NATO STANDARD

ATP-3.2.49.3.2

HELICOPTER AIR MOVEMENT TACTICS, TECHNIQUES AND PROCEDURES (TTPs)

Edition A Version 1
Ratification draft 1
MONTH YEAR

NORTH ATLANTIC TREATY ORGANIZATION

ALLIED TACTICAL PUBLICATION

Published by the
NATO STANDARDIZATION OFFICE (NSO)

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NORTH ATLANTIC TREATY ORGANIZATION (NATO)

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NATO LETTER OF PROMULGATION

[Date]

1. The enclosed Allied Tactical Publication ATP-3.2.49.3.2, Edition A, Version 1, HELICOPTER AIR MOVEMENT TACTICS, TECHNIQUES AND PROCEDURES (TTPs), 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 2653.

2. ATP-3.2.49.3.2, Edition A, Version 1, is effective upon receipt.

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

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

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RECORD OF RESERVATIONS

CHAPTER	RECORD OF RESERVATION BY NATIONS
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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Reservations and Observations

NATO Reservations and Partner/Global Helicopter Inter Service Working Group (HISWG) Participating Nations' Observations will be delineated by their respective 2-letter national country code within the margin. Refer to the Record of Reservations for details.

Change Symbols

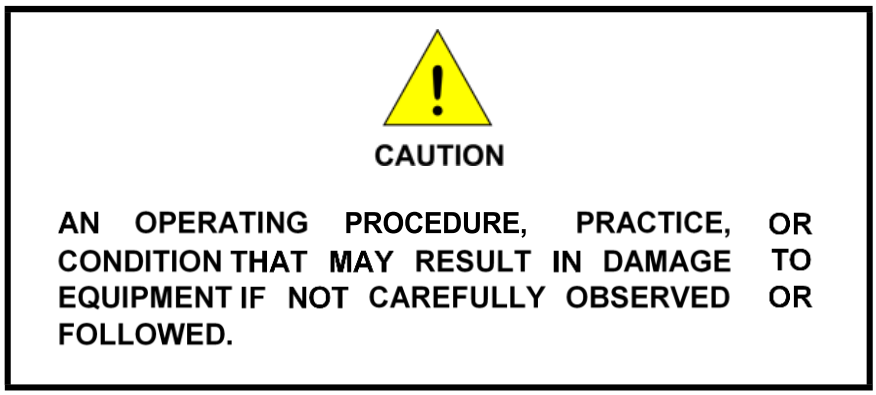
Revised text from new versions are indicated by a black vertical line in the margin of the page, like the one printed next to this paragraph. The change symbol indicates added or restated information. A change symbol in the margin adjacent to an annex number and title indicates a new or completely revised annex.

Warnings, Cautions, and Notes

1. The following symbols and definitions apply to warnings, cautions, and notes used in this publication:

2. **WARNING**

3. **CAUTION**



TACTICS, TECHNIQUES AND PROCEDURES (TTPs)

To ensure safe and successful transport of personnel / troops, equipment and materials (cargo) by “Air Movement”, standardisation of TTPs for individuals, units and organisations are described in this document. These TTPs are to be used during air movement by all types of helicopters and all types of missions. When appropriate, these TTPs should be conducted during the execution of Air Movement tasks, according ATP-3.2.49, chapter 4, Paragraph 4.4.2

TERMS AND DEFINITIONS

NATOTerm

1. Attention is drawn to the terms and definitions, contained in the Lexicon which includes terms and definitions from NATOTerm, the official NATO Terminology Database (available on https://.nso.nato.int), and others specific to this ATP.

2. ‘Adversary’ is used to describe forces and/or weapon systems that pose a threat to the security of NATO forces or operations. It is not used to identify those forces that are considered a threat as national enemies of NATO or any member nation involved in NATO operations.

3. Due to the common use and understanding within organisations, units and documents of NATO members and Partners, the term “helicopter” is used throughout the ATP-3.2.49 series. Within this document when the term helicopter is used, it may be understood to include other rotorcraft (e.g. tiltrotor), although there may be additional factors to be considered.

4. Nations deploy many different types of armed helicopters, including attack, armed reconnaissance, and armed utility helicopters. The extent that these may be used for the attack tactical activities will depend upon the threat and the level of risk

nations are prepared to accept. This document uses the term “armed helicopters” to include all available types suitable for the prevailing conditions.

Terms regarding Air Movement

1. The following terms used in this document are defined in the Lexicon:

   a. Pilot in Command (PIC)[1];

   b. Chalk Commander;

   c. Chalk Number;

   d. Crewmember;

   e. Ready Position.

