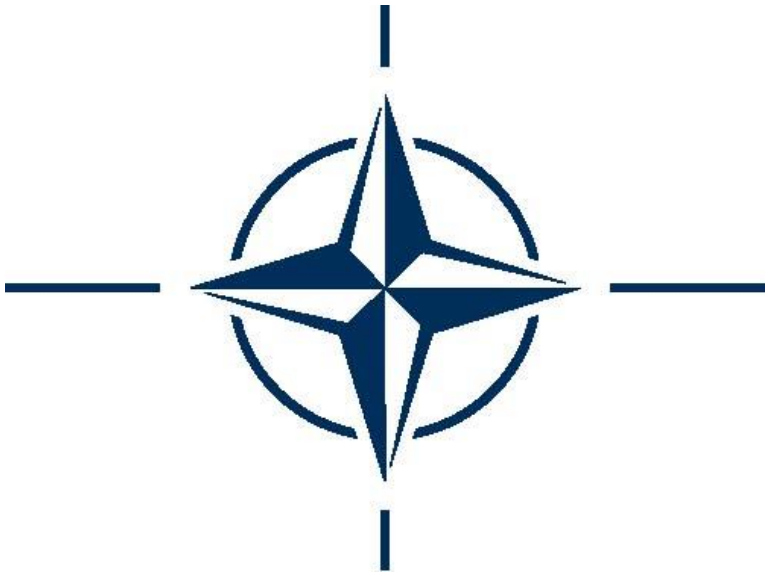
NATO STANDARD

ATP-3.2.49.2.1

CRITERIA FOR THE CLEARANCE OF HELICOPTER UNDERSLUNG LOAD EQUIPMENT (HUSLE) AND UNDERSLUNG LOADS (USL)

Edition A, Version 1

NOVEMBER 2022



NORTH ATLANTIC TREATY ORGANIZATION

ALLIED TECHNICAL PUBLICATION

Published by the
NATO STANDARDIZATION OFFICE (NSO)

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NORTH ATLANTIC TREATY ORGANIZATION (NATO)

NATO STANDARDIZATION OFFICE (NSO)

NATO LETTER OF PROMULGATION

3 November 2022

1. The enclosed Allied Technical Publication ATP-3.2.49.2.1, Edition A, Version 1, CRITERIA FOR THE CLEARANCE OF HELICOPTER UNDERSLUNG LOAD EQUIPMENT (HUSLE) AND UNDERSLUNG LOADS (USL), which has been approved by the nations in the MILITARY COMMITTEE LAND STANDARDIZATION BOARD, is promulgated herewith. The agreement of nations to use this publication is recorded in STANAG 2445.

2. ATP-3.2.49.2.1, Edition A, Version 1, is effective upon receipt.

3. This NATO standardization document is issued by NATO. In case of reproduction, NATO is to be acknowledged. NATO does not charge any fee for its standardization documents at any stage, which are not intended to be sold. They can be retrieved from the NATO Standardization Document Database ((https://nso.nato.int/nso/) or through your national standardization authorities.

4. This publication shall be handled in accordance with C-M(2002)60.

Rob TRABUCCHI
Deputy Director
NATO Standardization Office

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Dimitrios SIGOULAKIS
Major General, GRC (A)
Director, NATO Standardization Office

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RESERVED FOR NATIONAL LETTER OF PROMULGATION

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RECORD OF RESERVATIONS

CHAPTER	RECORD OF RESERVATION BY NATIONS
MNE	Implementation of this standard is not possible due to untrained pilots and flight personnel for this type of operation. For future implementation, pilots and flight personnel has to be trained in certified training organization which execute this type of flight operation.
TUR	TURAF will implement the STANAG after procurement of T-70 helicopters.
CAN	STANAG 2445 is in line with current RCAF training and procedures.

Note: The reservations listed on this page include only those that were recorded at time of promulgation and may not be complete. Refer to the NATO Standardization Document Database for the complete list of existing reservations.

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RECORD OF SPECIFIC RESERVATIONS

[nation]	[detail of reservation]

Note: The reservations listed on this page include only those that were recorded at time of promulgation and may not be complete. Refer to the NATO Standardization Document Database for the complete list of existing reservations.

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TABLE OF CONTENTS

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CHAPTER 1 INTRODUCTION

1.1. AIM

The aim of this publication is to define the minimum criteria for the clearance, rigging and lifting of helicopter underslung loads (ULS) and helicopter underslung load equipment (HUSLE) to permit interoperability between NATO and other partner nations, in order to enable the movement of loads cleared and rigged by one nation, to be lifted by a rotary wing aircraft of another nation.

1.2. AGREEMENT

Participating nations agree that the criteria established in this publication will apply for the carriage of underslung loads and HUSLE by helicopters.

1.3. DETAILS OF THE AGREEMENT

1. Any HUSLE (including nets) and loads must be cleared for flight before use. There are two elements to this clearance procedure required by each nation for each of its helicopter types: airworthiness clearance of the HUSLE and clearance of the rigging scheme for each load.

2. To facilitate interoperability, a list of agencies responsible for airworthiness clearance of HUSLE and USL at national level is available at Annex A.

