Maintenance Briefing Notes

Best Practices

Cabin Residual Pressure Warning

Preamble

As part of an overall safety management system, Airbus has processes in place where significant, or safety related in-service maintenance events are investigated by a panel of multi-disciplinary experts.

The purpose of the event investigation process is to continuously improve our product, but also to share the lessons learned with the customer community in order to improve awareness to manage the risks from events caused by human actions that may effect flight safety, personal injury, and damage to components.

The Airbus Maintenance Briefing Notes will be dedicated to share maintenance errors related events and their consequences.

Sharing the Airbus world-wide return of in-service events, in particular concerning maintenance errors, could help operator and maintenance organizations identify and understand multiple contributing factors to errors and violations.

This should not be understood to put the blame on the maintenance mechanics who are working often in a challenging and stressfull environment.

The maintenance error in this context is defined as a human action that unintentionally deviates from the required, intended, and expected action.

Whereby the violation is a human action that intentionally deviates from company or regulatory policies and procedures.

What happened

During a scheduled maintenance inspection on an Airbus A330 aircraft, the cabin pressure switch static line was found incorrectly connected to the “P1” position instead of the “P2“ position.

The maintenance history of the concerned aircraft revealed that the pressure switch was replaced about 1.5 years ago before the incorrect installation was detected. During this time, the incorrect installation remained hidden.

Under this condition, the Residual Pressure Warning System (RPWS) will not work, and the red warning lights on the doors will not flash in the event of a cabin residual pressure scenario.

The potential consequences are a rapid door opening, which can lead to serious injuries, if in addition other maintenance precautions are not applied.

Residual cabin pressure warning (passenger door)

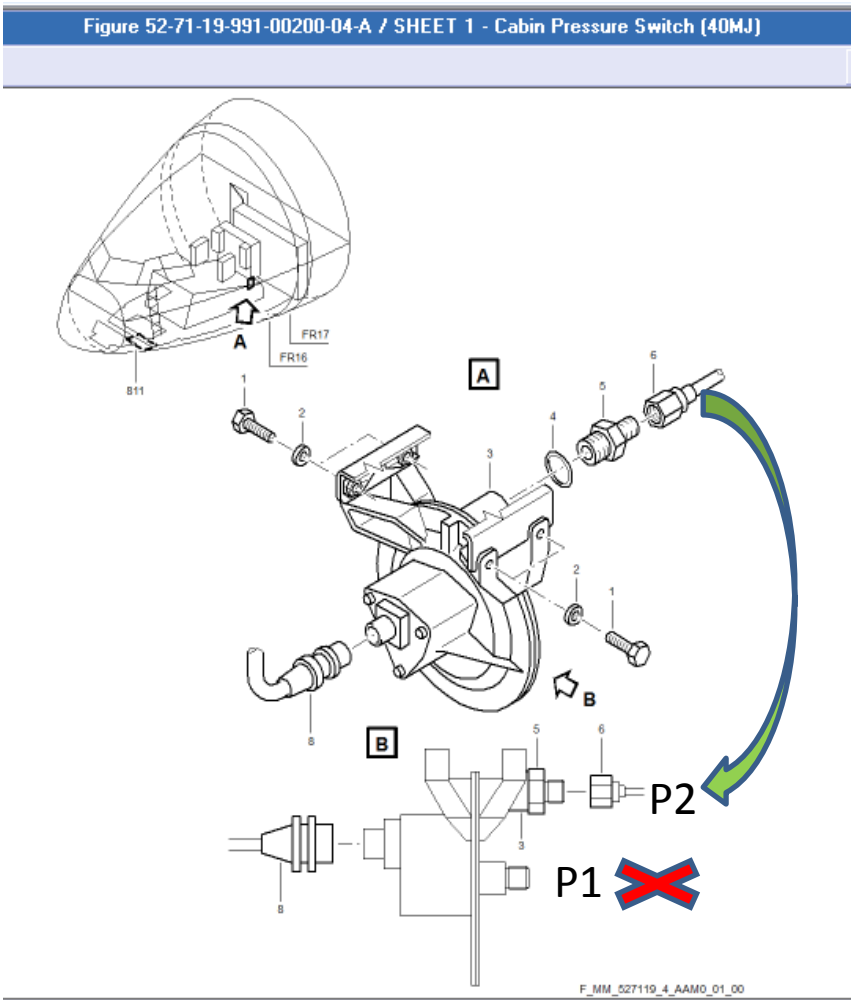
Why did it happen

The two pressure ports (“P1” and “P2”) of the pressure switch are of different diameter.

The AMM installation procedure (AMM 52-71-19-400-801-A) requires a restrictor to be istalled on the “P2” position (IPC 52-71-01-01 item 54).

With the restrictor installed, the connecting ports of “P1” and “P2” have the same diameter as the cabin pressure switch static line.

If instructions as per the AMM are not strictly adhered to, the static line can be connected to the wrong pressure port “P1”.



Lesson learned

Strictly follow, and verify that the maintenance instructions as per the AMM are adhered to.

In this example, it can contribute to prevent serious injuries to maintenance mechanics.

In addition, it is reminded that the AMM requests that the following precautions are to be made in order to avoid rapid door opening due to pressurisation of the aircraft cabin:

"*BEFORE YOU DO THIS PROCEDURE, MAKE SURE THAT ALL THE OUTFLOW VALVES ARE FULLY OPEN OR THAT:*

- FWD AVIONICS COMPARTMENT ACCESS DOOR 811 OR

- ONE OR MORE COCKPIT WINDOWS OR

- ONE OR MORE PASSENGER DOORS ARE OPEN.

ATTACH A WARNING NOTICE ON EACH OPEN WINDOW OR DOOR TO TELL PERSONS NOT TO CLOSE IT.

THIS PREVENTS ACCIDENTAL PRESSURIZATION OF THE AIRCRAFT."

We appreciate receiving feedback to this issue of the Maintenance Briefing Notes.

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This Maintenance Briefing Note (MBN) is part of a set of Briefing Notes that provide an overview of the applicable standards, techniques, best practices, human factors, suggested company prevention strategies and personal lines-of-defense related to major threats and hazards that may affect maintenance.

This MBN is intended to enhance the reader's safety awareness but it shall not supersede the applicable regulations and the Airbus or airline's maintenance documentation; should any deviation appear between this MBN and the Airbus or airline's maintenance documentation, the latter shall prevail at all times.

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