Title 14—AERONAUTICS AND SPACE

Chapter I—Federal Aviation Administration, Department of Transportation

[Docket No. 9995; Amdt. 37-23]

PART 37—TECHNICAL STANDARD ORDER AUTHORIZATIONS

Airborne ILS Glide Slope Receiving Equipment TSO-C34C and Airborne ILS Localizer Receiving Equipment TSO-C36C

The purpose of this amendment to the Federal Aviation Regulations is to update the minimum performance standards for airborne ILS glide slope and localizer receiving equipment in §§ 37.160 and 37.161 of Part 37.

These amendments were proposed in Notice 69-52, issued December 3, 1969 (34 F.R. 19142). The comments received in response to Notice 69-52 were all favorable. However, a few comments suggested minor clarifying changes to the proposal. In addition, two commentators noted and Notice 69-52 stated that the minimum performance standards set forth herein are suitable only for equipment used on aircraft which operate under Category I or Category II minimums. These standards are not intended for ILS equipment that is to be used in aircraft operated under Category III minimums. Minimum performance standards have not yet been developed for this latter equipment. In response to another comment, the proposed amendments have been changed to make it clear that the performance requirements of the antenna must be met after the equipment has been exposed to the environmental tests.

Finally, the marking requirement has been revised to make it clear that all markings required in addition to those required under § 37.7 must also be "permanent and legible."

In consideration of the foregoing, §§ 37.160 and 37.161 of Part 37 of the Federal Aviation Regulations are amended effective October 15, 1970, as follows:

§ 37.160 Airborne ILS Glide Slope Receiving Equipment, TSO-C34c.

(a) *Applicability.* (1) This technical standard order prescribes the minimum performance standards that airborne ILS glide slope receiving equipment must meet in order to be identified with the applicable TSO marking. New models of equipment that are to be so identified, and that are manufactured on or after October 15, 1970, must meet the requirements of Radio Technical Commission for Aeronautics Document No. DO-132 entitled "Minimum Performance Standards—Airborne ILS Glide Slope Receiving Equipment" dated March 15, 1966, and Radio Technical Commission for Aeronautics Document No. DO-138 entitled "Environmental Conditions and Test Procedures for Airborne Electronic/Electrical Equipment and Instruments" dated June 27, 1968, except as provided in subparagraph (2) of this paragraph. RTCA Documents Nos. DO-132 and DO-138 are incorporated herein in accordance with 5 U.S.C. 552(a)(1) and § 37.23, and are available as indicated in § 37.23. Additionally, RTCA Documents Nos. DO-132 and DO-138 may be examined at any FAA regional office of the Chief of Engineering and Manufacturing Branch (or in the case of the Western Region, the Chief, Aircraft Engineering Division), and may be obtained from the RTCA Secretariate, Suite 655, 1717 H Street NW., Washington, D.C. 20006, at a cost of $2.50 per copy for Document No. DO-132 and $4 per copy for Document No. DO-138.

(2) *Exceptions.* (i) RTCA Paper DO-108 referenced in RTCA Document DO-132 has been superseded by RTCA Document DO-138. Therefore, the environmental test conditions of RTCA Document DO-138 are applicable to equipment under this TSO.

(ii) RTCA Document DO-138 lists environmental test conditions covering equipment subjected to water, hydraulic fluid, sand and dust, fungus and salt spray, for which there are no corresponding equipment performance requirements in RTCA Document DO-132. Therefore, if the applicant elects to certify compliance with any of the aforementioned environmental test conditions, the equipment performance requirements of paragraphs 2.1a, 2.7, and 2.16 of RTCA Document DO-132 must be met after the equipment has been exposed to those test conditions.

(b) *Marking.* In addition to the markings specified in § 37.7, the article must be permanently and legibly marked with the following information:

(1) The environmental extremes over which the article has been designed to operate. There are 12 environmental test procedures outlined in RTCA Document DO-138 which have categories established. These must be identified on the nameplate by the words, "Environmental Categories" or, as abbreviated, "Env. Cat.", followed by 12 letters which identify the categories designated. Reading from left to right, the category designations must appear on the nameplate in the following order, so that they may be readily identified:

(i) Temperature—altitude category;
(ii) Humidity category;
(iii) Vibration category;
(iv) Audiofrequency magnetic field susceptibility category;
(v) Radiofrequency susceptibility category;
(vi) Emission of spurious radiofrequency energy category;
(vii) Explosion category;
(viii) Water proofness category;
(ix) Hydraulic fluid category;
(x) Sand and dust category;
(xi) Fungus resistance category; and
(xii) Salt spray category.

(2) The article must be marked to indicate the class of centering accuracy (Class A, B, C, or D) for which it has been designed to operate.

(3) Each separate component of the article (antenna, receiver, indicators, etc.) must be identified with at least the name of the manufacturer, the TSO number, and the environmental categories over which the article component is designed to operate. Where an environmental test procedure is not applicable to that component and the test is not conducted, an X should be placed in the space assigned for that category.

(4) Where a manufacturer desires to substantiate his article in dual categories for a specific environmental test procedure, the nameplate must be marked with both categories in the space designated for that category, by placing one letter above the other. A typical nameplate identification would be as follows:

Env. Cat. $\frac{A}{B}$AJAAAXWHDFS Class A

(c) *Data requirements.* In accordance with § 37.5, the manufacturer must furnish to the Chief, Engineering and Manufacturing Branch, Flight Standards Division (or in the case of the Western Region, the Chief, Aircraft Engineering Division), Federal Aviation Administration, in the region in which the manufacturer is located, the following technical data:

(1) One copy of the operating instructions and equipment limitations of the manufacturer.

