

298237

FAA-04-19176-6

RECEIVED
DEC 18 2002

Aircraft Certification Service
'SHORT' WORKSHEET
RECEIVED

DEPT. OF TRANSPORTATION
DOCKETS
2003-NM-36-AD
2003 SEP 30 A 10:04

ANM-114

JAN 29 2003

DOCKET NUMBER: 2003-NM-36-AD

FCAA AD No./Revision/Date (Attach 1 copy): CTA AD 2000-08-01R2 dated February 13, 2000.

Manufacturer Service Information/Revision/Date (Attach 2 clean copies): Embraer Service Bulletin 145-28-0013, original issue, dated April 25, 2001.

PROPOSED CORRESPONDING ACTION:

- | | |
|---|---|
| <input type="checkbox"/> Emergency AD | <i>Is this action one of the following?</i> |
| <input type="checkbox"/> Immediately Adopted AD | <input checked="" type="checkbox"/> Supersedure of AD (Docket No. 2000-NM-300-AD) |
| <input checked="" type="checkbox"/> Notice of Proposed Rulemaking | <input type="checkbox"/> Revision of AD (Docket No. _____) |
| <input type="checkbox"/> Final rule after NPRM
(If FRAN, complete Attachment A.) | <input type="checkbox"/> Supplemental NPRM (Docket No. _____)
(If any of the above is checked, complete Attachment B.) |
| <input type="checkbox"/> Other (NFR, DFR) | |

For each AD item numbered below, provide draft text and/or FCAA AD or SB references. WHERE POSSIBLE, answer items using markup of FCAA AD or SB, & mark with the AD item number.

1. Model, Applicability, # Airplanes (both U.S. & worldwide) - Refer to FCAA AD or SB; state any differences for the U.S. AD:

Empresa Brasileira de Aeronautica S.A. (Embraer) model EMB-145() and EMB-135() series aircraft, all serial numbers.

290 aircraft in US service
400 in worldwide service (incl US)

AD Summary and Discussion Sections:

2. What has the FCAA/mfgr told the FAA? "The FCAA advises that ..."
Describe background/events that prompted the AD in 1-2 sentences. Refer to FCAA AD or SB 'Reason.'

Evidence of damage to the hermetically sealed connectors of the electric fuel pumps has been reported. This damage could lead to a failure in the electrical connectors, possibly due to heat generated by degraded spring-tension of the mating female connector, which may cause arcing between the poles. The damage sustained by the pins shows partially blackened portions or charring of the elastomeric insert, adjacent to and surrounding the pin.

3a. What is the unsafe condition AND its cause? "These actions are intended to prevent..."
Describe unsafe condition and its cause in 2-3 sentences (non-technical terms). Refer to FCAA AD or SB 'Reason.'

These actions are intended to prevent electrical arcing of the fuel pump electrical connectors which could result in an ignition source in the fuel tank or adjacent dry bay, or fuel leakage into the adjacent dry bay.

**3b. What is the end-level effect on the airplane?
result in..."**

"...which could

Provide a 1-sentence description; use non-technical terms.

An ignition source in the fuel tank can cause ignition of the fuel vapors in the fuel tank or in the adjacent dry bay with a resulting fire or explosion.

4. (Yes or No) Is the corrective action required in this AD considered to be interim action?

No.

**5. (Yes or No) Is this action considered 'sensitive, or is it related to a Safety Recommendation?
(If yes, state why sensitive, and/or provide copy of FAA/NSTB Safety Recommendation.)**

Yes, due to SFAR 88 activity.

**6. AD Differences or Exceptions to Policy (if needed):
FCAA AD..."**

"This AD differs from the

**Check if: Flight with Cracks (exception to policy)___; No Flight with Cracks___; Mandate Term
Action ___;**

**Not Mandating Term Action (exception to policy)___; Contact Mgr, FAA___; Compliance time
___;**

Mandate AFM Action___; Contact Mgr or FCAA___

*Describe any other differences between service bulletin (or exceptions to policy) and this proposed FAA
AD.*

This AD differs from the FCAA AD in that the Brazilian AD initial inspection requirements are based on the date revision 1 of the Brazilian AD took effect, July 3, 2001, while the US AD is based on the date the original US AD took effect, October 3, 2000. The US AD also requires that all P/N 2C7-1 fuel pumps be replaced with P/N 2C7-4 fuel pumps within the next 8000 flight hours.

AD Cost Impact Section:

7a. Work hours for corrective action(s) required: (List hours or reference SB 'Manpower').

Part I:

Disassembly: 0.5 man-hours

Inspection: 0.5 man-hours

Assembly: 0.5 man-hours

Test: Not Applicable

Part II:

Disassembly: 0.5 man-hours

Modification: 1.0 man-hours

Assembly: 0.5 man-hours

Test: 0.5 man-hours

Part III:

Disassembly: 0.5 man-hours

Modification: 0.5 man-hours

Assembly: 0.5 man-hours

Test: Not Applicable

7b. Parts Cost, if any: (List costs or reference SB 'Material - Cost and Availability').

See Service Bulletin 145-28-0013, Section 2, Material – Cost and Availability, on page 8.

AD Body Section:

For EACH corrective action, mark up FCAA AD or SB, if usable -OR- fill out Corrective Action Table below.