[1] In some nations referred to as “Aircraft Commander”

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CHAPTER 1 PRINCIPLES OF AIR MOVEMENT

1.1. GENERAL PREPARATION FOR AIR MOVEMENT

To facilitate the planning and preparation of helicopter operations, standard operating procedures are to be developed for both normal and quick-reaction operations. For specific operations, the air and ground forces are to exchange information which should include the following:

a. Time of pick-up;

b. Total number of troops/equipment to be lifted; Passenger Manifest, Air Loading Table (ALT)

c. Point of Departure;

d. Destination;

e. Requirement for back loading;

f. Operational data, such as map references, organisation and marking of loading and landing points, communication, preparation of schedules and alternative schedules, survival equipment, refuelling and logistic support;

g. Intelligence data - adversary positions etc;

h. Requirements of helicopter unit for support personnel etc., at departure point and destination;

i. Request for air/helicopter escort, fire support, command and control aircraft etc.;

j. Action to be taken in the event of downed aircraft (see ATP-3.2.49.4.3);

k. Aircraft type, number of aircraft available and allowable load;

l. Method of movement;

n. Airspace control measures;

o. Lighting requirements for night operations;

p. Diagram or sketch of seating arrangement of lift aircraft;

q. Landing site condition, e.g. dusty, snow-covered.

1.2. SUPPORTING UNIT RESPONSIBILITIES

1.2.1. Planning and Preparation

1. The helicopter unit is responsible for:

   a. Liaising with the supported unit to coordinate planning which includes providing information and advice on:

      (1) Aircraft availability;

      (2) Allowable cargo load;

      (3) Special loading instructions such when loads are to be carried internally or externally;

      (4) Selecting and preparing pick-up and release sites;

      (5) Safety and security instructions;

      (6) Procedures to ensure the maximum recovery of all rigging equipment;

      (7) Procedures to ensure that internal/external cargo is properly secured or rigged.

   b. Supplying the following special equipment which is not available to the supported unit:

      (1) **Internal Loads**: Lashings, tie-downs and equipment organic to the helicopter unit, required exclusively for helicopter transport operations.

      (2) **External Loads**: All equipment connected to the helicopter including the hook installation that engages the load. Additionally, any other equipment organic to the helicopter unit required exclusively for transport operations.

   c. Supplying technical supervision to the supported unit during loading, tie down and off-loading of cargo.

1.2.2. Loading - Unloading

1. **Loading**. The pilot in command of the helicopter is responsible for accepting or declining a load including the distribution and restraint of internal cargo.

2. **Unloading**. The final responsibility for the safe unloading or release of cargo rests with the helicopter pilot in command. The helicopter unit may assist with recovering slings, nets etc. by arranging for back-loading in helicopters returning empty to the supported unit.

1.2.3. Marshalling

When necessary the helicopter unit will issue special instructions on hooking procedures.

1.3. SUPPORTED UNIT RESPONSIBILITIES

1.3.1. Planning and Preparation

1. The supported unit is responsible for coordinating air transport activities by establishing liaison with the helicopter unit and other agencies. In particular it is responsible for:

a. Establishing the priority for transport of cargo.

b. Providing trained personnel, material or handling equipment that may be required to accomplish cargo preparation, rigging, hook-up release and de-rigging as appropriate. This should include all equipment required to contain or rig an external load to enable it to be attached to the helicopter hook, e.g. vehicles, containers, pallets, slings, stops, shackles, clevises and padding.

c. Preparing of internal cargo loads which may include shoring if required.

d. Preparing of external cargo loads. Such loads should be prepared and rigged so as to minimise oscillation while suspended from the aircraft during flight. Loads must not exceed allowable cargo weight established by the helicopter unit.

e. Preparing dangerous cargo in accordance with the current international or national regulations.

f. Providing the helicopter unit with all pertinent information on internal and external cargo including; its weight, centre of gravity, density loading, dimensions, axle weight of vehicles, load description and the quantity of all cargo. Whenever possible, the weight and density loading should be marked on the cargo, including each individual element to be loaded. When the weight or density of a load/element is not known, the supported unit is responsible for notifying a crewmember and is to provide an assessed weight/density.

g. Providing all static electricity discharging devices or protective clothing and equipment that may be required during external cargo transport operations.

h. Selecting and preparing the pickup and release sites, with technical advice provided by the helicopter unit when required.

1.3.2. Loading - Unloading

1. **Loading**. The supported unit is responsible for the following actions when the helicopter is being loaded:

a. Loading and restraining internal cargo under the supervision of a helicopter crew member or other qualified personnel;

b. Presenting loads to be carried externally in a safe condition for flight, rigged in accordance with their national procedure (or mutually approved procedures), and correctly attaching the load to the helicopter hook(s) by qualified personnel. (Also see HUSLE Matrix on www.JAPCC.org/).

The CG markings on trucks are for an empty truck. This is not the CG of the load when a truck is loaded with equipment/cargo.

2. **Unloading**. The supported unit is normally responsible for unloading cargo carried internally and recovering slings, nets etc. from externally delivered loads.

