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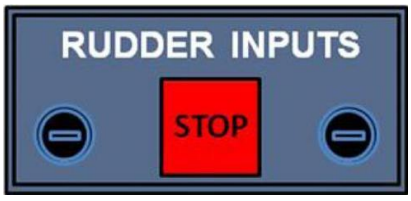
Airbus A300-600/A310 STOP RUDDER INPUT WARNING (SRIW)

Description:	Airbus A300-600/A310 STOP RUDDER INPUT WARNING (SRIW)
Language:	English
Final/Draft/Interim:	Final
OEB Report category:	Aeroplanes
Manufacturers:	Airbus

EUROPEAN AVIATION SAFETY AGENCY



Operational Evaluation Board Report

AIRBUS A300-600/A310
STOP RUDDER INPUT WARNING (SRIW)

OPS/FCL Report
08 August 2012

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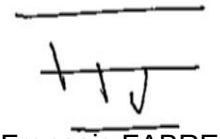
AIRBUS A300-600/A310
STOP RUDDER INPUT WARNING (SRIW)

Operational Evaluation Board (OEB)



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Revision Record

Rev. No.	Content	Date
Original Draft	Initial Evaluation	12 June 2012
Original	no changes	08 August 2012

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Acronyms

AEG .....Aircraft Evaluation Group
CBT .....Computer Based Training
CPD .....Common Procedures Document for conducting Operational Evaluation Boards, dated 10 June 2004
EASA .....European Aviation Safety Agency
FAA .....Federal Aviation Administration
FFS .....Full Flight Simulator (Level C or D)
FCC .....Flight Control Computer
FCOM .....Flight Crew Operations Manual
FSB .....Flight Standardization Board
IAW .....In accordance with
OEB .....Operational Evaluation Board
SRIW .....Stop Rudder Input Warning

OEB Group Composition

Name	Capacity	Task
Kevin Bonfield	EASA	OEB Chairman
Herbert Meyer	EASA	Section Manager Operational Suitability
Fabrice Montier	DGAC	Operational Evaluation Expert
David L Robinson	FAA	AEG FSB

Executive Summary

In order to address NTSB recommendations A-04-58 and A-04-63 (from AAL 587 accident), and also with a link with NTSB recommendation A-04-44 (from AAL 903 incident), Airbus has developed a new “Stop Rudder Inputs” warning system for the A300-600/A310 (Airbus Modification 13593).

In a joint operational evaluation, the EASA OEB and the FAA AEG Flight Standardization Board evaluated the flight crew training programme for the Stop Rudder Input Warning (SRIW) System. This evaluation was conducted by analysis of the CBT training programme and was confirmed by a simulator validation exercise.

This OEB report addresses only the Stop Rudder Input Warning, as there is no existing EASA OEB evaluation for the A300/A310 aircraft.

EASA found the Airbus A300-600/A310 Stop Rudder Input Warning operationally suitable for all phases of flight and the proposed training syllabus appropriate.

1. AIRBUS A300-600/A310 STOP RUDDER INPUT WARNING SYSTEM

1.1 Description of the modification

In case of excessive rudder reversal control input, the SRIW system provides a dedicated red warning light in front of each pilot in the vicinity of the auto land warning light, as well as an aural warning “Stop Rudder Input”.

These warnings are triggered through a detection logic in the FCC (auto pilot computer). Rudder order is deduced from position values derived from the autopilot yaw servomotor output lever arm.

1.2 SRIW System Evaluation

1.2.1 Using the methodology from the EASA Common Procedures Document (CPD), training at Level B was proposed as appropriate to cover the differences in terms of knowledge and procedures when introducing this modification in the current A300-600/A310 fleet. Training level B (aided instruction) typically employs means such as Computer Based Training (CBT), stand-up lectures, or videotapes.

For this purpose, Airbus has developed a specific CBT module “A310/A300-600 RUDDER-REVERSAL WARNING-SYSTEM, FLIGHT” which includes an embedded video presentation.

Furthermore, the operational documentation has been amended to include a description of the system (FCOM, Vol. 1) in a new chapter (the warning and its logics), and to include the new procedure (FCOM, Vol. 2 - Emergency Procedures).

1.2.2 The OEB reviewed the proposed CBT and SRIW system documentation. In addition, an evaluation of the SRIW system was conducted using an A300-600 Engineering simulator at Airbus facility in Toulouse, in March 2012. The evaluation of this function into the simulator verified the validity of the proposed Level B training.

Therefore, the OEB recommends familiarization training at level B, using the CBT and embedded video as presented by Airbus.

2. PREREQUISITES FOR STOP RUDDER INPUT WARNING TRAINING

2.1 The prerequisite to Stop Rudder Input Warning training is prior training, and type rating on the A300-600/A310. Stop Rudder Input Warning training may however be integrated into the type rating training.

3 STOP RUDDER INPUT WARNING TRAINING

3.1 The purpose of the CBT is to familiarise flight crew with the SRIW system and the associated procedure during initial type rating and recurrent courses.

Flight crew member initial training can be accomplished by reference to the Computer Based Training module including technical principle and flight procedure complemented with a video.

3.2 The following training references / recommendations concerning the use of the rudder have been provided to all operators:

- FCOM (“upset situation”)
- FCOM bulletin 827/1 “use of rudder on transport category airplanes”
- FCTM (“use of rudder”)
- Airbus type rating for WB, a specific exercise “use of rudder at low and high speed”
- Instructor DVD presentations “rudder and load” and “upset recovery”

Additional academic lecture and presentations are available which are addressing the correct use of rudder, including an Airbus presentation “Rudder and Loads”.

3.3 Full Flight Simulator (FFS, Level C or D)

Where a FFS is fitted with the system, training should be conducted as a demonstration of the warning on the ground during cockpit preparation and briefing on the procedure. The simulated flight demonstration should be in accordance with the Airbus A310/300-600 Standard Course Normal Phase Flight Crew Training Programme (copy held on file at EASA).

Special Emphasis ground training shall be conducted in the use of rudder on transport category airplanes.

4 STOP RUDDER INPUT WARNING CHECKING REQUIREMENTS

4.1 There are no specific checking requirements associated with the Stop Rudder Input Warning.

5. STOP RUDDER INPUT WARNING RECURRENT TRAINING REQUIREMENTS

5.1 There are no specific recurrent training requirements relating to the Stop Rudder Input Warning.

6 STOP RUDDER INPUT WARNING RECURRENT CHECKING REQUIREMENTS

6.1 There are no specific recurrent checking requirements relating to the Stop Rudder Input Warning.

7. STOP RUDDER INPUT WARNING CURRENCY REQUIREMENTS

7.1 There are no currency requirements for the Stop Rudder Input Warning.