8a: Action # 1

Perform a detailed inspection of

What is the corrective action? Per SB 145-28-0013, Part I, ~~visually inspect~~ the electrical pins and elastomeric inserts of the electrical fuel pumps (RH and LH wings) for general condition, and replace the affected fuel pumps as necessary (per Part II and Part III), as follows:

*7 AD
asp*

What is its compliance time? (Add grace period if not available) (a) For aircraft with less than 1200 flight hours on October 3, 2000, the effective date of the original AD, before the aircraft reaches 1,600 flight operating hours, and every 1200 flight hours thereafter.

(b) For aircraft with between 1200 hours and 4000 flight hours on October 3, 2000, the effective date of the original AD, within the next 400 flight hours and every 1200 flight hours thereafter.

(c) For aircraft with more than 4000 flight hours on October 3, 2000, the effective date of the original AD, before the aircraft reaches 4400 flight hours or within the next 50 flight hours, whichever occurs later, and every 1200 flight hours thereafter; and

(d) For aircraft that have already replaced all fuel pumps P/N 2C7-1 with fuel pumps P/N 2C7-4, at every 8000 flight hours.

What is repetitive interval? Every 1200 hours until all six fuel pumps have been replaced with P/N 2C7-4 fuel pumps, and then every 8000 flight hours thereafter.

8b: Action # 2

What is the corrective action? Accomplish Part II and Part III of SB 145-28-0013 replacing all P/N 2C7-1 fuel pumps with P/N 2C7-4 fuel pumps.

What is its compliance time? (Add grace period if not available) Within the next 8000 flight hours.

What is repetitive interval? Repeat inspection given in Part I of SB 145-28-0013 every 8000 flight hours.

9. (Yes or No) Should corrective action(s) required in this AD to be applied to spares as well?

Yes

10. Should a ferry flight permit be: Permitted Permitted with limitations* Prohibited

*List limitations.

11. Check the category that best describes the cause of the unsafe condition addressed by this AD:

<input checked="" type="checkbox"/> Design Problem	<input type="checkbox"/> Unapproved Parts	<input type="checkbox"/> Operational
<input type="checkbox"/> Maintenance	<input type="checkbox"/> Quality Control Problem**	<input type="checkbox"/> Other (specify):
	**Reporting Req't Needed? <input type="checkbox"/>	

**ATTACHMENT B:
SUPERSEDURE/REVISION/SUPPLEMENTAL REQUIREMENTS**

For supersedure/revision/supplemental AD's: Indicate the change(s) proposed in the new AD action.

- | | |
|---|---|
| <input type="checkbox"/> Add airplanes to applicability | <input type="checkbox"/> Remove airplanes from applicability |
| <input type="checkbox"/> Reduce compliance time(s) | <input checked="" type="checkbox"/> Extend compliance time(s) |
| <input type="checkbox"/> Mandate previously optional action | <input type="checkbox"/> Provide optional action |
| <input checked="" type="checkbox"/> Require new revisions of service bulletin(s) method | <input type="checkbox"/> Provide optional accomplishment |
| <input checked="" type="checkbox"/> Add new requirements | <input type="checkbox"/> Remove requirements |
| <input type="checkbox"/> Revise part number(s)--possible to comply with existing AD | <input type="checkbox"/> Revise part number(s)--impossible to comply with existing AD |

1. What prompted this new action? *"Since the issuance of that AD, ..."*
(i.e., new/other incidents, new service information, actions taken by the FCAA, manufacturer, or FAA)

Since the issuance of FAA AD 2000-19-02, testing by the fuel pump manufacturer, experience, and inspection results have indicated that new action is necessary. In response, CTA has issued AD 2000-08-01R2 that ~~increases the re-inspection interval from 400 hours to 1200 hours~~ and incorporates Service Bulletin (SB) ~~145-28-0013~~ original issue, dated April 25, 2001. This SB ~~differs from SB 145-28-A013~~ which was part of the original AD ~~in that it accomplishes the following:~~

- 1) The inspection criteria presented in ~~SB 145-28-0013 is changed to require fuel pump replacement when the inspection results indicate any corrosion, surface irregularities, damaged plating, blackened pins, damaged elastomeric inserts, cracks, erosion or charring of the connectors.~~ SB 145-28-A013 referenced in the original Service Bulletin ^{AD} contained other criteria based on the extent of the damage observed.
- 2) ~~SB 145-28-0013 includes requirements for the application of anti-corrosion spray on the male contacts of the fuel pump electrical connectors.~~
- 3) ~~SB 145-28-0013 includes provisions for replacement of the P/N 2C7-1 fuel pumps with P/N 2C7-4 fuel pumps that are made with gold plated connectors.~~

2. Which requirements of the existing AD, if any, need to be retained in this new AD?
 N/A

3. If new airplanes are being added, do the old requirements apply to those airplanes?
 N/A

4. If this is a supersedure or revision, do AMOC's exist for the existing AD? If yes, should they continue to be considered approved for any or all of this new AD? If yes, state for what portions of this new AD they should continued to be considered approved.

An AMOC was issued to AD 2000-19-02 and it should not be considered approved for this supersedure of the AD. (The AMOC was issued to Embraer Services, Inc. on August 30, 2001 and was extended to any EMB-145 and EMB-135 aircraft subject to the requirements of AD 2000-19-02. The AMCO extended the inspection interval from 400 to 1200 hours and offered fuel pump replacement as a means to eliminate continued inspections. This supersedure incorporates the new inspection interval and also requires that all fuel pumps be replaced with P/N 2C7-4 fuel pumps within the next 8000 flight hours and be re-inspected every 8000 hours thereafter.)

5. If this is a supplemental NPRM, do any of the comments received in response to the NPRM result in a change to this supplemental NPRM? If yes, complete Attachment A.

N/A