1.3.3. Marshalling

1. The supported unit has the following marshalling responsibilities:

    a. Providing qualified personnel to marshal helicopters to their landing points, and for the pick-up and release of external loads. If the operational environment permits, these personnel should wear distinctly coloured high visibility clothing, e.g. fluorescent orange or yellow.

    b. Use the appropriate marshalling signals (STANAG 3117).

    c. Positioning marshallers and hooking personnel.

    d. Restricting personnel within the danger area around the helicopter to those directly involved in the marshalling, loading and hooking procedures.

    e. When operating at night, providing ground personnel with appropriate night lighting devices. The type of lights will vary, depending on whether the aircrew are using night vision devices or are operating unaided;

    f. When requested by the helicopter pilot, providing additional reference lighting to aid the pilot at night.

1.4. HELICOPTER DANGER AND APPROACH AREAS

The term ‘danger area’, as applied to helicopter operations, is the area around a helicopter on the ground extending 15m from the tips of the main rotor blades and 15m from the tips of the tail rotor blades. When helicopters are armed additional danger areas can apply.

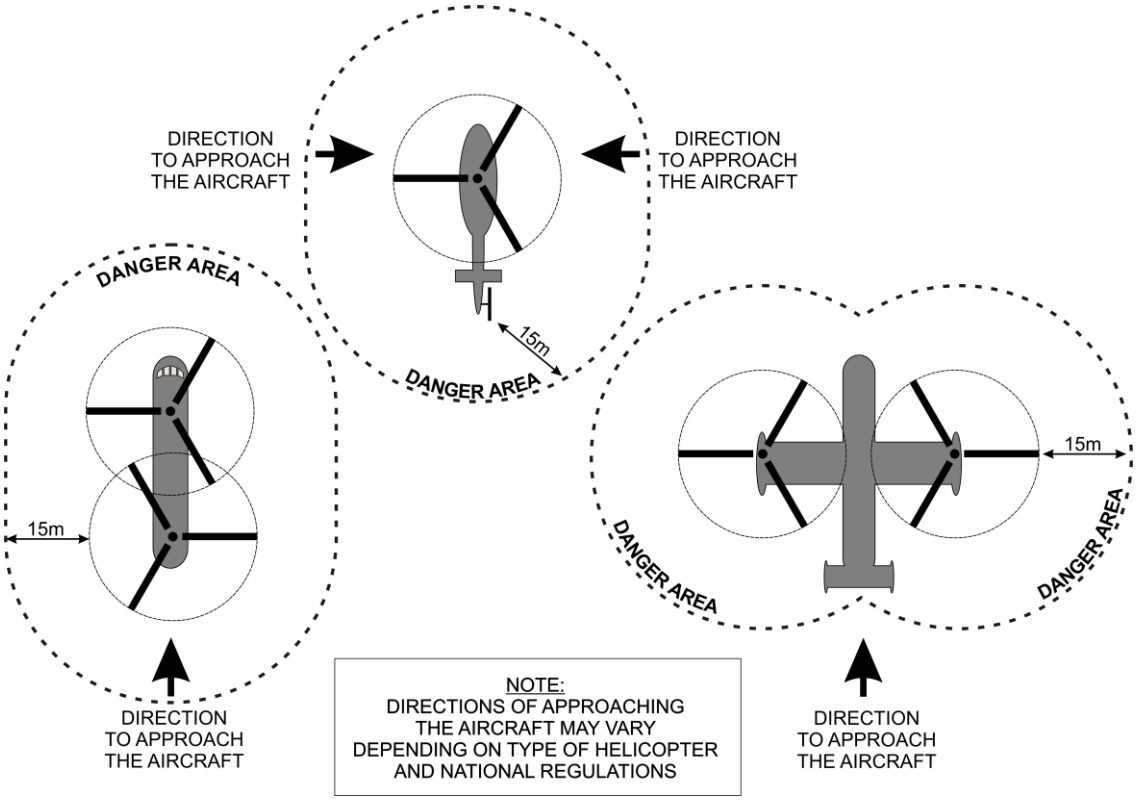

Figure 1.4.1.a: Danger Areas and Approach directions

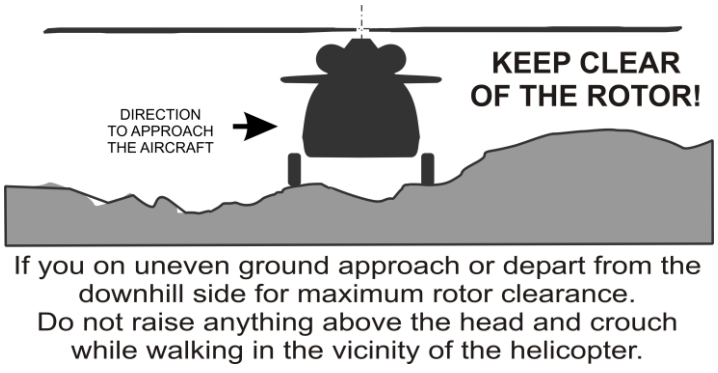

Figure 1.4.1.b: Slope Rotor Clearance

1.4.1. Personnel Boarding / Exiting the Helicopter(s)

Regarding danger areas and approach directions, see Figure 1.4.1.a and Figure 1.4.1.b.

