

Advance copies pending  
issuance of revised pages  
of Parts 37 & 121

**Title 14—Aeronautics and Space**  
**CHAPTER I—FEDERAL AVIATION ADMINISTRATION, DEPARTMENT OF TRANSPORTATION**

[Docket No. 14564, Amdts. 37-38, 121-122]

**PART 37—TECHNICAL STANDARD ORDER AUTHORIZATIONS**

**PART 121—CERTIFICATION AND OPERATIONS: DOMESTIC, FLAG, AND SUPPLEMENTAL AIR CARRIERS AND COMMERCIAL OPERATORS OF LARGE AIRCRAFT**

**Ground Proximity Warning; Glide Slope Deviation Alerting System**

The purpose of these amendments to Parts 37 and 121 of the Federal Aviation Regulations is to revise the Technical Standard Order (TSO) contained in § 37.201 to provide standards for ground proximity warning-glide slope deviation alerting equipment and to require, under § 121.360, the installation of equipment meeting those standards in large turbine-powered airplanes used in operations under Parts 121, 123, or 135.

On April 10, 1975, the Federal Aviation Administration issued a notice of proposed rulemaking (Notice 75-16; 40 FR 17156) relating to glide slope deviation monitoring equipment. Based on the comments received in response to Notice 75-16 and on further review by the FAA, it was determined that a need existed for the installation of such equipment, but that the amendment proposed in Notice 75-16 should contain specific technical standards for the equipment. Therefore, on July 18, 1975, a supplemental notice of proposed rulemaking was issued (Notice 75-16A; 40 FR 30839) which proposed complete and comprehensive technical standards for ground proximity warning-glide slope deviation alerting systems. Moreover, since it was determined that the installation of equipment meeting the new technical standards could not be accomplished by the date originally proposed, new compliance dates were proposed in Notice 75-16A. Interested persons have been afforded an opportunity to participate in the making of these amendments, and due consideration has been given to all comments received in response to that notice. Except for minor editorial revisions and as specifically discussed hereinafter, these amendments and the reasons therefor are the same as those in Notice 75-16A.

Four commentators responded to Notice 75-16A and all were in basic agreement with the proposals contained therein. However, several substantive comments were received in response to Notice 75-16A, and the FAA's disposition of those comments is discussed below.

One commentator, an industry association, presented the views of two of

its members as well as several comments for the association as a whole. One of these members requested that §§ 121.360 (f) and (g) be revised to provide a single date by which systems meeting the standards of the revised TSO must be installed. Another member requested that the single date be January 1, 1977, in order that the envelope for the glide slope deviation alerting mode (Mode 5) of the TSO could be refined. On the other hand, another commentator expressed regret that the December 1, 1975, compliance date originally proposed in Notice 75-16 was changed. However, as indicated in Notice 75-16A, the change in compliance dates as well as the two separate compliance dates are necessary to ensure that sufficient equipment meeting acceptable standards will be available for installation within the time provided. It should be noted that in establishing the compliance dates in this amendment, the FAA does not intend that operators unnecessarily delay installation of the systems that are required to be installed by the June 1, 1976, or January 1, 1977, compliance dates. These dates have been established to reflect a realistic time frame for equipment availability and installation no later than the required compliance dates. However, the FAA urges all operators to install the required ground proximity warning-glide slope deviation alerting system as soon as practicable.

With respect to the asserted need to refine the alerting envelope (Mode 5), a commentator also requested that the exceptions contained in proposed § 37.201 (a)(1) through (a)(4) (renumbered herein as §§ 37.201(a)(2)(i) through (a)(2)(iv)) be deleted. These exceptions act to prohibit the use of two alternate warning envelopes (Alternate Modes 1 and 4) that were developed by the Radio Technical Commission for Aeronautics for use in turbopropeller powered airplanes. In regard to these comments, the FAA does not agree that the presently available data and information warrant a revision of the alerting envelope specified in the TSO, the establishment of additional warning envelopes in the TSO, or a delay in the proposed compliance dates. The FAA recognizes, however, that increased experience with ground proximity warning-glide slope deviation alerting systems may result in a recognized need for adjustments in the warning and alerting envelopes specified in the TSO. The FAA will continue to review all available relevant data, and expedited action will be taken if found necessary.

The FAA also does not agree with the comment that the deactivation of the glide slope deviation alerting portion of the overall system during back course approaches should be specifically authorized in order to avoid "nuisance" alerts. The TSO, as revised, requires a deactivation capability for the glide slope deviation alerting portion of the overall system, and there exists no prohibition against the pilot deactivating that por-

tion of the system to avoid back course "nuisance" alerts. However, the TSO also provides that after any deactivation of the glide slope deviation alerting portion of the system, that portion be automatically reactivated for the next approach.

It should be noted that proposed § 121.360 has been revised to provide for the use of all TSO-approved ground proximity warning-glide slope deviation alerting equipment. For consistency, similar revisions have been made herein to current §§ 121.360 (a) and (b). Since these revisions provide for an alternate means of compliance, and impose no additional burden on any person, additional notice and public proceedings on these revisions are unnecessary.

