



**Date:** 5/12/89

# Technical Standard Order

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**Subject: TSO-C30c, AIRCRAFT POSITION LIGHTS**

a. Applicability

(1) Minimum Performance Standard. This technical standard order (TSO) prescribes the minimum performance standards that aircraft position lights must meet in order to be identified with the applicable TSO marking. New models of aircraft position lights that are to be so identified and that are manufactured on or after the date of this TSO must meet the minimum performance standard of the Society of Automotive Engineers, Inc. (SAE), Aerospace Standard (AS) 8037, "Minimum Performance Standard for Aircraft Position Lights," dated January 1986.

(2) Environmental Standard. SAE AS 8037 incorporates as a reference RTCA Document No. DO-160B, "Environmental Conditions and Test Procedures for Airborne Equipment," dated July 1984.

(3) Additions. In addition to paragraph 3, General Standards, of AS 8037, all materials used must be self-extinguishing when tested in accordance with applicable requirements of Section 1359(d) and Part 25, Appendix F of the Federal Aviation Regulations (FAR) effective May 1, 1972.

b. Marking.

(1) In addition to the marking specified in FAR Section 21.607(d), the following information shall be legibly and permanently marked on the major equipment component.

(i) Type I, II, or III (ref. SAE AS 8037)

(ii) Nominal power input rating.

(2) The equipment must be permanently and legibly marked with at least the name of the manufacturer, the TSO number, and part number.

c. Data Requirements.

(1) In addition to the requirements of FAR Section 21.605, the manufacturer must furnish the Manager, Aircraft Certification Office (ACO), Federal Aviation Administration, having purview of the manufacturer's facilities, one copy each of the following technical data:

- (i) Operating instructions.
- (ii) Equipment limitations.
- (iii) Installation procedures and limitations.
- (iv) Schematic drawings as applicable to the installations procedures.
- (v) Wiring diagrams as applicable to the installation procedures.
- (vi) Specifications.
- (vii) List of the major components (by part number) that make up the equipment system complying with the standards prescribed in this TSO.
- (viii) An environmental qualification form as described in RTCA Document No. DO-160B.
- (ix) Manufacturer's TSO qualification test report.
- (x) Nameplate drawing.

(2) In addition, to those data requirements that are to be furnished directly to the FAA, each manufacturer must have available for review by the Manager, ACO having purview of the manufacturer's facilities, the following technical data:

- (i) A drawing list, enumerating all of the drawings and processes that are necessary to define the articles design.
- (ii) The functional test specification to be used to test each production article to ensure compliance with this TSO.
- (iii) Equipment calibration procedures.
- (iv) Corrective maintenance procedures (within 12 months after TSO authorization).
- (v) Schematic drawings.
- (vi) Wiring diagrams.

d. Data to be furnished with manufactured units. One copy of the data and information

specified in paragraphs (c)(l)(i) through (viii) of this TSO, and instructions for periodic maintenance and calibration which are necessary for continued airworthiness must go to each person receiving for use one or more articles manufactured under this TSO.

e. Color and Intensity specifications. The chromaticity coordinates contained in AS 8037, paragraph 3.3.1 for aviation red, green, and white provide an equivalent level of safety to those specified in Section .1397 of FAR Parts 23, 25, 27, and 29. For national and international standardization these coordinates have been made identical to the existing International Civil Aviation Organization requirements. This also applies to specifying intensity in terms of “candles” in AS 8037 as opposed to “candles” in Sections .1391 and .1395 of FAR Parts 23, 25, 27, and 29. In practical application all existing aircraft position light installations meet both the TSO and FAR requirements.

f. Availability of Reference Documents.

(1) Copies of SAE AS 8037 may be purchased from the Society of Automotive Engineers, Inc., Department 331, 400 Commonwealth Drive, Warrendale, Pennsylvania 15096.

(2) Copies of RTCA Document No. DO-160B may be purchased from the Radio Technical Commission for Aeronautics Secretariat, One McPherson Square, Suite 500, 1425 K Street, NW., Washington, D.C. 20005.

(3) Federal Aviation Regulations 21, Subpart O, and Advisory Circular 20-110E, “Index of Aviation Technical Standard Orders,” may be reviewed at the FAA Headquarters in the Office of Airworthiness, Aircraft Engineering Division, (AIR-120), and at all regional ACO’s.