General. (Figure 1.2.5.a) Personnel may enter or leave the danger area only upon the signal from a crew member and in the direction indicated. The rotating elements of the helicopter (i.e. main rotor blades and tail rotor blades) are barely visible and may strike body parts or equipment. The noise generated by turbine engines and rotors of a helicopter is a distracting factor that adversely affects communication; therefore, visual signals should be used as a primary means of communication with the crew.

On slopes, (Figure 1.4.1.b) personnel may only approach or withdraw from a helicopter with rotors engaged on the downslope side under direction of a crew member. If it is necessary to board on the side of a helicopter closer to the slope, personnel should approach the helicopter from the downslope side and then move around the nose, to keep clear of the tail rotor. With tandem rotor helicopters, personnel should not move around the nose. They have to approach via the side and board via the tail entrance of the helicopter. When exiting on a slope, personnel should follow the crew's instructions and either reverse the boarding procedure or remain close to the helicopter until it lifts off.

1.5. PREVENTING FOREIGN OBJECT DAMAGE (FOD)

FOD is damage done to aircraft caused by foreign objects (e.g. loose elements of personal equipment or other debris). Helicopters require special attention to prevent FOD destroying vital elements (e.g. turbine engines, main rotor blades, tail rotor blades and electro optical systems etc.). All personnel are responsible for preventing FOD to the helicopter by securing; hats, berets and other loose items. Airfield or landing zone marker panels, signs and other equipment may cause serious damage to aircraft, personnel or equipment if they become unsecured by the blast generated by rotors or turbine engines.

1.6. AEROMEDICAL EVACUATION (AE)

Due to the short notice associated with these types of missions, there is often little or no time to perform flight planning prior to the mission. Therefore, many actions should be completed in advance, e.g:

a. Crew duty time / crew planning.

b. Alerting procedures.

c. Specific crew duties before and / or after a launch.

d. The crews should have a daily intelligence update and weather briefing.

e. The helicopter should be ready for a launch, within the given REDCON status.

f. Command, Control and Communication (C3) plan (Operations (OPS) / Headquarter (HQ) / Role 1-2-3-4).

g. Landing Zone (LZ) planning for known drop off locations (Hospitals), position, call sign and frequency.

h. Prepared maps for Area of Responsibility (AOR).

i. Procedures and tactics should be standardized between helicopter crew, ground personnel and airborne escort.

j. Prepare medical equipment that is approved for use during flight.

k. Refer to STANAG 3204 for further details on AE.

1.7. REFUELLING

Refuelling with engines operating (i.e. Hot Refuelling) requires special procedures using qualified personnel.
Refuelling operations should preferably not be conducted with passengers or dangerous goods on board. When possible, engines should be shut down and passengers deplaned for refuelling operations.

CHAPTER 2 AIR MOVEMENT OF PERSONNEL

2.1. GENERAL

2.1.1. Supported Unit Actions

The supported unit is responsible for the following actions:

a. Allocate chalk numbers to troops.

b. Provide a Passenger Manifest (Appendix 1 to Annex A).

c. Brief troops on the following points (assisted where necessary by helicopter unit):

- Use of Personal Protective Equipment (PPE; hearing, eyes, head).
- The boarding location of the helicopters for each chalk number.
- Mitigating the dangers inherent in operating in the close proximity of helicopters on the ground.
- Weapons state and carriage.
- Status of portable electronic devices including the removal or folding of radio antennae in order to avoid damage.
- Safety and emergency procedures, to include any known hazards in the landing zone.
- The PIC has final authority on all matters concerning the safe operation of the aircraft.
- Troops will not throw items or fire from the aircraft unless specifically authorised to do so by the PIC.
- The requirements and implications of carrying dangerous cargo.
- The restrictions on personnel using lights in the landing area.

d. Station the troops in the ready position at the designated time;

e. Ensure that the helicopter unit commander is briefed on the supported unit’s mission.

2.1.2. Passengers

1. Basic knowledge about emergency procedures and other situations that may occur is vital and should be briefed to all passengers before take-off. All personnel on board the helicopter should follow instructions given by the helicopter crew.

2. Personal Protective Equipment (PPE) should be used in the area near the helicopter (e.g. hearing-, eye- and head protection).

3. All signals and/or commands given by the helicopter crew should be known and followed.

4. Use of open fire and smoking within 50 meters from aircraft is prohibited.

5. All malfunctions of aircraft systems and/or safety violations should be immediately reported to the helicopter crew.

2.1.3. Personal Weapon

Regulations concerning the weapons carried by passengers may differ between nations and therefore weapon state and carriage should be covered within the passenger briefing. Generally, personal weapons should be unloaded (NATOTerm 7390, a weapon separated from its ammunition), in safe position and placed according to instructions given by the helicopter crew.

