



EASA Safety Information Bulletin

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Subject: Maintenance of Emergency Evacuation Systems

Ref. Publications: EASA Airworthiness Directives:

- * [AD 2010-0210](#), effective date 04 November 2010,
- * [AD 2011-0015](#), effective date 14 February 2011, and
- * [AD 2011-0160](#), effective date 09 September 2011.

Service Publications:

- * AIRBUS Operator Information SE 999.0023/05/SH dated 24 March 2005,
- * AIRBUS Service Information Letter (SIL) 25-061 Rev.5 dated 14 September 2011, and
- * Air Cruisers SIL 25-102 rev.24 dated 21 October 2011.

Applicability: AIRBUS A318, A319, A320 and A321 aeroplanes.

Introduction: The proper operation of emergency evacuation systems, e.g. slides, slides/rafts, door mechanisms, arm/disarm mechanisms, door opening assist mechanisms, slide activation mechanisms, is essential for the success of evacuations from passenger-carrying aircraft. Many efforts are dedicated to monitor and improve the reliability of these systems. As part of these efforts, continuous analysis and survey of in-service events, whether operational or part of a maintenance/test activity, has allowed EASA to identify problems and, where necessary, mandate corrective actions – for example the 3 recently published ADs referenced above.

Nevertheless, malfunctions of evacuations systems will likely persist unless all parties (systems designers, aircraft manufacturers, systems and aircraft maintainers, aircraft operators and aviation authorities) work in conjunction to collectively tackle the various issues that occur with these systems.

Slides and Slide Raft (S/R) are subject to a 36 months periodical task during which system performance and durability is checked. Depending on the maintenance program, a sampling program is used. The number of units actually tested on the aeroplane represents 3% of the total population. Reporting of malfunction of the units deployed is

necessary but is often insufficient to allow satisfying judgement of the root cause of the failure.

In-service evacuation events provide very useful data, although the testing performed during maintenance or training is also a valuable source of information. Whilst these do not fully represent an emergency situation, the behaviour of the systems and any malfunctions observed can help to identify design issues or deficiencies in the maintenance practices that can compromise the safe operations of the evacuations systems and consequently contribute to failures during real emergencies.

Because the on-aeroplane testing of emergency evacuation systems is made in a controlled environment – sometimes performed jointly with cabin attendants' touch-drills¹ – it is essential to collect information, document and identify any malfunction or failure. Accurate reporting of the testing performed is fundamental for system designers and aircraft manufacturers to identify potential improvements in systems design and maintenance procedures. It is commonly agreed that video-recording is the most appropriate and most effective tool to document such testing.

To achieve and maintain a high-level of serviceability of emergency evacuation systems necessitate that each failure, malfunction or defect of any component of these systems is reported as foreseen in the applicable regulations, for instance EC 2042/2003, Part M.A.202 for organisations and personnel involved in continuing airworthiness of aircraft, and Part 145.A.60 for maintenance organisations.

Lack of data from incidents or lack of data quality may lead to the conclusion that the current maintenance process is inadequate in providing information needed resulting in a more conservative approach.

Also, Directive 2003/42/EC Annex I, paragraph C.(vi) of 13 June 2003 on occurrence reporting in civil aviation states that *“Failure of any emergency system or equipment, including all exit doors [...] to perform satisfactorily, including when being used for maintenance or test purposes”* must be reported.

With that in mind, all slide and slide raft deployments due to emergency evacuation, inadvertent (accidental) deployments or scheduled test/demonstration deployments must be reported to the organisations as defined in these regulations and/or directives.

See also Airbus doc. SIL 25-061 Rev.5.

Available data concerning A320 series aeroplanes slides and slides/rafts also stresses that numerous packing and/or improper installation defects have been found. Many of these problems could have been avoided if the folding/packing had

¹ See appendices 1 to OPS 1.1010, 1.1015 and 1.1020

been accomplished in accordance with the manufacturer's current technical data and their installation onto the aeroplane made in accordance with the current AMM (see chapter 25-62 for A320s). In effect, these publications had already been updated to reflect lessons learnt from reported in-service history and contained amended procedures; however, this had not been used. It is therefore reminded that maintenance on emergency evacuation systems must be performed in accordance with the current (latest issue) CMMs and AMMs, and that data retrieved during these maintenance actions must be recorded and presented to the holder of the Type Certificate.

Recommendations: As emergency evacuation systems are complex in design and are safety-critical items, air carriers and their maintenance organisations should ensure that each person performing maintenance actions on evacuation systems is properly trained, qualified, and understands the implications of the current maintenance instructions and how to ensure that the latest versions are used. Operators should as well check and ensure that all maintenance actions on evacuation systems are performed by authorized stations listed in the Air Cruisers SIL 25-102 Rev 24, or later revisions.

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