



Safety Information Bulletin

CAAS SIB No.	2015-20
Issued	31 December 2015
Subject	Defect of Rudder Travel Limiter Unit (RTL) Electronic Module on Airbus A320 Family Aircraft Types
Ref. Publications	<ol style="list-style-type: none"> 1) Indonesian KNKT Investigation Report – Air Asia Airbus A320-216, PK-AXC, Karimata Strait, 28 December 2014. 2) Airbus SIL_ARTUS_F1549-27-23-05
Applicability	All Singapore Air Operator Certificate (AOC) Holders operating the A320 Family Aircraft Types and SAR-145 Approval Holders performing maintenance work on the A320 Family Aircraft Types.
Description	<p>The defect of RTL has resulted in numerous “AUTO FLT RUD TRV LIM 1 FAULT”, “AUTO FLT RUD TRV LIM 2 FAULT”, or “AUTO FLT RUD TRV LIM SYS FAULT” messages on the A320 aircraft. In the context of the Air Asia A320 accident on 28 December 2014, the intermittent failure of RTL systems 1 and 2 was a contributory factor to the accident. The subsequent flight crew actions caused the aircraft to go into a stall resulting in an accident.</p> <p>The presence of cracks on the soldering of the RTL electronic module is a known problem on the A320 family. The RTL is located in the Vertical Fin and is subjected to high stresses from vibrations and high temperature variations; this being a technical constraint for electronic boards.</p> <p>Improvements to the manufacturing process were made and the improved electronic modules were made available in 2002. However, the problem persists and triggers the AUTO FLT RUD TRV LIM fault messages. The RTL electronic module found in the Air Asia A320 accident is the improved module.</p> <p>Airbus has recommended that the RTL electronic module be replaced after 3 reports of any combination of the ‘AUTO FLT RUD TRV LIM 1 FAULT’ or “AUTO FLT RUD TRV LIM 2 FAULT” or “AUTO FLT RUD TRV LIM SYS FAULT” messages. The module should be replaced regardless whether the faults messages can be removed or no faults found.</p> <p>When there is a dual channel failure (system 1 and 2) resulting in the “AUTO FLT RUD TRV LIM SYS FAULT” message, aircraft dispatch is not</p>

allowed as per the Minimum Equipment List. The practice is to reset both the systems to clear the fault message and the aircraft is then allowed for dispatched.

It has been noted that electronic modules have been returned back to service from the workshops with no fault found (NFF) reports. This is because the stresses from flight conditions cannot be simulated in the workshops and thus the faults were not able to be reproduced. Airbus has mandated the electronic boards be replaced whenever the electronic modules are sent to the workshop. Reworking of the electronic boards is strictly forbidden.

Recommendation(s) Singapore Air Operator Certificate (AOC) Holders

AOC holders are to closely monitor the “AUTO FLT RUD TRV LIM 1 FAULT” / “AUTO FLT RUD TRV LIM 2 FAULT” / “AUTO FLT RUD TRV LIM SYS FAULT” messages on its A320 family aircraft types and that the RTLU electronic module is replaced after 3 occurrences of any combination of the above fault messages.

Whenever there is an “AUTO FLT RUD TRV LIM SYS FAULT” message, CAAS recommends that the electronic module be replaced before flight. If the ground time do not permit for the replacement and the fault message is cleared by resetting the system, CAAS recommends that AOC holders do the following:

- a) For flight out of Singapore, the electronic module is to be replaced when the aircraft returns to Singapore.
- b) For aircraft that are overseas, the electronic module is to be replaced on return to Singapore.
- c) In any case, if the “AUTO FLT RUD TRV LIM SYS FAULT” message is reported the third time, the electronic module is to be replaced before the next flight.

AOC holders are to ensure that its contracted Fleet Technical Management service provider and maintenance organisations working on its aircraft are fully aware of the above.

AOC holders are to remind its flight crew to follow the actions as per the non-normal checklist whenever there is a RTLU fault message.

SAR-145 Approved Maintenance Organisations (AMOs)

AMOs approved and contracted to test/repair the RTLU are to adhere closely to the CMM and ensure that the electronic boards are replaced regardless whether the unit has faults or not. As mentioned above, any reworking of the RTLU electronic boards is strictly forbidden.

Contact(s)

For further information, contact respective POIs or CAAS A/FO Division Infocenter at 6595 6764 or CAAS_AFO_Infocenter@caas.gov.sg