2.2. BOARDING THE HELICOPTER

2.2.1. Chalk Commander Responsibilities

1. The responsibilities of the chalk commander, upon receipt of the signal to board (see Table 2.2.2.) are:

   a. To lead the chalk to the helicopter and count chalk on board.

   b. To be stationed near the door or ramp and assist the chalk to board.

2. If no rear crewmember is available, the chalk commander is also required to:

   c. Direct the chalk to the correct position in the helicopter and to board last of all closing and securing the doors where applicable.

   d. Ensure that safety harnesses/belts are secured and notify the pilot.

2.2.2. Boarding Signals

Action	Day	Night (see Note 1)
BOARD	'Thumbs up' by pilot or crewmember.	One flash of flashlight or emplaning light by pilot or crewmember.
READY TO TAKE-OFF	Intercom or tap pilot.	Same as day.
STAND-BY	Hand signal by crew member. Intercom and/or 2 short bell rings or red light '**ON**.'	Same as day.
DEPLANE	'Thumbs up' by pilot or crewmember. Intercom and/or 1 short bell ring or green light '**ON**.'	Same as day.
TROOPS CLEAR	'Thumbs up' by chalk commander or designated representative.	Same as day or two flashes of flashlight by chalk commander or designated representative
EMERGENCY	Intercom and/or a continuous bell ring, emergency/brace card or flashing red light.	Same as day.

Table 3.2.2.1: Signals used when transporting troops / personnel by helicopter

Note 1: *At night, light signals should be used with caution to avoid impairment of aircrew vision. Therefore, in some situations (e.g. when helicopter ground time must be kept to a minimum) the night signals shown may not be practicable.*

2.3. IN-FLIGHT PROCEDURES

2.3.1. Crew Responsibilities

1. It is the responsibility of the crew to ensure that communication is established with the chalk commander.

2. On approaching the landing point, the chalk commander should be informed of the helicopter's heading on touchdown and any other pertinent information that will change the troops' pre-flight briefing, e.g. the exact position of the landing point.

2.3.2. Chalk Commander's Responsibilities.

As soon as possible after boarding the helicopter, the chalk commander should brief the crew on; any changes in the tactical situation, changes of/to Landing Point (LP)/Landing Site (LS)/LZ/Landing Area (LA) or any item which may influence the safe operation of the aircraft, its crew or passengers.

2.4. EXITING THE HELICOPTER

1. Upon approaching the landing point the aircrew are to signal ‘stand-by’ and ensure that the chalk commander is informed of any exiting hazards.

2. When cleared to exit the helicopter, the following actions should be taken:

    a. Upon receipt of the ‘exit’ signal the chalk should release harness/belts and exit the helicopter;

    b. The chalk commander or designated representative is to count the chalk out of the aircraft and give the ‘troops clear’ signal to a crewmember;

    c. When exiting on a slope, the chalk commander should ensure that the chalk keeps clear of the rotor blades, either by remaining beside the helicopter until it lifts off, or by moving down slope from the helicopter;

3. Some methods of deplaning may require additional training/qualification, these include:

    a. Exiting from a low hover by jumping.

    b. Winching/Hoisting

    c. Parajumping

    d. Helocasting

    e. Exiting by using ropes, ladders or other devices from greater heights. Refer to ATP 3.2.49.3.9

2.5. SAFETY RESPONSIBILITIES

2.5.1. Authority

The PIC has full authority in all matters concerning operation safety of the helicopter. Individuals, units and organisations receiving support are not authorised to issue orders that may jeopardise the safety of the helicopter.

CHAPTER 3 AIR MOVEMENT OF CARGO / EQUIPMENT

3.1. GENERAL

Before loading, all cargo which might be deemed hazardous or dangerous (i.e. batteries, ammunition, fuel etc.) must be declared to the helicopter crew in order to adopt appropriate and safe loading procedures. STANAG 7213/ATP 3.3.4.1 and STANAG 4441/AMovP-06 provide NATO standards for handling dangerous goods. Dangerous cargo authorization regulations may differ between nations. Users should be aware of this and liaise with aviation unit prior to pick up.

3.1.1. Regulations

1. Transport of cargo and equipment should be executed according to ICAO Technical Instructions, STANAG 7213/ATP 3.3.4.1 and national regulations respectively.

2. **Air Loading Table (ALT)**. Appendix 2 to Annex A.

3. **Dangerous Goods**. The transport of dangerous goods should be executed according to STANAG 4441/AMovP-06 and regulations of the national MAAs.

3.1.2. Load Methods

Loading is accomplished by one of two methods:

a. **Distributed Loading**. Loading of smaller and lighter items divided over helicopter compartments.

b. **Concentrated Loading**. Loading large items by placing their Centre of Gravity (CG) at a particular station number in the helicopter. Items loaded in this method are trucks, large boxes and missiles. The CG of such items should be known. It is the supported unit's responsibility to provide this information.

