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APPENDIX: 4
BULLETIN TYPE: Flight Standards Information Bulletin
for Air Transportation (FSAT)
BULLETIN NUMBER: FSAT 98-16 (**URGENT**)
BULLETIN TITLE: Embraer EMB-120 Airplanes (All Models):
Company Operating Manuals and Training Program
Revision for Compliance with Airworthiness
Directive (AD) 97-26-06
EFFECTIVE DATE: 08-13-98
TRACKING: NTSB A-97-31, A-97-32, and A-97-33

NOTE: THIS BULLETIN REQUIRES PTRS INPUT. See item #5.

1. PURPOSE. The purpose of this bulletin is to ensure that National Transportation Safety Board (NTSB) Safety Recommendations A-97-31, A-97-32, and A-97-33 concerning the Embraer EMB-120 Airplane have been addressed by:

A. Requiring operators of the EMB-120 airplane to reflect Federal Aviation Administration (FAA) approved minimum airspeeds for all flap settings and phases of flight, including flight in icing conditions, in their EMB-120 company operating manuals;

B. Requiring operators of the EMB-120 airplane to ensure that de-icing information and procedures in their company operating manuals and training programs are consistent with the revised EMB-120 Airplane Flight Manual (AFM), and to provide flightcrews with training emphasizing the importance of icing conditions recognition and the need to comply with procedures for using de-ice boots specified in the revised EMB-120 AFM;

C. Requiring principal operation inspectors (POI) having oversight responsibilities for operators of EMB-120 airplanes to ensure that operators have revised their company operating manuals and training programs to conform with changes in the AFM; and

D. Requiring POIs to ensure that the operators training programs emphasize the requirement for activation of ice protection systems.

2. BACKGROUND.

A. On January 9, 1997, an Embraer EMB-120 crashed in Monroe, Michigan, while being vectored for approach to landing at Detroit Metropolitan Wayne County Airport, resulting in 29 fatalities. Although a probable cause has not been determined, ice accretion is suspected. The NTSB issued four safety recommendations based on this particular accident; however, the NTSB also referenced six other EMB-120 icing events at the following locations:

- (1) April 1995 near Tallahassee, FL
- (2) October 16, 1994, near Elko, NV
- (3) April 29, 1993, at Pine Bluff, AR
- (4) November 21, 1991, in Clermont-Ferrand, France
- (5) September 1991, at Fort Smith, AR
- (6) June 28, 1989, at Klamath Falls, OR

B. On May 13, 1997, the FAA published a Notice of Proposed Rulemaking (NPRM) to address EMB-120 icing issues. The NPRM resulted in the issuance of AD 97-26-06, with an effective date of 01/23/98, for all models of EMB-120 airplanes requiring:

(1) Revisions to the limitations section of the FAA-approved AFM that call for activation of specific ice protection systems when atmospheric or ground icing conditions exist and activation of specific ice protection systems at the first sign of ice formation anywhere on the aircraft (see note following (3) below);

(2) Revisions to the normal procedures section of the FAA-approved AFM including procedures to check the Ice Protection System, to maintain increased minimum airspeed during approach to landing in icing conditions, and to maintain a minimum airspeed of 160 KIAS [knots of indicated airspeed] during other phases of flight in icing conditions (see the note following (3) below); and

(3) Installation of an ice detector on the aircraft within 10 months after the effective date of the AD conditions (see the following note).

NOTE: Refer to AD 97-26-06 for specific requirements.

3. DISCUSSION.

A. One of the very important precursors for safe operations during icing conditions is that flightcrews be acutely aware of aircraft limitations and adhere to anti-ice/de-ice operating procedures contained in the FAA-approved AFM. In order for flightcrews to comply with safe operating procedures, it is paramount that operators provide them with accurate and timely knowledge through training.

B. During the NTSB's investigation of the January 9, 1997, accident, it was revealed that the operator had not incorporated the changes prescribed by revision 43 to the EMB-120 AFM in its company manuals, or incorporated those changes in its EMB-120 training program. Revision 43 to the "Normal Procedures" section of the AFM required "activating the de-ice boots at the first sign of ice formation."

C. Another issue addressed by the NTSB is that, for years, turboprop pilots have been trained to operate de-ice boots only after $\frac{1}{4}$ to $\frac{1}{2}$ inch of ice has accumulated on the wings. This practice has been accepted as a norm by pilots of turboprop airplanes because of the "bridge effect." Because of the changes mandated by AD 97-26-06 requiring activation of the de-ice boots on the EMB-120 "at the first sign of ice formation anywhere on the aircraft," it is important to emphasize to all EMB-120 flightcrews, through updated operator training and revised manuals, that this norm does not apply to this aircraft.

4. ACTION. Principal operations inspectors assigned oversight responsibilities for operators of the EMB-120 airplane (all models) shall ensure that:

A. Operators have an FAA-approved EMB-120 AFM that contains all current revisions and any applicable AD(s) that revise the AFM (Note: AD 97-26-06 allows revision of the EMB-120 AFM by inserting the AD in the "Limitations and Normal Procedures" section of the AFM;

B. Company flight manuals are consistent with and reflect FAA-approved EMB-120 AFM de-icing information and procedures, minimum airspeeds for all flap settings and phases of flight including flight in icing conditions, and that changes to company flight manuals are disseminated to all flightcrew personnel;

C. Company training programs in all categories; initial, transition, upgrade, recurrent, and requalification, are revised to reflect the changes in the company flight manuals and to ensure that all flightcrew personnel have received training on these changes no later than September 30, 1998; and

D. EMB-120 operators provide flightcrews with training that emphasizes the importance of recognition of icing conditions and

the importance of adhering to anti-ice/de-ice procedures contained in the revised company flight manuals.

NOTE: All EMB-120 instructors must emphasize that the past practice of waiting until ¼ to ½ inch of ice accumulates before activating the de-ice boots does not apply to the EMB-120 aircraft.

5. PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS). Principal operations inspectors having oversight responsibilities for affected operators shall make a PTRS entry to record the action directed by this bulletin. The PTRS entry shall be listed as activity code 1381, and the National Use field entry shall be FSAT9816. Principal operations inspectors shall use the comments section to record interaction and comments with their operators.

6. INQUIRIES. This bulletin was developed by AFS-210. Any inquiries from operators of the EMB-120 may be directed to the POI having oversight responsibilities at the Certificate Holding District Office (CHDO). Principal operations inspectors and Regional Offices may direct any inquiries regarding this bulletin to either Will Swank, at (202)493-4602 or Hop Potter, at (202)267-3723.

7. EXPIRATION DATE. This bulletin will expire on August 31, 1999.

/s/

David L. Catey for

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