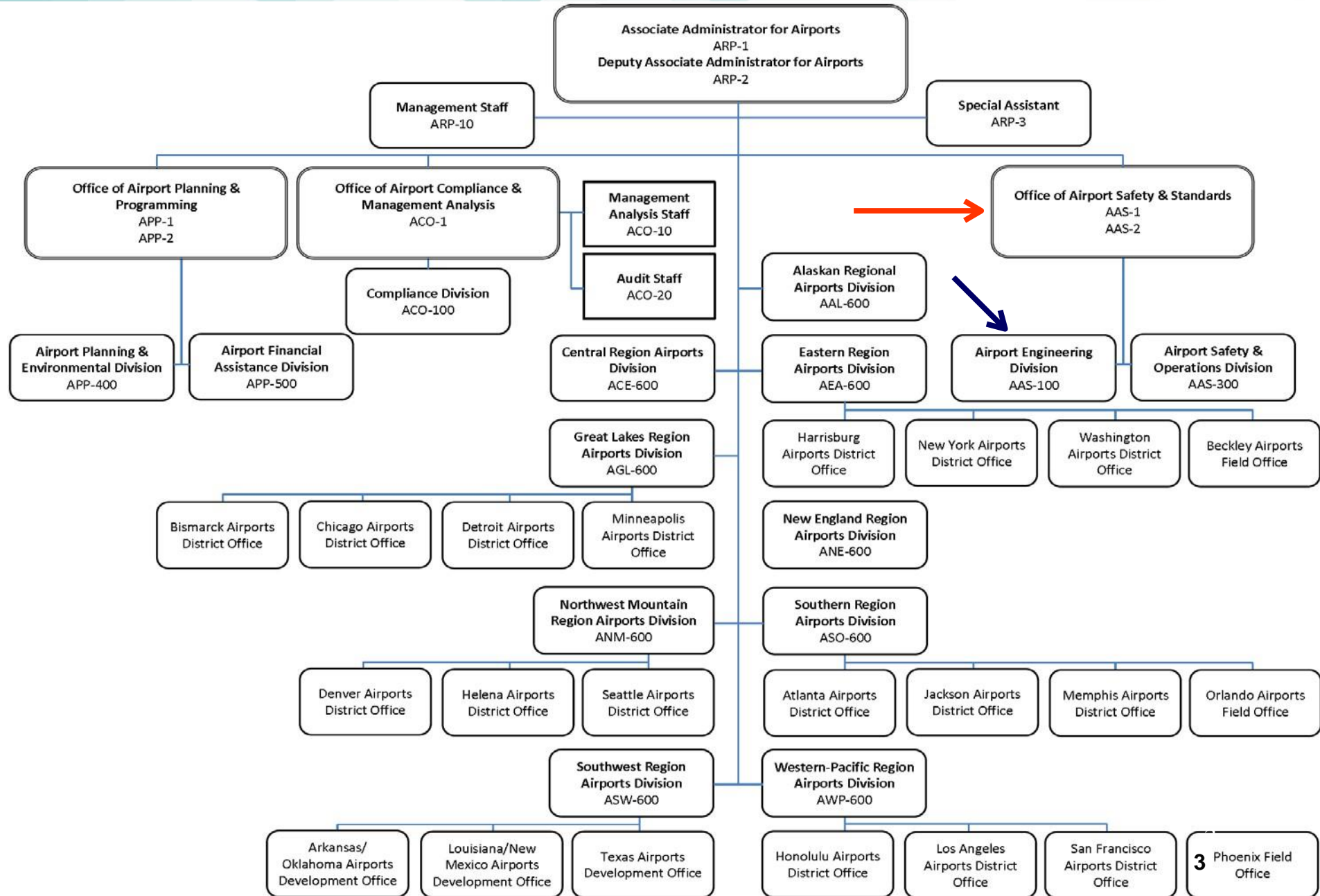
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FAA
Office of Airports

FAA OFFICE OF THE ASSOCIATE ADMINISTRATOR FOR AIRPORTS



Airport Engineering Division

- **Maintain over 80 of the airport series (150/5xxx) advisory circulars**
 - Standards for airport design, safety, construction, equipment, airfield lighting, signage and marking, and airfield pavements that are required for projects using AIP funds
 - Global leadership in international standards through ICAO
 - Maintain engineering briefs for additional guidance for airport projects.
 - Approves requests for modification of design or construction standards for individual projects.

