



# Helicopter Operations

## Frequently asked questions

These 'frequently asked questions' and answers provide general information about the new issue 3 of AMSA Marine Orders Part 57 Helicopter Operations (MO 57) that came into force on 1 August 2010. This information complements that contained in Marine Notice 16/2010.

### Background

Ship-helicopter operations, for a variety of purposes, are becoming increasingly commonplace in Australian waters. AMSA revised MO 57 to ensure that these operations in Australian waters continue to be conducted with very high standards of safety and operational awareness.

AMSA has accepted, as best practice, the International Chamber of Shipping's Guide to Ship Helicopter Operations, 4th Edition (ICS Guide) as the most up to-date guide promoting standardised procedures for ship-helicopter operations worldwide.

### Q Does MO 57 apply to my ship?

Several questions have been received regarding the application of MO 57. For example:

- ▶ Is this regulation applicable to all ships or only to ships certified to have a helicopter landing area or winching area?
- ▶ What is applicable to ships not intending to transfer a marine pilot by helicopter?
- ▶ Is this requirement applicable to any type of vessel?

**A** The application of MO 57 is determined by reading provision **1.1 Purpose** and provision **4 Application**. These provisions require all ships (there are no exceptions) intending to conduct helicopter operations in Australia to comply with MO 57.

Ships not intending to conduct helicopter operations do not have to comply. Note, however, that provision **5.5 Medical or other emergency** is there to cater for helicopter operations in an emergency.

MO 57 Issue 3 is to a large degree performance based legislation replacing MO 57 Issue 2 which was predominantly prescriptive. Compliance with the ICS Guide is not intended to be 'mandatory' in the same way as the Australian Code of Practice was under the repealed Issue 2 of MO 57. The ICS Guide covers a range of situations including very detailed guidelines for highly specialised helicopter operations. For example; purpose built landing areas (helidecks) and helicopter facilities (including a hangar). It is not necessary to comply with all the suggestions in the ICS Guide, where these are clearly for operations in excess of those intended, since this would be impractical.

It is not the intent of MO 57 to make any particular part of the ICS Guide mandatory. Guidelines that clearly do not apply to an individual master's intended helicopter operation do not have to be implemented and there is no need for an 'approval' to be sought from AMSA to vary each and every requirement of the ICS Guide.

Extracts from MO 57:

#### **"1.1 Purpose**

This Part of Marine Orders makes provision for and in relation to:

- (a) the protection of the health and the security from injury of persons engaged in the loading or unloading of ships; and
- (b) the safety of persons, including pilots, going on or coming from, or on board, ships, in connection with transfer operations by helicopter.

*Note: Helicopters used in ship/helicopter transfer operations are subject to the jurisdiction of the Civil Aviation Safety Authority (CASA) and must comply with relevant CASA regulations.*

#### **4 Application**

This Part applies to and in relation to:

- (a) a ship registered in Australia; and
- (b) a ship registered in a country other than Australia that is in the territorial sea of Australia or waters on the landward side of the territorial sea.

#### **5.5 Medical or other emergency.**

When it is necessary, due to medical or other emergency, either to evacuate a person requiring urgent medical attention or to embark or disembark medical or other emergency personnel, the master of the ship and the pilot of the helicopter may make such alternative arrangements as they consider appropriate in the circumstances, provided that safety is not thereby compromised."

## Q What standard fire fighting and rescue equipment is required by MO 57?

AMSA has been asked questions, similar to the above, regarding equipment to be carried on the ship and its preparation for use when undertaking a ship-helicopter operation. For example:

- ▶ Can the existing fire extinguishers (which are as per the vessel's fire plan) be moved to deck and used for this purpose OR is dedicated equipment required?
- ▶ Can you confirm whether for a landing or winching area, used only for the occasional pilot transfer, all the fire fighting equipment requested in 4.7 of the ICS Guide is to be provided on board?
- ▶ The ICS Guide, in section 4.7, provides a summary of the required fire fighting and rescue equipment. In particular it says that the following equipment should be onboard (which is also in line with SOLAS Ch.II-2, Reg.18): [table provided]  
We would appreciate clarification:
  - if ALL the above fire fighting equipment should be onboard the ship; and
  - whether the requirement for a foam system is covered by portable foam applicators and of what capacity and how many units?

## A Provision 5.1 Requirements for safe arrangements and provision 5.4 Crew members' responsibility describe the regulation in respect of such equipment.

SOLAS should be consulted for fire extinguisher capacity and quantity since it has some specific references to helicopter operations that are relevant. The Master may also wish to refer to the ICS Guide to ensure he/she is providing the safe operation required by MO 57. The requirement in MO 57 is that the equipment is at least as effective as what is specified in the ICS Guide.

An issue that seems to arise as a result of consulting SOLAS concerns the number of extinguishers that could be provided for a helicopter operation. The wording in SOLAS indicates that the number of extinguishers is not important and hence a large number of small capacity extinguishers could be seen as compliant. The ICS Guide generally indicates a number of extinguishers including a 'maximum number'; hence inferring a requirement for larger extinguishers but less of them.

The Master should decide what is 'safe' for his/her ship-helicopter operation taking into account the number of trained personnel available and the ship's equipment.

When considering fire extinguishers the master should bear in mind that if he/she substitutes SOLAS portable extinguishers for the one or two much larger extinguishers as per the ICS Guide, then this may not be 'as effective'.

