



AIRWORTHINESS BULLETIN

Embraer 120 Oil Cooler Bypass Hose Chafing

AWB 79-004 **Issue :** 1
Date : 11 November 2014

1. Effectivity

Embraer 120 (Brasilia) Aeroplanes.

2. Purpose

To advise operators of modifications available for the oil cooling system to prevent chafing and subsequent failure of the oil cooler bypass hose and engine oil return hose.

3. Background

A series of Embraer 120 oil cooler bypass hose failures reported to CASA prompted an investigation into the history of this defect. The described condition, if not detected and corrected, could lead to oil cooler hose rupture, possibly resulting in engine inflight shutdown.

The investigation identified a number of contributing factors which are within the control of the operator and maintenance personnel, with Embraer and Allied Signal (now Honeywell) having released service literature in relation to this issue.

Embraer's S/B 120-79-0009, introduces a bracket to secure the oil cooler bypass hose in the upper portion of the oil cooler. In addition, the bulletin offers protection for the engine return hose over a sharp corner of the access cover to the engine oil cover.

In-service experience has also shown that Embraer S/B 120-79-0009 configured aircraft, potentially remain vulnerable to oil hose failures. This is due to over torqueing of the oil line nuts during installation, or via installation of the bracket in the incorrect orientation, which results in the oil hoses kinking and coming into contact with the surrounding baffle plates. During subsequent aircraft operation, this contact introduces friction to the hose causing it to wear prematurely.

It has also been found that during engine shop visit, the Embraer service bulletin can be removed, and not reinstated prior to engine shop release.

Allied Signal S/B 160282-79-2029, also considers chafing of the bypass hose. This modification replaces the original oil cooler bypass hose with an anti-chaffing hose assembly to mitigate the chaffing experienced by the original assembly.



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4. Recommendations

For the reasons identified above, this AWB recommends the following action:

1. Incorporation of Embraer S/B 120-79-0009, Dated 28 April 1993 or later approved revision.
2. Following engine shop visit, inspect oil cooler hoses to confirm the actual configuration status against S/B 120-79-0009.
3. Incorporation of Allied Signal S/B 160282-79-2029, Dated 18 February 1997 or later approved revision.
4. Inspection of oil cooler hoses to ensure they are not kinked due to over torqueing of nuts.

5. Reporting

Defects identified as a result of following the recommended actions of this AWB are to be reported via the CASA Service Difficulty Reporting system.

6. Enquiries

Enquiries with regard to the content of this Airworthiness Bulletin should be made via the direct link e-mail address:

AirworthinessBulletin@casa.gov.au

or in writing, to:

Airworthiness and Engineering Standards Branch
Standards Division
Civil Aviation Safety Authority
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