



Date: 28/01/2003

Australian Technical Standard Order

Subject: HELICOPTER EXTERNAL PERSONNEL LIFTING DEVICES

1. **(i) APPLICABILITY.** This ATSO prescribes the minimum performance standards that must be met by a Helicopter External Personnel Lifting Device, in order that the item can be identified with the applicable ATSO marking. This ATSO is applicable to all new applications submitted after the effective date of this ATSO. Major changes to the design approved under this ATSO require a new approval under this ATSO.

Examples of equipment that would fall under the definition of an “External Personnel Lifting Device” and may be approved under this ATSO, are as follows:

- Winchman’s or Rescue Harness
- Rescue/Retrieval Strop combinations

(ii) DEFINITIONS

Winchman’s or Rescue Harness

This item of equipment is a full harness worn by a person when suspended outside a helicopter from the winch hook. The harness may also be used in conjunction with a “Dispatcher’s Restraint Strap” (ATSO-C1001) to prevent the wearer from inadvertently exiting the aircraft. A Rappel harness is also included under this definition.

Rescue/Retrieval Strop

A Rescue/Retrieval Strop is an item of equipment that is used in either a single or double lift. It is fitted around the patient, under the arms and across the back and securing in front of the chest. A second Rescue/Retrieval Strop may be used to carry out a hypothermic lift.

2. REQUIREMENTS. The Helicopter External Personnel Lifting Device that is to be approved under this ATSO, and is to be manufactured on or after the effective date of this ATSO, must meet the minimum performance standards, qualification requirements and documentation requirements specified below:

If the item of equipment is a Winchman's or Rescue Harness;

- (i) AS/NZS 1891.1:1995 Amdt 4. Use the applicable sections in the standard for "Fall Arrest Harnesses".

If the item of equipment is a Rescue/Retrieval Strop or combination;

- (ii) AS/NZS 1891.1:1995 Amdt 4. Use the applicable sections in the standard for "Retrieval Strap".

All items of equipment covered by this ATSO must comply with:

- (iii) The applicable sections of FAA FAR Part 29.865 "External Loads" at the latest amendment.

Note 1: The requirements of FAR 27.865 and FAR 29.865 are identical in relation to human external cargo. Compliance with the requirements of FAR 29.865 will ensure compliance with FAR 27.865.

Note 2: The guidelines given in the applicable section of FAA Advisory Circular AC 29-2C should be used when complying with FAR Part 29.865.

(a) Additional safety requirements

(i) Quick Release Device

The incorporation of a quick release device in the Helicopter External Personnel Lifting Device is optional.

If the harness or strop is to incorporate a quick release device when attached to the winch hook, the quick release device shall have the following features:

- i. Be simple and obvious to action;
- ii. Be able to easily release under load with one hand;
- iii. Be protected against inadvertent release; and
- iv. Require two distinct and separate physical actions to initiate release of the load from the winch hook.

(ii) Protection from Unintentional Disengagement or “Dynamic Rollout”

While Dynamic Rollout cannot be prevented by the design of the strop or strap alone, consideration should be made within the design of each Helicopter External Personnel Lifting Device to minimise the possibility of unintentional disengagement during all modes of operation.

(b) Deviations from the design standard AS/NZS 1891.1:1995 Amdt 4

i) Section 4.2.3 - Resistance to light shall be demonstrated by the tests specified in this section or by the use of webbing previously qualified to a similar performance standard. A substantiated life limitation would be acceptable in lieu of the requirement of Section 4.2.3.

ii) Section 5.1. Instructions for use shall be provided in accordance with this section, but the additional information specified by paragraphs (a) to (f) inclusive is not required for aircraft components used in this application and is deleted.

iii) Section 5.2 - Marking. The requirement to mark the maximum allowable free fall specified in subparagraph (d) is deleted.

iv) Appendix D - Procedure D5 (b). A manually operated hydraulic pump is permitted to apply the load. Reference to 150 mm/min cross head speed is deleted.

3. CONFORMANCE.

Prior to marking any Helicopter External Personnel Lifting Device with an ATSO marking as provided for in paragraph 4, the manufacturer must:

- a) Submit a statement of conformance certifying that the Helicopter External Personnel Lifting Device meets the applicable performance standards established in this ATSO; and
- b) Be in receipt of a letter from CASA authorising marking of the Helicopter External Personnel Lifting Device.

4. MARKING.

In addition to the requirements of AS/NZS 1891.1:1995 Amdt 4, articles manufactured under this ATSO must be permanently and legibly marked with the information required by regulation 21.607 of the Civil Aviation Regulations (1998).

5. DOCUMENTATION.

The following documentation must accompany each article manufactured under this ATSO:

- a) A note with the following statement must be provided with each article manufactured under this ATSO: “The conditions and tests required for ATSO approval of this article are minimum performance standards. It is the responsibility of those desiring to install the article either on or within a specific type or class of aircraft to determine that the aircraft’s installation conditions are within ATSO standards. The article may be installed only if further evaluation by the applicant (user/installer) substantiates an acceptable installation and is approved by the Authority”;
- b) Installation instructions and limitations;
- c) Operating Instructions and limitations, including instructions which address the additional safety requirements of part 2 (a) (i) of this ATSO; and
- d) Maintenance instructions, which include procedures to address issues such as cleaning off contaminants that are unique to the operating environment (such as: salt water, hydraulic and engine oil), a retirement criteria based on the component condition and periodic inspections to ensure the continued safety of the equipment throughout its operational life.

6. DATA REQUIREMENTS.

In addition to the data requirements of regulation 21.605 of the Civil Aviation Regulations (1998), an application for ATSO approval must be accompanied by one copy of each of the following:

- a) A complete technical description of the Helicopter External Personnel Lifting Device, including detail drawings, manufacturing procedures, material identification and specifications.
- b) A completed compliance summary against the applicable parts of AS/NZS 1891.1:1995 Amdt 4, FAA FAR Part 29.865 and paragraphs 2 (a) Additional safety requirements and 2 (b) Deviations from AS/NZS 1891.1:1995 Amdt 4; of this ATSO.
- c) Conformity inspection reports for the tested components;
- d) Operating Instructions and limitations in accordance with AS/NZS 1891.1:1995 Amdt 4 and the specific requirements of part 5 (c) of this ATSO;
- e) Maintenance instructions in accordance with AS/NZS 1891.1:1995 Amdt 4 and the specific requirements of part 5 (d) of this ATSO;
- f) Installation instructions and limitations;
- g) Qualification and approval test reports; and
- h) Quality control functional test specification for each production article to ensure compliance with this ATSO.

Approved by:

(Original signed on 28 January 2003)

Neville Probert

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Aviation Safety Standards Division