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1. Helicopter details

The following helicopter type is in use by the Dutch Maritime Pilots Organisation:

Aerospatiale Dauphin SA 365N3

- helicopter overall largest dimensions (D) **13,68 meters**
- rotor diameter **11,93 meters**
- width of wheel track **2,03 meters**
- maximum take-off weight **4300 kilograms**
- approximate minimum required relative wind on deck: **0 knots**

2. Landing / Hoist area requirements

2.1 General

The Dutch Civil Aviation Authorities have endorsed minimum dimensions for shipboard helicopter landing and hoist areas including maximum obstacle heights within these areas (for details see section [2.2]).

When advising a landing or hoist area to the VTS operator (for details see section [4]), the advised area should meet these minimum dimensions and maximum obstacle heights.

2.2 Minimum dimensions and obstacle limitations

2.2.1 Full landing area

A *full landing area* consists of an inner circle called the *landing zone* surrounded by an outer circle called the *clear zone*.

The *landing zone* is the area where the helicopter will actually land on the ship's deck.

The *clear zone* functions as a safety space barrier for the helicopter during the approach to and departure from the *landing zone* and when manoeuvring over the *landing zone*.

The main characteristic of a *full landing area* is that the helicopter can land from all directions, depending on specific conditions such as the actual location on deck, relative wind on deck etc.

A selected area on deck may be designated as a *full landing area* if complying with below mentioned minimum dimensions and obstacle limitations:

LANDING ZONE

Diameter	:	minimum	13,68 meters
Obstacle height	:	under	0,25 meters

CLEAR ZONE

Diameter	:	minimum	20,00 meters
Obstacle height	:	under	1,20 meters

2.2.2 Restricted landing area

A *restricted landing area* consists of a rectangular area called the *landing zone* surrounded by a circle called the *clear zone*.

The restriction for this type of landing area is that the helicopter cannot land from all directions, but from two specific directions only, the so called *parallel landing* and the *perpendicular landing*.

During a *parallel landing* the fuselage of the helicopter will be positioned over the water and exactly parallel to the selected (restricted) landing area on deck. When in parallel position the helicopter will slowly move sideways in the direction of the vessel and land on the deck. Departure will take place in reversed order.

During a *perpendicular landing* the fuselage of the helicopter will be positioned over the water and exactly perpendicular to the selected (restricted) landing area on deck. When in perpendicular position the helicopter will slowly move forward in the direction of the vessel and land on the deck. Departure will take place in reversed order.

A selected area on deck may be designated as a *restricted landing area* if complying with below mentioned minimum dimensions and obstacle limitations:

LANDING ZONE

Length	minimum	13,68	meters
Width	minimum	6,10	meters
Obstacle height	maximum	0,25	meters

CLEAR ZONE

Diameter	minimum	20,00	meters
Obstacle height	maximum	1,20	meters

2.2.3 Non-dedicated hoist area

A *non-dedicated hoist area* is an unmarked area on board (for example –but not limited to- the deck, a container stack or a bridge wing) to be used for helicopter-ship transfer operations by means of hoisting only.

A *non-dedicated hoist area* may be designated at such if complying with below mentioned minimum dimensions and obstacle limitations:

HOIST SPOT

Diameter	minimum	2 meters	(if hoist height under 4 meters [low hoist])
	minimum	4 meters	(if hoist height over 4 meters [high hoist])
Obstacle height		no obstacles allowed (flat surface only)	

CLEAR ZONE

Diameter	minimum	24	meters
Obstacle height		minimum of two sides with obstacles under 3 meters only	

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2.3 OTHER REQUIREMENTS

In addition to the requirements as to minimum dimensions and maximum obstacle height, landing and hoist areas must comply with the following:

- minimum turbulence;
- free of exhaust gasses / fumes;
- no water on deck (green water);
- minimum spray;
- if vessel pitching, as close as possible to mid-ship position;
- compliance with the *Shipboard Safety Checklist for Receiving Pilot by Helicopter* (see section [5])

2.4 Selection and acceptance of landing/hoist area

Selection of an acceptable landing or hoist area will initially be at the discretion of the helicopter pilot. By means of a visual inspection of the local situation he will assess if and where the transfer operation can safely take place from a flight / helicopter safety point of view.

If the local situation is acceptable to the helicopter pilot, the maritime pilot will see if the local circumstances are acceptable as to his personal safety during the transfer operation (see also section [8])

! Attention

For the above reasons the transfer of the maritime pilot *may* take place at a location on board which is different to the location advised by the master prior to arrival (see also section [4]).

3. Operational limits

3.1 Maximum movements of vessel in case of deck landing

Excessive movements of the vessel may cause the helicopter to slide away from its landing area while on deck. For this reason the following limits for vessel's movements are in force in case of a full landing on board the vessel. It is at the discretion of the helicopter pilot if a full landing is possible.

Maximum roll angle of vessel 5° to starboard side, 5° to portside (total maximum roll angle 10°)

Maximum pitch angle of vessel 2° forward, 2° aft (total maximum pitch angle 4°)

Maximum heave rate of vessel not defined, at helicopter pilot's discretion.

3.2 Maximum movements of vessel in case of hoisting

Not defined. At helicopter pilot's and maritime pilot's discretion.