3.1.3. External Underslung Load (USL)

1. **Criteria for Clearing USL**. ATP-3.2.49.2.1, CRITERIA FOR THE CLEARANCE OF HELICOPTER UNDERSLUNG LOAD EQUIPMENT (HUSLE) AND UNDERSLUNG LOADS (USLs) (STANAG 2445) defines the minimum criteria for clearing, rigging and lifting helicopter USLs and Helicopter Underslung Load Equipment (HUSLE). It is intended to permit and aid interoperability between nations conducting combined USL operations.

Supporting Nations are responsible for clearly identifying the criteria for accepting a supported Nation's external loads. Supported Nations loads will be rigged in accordance with applicable standards and certified to meet specified dimensions, weight and centre of gravity. The level of risk for external load will be assumed at the appropriate level by the nation providing the lifting helicopter.

2. **HUSLE and Interoperability Tables**. Annex C in STANAG 2445 provides the USL interoperability information required by both helicopter crews and ground handlers for clearing HUSLE. The table shows basic information and limitations relevant to each load. When necessary, it should be used in conjunction with the appropriate National Underslung Load Clearance (USLC) document.

3.2. OPERATIONAL TRANSPORT OF AMMUNITION AND FUEL

3.2.1 General Rules

1. Since ammunition and fuel are dangerous goods, transport of these goods should be executed according to ICAO Technical Instructions, STANAG 7213/ATP 3.3.4.1, STANAG 4441/AMovP-06 and national regulations respectively.

2. Ammunition and fuel are potentially dangerous items that due to their characteristics constitute a potential hazard to the helicopter, its crew and, if the helicopter is parked while loaded, to the surroundings (other aircraft or objects that are close enough to be at risk). The following safety regulations are applicable when handling and/or transporting ammunition and/or fuel:

a. Ammunition and fuel shall be stored outside the landing site. External loads should be placed at the pick-up points shortly before the arrival of the helicopter.

b. At the landing site, the supported unit should provide the best available firefighting arrangements and where possible inform the helicopter unit of the following:

(1) The fire extinguishing compounds appropriate to the type of cargo to be transported;

(2) Firefighting equipment available at the pick-up site;

(3) Appropriate firefighting procedures.

3. The supported unit is responsible for briefing ground crews on conditions under which firefighting personnel should fight a fire, i.e. only from a certain distance or from protective cover, etc.;

4. Where possible, the helicopter unit will provide appropriate fire extinguishing equipment to be carried on board the helicopter;

5. There shall be no smoking or open fires within 50 m of the helicopter;

6. Helicopters scheduled for transporting ammunition or fuel should be refuelled prior to loading. It is prohibited to defuel helicopters that are carrying this cargo;

7. Prior to loading and unloading, as well as picking-up of slung loads of ammunition and fuel, the static electricity of the helicopter should be discharged. A non-conducting attaching device should be positioned between the load and hook;

8. Where possible, all loading and unloading procedures should be carried out with equipment authorised for this purpose and under the supervision of qualified personnel;

9. The cargo should be loaded and lashed in such a manner as to be stationary during flight. The aircrew should check it at regular intervals. The cargo should not be loaded near potentially hazardous installations such as heat conduits, heaters and airborne electrical installations;

10. Where necessary, prior to take-off, the helicopter crew in charge of transporting the cargo should be briefed by the supported unit on special handling measures;

11. The aircraft should be well ventilated at all times;

12. Unauthorised persons are to be kept away from helicopters transporting ammunition and fuel. Nonessential personnel will not be transported on the same lift;

13. Service and maintenance work that could constitute a fire hazard shall not be performed on any helicopter loaded with ammunition or fuel as cargo. This cargo should be off-loaded prior to performing such work;

14. When a helicopter is transporting ammunition or fuel as cargo and is taking-off or landing at an airport; the pilot shall provide the airport's Air Traffic Control (ATC) Service with the following information:

a. Quantity and type of load;

b. Classification of cargo.

15. If a fire breaks out in a cargo hold during a flight, the aircrew will attempt to extinguish it with the airborne fire extinguishers. The pilot will land the helicopter in the closest area that is clear of obstruction. The cargo will be inspected before it is transported again;

16. If during flight, or due to an emergency situation, a slung load has to be jettisoned and/or if it is suspected that a large quantity of fuel has leaked out, the fact

is to be reported to the ATC service. In case of radio failure, the crew shall inform the local authorities at the first opportunity;

17. In peacetime, it is prohibited to fly helicopters loaded with ammunition and fuel as cargo over residential areas. Whenever possible, flying over houses, public means of transportation or groups of people should be avoided;

18. When helicopters transporting ammunition and/or fuel as cargo are temporarily parked, the following points should be considered:

a. The minimum safe distance between the helicopter and objects to be protected is 275 m. Helicopters should maintain a minimum safe distance of 25 m (measured from the periphery of the main rotor disk) from one another. The exact minimum safe distance requires careful calculation and should be based on national and international regulations;

b. The parking area should be in the shade;

c. Where necessary, the parking area should be secured by guards;

d. Helicopters should not be parked in aircraft hangars. If the helicopter must be parked in an aircraft hangar it should be grounded to an appropriate device and all other aircraft parked therein should be removed;

e. Aircraft shall be grounded (earthed) to an appropriate device.

