EASA Safety Information Bulletin

SIB No.: **2012-16R1**
Issued: **21 November 2012**

Subject: **Hydraulic Systems – Implementation of automatic Power Transfer Unit inhibition logic**

Reason for revision: This SIB revises EASA SIB No. 2012-16 dated 28 August 2012, to include reference to Airbus Service Bulletin (SB) A320-29-1156, which provides an optimized retrofit solution for automatic Power Transfer Unit (PTU) inhibition.

Ref. Publications:
- Airbus SB A320-29-1115 - provision for PTU inhibition logic
- Airbus SB A320-29-1126 - activation of PTU inhibition logic.
- Airbus SB A320-29-1156 - retrofit automatic PTU inhibition.

Introduction:

Operators of Airbus A320 family aeroplanes have reported failures of a single hydraulic system with external leakage (leading to a loss of fluid) where a subsequent hydraulic system failed, due to overheat of the second system when the power transfer unit (PTU) was not de-activated within a short time after the first failure (loss of hydraulic fluid) occurred.

PTU deactivation is normally managed by flight crew action after a hydraulic failure is indicated in the cockpit.

Airbus A318, A319, A320 and A321 aeroplanes are equipped with three hydraulic systems and they can be safely controlled with only one system operative. A bi-directional PTU enables the yellow system to pressurize the green system, and vice versa, without the transfer of fluid from one system to the other. In flight, the PTU operates automatically if a pressure drop in one of the systems is detected. The PTU ensures optimal hydraulic system availability for take-off. In case of loss of hydraulic fluid of the yellow or green system, the PTU cannot pressurize the failed system and must be switched OFF as required by ECAM procedure to avoid a PTU overheat which may occur two minutes later. The second hydraulic system can normally be recovered when the overheat situation is over after some minutes.

To address these concerns, Airbus developed an optional modification of the hydraulic system, providing automatic

inhibition of the PTU, when necessary. This modification improves system robustness and assures continuous availability of two hydraulic systems after a single loss of hydraulic fluid in the green or yellow system.

The improved design as implemented with SB A320-29-1115 and SB A320-29-1126 for A318, A319, A320 and A321 aeroplanes reduces the risk a subsequent loss of a hydraulic system after a single hydraulic failure.

The modification described in Airbus SB A320-29-1156 was developed to optimize the installation for retrofit.

The purpose of this SIB is to inform all operators about the availability of the design improvements and to recommend implementation of those design solutions for all affected aeroplanes.

Implementation within the fleet:

- The system provision of SB A320-29-1115 is standard on production aeroplanes from manufacturer serial number (MSN) 2740, but it depends on the operator to activate the logic. Many operators have decided not to activate the logic.
- Activation of PTU inhibition logic is standard on production aeroplanes as follows:

  A320 since MSN 4177
  A321 since MSN 4180
  A319 since MSN 4182
  A318 since MSN 4211

At this time, the safety concern described in this SIB has not been determined to be an unsafe condition that would warrant Airworthiness Directive (AD) action under EU 748/2012, Part 21.A.3B.

Recommendations: EASA recommends that operators review the implementation of the affected product improvements within their fleet of aeroplanes and

(1) For aeroplanes that do not have the optional design installed, either

  (a) modify each aeroplane in accordance with the instructions of Airbus SB A320-29-1115 and activate the improved logic in accordance with the instructions of SB A320-29-1126, or

  (b) modify each aeroplane in accordance with the instructions of Airbus SB A320-29-1156.

(2) For those aeroplanes that have the optional design installed but not activated, activate the improved logic in accordance with the instructions of Airbus SB A320-29-1126.

Contacts:

For further information, contact the Safety Information Section, Executive Directorate, EASA, E-mail: ADs@easa.europa.eu.

Copies of the referenced service publications can be obtained upon request from AIRBUS – Airworthiness Office – EIAS (A318, A319, A320, A321), Fax +33 5 61 93 44 51, E-mail: account.airworth-eas@airbus.com.