/S/ Thomas E. McSweeney  
Acting Director, Aircraft  
Certification Service



# Technical Standard Order

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**Subject: TSO-C96a, ANTICOLLISION LIGHT SYSTEMS**

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a. Applicability.

(1) Minimum Performance Standard. This technical standard order (TSO) prescribes the minimum performance standards that anticollision light systems must meet in order to be identified with the applicable TSO marking. Anticollision light systems that are to be so identified and that are manufactured on or after the date of this TSO must meet the minimum performance standard of the Society of Automotive Engineers Inc. (SAE), Aerospace Standard (AS) 8017A, "Minimum Performance Standard for Anticollision Light Systems," dated January 30, 1986.

(2) Environmental Standard. SAE AS 8017A incorporates as a reference RTCA Document No. DO-160B, "Environmental Conditions and Test Procedures for Airborne Equipment," dated July 1984.

(3) Additions. In addition to paragraph 3, General Standard, of AS 8017A, all materials used must be self-extinguishing when tested in accordance with applicable requirements of section 1359(d) and Part 25, Appendix F of the Federal Aviation Regulations (FAR) effective May 1, 1972.

b. Marking.

(1) In addition to the marking specified in FAR Section 21.607(d), the following information shall be legibly and permanently marked on the major equipment components:

(i) Class I, II, or III (ref. SAE AS 8017A).

(ii) Nominal power input rating.

(2) Each separate component of equipment that is manufactured under this TSO (e.g., remote power supply) must be permanently and legibly marked with at least the name of the manufacturer, the TSO number, and part number.

c. Data Requirements.

(1) In addition to the requirements of FAR section 21.605, the manufacturer must furnish the Manager, Aircraft Certification Office (ACO), Federal Aviation Administration, having purview of the manufacturer's facilities, one copy each of the following technical data:

- (i) Operating instructions.
- (ii) Equipment limitations.
- (iii) Installation procedures and limitations.
- (iv) Schematic drawings as applicable to the installation procedures.
- (v) Wiring diagrams as applicable to the installation procedures.
- (vi) Specifications.
- (vii) List of the major components (by part number) that make up the equipment complying with the standards prescribed in this TSO.
- (viii) An environmental qualification form as described in RTCA Document DO-160B.
- (ix) Manufacturer's TSO qualification test report.
- (x) Nameplate drawing.

(2) In addition to those data requirements that are to be furnished directly to the FAA, each manufacturer must have available for review by the Manager, ACO having purview of the manufacturer's facilities, the following technical data:

- (i) A drawing list, enumerating all of the drawings and processes that are necessary to define the article's design.
- (ii) The functional test specification to be used to test each production article to ensure compliance with this TSO.
- (iii) Equipment calibration procedures.
- (iv) Corrective maintenance procedures (within 12 months after TSO authorization).

(v) Schematic drawings.

(vi) Wiring diagrams.

d. Data to be furnished with manufactured units. One copy of the data and information specified in paragraphs c(l)(i) through (viii) of this TSO, and instructions for periodic maintenance and calibration which are necessary for continued airworthiness must go to each person receiving for use one or more articles manufactured under this TSO.

e. Color and Intensity Specifications. The chromaticity coordinates contained in AS 8017A, paragraph 3.4.1 for aviation red and paragraph 3.4.2 for aviation white provide an equivalent level of safety to those specified in section .1397 of FAR Parts 23, 25, 27, and 29. For national and international standardization these coordinates have been made identical to the existing International Civil Aviation Organization requirements. This also applies to specifying intensity in terms of “candelas” in AS 8017A as opposed to “candles” in sections .1407 of FAR Parts 23, 25, 27 and 29. In practical application all existing anticollision light installations meet both the TSO and FAR requirements.

f. Availability of Reference Documents.

(1) Copies of SAE AS 8017A may be purchased from the Society of Automotive Engineers Inc., Department 331, 400 Commonwealth Drive, Warrendale, Pennsylvania 15096.

(2) Copies of RTCA Documents No. DO-160B may be purchased from the Radio Technical Commission for Aeronautics Secretariat, One McPherson Square, Suite 500, 1425 K Street, NW., Washington, D.C. 20005.

(3) Federal Aviation Regulations Part 21, Subpart O, and Advisory Circular 20-110E, “Index of Aviation Technical Standard Orders,” may be reviewed at the FAA Headquarters in the Aircraft Certification Service, Aircraft Engineering Division (AIR-120), and at all regional ACO’s.

/S/ William J. Sullivan  
Acting Director, Aircraft  
Certification Service