AC 150/5345-43J, Specification for Obstruction Lighting Equipment



U.S. Department
of Transportation
Federal Aviation
Administration

Advisory Circular

Subject: Specification for Obstruction
Lighting Equipment

Date: Draft
Initiated By: AAS-100

AC No: 150/5345-43J
Change:

1 **Purpose.**

This advisory circular (AC) contains the Federal Aviation Administration (FAA) specification for obstruction lighting equipment.

2 **Effective Date.**

Effective 12 months after the date of this circular, only that equipment qualified per this specification will be listed in AC 150/5345-53, *Airport Lighting Equipment Certification Program*. No re-testing will be required for existing equipment where test standards are unchanged from the previous version of this AC.

3 **Cancellation.**

This AC cancels AC 150/5345-43H, *Specification for Obstruction Lighting Equipment*, dated September 28, 2016.

4 **Application.**

The Federal Aviation Administration recommends the guidance and specifications in this advisory circular for obstruction lighting equipment. In general, use of this AC is not mandatory. However, the use of the specifications in this AC is mandatory for lighting or projects funded under the Airport Improvement Program (AIP) or with revenue from the Passenger Facility Charges (PFC) program. All lighting designs contained in this AC are acceptable to the Administrator to meet the lighting requirements under Title 14 § 139.311, *Marking, Signs and Lighting*.

- *Published March 13th, 2019*
- *The effective date is extended by six months to September 11th, 2020*
- Adds infrared specifications for Aviation Obstruction Light Compatibility with Night Vision Goggles (NVGs) per Engineering Brief 98 to allow infrared emitters to be included in LED obstruction lighting fixtures.
- The specifications for the IR emitters support the operational requirement for LED-lit obstruction lights to be visible to operators in AC 7460-1 “Obstruction Marking and Lighting”.

Optional Monitoring:

1. If the IR emitter fails, the visible light is de-energized, and an alarm signal must be generated to provide an indication of the failure, (coupled).

OR

2. If the IR emitter fails, the visible light remains energized. The IR emitter is independently monitored in accordance with the monitoring requirements for FLASH/FAIL status of L-864, L-810 and L-885 visible light units. An alarm signal must be generated to provide an indication of the failure, (de-coupled).

Infrared Specifications for red LED Obstruction Lights

IR Wavelength (nominal)	Applicability	IR Vertical Beam Width	IR Radiant Intensity
800-900 nm	L-810 (L)	$\geq 10^{\circ}$ ¹	Minimum: 4 mW/sr
	L-864 (L) and L-885 (L)	$\geq 3^{\circ}$	Minimum: 246 mW/sr

FAA AIRPORT LIGHTING EQUIPMENT CERTIFICATION PROGRAM (ALECP)

AC 150/5345-53D

- Established January 1990.
- Under the ALECP, the FAA has established a list of accepted certification bodies (3rd party certifiers)
- Manufacturer submits certification request to the 3rd party certifiers; they in turn evaluate and certify airport lighting equipment against our AC's.
- Certificate is then issued and the product is listed and maintained in AC 150/5345-53D Addendum. This list is provided to assist airport sponsors to determine that equipment has met the applicable FAA specifications.

LED Research Efforts

- Compatibility of LED-lit Obstruction lights with Night Vision Goggles
 - Conducted research to determine performance specifications for IR emitters.
 - Issued Engineering Brief #98,
 - Obstruction Lighting Equipment specifications Advisory Circular (AC 150/5345-43J) was published March 2019, incorporating the performance specifications in Engineering Brief #98
- Loss of sight of LED airport lighting
 - Conducted omnidirectional measurements of existing high and medium intensity runway edge lights.
 - A technical report was issued July 2017, detailing the test results
- Airfield Lighting Infrastructure for LEDs
 - Conduct research to develop an alternative airfield electrical infrastructure to support the operation of LEDs.

Recently Published Advisory Circulars

- AC 150/5345-28, Precision Approach Path Indicator (PAPI) Systems