Embraer EMB-120 (Brasilia) Series Aeroplanes

AIRWORTHINESS DIRECTIVE

For the reasons set out in the background section, the CASA delegate whose signature appears below revokes Airworthiness Directive (AD) AD/EMB 120/7 and issues the following AD under subregulation 39.1 (1) of CAR 1998. The AD requires that the action set out in the requirement section (being action that the delegate considers necessary to correct the unsafe condition) be taken in relation to the aircraft or aeronautical product mentioned in the applicability section: (a) in the circumstances mentioned in the requirement section; and (b) in accordance with the instructions set out in the requirement section; and (c) at the time mentioned in the compliance section.

AD/EMB-120/7 Amdt 1 — Flight Idle Stop System — 9/2001

Applicability: All EMB-120 aircraft **not incorporating** Embraer Service Bulletin 120-76-0018, Revision 1 (or later revision).

Requirement: **Aircraft not incorporating Embraer Service Bulletin (SB) 120-76-0018 (any revision status)**

1. For aircraft on which an inspection window has been installed on the Left Lateral Console Panel that permits visibility of the Flight Idle Stop Solenoid Breakers:

   Using an appropriate light source, perform a visual check to verify that both "FLT IDLE STOP SOL" circuit breakers CB0582 and CB0583 for Engine 1 and Engine 2 are closed.

Note 1: This check may be performed by a flight crewmember.

Note 2: Instructions for installation of an Inspection Window can be found in Embraer Service Bulletin 120-076-0014 dated 29 July 1992.

2. For aircraft without an inspection window installed on the Left Lateral Console Panel:

   Perform a visual inspection to verify that both "FLT IDLE STOP SOL" circuit breakers CB0582 and CB0583 for Engine 1 and Engine 2 are closed.

3. Conduct a functional test of the Secondary Flight Idle Stop System (SFISS) for Engine 1 and Engine 2 by performing the following:

   (a) Move both power levers to the "MAX" position.

   (b) Turn the aircraft power switch "ON".

   (c) **Open** both "AIR/GROUND SYSTEM" circuit breakers CB0283 and CB0286 to simulate in flight conditions with weight-off-wheels. Wait for at least 15 seconds, then move both power levers back toward the propeller reverse position with flight idle gate triggers raised. Verify that the power lever for each engine **cannot** be moved below the flight idle position, even though the flight idle gate trigger on each power lever is raised.

(d) Move both power levers to the "MAX" position.

(e) **Close** both "AIR/GROUND SYSTEM" circuit breakers CB0283 and CB0286 to simulate the aircraft on the ground with weight-on-wheels. Wait for at least 15 seconds, then move both power levers back toward the propeller reverse position with the flight idle gate triggers in the normal flight position. Verify that the power lever for each engine **cannot** be moved below the flight idle position.

(f) Raise the flight idle gate triggers and verify the power levers **can** be moved below the flight idle position.

(g) Failure to satisfy the requirements of either test (c), test (f) indicates a failure of the SFISS, which must be rectified before further flight.

Failure to satisfy the requirements of test (e) indicates a failure of the primary flight idle stop system, which must be rectified before further flight.

If required application can be made under CAR (1998) Part 21.197 for a special flight permit to ferry an aircraft to a place where rectification of the discrepant flight idle stop system can be accomplished.

Note 3: The tests prescribed in Requirement 3 essentially reflect the requirements of Brazilian CTA Telegraphic AD T92-08-04 and FAA Emergency AD T92-16-51.

4. Incorporate the requirements of Embraer Operations Bulletin OP120-004/99 into the flight crew-training program.

Note 4: Incorporation of Embraer SB 120-76-0018, Revision 1 (or later revision) constitutes terminating action for Requirements 1 through 4.

For aircraft incorporating Embraer SB 120-76-0018 (Original Issue)

5. Incorporate the SFISS reliability improvements in accordance with Embraer SB 120-76-0022, Original Issue, Revision 1 or Revision 2.

   Upon compliance with Requirement 5, the SFISS configuration may be considered to be equivalent to that specified in Embraer Service Bulletin 120-76-0018, Revision 1, and no further action with respect to this Airworthiness Directive is required.

Note 5: For Requirement 5, CTA AD 90-07-04 R4, COMPLIANCE (c) also refers

Compliance: Requirements 1 & 2:

Prior to the first flight of each day.

Requirement 3:

(a) At each Line Check but not to exceed 100 hours time in service since the last functional test of the SFISS;

(b) Immediately following any maintenance where the aircraft is jacked; and

(c) Prior to further flight, if circuit breakers CB0582 and CB0583 are required to be reset as a result of Requirement 1 or 2 inspections.

Requirement 4:

Unless previously accomplished, no later than 6 months after the effective date of this Directive.

Requirement 5:

Unless previously accomplished, no later than 6 months after the effective date of this Directive.

This Airworthiness Directive becomes effective on 6 September 2001.

Background: The manufacturer received reports of propeller overspeed events simultaneously affecting both engines when the power levers were inadvertently moved into the Beta range in flight. Investigation revealed that both circuit breakers of the Secondary Flight Idle Stop System (SFISS) were open. The additional maintenance requirements mandated by this Directive will enhance the reliability of the SFISS.

This amendment to the Directive:

- Revises the SFISS test requirements to require immediate rectification if the SFISS is found defective;
- Adds a requirement for additional flight crew training to address inadvertent selection of Beta range in flight;
- Makes reference to a new SFISS that provides terminating action for the test and training provisions in the AD; and
- Requires reliability improvements to a certain version of the new SFISS.

The original issue of this Airworthiness Directive became effective on 16 August 1992.

Eugene Paul Holzapfel
Delegate of the Civil Aviation Safety Authority

27 July 2001

The above AD is notified in the *Commonwealth of Australia Gazette* on 15 August 2001.