



# Federal Aviation Administration

## National Part 139 CertAlert

**\*\*Advisory\*\*Cautionary\*\*Non-Directive\*\*Advisory\*\*Cautionary\*\*Non-Directive\*\*Advisory\*\*Cautionary\*\*Non-Directive\*\***

**Date:** June 25, 2014 **No. 14-03**

**To:** Airport Operators, FAA Airport Certification Safety Inspectors (ACSIIs)

**Subject:** Preventive Maintenance of In-Pavement Lighting Systems

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- 1. Purpose.** This CertAlert informs airport operators of a recent incident in which a departing air carrier aircraft dislodged an in-pavement runway light fixture, causing significant damage to the aircraft. It reminds them to properly maintain lighting systems as required by 14 Code of Federal Regulations part 139.311(d). This section states, "Each certificate holder must properly maintain each marking, sign, or lighting system installed on the airport." Airports comply with this requirement through routine inspections and by applying a detailed preventive maintenance program.
- 2. Background.** In recent incidents, physical damage to an aircraft resulted from the failure of in-pavement runway light fixtures. Lapses in maintenance programs for these in-pavement fixtures may have played a role. These incidents highlight the importance of preventive maintenance programs, associated checks, and inspection procedures. Such surveillance is particularly important with in-pavement lighting systems because they are subjected to physical stress caused by moving aircraft and require additional maintenance, especially in touchdown zones and on busier runways.
- 3. Recommendations.**
  - a. The current version of [Advisory Circular \(AC\) 150/5340-26, Maintenance of Airport Visual Aid Facilities](#), provides specific guidelines for maintenance of airport visual aid systems. This AC discusses maintenance procedures for in-pavement lighting systems and provides guidelines and a schedule of periodic checks. It is important that maintenance personnel review the schedule of periodic checks, including the need to periodically check bolts used to install in-pavement lights and torque them to the required standard. Other specific recommendations found in the AC include the following:

- i. Torque bolts used with in-pavement lights per the manufacturer's recommendations. Always use a calibrated torque wrench. Never use an impact driver because this could cause over-torque of the bolts. Installed bolts require periodic checks to ensure they remain at the required torque.
  - ii. Always use a two-part locking washer assembly with in-pavement light fixtures.
  - iii. Always use new bolts and washer assemblies. Never reuse bolts.
  - iv. Never leave a fixture with a bolt missing. Missing bolts place additional stress on the fixture as well as the remaining bolts.
  - v. When maintenance other than simple cleaning is required, removal of the light fixture and replacement with a refurbished unit is necessary. Although AC 150/5340-26 offers a recommended schedule for periodic checks, they should be tailored to the facility based on local conditions such as environmental issues and runway traffic load.
- b. Airport operators should review the requirements in AC 150/5340-26, as well as the maintenance recommendations found in the current version of [AC 150/5340-30, Design and Installation Details for Airport Visual Aids](#), Chapter 12, that discuss the unique requirements associated with the maintenance of 'load-bearing lighting fixtures' such as in-pavement centerline or touchdown-zone lighting.
  - c. [Engineering Brief \(EB\) 83, In-Pavement Light Fixture Bolts](#), offers guidance and information to be used when installing stainless steel hardware to secure in-pavement light fixtures. It also offers guidance on the use of anti-seize compound with stainless steel bolts and the use of ceramic-metallic coated bolts in lieu of stainless steel. Operators should be aware of EB 83 when selecting materials such as bolts and installing light systems.
  - d. In addition to conducting the required maintenance, airport operators must also ensure these maintenance activities are properly documented. If you are responsible for a Part 139 certificated airport and have any questions about documentation requirements, contact your assigned Airport Certification Safety Inspector.



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