3.3 Minimum visibility

Pilot by helicopter operations may temporarily be suspended due to poor visibility. Minimum visibility limits for pilot by helicopter operations are as follows:

		<u>Daylight*</u>	<u>Night</u>
On board the vessel	<u>Horizontal visibility</u>	0,75 NM	0,75 NM
	<u>Vertical visibility</u>	200 feet	300 feet
At the heliport	<u>Horizontal visibility</u>	2500 meters	5000 meters
	<u>Vertical visibility</u>	500 feet	1000 feet

* period between 15 minutes prior to sunset and 15 minutes after sunset (measured at 52° 00'N – 05° 00'E at mean sea level)

3.4 Other meteorological limits

Pilot by helicopter operations may further temporarily be suspended due to:

- high relative humidity in combination with temperatures under zero ° C. (risk of icing);
- freezing rain;
- thunder storms;
- extreme snowfall or hail;
- winds in excess of 55 knots;
- relative wind on deck under 25 knots (in case of hoisting only)

4. Requesting pilot by helicopter

Vessels limited by their draught (drawing more than 17,37 meters in salt water) are bound to the EUROGEUL (EURO CHANNEL) and MAASGEUL (MAAS CHANNEL). Channel bound vessels will normally receive a pilot by helicopter without request (on an exceptional basis, pilots may be delivered by pilot vessel or pilot tender).

All other (not channel bound) vessels may receive a pilot either by helicopter or by pilot vessel or pilot tender. Vessels may request a pilot by helicopter at initial contact with the Port of Rotterdam VTS-operator (MAAS APPROACH, VHF channel 1).

Masters of inbound vessels should consider sections [2.2] and [5] in particular, including possible previous experiences, prior to giving a positive advise to MAAS APPROACH regarding the vessels capability of receiving a pilot by helicopter.

As to the helicopter suitability of outbound vessels the maritime pilot will assist in selecting a suitable landing / hoist area on board the vessel and report same to the chief-pilot on duty / planning department.

Honouring of a request to receive a pilot by helicopter will depend on traffic volume, the actual planning situation and local weather conditions.

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5. Safety precautions to be taken by the vessel

In anticipation of receiving a pilot by helicopter the Master of the vessel should ensure that all possible safety precautions on board have been taken prior to arrival of the helicopter.

The *Shipboard Safety Checklist for Receiving Pilot by Helicopter* may be used as a guideline in this respect.

With regard to taking fire fighting precautions on board the vessel, ship-owners and masters are requested to meet the guidelines set out in the *ICS Guide to Helicopter/Ship Operations Guide* as much as possible.

For good orders sake Masters are requested to plan and execute safety precautions to be taken in time and carry out same in advance as much as possible

6. Helicopter ship communication

All communication between vessel and helicopter must be channelled via PILOT MAAS (VHF channel 2). Hence, vessels should communicate with PILOT MAAS only and avoid direct communication with the helicopter pilot.

The helicopter pilot listens to PILOT MAAS simultaneously, instantly sharing all communication between the vessel and PILOT MAAS.

7. Changing vessels course / speed

During helicopter-ship operations, PILOT MAAS may request the vessel to alter course and/or speed, in order to allow the helicopter to catch sufficient relative wind, to move the helicopter into a favourable transfer position or to reduce vessel's movements (especially rolling).

The Master should confirm to PILOT MAAS if he can and will comply with such request or not.

8. Use of alternative landing / hoisting area

Judgement of the operational situation at vessels position and acceptance of the landing / hoist area will be carried out by the helicopter pilot when in position near/over the vessel, based on his on-the-spot observations and local conditions.

For flight safety reasons, the helicopter pilot may select a landing / hoist area different to the location initially advised by the vessel to VTS-MAAS APPROACH earlier.

For reasons of personal safety, the maritime pilot can decide not to board the vessel and request the helicopter pilot to abort the operation (especially during hoisting operations in heavy weather, heavy swell etc.). In that case the vessel will receive a pilot by pilot vessel or pilot tender.

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9. Clearance by the vessel

A few minutes prior to the helicopter's arrival at the vessel PILOT MAAS will confirm to the vessel that the helicopter is underway.

! Attention

If at that particular moment the vessel is not (yet) ready for receiving the maritime pilot by helicopter, this should be reported to PILOT MAAS immediately.

Silence from vessel's side at that particular moment is considered as an implied clearance by the vessel for the helicopter to start the landing / hoisting procedure.

10. Aborting operations

If the helicopter pilot or the maritime pilot aborts the operation for safety reasons, the helicopter will move away from the vessel and depart. In that case PILOT MAAS will confirm the abortion to the vessel.

If the vessel wishes to abort the helicopter-ship transfer operation (for instance in case of a sudden emergency on board the vessel), this should be advised to PILOT MAAS immediately. PILOT MAAS will inform the helicopter pilot accordingly and the helicopter will move away from the vessel immediately.

11. Deviations / hazardous occurrences

When the vessel deviates from the criteria and procedures explained in this document or when during the operation a dangerous occurrence takes place which can be reasonably attributed to the vessel's conduct, the maritime pilot can formally report this to the vessel's command.

In that case the maritime pilot will issue a *pilot by helicopter deviation/hazardous occurrence report to vessel/s* to the master who will be requested to sign for receipt of the report.

The report will describe the deviation observed and/or the events and circumstances leading to the hazardous occurrence. The intention of such reports is to emphasise the importance of following the procedures explained earlier and to avoid re-occurrence of such hazardous situations in the future.