19. Before ammunition and fuel are transported the supported unit will:

a. Identify the goods in the request for air transport;

b. Label the cargo/goods in accordance with the appropriate regulations;

c. Identify the cargo/goods in the aircraft loading list.

20. The following basic rules apply:

a. Cargo is to be prepared for air transport so that danger to the helicopter and the crew is reduced to a minimum;

b. Cargo is to be loaded in a way that it is protected from damage inflicted by sharp edges within the cargo compartment of the helicopter;

c. The helicopter crew is responsible for meeting the safety requirements for the cargo hold for the period between loading and unloading of the helicopter;

d. The supported unit should prepare external loads according to its national regulations, make them air-transportable and hang them onto the lifting hook of the helicopter;

e. The load originator is responsible for specifying the STANAG(s) used in preparing the load;

f. In the case of cargo being handed over from one nation to another for transport without previous or accompanying instructions as to safety precautions, the safety regulations of the nation accepting the cargo will apply;

g. When deemed necessary by the helicopter unit, the supported unit will provide qualified escort personnel.

3.2.2. Transport of Ammunition

Ammunition is classified ‘explosives’ according to ICAO Technical Instructions, STANAG 7213/ATP 3.3.4.1 and national regulations respectively. The following regulations are applicable when ammunition is being transported as cargo:

1. Ammunition must be technically suitable and compatible for transport by helicopter, in accordance with national regulations. If not packed in the original packing material, extra care should be given to the labelling.

2. The following situations do not constitute transport of ammunition:

a. When ammunition is needed by the soldiers on board the helicopters immediately after landing to fulfil their combat mission;

b. When ammunition is part of the helicopter’s or the helicopter crew’s equipment.

3. When a helicopter is transporting ammunition, the landing place is classified as an in-transit storage place for ammunition and therefore becomes:

a. A risk to vulnerable locations (e.g. residential areas, public roads, barracks, taxiways, parking lots and aircraft parking areas);

b. Vulnerable to accident, interference or hostile actions and needs to be protected.

4. The required safe distances are to be determined according to the corresponding regulations of the nation where the transfer of the load takes place.

3.2.3. Transport of Fuel

1. Fuel is classified ‘highly flammable liquid’ or ‘flammable compressed gas’ and labelled in accordance with ICAO Technical Instructions and STANAG 7213 / ATP

3.3.4.1. The following regulations are applicable when fuel is being transported as cargo.

2. Fuel is to be carried only in approved containers that meet the requirements as stated in STANAG 4441/AMovP-6. The content of the containers or jerry cans should not exceed 90% unless specifically cleared for a safe higher content. The closure should be leak-proof.

3. The content of fuel tanks is governed by ICAO Technical Instructions. Vehicle fuel tanks may contain some fuel but not more than 75% of tank capacity; the fuel tanks of ground support equipment, static or self-propelled, may contain at least some fuel but not more than 25% of tank capacity.

4. The type of transport (i.e. internal or USL) should be governed by the regulations of the nation providing the helicopters.

3.3. Transport of Vehicles

Only after the driver has been signalled by a crewmember or marshaller acting on instructions from the helicopter crew, vehicles may enter the danger area of a helicopter for the purpose of loading/boarding or unloading/exiting operations. The driver should ensure that there are no obstructions extending above the basic structure of the vehicle, e.g. radio antenna, equipment. Before loading vehicles onto helicopters, the following should be checked.

a. Tightness of fuel tank caps, battery plugs and oil filler plugs;

b. Vehicle fuel tanks should not exceed 75% full and fuel canisters should not exceed 90% of rated capacity;

c. Security of equipment stored in vehicles;

d. Verify all vehicles and attached electronics equipment is turned off;

e. Dangerous goods stored in or on vehicles has been loaded in accordance with the approved STANAGs;

f. All vehicles should be inspected for fuel leaks before loading. Any vehicle with a fuel leak should not be loaded.

CHAPTER 4 HELICOPTER HANDLING

4.1. GENERAL

1. Any ground personnel working or operating in support of helicopter operations should be trained to a specified level. Some nations maintain qualified personnel that cover all the responsibilities for helicopter support (i.e. pathfinders, handlers etc) while other nations rely on separate units to provide the support. For the purpose of this chapter the term 'helicopter handlers' means all personnel responsible for the helicopter support functions such as Marshalling, Recon / preparation of LZ/LP and USL operations.

2. Helicopter handlers should be qualified to specified nation levels. During joint/combined operations, it is the responsibility of each nation to accept the qualification standards of the helicopter handlers prior to joint/combined operations.