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CHAPTER 2 LOAD RIGGING SCHEMES

2.1 LOAD RIGGING SCHEMES

To facilitate the acceptance of rigging schemes between nations the following procedures should be followed:

a. Clearance of Netted Loads. Loads may be transported by cargo nets, meeting the technical criteria specified in STANAG 2286 and which have been given clearance to fly as HUSLE with a particular nation's ac, without individual clearance of the load.

b. Clearance of Rigged Loads. Nations will clear items of equipment designated as helicopter underslung loads rigged in accordance with the following procedure:

c. Load Assessment. Make an assessment of:

(1) The weight of the load.

(2) The weight of the HUSLE.

(3) The strength of the attachment points, which will be used for HUSLE attachment.

(4) The ability of the attachment points to meet the criteria specified in STANAG 3542.

(5) The maintenance programme for ensuring the continued serviceability of the attachment points.

(6) Any likely aerodynamic characteristics of the load throughout the potential air speed range.

d. Slinging Scheme. Design a slinging scheme detailing:

(1) The HUSLE to be used.

(2) The method of attachment to the load. Recommendation should be made on the use or non-use of extension strops.

(3) Any additional precautions required. The text should include a list of items to be removed or secured and the appropriate method. Any measures needed to combat aerodynamic instability of the load are to be stated.

e. Limitations. Document the following:

(1) State the maximum and minimum weight of the load when it is to be transported underslung.

(2) State the actions required to ensure the in-flight integrity of the load.

f. Static Testing. The slinging scheme should be validated by means of a static test. The test should be used to:

(1) Ensure that individual leg loads and sling leg angles of the HUSLE fall within the published limits for the slinging equipment in use, in accordance with STANAG 2286.

(2) Ensure that the load is statically balanced.

(3) Minimise the likelihood of damage to the load by the HUSLE.

g. Flight Trial. A flight trial should be carried out to determine:

(1) The maximum speed of the helicopter when carrying the underslung load.

(2) The maximum angle of bank permissible when carrying the underslung load.

(3) The maximum rate of descent permissible when carrying the underslung load.

(4) Any adverse flying characteristics.

h. Documentation. Clearance documentation should be produced which provides:

(1) Diagrammatic and written instructions for the rigging and preparation of the load.

(2) The range of possible load weights. The actual weight of each item and the weight of the HUSLE should be clearly specified.

(3) The range of possible load combinations.

(4) The maximum safe forward speed, angle of bank and rate of descent for a helicopter carrying the slung load.

(5) Advice on load behaviour and appropriate warnings where the load may display poor flight characteristics.

2.2 DANGEROUS AIR CARGO

Dangerous Air Cargo should be labelled, prepared, handled and flown in accordance with the agreed provisions of STANAG 2999.

2.3 CROSS OPERATING RESPONSIBILITIES

Once a load has been cleared in accordance with this STANAG, the responsibilities of the supporting/supported nation remain detailed in STANAG 2999. The supported nation is to rig the load in accordance with national procedures.

2.4 TRAINING

Each helicopter should be handled by a correctly trained helicopter handling team who should have undertaken a period of nationally accepted training in accordance with the syllabus at Annex B.

2.5 MAINTENANCE

All HUSLE utilized under the terms of this agreement is to be inspected and maintained in accordance with the nationally approved maintenance schedule.

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ANNEX A NATIONAL AGENCIES

This table lists the National points of contact responsible for the airworthiness clearance of HUSLE and Underslung Load Clearances.

TABLE 1

Nation	Organisation	Postal Address	Telephone	FAX	Email
BEL	Training centre for Paratroopers Testboard - External Loads Section	Kazerne 0 B-3290 Diest - Schaffen Belgium	0032 13 35 30 80	0032 13 35 30 78	TrgCPara-TB@mil.be
GBR	Joint Air Delivery Test and Evaluation Unit	OC Helicopter Section RAF Brize Norton Carterton Oxfordshire England OX18 3LX	0044 1993 896173		ASWC-JADTEUHelicopterSection@mod.gov.uk
NLD	Armed and Transport Helicopter Division External Load Office	PO Box 9208 6800HK Arnhem	+31 26 35 33 690 Mobile +31 62278730	0031 26 35 33 694	P56677@mindef.nl
AUS	Air Movement Training & Developement Unit (AMTDU)	RAAF Base Richmond Richmond NSW 2755 Australia	0061 24587 3579	0061 24587 3819	

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ANNEX B SYLLABUS FOR THE TRAINING OF HELICOPTER HANDLERS

1. This syllabus defines the minimum requirements for the training of helicopter handling team personnel in the preparation and handling of helicopter underslung loads and the marshalling of helicopters involved in underslung load operations.

2. Training Responsibility. Nations will nominate a specific agency to be responsible for the training of Helicopter Handlers.

3. Training Syllabus. The training is to include the following topics:

a. Preparation and rigging of underslung loads using national Helicopter Underslung Load Equipment (HUSLE).

b. Pre and post flight inspection of all national HUSLE.

c. Marshalling of helicopters and safety drills, in accordance with STANAG 2999 and 3117.

d. Helicopter underslung load carrying cargo hooks and their capabilities.

e. Hooking-up and unhooking of loads, and static discharge procedures.

f. Familiarity with relevant national publications, STANAG 2445 and 2999.

g. Use of national underslung load clearance schemes.

h. National procedures governing the transportation of Dangerous Air Cargo.

4. Scope of the Training. The training is to be both practical and theoretical with checks on student performance. Local re-examination of the qualified Helicopter Handler should be undertaken periodically, in accordance with national regulations. Helicopter Handling Instructions are to be re-examined annually.

ATP-3.2.49.2.1(A)(1)