

Schedule 27 **ATSO-C1006 — Restraint system automated release device**

(subsection 13.2 (1), table, item 7)

1 **Application**

This Schedule applies to an article manufacturer in relation to a restraint system automated release device.

2 **Definitions**

In this Schedule:

restraint means a tether, strop, cargo tie-down, seat belt or similar device, which includes its own manual release system.

restraint system automated release device or **RSARD** means a device that:

- (a) is an add-on dual-purpose restraint-release device used in conjunction with a restraint and an anchor point in an aircraft; and
- (b) keeps a person or an item restrained inside the aircraft during flight; and
- (c) automatically activates to release the person or restrained item from the anchor point if the aircraft ditches or crashes into water; and
- (d) is not aircraft type specific.

RTCA/DO-160G means the RTCA Document RTCA/DO-160G called *Environmental Conditions and Test Procedures for Airborne Equipment*, or a later version of RTCA Document No. DO-160, as existing from time to time.

3 **Minimum performance standard — compliance with RTCA/DO-160G**

The RSARD must comply with the standards in the provision of RTCA/DO-160G mentioned in column 2 of an item of the following table in relation to the environmental conditions mentioned in column 1 of the item.

Compliance with RTCA/DO-160G		
Item	Column 1 Environmental conditions	Column 2 Provision of RTCA/DO-160G
1	Temperature and altitude	Section 4, Category A2
2	Temperature variation	Section 5, Category B
3	Humidity	Section 6, Category B
4	Operational shocks and crash safety	Section 7, Category A
5	Vibration	Section 8, Category U, fuselage zone, unknown helicopter frequency
6	Waterproofness	Section 10, Category W
7	Sand and dust	Section 12, Category S
8	Salt fog	Section 14, Category T
9	Radio frequency susceptibility	Section 20, Category R modified with an upper frequency limit of 12 GHz
10	Fire, flammability	Section 26, Category C

4 Minimum performance standard — RSARD in restraint mode

- (1) The RSARD must, in restraint mode:
 - (a) be statically tested to its ultimate rated strength; and
 - (b) for the load rating test — be attached to an anchor point and restraint, using a method that replicates that likely to be found in service; and
 - (c) if the RSARD is designed to attach to occupant restraints:
 - (i) have a load rating of at least 15 kN; and
 - (ii) be designed to interface with the restraint without modification of the restraint or RSARD; and
 - (d) not interfere with, or modify, the attaching restraint system's normal attaching method or restraint function; and
 - (e) be designed so as to protect against unintentional disengagement; and
 - (f) not restrict the attaching restraint system's range of movement.
- (2) If the RSARD can be easily removed from an anchor point with 1 hand, the release mechanism of the RSARD must be designed to release with 2 independent actions.
- (3) If the RSARD will be attached to a restraint, the RSARD must be designed to avoid dynamic rollout.

5 Minimum performance standard — RSARD in release mode

- (1) The RSARD must, in release mode:
 - (a) release independently and without any further operator action required; and
 - (b) not interfere with, or modify, the attaching restraint system's normal manual release method; and
 - (c) if the RSARD is designed to release only in salt water — be demonstrated to trigger the release in potassium chloride/water solutions down to a minimum water salinity of 31.0 parts per thousand; and
 - (d) have defences against inadvertent activation by salt spray, rain or fluid spillage; and
 - (e) release between 1.5 seconds and 5.5 seconds after it is immersed in water; and
 - (f) be demonstrated to:
 - (i) activate in water temperatures from 1° to 30° Celsius; and
 - (ii) not have its activation time delayed by contact with water at low temperatures; and
 - (iii) not be otherwise affected by contact with water at low temperatures.
- (2) On release, any component of the RSARD that may remain attached to the restraint it is releasing must be of a profile that is not prone to snagging.
- (3) Once released, the RSARD must not be capable of being refitted and made ready for immediate reuse.

6 Minimum performance standard — electrical circuitry

Any electrical circuitry for the RSARD must be capable of self-diagnosing internal faults and clearly indicating to the end user the presence of the faults.

7 Minimum performance standard — marking

The RSARD must:

- (a) be marked with its rated strength; and

(b) if it is designed only to release in salt water — be marked accordingly.

8 Minimum performance standard — technical data

The technical data mentioned in paragraph 21.605 (2) (b) of CASR must include the following:

- (a) a complete technical description of the RSARD, including detail drawings, manufacturing procedures, material identification and specifications;
- (b) operating instructions and limitations for the RSARD;
- (c) a completed compliance summary in relation to the applicable performance standards mentioned in this Schedule;
- (d) conformity inspection reports for the tested components;
- (e) a component maintenance manual containing information about the periodic maintenance, calibration and repair for the continued airworthiness of the RSARD, including recommended inspection intervals and service life for the RSARD;
- (f) qualification and approval test reports in relation to the compliance of the RSARD with the applicable functional performance standards mentioned in this Schedule.

9 Minimum performance standard — supply of RSARD

If the manufacturer for the RSARD supplies 1 or more RSARDs to a person, the manufacturer must give the person the operating instructions and limitations and the component maintenance manual for the RSARD.