

Cargo Compartment Smoke Detector Certification



International Aircraft Systems Fire Protection
Working Group.
Toulouse, France

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Federal Aviation
Administration





Technical Standard Order

Subject: Cargo Compartment Fire Detection Instruments

1. **PURPOSE.** This technical standard order (TSO) is for manufacturers applying for a TSO authorization (TSOA) or letter of design approval (LODA). In it, we (the Federal Aviation Administration, FAA) tell you what minimum performance standards (MPS) your Cargo Compartment Fire Detection Instruments must first meet for approval and identification with the applicable TSO marking.

2. **APPLICABILITY.** This TSO affects new applications submitted after its effective date.

a. TSO-C1d will remain effective until February 19, 2016. After this date, we will no longer accept applications for TSO-C1d.

b. A Cargo Compartment Fire Detection Instrument approved under a previous TSOA may still be manufactured under the provisions of its original approval.

c. Major design changes to Cargo Compartment Fire Detection Instruments approved under this TSO will require a new authorization. See Title 14 of Code of Federal Regulations (14 CFR) § 21.619(b).

3. **REQUIREMENTS.** ~~New models of Cargo Compartment Fire Detection Instruments identified and manufactured on or after the effective date of this TSO must meet the MPS qualification and documentation requirements in SAE, Inc., Aerospace Standard (AS) Document No. AS8036 "Cargo Compartment Fire Detection Instruments," Revision A, dated December 17, 2013 except for paragraphs 4.9, 4.10 and 4.11.~~

a. **Functionality.** ~~This TSO standard applies to equipment intended to provide protection by fire detection in aircraft cargo compartments, galleys, electronic equipment bays, and other similar installations.~~

b. **Failure Condition Classifications.** There is no standard minimum failure condition classification for this TSO. The failure condition classification appropriate for



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AEROSPACE STANDARD

AS8036

**REV.
A**

Issued 1985-04
Revised 2013-3-5

Superseding AS8036

Cargo Compartment Fire Detection Instruments

New False Alarm Rejection Criteria.

- **Dust**
- **Insecticide**
- **Ambient Light (Dazzle)**
- **Combined Temperature, Pressure, and Humidity Cycling**



Problem

Theatrical smoke generators traditionally used during cargo compartment inflight certification testing produce vaporized liquid droplets that are similar to the false alarm test conditions of insecticide and condensation.

Detectors designed to not respond to the false alarm conditions may also not respond to theatrical smoke.

A new “smoke” source is needed for certification testing.

The FAA Transport Airplane Directorate has requested that the Fire Safety Branch explore alternate certification test methods.

Is a task group on this issue desired by the IASFPWG?

Please respond to Dave Blake or April Horner

