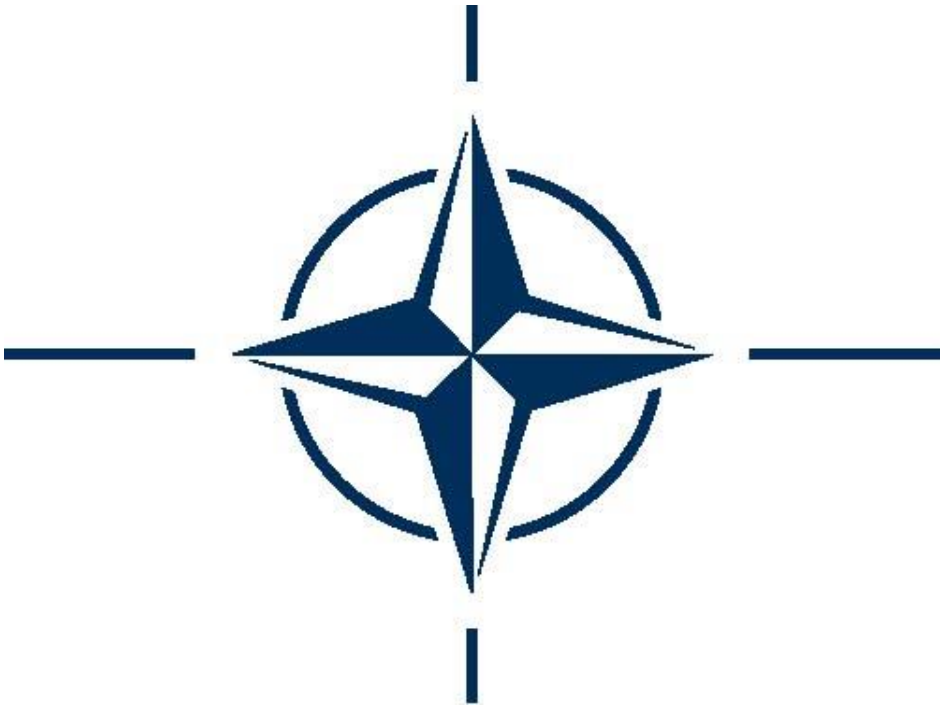
NATO STANDARD

AFLP-3847

HELICOPTER IN-FLIGHT REFUELLING (HIFR) EQUIPMENT

Edition A Version 1
DECEMBER 2019



NORTH ATLANTIC TREATY ORGANIZATION

ALLIED FUELS LOGISTICS PUBLICATION

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NORTH ATLANTIC TREATY ORGANIZATION (NATO)

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NATO LETTER OF PROMULGATION

3 December 2019

1. The enclosed Allied Fuels Logistics Publication AFLP-3847, Edition A, Version 1, HELICOPTER IN-FLIGHT REFUELLING (HIFR) EQUIPMENT, which has been approved by the nations in the Petroleum Committee, is promulgated herewith. The agreement of nations to use this publication is recorded in STANAG 3847.

2. AFLP-3847, Edition A, Version 1, is effective upon receipt.

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

Zoltán GULYÁS
Brigadier General, HUNAF
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
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]
DNK	HIFR equipment in Danish Defence are not equipped with a one-way-valve to prevent siphoning. The requirement for a maximum resistance of 10kOhm in the entire HIFR hose assembly can not be met.

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SECTION 1 - AIM AND AGREEEMENT

AIM

0101. The aim of this agreement is to provide a minimum standard for Helicopter In-Flight Refuelling (HIFR) equipment which can safely pressure-refuel helicopters in the hover from ships and meet the operational requirements of MPP-02, Volume I, Edition H, Version 2.

AGREEMENT

0102. Participating nations agree that HIFR equipment shall meet the following minimum requirements:

a. The length of the fuel hose is to be such that it allows the helicopter to be refuelled safely while in the hover, up to a maximum height of 15 m (49 ft) above the flight deck refuelling point, or 20 m (65 ft) above the water, and up to a maximum lateral distance of 20 m (65 ft) from the port side of the ship.

b. A pressure-refuelling self-sealing coupling (nozzle) to the aircraft is to be provided with a manually controlled ON/OFF valve, and the coupling dimensions are to conform to STANAG 3105.

c. The fuel pressure delivered to the aircraft is neither to be less than 1.38 bar (20 psi) nor to exceed 3.44 bar (50 psi). The minimum flow rate is to be 114 L (25 Imperial gal, 30 US gal) per minute.

d. The maximum allowable flow velocity is to be 1 $m \cdot s^{-1}$ (3.3 $ft \cdot s^{-1}$) until immersion of the fill-pipe, and 5 $m \cdot s^{-1}$ (16.4 $ft \cdot s^{-1}$) thereafter, in order to minimize electrical charge separation.

e. A suitable lifting eye is to be provided between 2.1 and 3.0 m (6.9 and 10 ft) from the aircraft end of the HIFR hose. The dimensions of the orifice of the eye (which may be elongated) are to be as follows:

(1) Minimum height: 33 mm (1.30 in).

(2) Minimum width: 22 mm (0.87 in).

(3) Maximum diameter: 76 mm (3.00 in).

f. The material lying over the winch hook is to be of a cross-section not exceeding a diameter of 19 mm (0.75 in). The eye shall be capable of supporting the maximum weight of the HIFR assembly under normal

HIFR operations and must also be capable of supporting the upper load limit specified in sub-paragraph 2. i. below.

g. A minimum of one self-sealing emergency break-away coupling is to be fitted to the HIFR hose between the lifting eye and the ship, close to the lifting eye.

h. Automatic release of the break-away coupling is preferred and the tensile force to break the coupling is to be between 180 kg_f (400 lb_f) and 230 kg_f (500 lb_f) while observing the ultimate limit in sub-paragraph 2. i. below. If an automatic release is provided, a suitable deck attachment point at the ship's end of the HIFR hose is required to ensure that tension can be applied during an emergency break-away.

i. The HIFR equipment is to be designed so that the absolute maximum load produced at the lifting eye under normal operating conditions, including the emergency break-away force, does not exceed 270 kg_f (595 lb_f), the capacity of the aircraft's rescue winch. At this load, the elongation of the hose is not to exceed 5%.

j. The HIFR equipment is to be electrically bonded between the ship and the HIFR fuel nozzle in order to continually dissipate static electricity, with the grounding (earthing) provided by the ship. The electrical resistance of the HIFR hose assembly shall not exceed 10 kΩ.

k. If required, an inward vent valve may be provided near the aircraft end of the HIFR hose so that fuel can be drained from the hose after the fuelling operation has been completed.

l. A non-return valve shall be incorporated to prevent fuel from being siphoned from the aircraft.

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