ORDER: 8300.10

APPENDIX: 4

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

BULLETIN NUMBER: FSAW 95-09E (Amended)

BULLETIN TITLE: Electronic Horizontal Situation Indicator (EHSI) Approvals

EFFECTIVE DATE: 07-23-96

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APPLICABILITY:

M/M	ATA Code	14 CFR	PTRS
NA	NA	43	5414, 5416

NOTE: THIS BULLETIN REQUIRES PTRS INPUT. SEE ITEM # 5.

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1. PURPOSE. This bulletin clarifies procedures for field approval of Electronic Horizontal Situation Indicator (EHSI) installations.

2. BACKGROUND.

A. All avionics/electronic systems that perform critical functions for the safe operation of an aircraft must be tested for High Intensity Radiated Fields (HIRF). The applicable regulations do not contain adequate or appropriate safety standards for the protection of these systems from the effects of HIRF. Therefore, special conditions must be imposed upon the type certificate (TC) or Supplemental Type Certificate (STC) applicant of an Electronic Flight Instrumentation System (EFIS) installation. These special conditions contain the additional safety standards the Administrator considers necessary to establish a level of safety equivalent to that established by the existing airworthiness standards. This process requires the Administrator to issue a Notice of Proposed Rulemaking (NPRM) to require these additional standards. This process is beyond the duties of a Flight Standards field inspector.

B. Installation of EFIS and Electronic Attitude Direction Indicator (EADI) are to be approved under the TC or STC process. The EADI has been classified as a flight critical instrument by the Aircraft Certification Service, therefore approval of an EFIS

or EADI system must be accomplished by the Aircraft Certification Offices (ACO).

3. GUIDANCE.

A. Field Approval. Field approvals that reference a previously issued TC or STC as a basis may be accomplished by Flight Standards Avionics inspectors for the Rockwell/Collins EHSI-74 system, Honeywell (Bendix/King) EHI 40 EHSI, KI 825 EHSI, L3 Communications EHSI-4000 EHSI, and the Sandel Avionics Models SN3308 EHSI, SN3500 EHSI, and SN4500 EHSI with the following conditions and limitations:

(1) The EHSI must be installed in the same location and as a replacement for the existing instrument that most effectively indicates direction of flight.

(2) The EHSI system wiring interconnect must be accomplished in accordance with the equipment manufacturer's documentation, (i.e., current installation manual, service bulletin, and service information letter). Acceptable or approved systems interconnect can normally be found in one of the aforementioned documents.

(3) Interfaces with other equipment and systems for which the EHSI perform control functions, or display TAWS, weather data, traffic alert and collision avoidance system (TCAS), or other traffic information, must have prior approval or must be independently assessed by the applicant to determine if operating limitations need to be placed on the aircraft, or if any abnormal and emergency procedures, normal operating procedures, and aircraft performance are affected. Evidence of prior approval will normally be found in one of the aforementioned documents.

(4) The mechanical installation of the equipment is in conformance to the applicable airworthiness regulations and in accordance with the aircraft and equipment manufacturers' recommendations, observing acceptable methods, techniques, and practices. This would include but not be limited to instrument panel loading requirements.

(5) The display method, symbology, and color must have prior approval.

(6) Installations of EHSI systems certificated by TC or STC without an Airplane or Rotorcraft Flight Manual Supplement (AFMS/RFMS) identified as a required document do not necessarily require an AFMS/RFMS. An AFMS or RFMS, if required by the original system TC or STC, must be submitted for approval to the Flight Standards Avionics inspector along with FAA Form 337, Major Repair and Alteration. The Avionics inspector is

authorized to review and approve AFMS or RFMS based on the content of the original supplement. The FAA-approved AFMS/RFMS must identify compatible equipment or systems and the specific approved operating system software version used within the configuration for the intended functions.

(7) Ensure the equipment manufacturers' proper cooling requirements are met.

(8) An operational flight check must be conducted in Visual Flight Rules (VFR) conditions, to ensure the correct operation of all navigation devices interfaced to the EHSI. This operational flight check must include a full Instrument Landing System (ILS) auto pilot coupled approach.

NOTE: Aviation safety inspectors (ASI) should refer to the guidance provided in FAA Order 8300.10, Airworthiness Inspector's Handbook, volume 2, chapter 1, as revised, for procedural requirements when accomplishing field approvals.

B. Deviations Requiring ACO Coordination.

(1) Interfaces with other equipment and systems not having prior approval.

(2) Changes made to the display method, symbology, or color.

(3) Changes in the EHSI mounting location.

C. Reference Material.

- Advisory Circular (AC) AC 23.1309-1, Equipment, Systems, and Installations in Part 23 Airplanes, as amended
- AC 25-10, Guidance for Installation of Miscellaneous, Nonrequired Electrical Equipment
- AC 25-11, Transport Category Airplane Electronic Display Systems

4. INSPECTOR QUALIFICATIONS. In accordance with FAA Order 8300.10, Airworthiness Inspector's Handbook, the Avionics inspector must have completed the General/Air Carrier Airworthiness Safety Inspectors Indoctrination course, completed the Aircraft Alterations and Repairs course, have working knowledge of EFIS systems, and be authorized to perform field approvals by the Regional Flight Standards Division.

5. PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS). Use PTRS activity code “5414” or “5416,” as applicable. Type “FSAW9509E” (without the quotes) in the National Use field.

6. INQUIRIES. This bulletin was developed by AFS-300. Any questions or comments regarding this bulletin may be directed to AFS-300 at (202) 267-3922.

7. EXPIRATION. This bulletin will remain in effect until further notice. Refer to the Appendix 4 Index at http://www.faa.gov/avr/afs/fsaw/fsawl.htm for updates on the status of this bulletin.

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