Finally, as indicated in Notice 75-16A, eight of the ten comments received in response to Notice 75-16 were in favor of a glide slope deviation monitoring system requirement. However, all comments received in response to Notice 75-16 were considered by the FAA in the issuance of Notice 75-16A, and due consideration has again been given those comments in making these amendments.

(Secs. 313(a), 601, 603, 604, Federal Aviation Act of 1958 (49 U.S.C. 1354(a), 1421, 1423, 1924); sec. 6(c), Department of Transportation (49 U.S.C. 1655(c)))

In consideration of the foregoing, Parts 37 and 121 of the Federal Aviation Regulations are amended effective October 13, 1975, as follows:

1. By revising the heading, paragraphs (a), (b), and (g), and the first sentence of paragraph (d)(1) of § 37.201 and adding a new § 37.201(h) to read as follows:

§ 37.201 Ground proximity warning-glide slope deviation alerting equipment; TSO-C92a.

(a) *Applicability*—(1) *Minimum performance standards*. This Technical Standard Order prescribes the minimum performance standards that ground proximity warning-glide slope deviation alerting equipment must meet in order to be identified with the applicable TSO marking. Equipment to be so identified must meet the minimum performance standards prescribed in Radio Technical Commission for Aeronautics (RTCA) Document No. DO 161, titled "Minimum Performance Standards, Airborne Ground Proximity Warning System" dated February 7, 1975 (DO-161) including Change Number 2, dated June 13, 1974, with the exceptions covered in paragraph (a)(2) of this section, and must meet the additional standards contained in paragraph (c) of this section.

(2) *Exceptions*. For purposes of this section—

- (i) The note added to paragraph 2.1.1 by Change Number 2 is not applicable;
- (ii) Alternate Mode 1 added as page 8 of Appendix A by Change Number 2 is not applicable;
- (iii) The note at the end of paragraph 2.1.4 as added by Change Number 2 is not applicable;

(As published in the Federal Register / 40 FR 42183/ on September 11, 1975)

FS-75-135-R  
FS-75-292-R

(iv) Alternate Mode 4 added as page 9 of Appendix A by Change Number 2 is not applicable; and

(v) The word "five" contained in the second sentence of the second paragraph of paragraph 2.6.5 as added by Change Number 2 is revised to read "three".

(b) *Environmental standards.* RTCA Document No. DO-138, dated June 27, 1968, including Change Number 2, dated October 29, 1969, or RTCA Document No. DO-160, dated February 28, 1975, both titled "Environmental Conditions and Test Procedures for Airborne Electronic/Electrical Equipment and Instruments", must be used to determine the environmental conditions over which the equipment has been designed to operate.

\* \* \* \*

(d) (1) The environmental categories over which it has been designed to operate as set forth in Appendix B of RTCA Document No. DO-138 or Appendix A of Document No. DO-160 must be permanently and legibly marked on the equipment.\* \* \*

(g) *Availability of referenced documents.* RTCA Document Nos. DO-138, dated June 27, 1968, including Change Number 2, dated October 29, 1969, DO-160, dated February 28, 1975, and DO-161, dated February 7, 1975, including Change Number 2, dated June 13, 1975, 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 Document Nos. DO-138, DO-160, and DO-161 may be examined at any FAA Regional Office of the Chief, 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 \$16.00 per copy for Document No. DO-138, \$20.00 per copy for Document No. DO-160, and \$16.00 per copy for Document No. DO-161.

(h) *Previously approved equipment.* Ground proximity warning equipment approved prior to October 13, 1975, un-

der TSO-C92 may continue to be manufactured under its original approval.

2. By revising the heading and paragraphs (a) and (b) of § 121.360 and by adding new paragraphs (f) and (g) to § 121.360 to read as follows:

**§ 121.360 Ground proximity warning-glide slope deviation alerting system.**

(a) Except as provided in paragraph (b) of this section, after December 1, 1975, no person may operate a large turbine-powered airplane unless it is equipped with a ground proximity warning system that meets the performance and environmental standards of TSO-C92 or incorporates TSO-approved ground proximity warning equipment.

(b) Ground proximity warning systems approved for use under this Part and installed before June 5, 1975, may be used in lieu of equipment that meets the performance and environmental standards of TSO-C92 or is TSO-approved until January 1, 1977, except that the requirements of paragraph (c) of this section must be met.

(f) Except as provided in paragraph (g) of this section, after June 1, 1976, no person may operate a large turbine-powered airplane unless it is equipped with a ground proximity warning-glide slope deviation alerting system that meets the performance and environmental standards contained in TSO-C92a or incorporates TSO-approved ground proximity warning-glide slope deviation alerting equipment.

(g) Large turbine-powered airplanes being operated under the provisions of paragraph (b) of this section may be operated until January 1, 1977, without being equipped with the ground proximity warning-glide slope deviation alerting system required by paragraph (f) of this section.

Issued in Washington, D.C., on September 5, 1975.

JAMES E. DOW,  
Acting Administrator.

NOTE.—The incorporation by reference in this document was approved by the Director of the Federal Register on April 18, 1969.