(2) One copy of the installation procedures with applicable schematic drawings, wiring diagrams, and specifications, and a listing of components (by part number) or possible combinations thereof, which make up a system complying with this TSO. The procedures must show all limitations, restrictions, or other conditions pertinent to the installation.

(3) One copy of the manufacturer's

(As published in the Federal Register [35 F.R. 14446] on Sept. 15, 1970)

test report.

(d) *Previously approved equipment.* Airborne ILS glide slope receiving equipment approved prior to October 15, 1970, may continue to be manufactured under the provisions of its original approval.

§ 37.161 Airborne ILS localizer receiving equipment, TSO–C36c.

(a) *Applicability.* (1) This technical standard order prescribes the minimum performance standards that airborne ILS localizer receiving equipment must meet in order to be identified with the applicable TSO marking. New models of equipment that are to be so identified, and that are manufactured on or after October 15, 1970, must meet the requirements of Radio Technical Commission for Aeronautics Document No. DO–131 entitled "Minimum Performance Standards—Airborne ILS Localizer Receiving Equipment" dated December 15, 1965, and Radio Technical Commission for Aeronautics Document No. DO–138 entitled "Environmental Conditions and Test Procedures for Airborne Electronic/Electrical Equipment and Instruments" dated June 27, 1968, except as provided in subparagraph (2) of this paragraph. RTCA Documents Nos. DO–131 and DO–138 are incorporated herein in accordance with 5 U.S.C. 552(a)(1) and § 37.23, and are available as indicated in § 37.23. Additionally, RTCA Documents Nos. DO–131 and DO–138 may be examined at any FAA regional office of the Chief of Engineering and Manufacturing Branch (or in the case of the Western Region, the Chief, Aircraft Engineering Division) and may be obtained from the RTCA Secretariat, Suite 655, 1717 H Street NW., Washington, D.C. 20006, at a cost of $2.50 per copy for Document No. DO–131 and $4 per copy for Document No. DO–138.

(2) *Exceptions.* (i) RTCA Paper DO–108, referenced in RTCA Document DO–131 has been superseded by RTCA Document DO–138. Therefore, the environmental test conditions of RTCA Document DO–138 are applicable to equipment under this Technical Standard Order.

(ii) RTCA Document No. DO–138 lists environmental test conditions covering equipment subjected to water, hydraulic fluid, sand and dust, fungus and salt spray, for which there are no corresponding equipment performance requirements in RTCA Document DO–131. Therefore, if the applicant elects to certify compliance with any of the aforementioned environmental test conditions, the equipment performance requirements of paragraphs 2.1a, 2.7, and 2.20 of RTCA DO–131 must be met after the equipment has been exposed to these test conditions.

(b) *Marking.* In addition to the markings specified in § 37.7, the article must be permanently and legibly marked with the following information:

(1) The environmental extremes over which the article has been designed to operate. There are 12 environmental test procedures outlined in RTCA Document DO–138 which have categories established. These must be identified on the nameplate by the words, "Environmental Categories" or, as abbreviated, "Env. Cat.", followed by 12 letters which identify the categories designated. Reading from left to right the category designations must appear on the nameplate in the following order, so that they may be readily identified:

(i) Temperature-altitude category;
(ii) Humidity category;
(iii) Vibration category;
(iv) Audiofrequency magnetic field susceptibility category;
(v) Radiofrequency susceptibility category;
(vi) Emission of spurious radiofrequency energy category;
(vii) Explosion category;
(viii) Waterproofness category;
(ix) Hydraulic fluid category;
(x) Sand and dust category;
(xi) Fungus resistance category;
(xii) Salt spray category.

(2) The article must be marked to indicate the class of centering accuracy (Class A, B, C, or D) for which it has been designed to operate.

(3) Each separate component of the article (antenna, receiver, indicator, etc.) must be identified with at least the name of the manufacturer, the TSO number, and the environmental categories over which the article component is designed to operate. Where an environmental test procedure is not applicable to that component and the test is not conducted, an X should be placed in the space assigned for that category.

(4) Where a manufacturer desires to substantiate his article in dual categories for a specific environmental test procedure, the nameplate must be marked with both categories in the space designated for that category, by placing one letter above the other. A typical nameplate identification would be as follows:

Env. Cat. $^{A}_{D}$AJAAAXWHDFS Class A

(c) Data requirements. In accordance with § 37.5, the manufacturer must furnish to the Chief, Engineering and Manufacturing Branch, Flight Standards Division (or in the case of the Western Region, the Chief, Aircraft Engineering Division), Federal Aviation Administration, in the region in which the manufacturer is located, the following technical data:

(1) One copy of the operating instructions and equipment limitations of the manufacturer.

(2) One copy of the installation procedures with applicable schematic drawings, wiring diagrams, and specifications, and a listing of components (by part number) or possible combinations thereof, which make up a system complying with this TSO. The procedures must show all limitations, restrictions, or other conditions pertinent to the installation.

(3) One copy of the manufacturer's test report.

(d) Previously approved equipment. Airborne ILS localizer receiving equipment approved prior to October 15, 1970, may continue to be manufactured under the provisions of its original approval.

(Secs. 313(a) and 601, Federal Aviation Act of 1958, 49 U.S.C. 1354(a) and 1421, sec. 6(c) Department of Transportation Act, 49 U.S.C. 1655(c))

Issued in Washington, D.C., on September, 8, 1970.

R. S. SLIFF,
Acting Director,
Flight Standards Service.

Note: The incorporation by reference in this document was approved by the Director of the Federal Register on April 16, 1969.