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APPENDIX: 4

BULLETIN TYPE: Flight Standards Information Bulletin
for Airworthiness (FSAW)

BULLETIN NUMBER: FSAW 02-03A

BULLETIN TITLE: Follow-On Approval of Class B Terrain Awareness
and Warning Systems (TAWS) (Amended)

EFFECTIVE DATE: 04-10-02

AMENDED DATE: 04-16-02

TRACKING NUMBER: N/A

APPLICABILITY:

M/M	ATA Code	14 CFR	PTRS
N/A	N/A	23, 25, 27, 29, 91, 135	N/A

1. PURPOSE. This bulletin explains the standards a Class B Terrain Awareness and Warning System (TAWS), also called an Enhanced Ground Proximity Warning System (EGPWS), must meet to qualify for a follow-on field approval.

2. BACKGROUND. For the initial installation of TAWS equipment, applicants must have obtained airworthiness approval through the Type Certificate (TC) or Supplemental Type Certificate (STC) process. Aircraft eligible for follow-on approval must be:

A. Certificated under Title 14 of the Code of Federal Regulations (14 CFR) parts 23, 25, 27, 29, or earlier Civil Aviation Regulation (CAR) counterparts, and

B. Operated under either parts 91 or 135.

3. DISCUSSION. Applicants may apply for a follow-on field approval for TAWS Class B equipment using Federal Aviation Administration (FAA) Form 337. The conditions below must be met.

A. The TAWS Class B equipment installed is required to:

(1) Comply with the minimum performance standards specified in TSO-C151a, Terrain Awareness and Warning System.

(2) Have received previous approval through the TC or STC process in a similar installation. The previous approval does not have to involve the same model or type of aircraft, but

should include a comparison of interfaces (sensors, displays, etc.) and operational characteristics.

B. The applicant is required to:

(1) Include the following in their submitted data:

- (a) The manufacturer's operating instructions;
- (b) Installation details;
- (c) System wiring diagrams; and
- (d) The results of ground tests.

(2) Note any limitations associated with their equipment in their submitted Airplane Flight Manual (AFM), Airplane Flight Manual Supplement (AFMS), or Supplemental AFM, as applicable. These limitations should be extracted from the operational procedures or installation instructions.

C. Flight Testing. Additional FAA flight-testing as part of the follow-on approval will not be needed if:

(1) The TAWS Class B equipment installations employ only interfaces with pressure or barometric altitude inputs and/or GPS altitude and position inputs specified as compatible by the TAWS equipment manufacturer.

(2) Adequate procedures to verify interface and operational concerns are included in ground test procedures.

D. Approval. The applicant's AFMS or Supplemental AFM may be approved following review to ensure the content is consistent with:

- (1) The content of the basic AFM.
- (2) The content of any applicant-furnished, FAA-approved AFMS or Supplemental AFM from the initial TC or STC, if applicable.

E. Equipment installations that include functionality beyond the minimum TAWS Class B equipment requirements (e.g., terrain display; radio altimeter; landing gear, flap, or glide slope sensor inputs) are also eligible for follow-on field approval if previously included as part of the initial TC or STC and are incorporating the same interface. The additional conditions listed below apply.

(1) A more extensive installation evaluation and an operational flight check (described in section 91.407) must be performed to ensure that the installation and equipment are compatible. See advisory circular (AC) 23-18, Installation of Terrain Awareness and Warning System (TAWS) Approved for Part 23 Airplanes, and AC 25-23, Airworthiness Criteria for the Installation Approval of a Terrain Awareness and Warning System (TAWS) for Part 25 Airplanes, for guidance on installation approval.

(2) If necessary, an FAA-conducted flight evaluation may be required to be performed to verify that the design and installation perform their intended functions and that there are no adverse interactions between the TAWS and existing aircraft systems.

NOTE: Flight evaluations will be conducted by the responsible Aircraft Certification Office (ACO) or, when authorized, by a Flight Test Pilot Designated Engineering Representative (DER) in accordance with the procedures used by the ACO.

4. ACTION. This bulletin is addressed to Avionics Aviation Safety Inspectors (ASI). ASIs are authorized to review for approval, via the field approval process, TAWS Class B systems that have been previously approved by a TC or STC in a similar installation. ASIs are also authorized to approve the corresponding AFMS or Supplemental AFM.

5. INQUIRIES. This bulletin was developed by AFS-300. If you have any questions about this information, please call AFS-300 at (202) 267-3809.

6. EXPIRATION DATE. This bulletin will expire on 04-30-03.

/s/ David E. Cann, Manager
Continuous Airworthiness Maintenance Division