3. Arming and refuelling personnel are not within the scope of this chapter. See ATP3.2.49.4.2

4.2. TRAINING OF HELICOPTER HANDLERS

4.2.1. Training Scope

Helicopter handling training should consist of both practical (including checks of student performance) and theoretical training. In accordance with national regulations, qualified helicopter handlers should be re-examined periodically.

4.2.2. Training Syllabus

1. As a minimum, training should include the following activities:

   a. Basic helicopter safety training;

   a. Personnel embarking/disembarking;

   a. Preparing and rigging USLs using national HUSLE;

   a. Conducting pre and post flight inspections of all national HUSLE;

   a. Marshalling helicopters and conducting safety drills in accordance with STANAG 3117 and this publication;

   a. Using helicopter USL carrying cargo and understanding their capabilities;

a. Hooking and unhooking loads;

a. Conducting fire and crash rescue drills;

a. Using national underslung load clearance schemes:

2. Additional training may include:

a. Recon/preparation of LZ/LP;

b. C2 of the helicopter handling team;

c. Establishing ground/air comms;

d. Operation of multiple LP’s in a LS

3. Training should also include knowledge of the following publications:

a. Relevant national publications.

b. ICAO/IATA Dangerous Goods Regulations.

c. ATP-3.2.49.2 series.

d. STANAG 4441/ATP3.3.4.1 and STANAG7213/AMovP-06.

e. Other relevant STANAGs.

ANNEX A TACTICAL AIDE MEMOIRE (TAM)

Appendix 1 **Passenger Manifest**

Appendix 2 **Air Loading Table (ALT)**

Appendix 1 to ANNEX A PASSENGER MANIFEST

PASSENGER MANIFEST (Ref. STANAG 7213, ATP-3.3.4.1, Annex F)								
FLIGHT DATE		AIRCRAFT TYPE		FLIGHT NUMBER / CALL SIGN			MANIFEST NUMBER	
DEPARTURE / APOE		ETD	DESTINATION / APOD			ETA	VIA	
CHALK- NUMBER		CHALK-COMMANDER	MODE of DELIVERY (landing / fast rope / rappel / parachute)					
Nr	RANK	NAME	Id Nr	UNIT	FINAL DESTINATION	BAGGAGE		REMARKS
						PIECES	WEIGHT	
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
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32								
33								
TOTAL NUMBER OF PASSENGERS					TOTAL WEIGHT (KG)			LOADMASTER (Rank/name/Signature)
MANIFEST PREPARED BY		NAME	SIGNATURE		ALL PASSENGERS AND BAGAGE LISTED ON THIS MANIFEST HAVE BEEN LOADED			

Note: *One complete copy of the passenger manifest should remain at the departure site.*

Appendix 2 to ANNEX A AIR LOADING TABLE (ALT)

Date and version:..... Page……of……Pages

DATE:				AIRLOADING TABLE							HHI/UNIT+ Telephone number:
Avn Unit Type Helicopter	Wave	Flight	Sortie	Sub unit USL Internal load type	No of Pax USLC ILC / Internal	AUW (kg) AUW (kg) AUW (kg) Total AUW (kg)	PUP/ Load Point	Arrival time	Loading time	DOP/ Load Release Point	Remarks*

* Remarks: Additional information concerning sorties: A) Timezone B) Bumpplan C) Frequenties and Callsigns D) Information about primary and alternate HLZ's te be used).

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ANNEX B LEXICON

B1. ABBREVIATIONS and ACRONYMS

AE	Aeromedical Evacuation
AOR	Area Of Responsibility
ATC	Air Traffic Control
ATP	Allied Tactical Publication
CASEVAC	Casualty Evacuation
C3	Command, Control and Communication
CG	Centre of Gravity
FOD	Foreign Object Damage
HIS WG	Helicopter Inter Service Working Group
HQ	Headquarter
HUSLE	Helicopter Underslung Load Equipment
IATA	International Air Transport Association
ICAO	International Civil Aviation Organisation
LA	Landing Area
LP	Landing Point
LS	Landing Site
LZ	Landing Zone
MAA	Military Aviation Authority
OPS	Operations
PIC	Pilot in Command
PLM	Passenger Load Manifest
STANAG	(NATO) Standardisation Agreement
TAM	Tactical Aide Memoire
TTPs	Tactics, Techniques and Procedures
USL	Underslung Load
USLC	Underslung Load Clearance

B.2. TERMS AND DEFINITIONS

aircraft commander

The aircrew member designated by competent authority as being in command of an aircraft and responsible for its safe operation.
Note*: The aircraft commander may also be the mission commander. [MC] NATO Agreed*

chalk commander

The commander of all troops embarked under one chalk number. [MC] NATO Agreed

chalk number

The number given to a complete load and to the transporting carrier. [MC] NATO Agreed

ready position

In helicopter operations, a designated place where a helicopter load of troops and/or equipment waits for pick-up. NATO Agreed

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