This kind of temporary 'substitution' may be permissible under the 'occasional use' provisions of SOLAS II-2/18.2.2 but MO 57 requires, in addition, that the effectiveness of the arrangement must be compared to what is indicated in the ICS Guide. The number of persons available to operate the extinguishers and the delivery rate of smaller extinguishers, if operated one at a time, must be taken into account in any comparison.

Foam fire-fighting systems are required but monitors could be substituted by foam branches. The latter are simply connected to fire hoses as required to achieve the foam rate specified. AMSA understands the ICS Guide to mean 'foam solution' to be the foam/water mixture (extinguishing medium) and not the delivery rate of the foam solution in its pre-use state. Hence you would probably not need 1,250 litres of foam liquid in drums for an H1 helicopter-operation. You would however, as a minimum, need sufficient foam liquid to be mixed with water from the branch

Extracts from MO 57:

### "5.1 Requirement for safe arrangements

The master of a ship must not permit the transfer of persons or goods from helicopter to ship, or vice versa, unless:

- a) the owner or master has provided such shipboard arrangements, equipment, training and drills as:
  - i. are necessary and reasonable for emergency evacuation of persons from the ship;
  - ii. are appropriate and reasonable for the normal operations of the ship; and
  - iii. are at least as effective as those specified in the ICS Guide;
- b) the arrangements, equipment, training and drills have been included in the safety management system on board the ship;
- c) the master has provided instructions to the members of the crew on their responsibilities relating to giving effect to the ship's safety management system; and
- d) the master is satisfied that:
  - i. the equipment is maintained in working order and readily available for use; and
  - ii. the specified training has been carried out.

*This is a penal provision.*

*Note: The arrangements, equipment, training and drills referred to in this provision apply only to those relating to the preparations on a ship*

(depending on the expansion ratio of the foam liquid and the amount of water added by the foam branch) to deliver a total of 1,250 litres of foam extinguishing medium over five minutes. AMSA suggests that this would be 'as effective' as what is specified in the ICS Guide.

A ship-helicopter operation risk assessment is likely to show that each operation, landing or winching, has an identical risk of an incident requiring fire-fighting equipment. AMSA takes the view that, during a winching operation, a hovering helicopter requires the same fire fighting equipment to be ready on the ship as in a landing operation because the consequences are the same if the helicopter were to crash onto the deck. This would indicate that equipment, when suggested by the ICS Guide, should be present at every operation. Infrequent operation does not mitigate the risk of an incident occurring but only the frequency with which the incident can occur. AMSA will not, therefore, accept that a reduced frequency of ship-helicopter operations be used as an excuse to remove/reduce required equipment.

## Q Can you please clarify the requirement for deck strength documentation and deck markings for a helicopter landing area?

Many questions have been asked of AMSA in respect of the deck strength and the deck markings for the helicopter landing area (HLA). Some examples are:

- ▶ Please clarify whether marking 'H' (inside touch-down zone) should be painted athwart ship or fore and aft direction.
- ▶ Please clarify the HLA strength required to meet provision 5.2.2 of MO 57 Issue 3. Is the classification society delegated to verify the helicopter landing area strength?
- ▶ Please advise the minimum load requirement for the HLA on a bulk carrier hatch cover.
- ▶ Regarding documentation of strength of HLA on a ship's deck; how does the ship's Master declare that ship's strength of deck is compliant with MO 57?
- ▶ Some of our vessels have Class certificate for helicopter load on landing area while others have only shipbuilders or dockyard plans. Is a shipbuilder plan acceptable for the purposes of MO 57?
- ▶ Can you clarify who decides if an existing arrangement, deviating from the ICS Guide for some aspects, is acceptable or not?

## A The provisions under 5.2 Helicopter landing and operating area describe the regulations in respect of the helicopter landing area.

Note the use of phrases in MO 57 such as 'the recommended dimensions and obstacle free zones in the ICS Guide are to be implemented as far as practical'; 'obstacles within the helicopter landing or operating area that do not comply with the ICS Guide must be clearly marked'; and 'information referred to in this provision would normally be provided by'.

MO 57 is the legislation covering the ship-helicopter interface and it requires that the Master ensures he/she has provided a safe arrangement. Helicopter operations include winching, landing and even hovering over/on a vessel. The operator and master are expected to have fulfilled their obligation, in provisions 1.1 and 5.1, to provide safe shipboard arrangements.

*and the ship/helicopter interface during the transfer operation. Any guidance in the ICS Guide dealing with operations or activities not directly related to the ship are not covered by this provision, although such guidance may provide useful background for the owner and master when considering the safety management system for the ship.*

## 5.4 Crew members' responsibility

Every crew member must:

- a) carry out the instructions determined by the owner or master under 5.1(c); and
- b) generally take such action as is reasonable to ensure that helicopter transfers are carried out safely.

*This is a penal provision."*

Extracts from MO 57

"5.2.1 When the location and size of a helicopter landing or operating area are being determined, the recommended dimensions and obstacle free zones in the ICS Guide are to be implemented as far as practical. Any divergence from the recommendations in the ICS Guide should be clearly documented and communicated to the helicopter pilot prior to commencing operations. Any obstacles within the helicopter landing or operating area that do not comply with the ICS Guide must be clearly marked.

In general MO 57 is about helicopter operations conducted from a ship's HLA on an occasional basis. These HLAs are not the dedicated helidecks with Class notation. AMSA accepts that each ship is different and so are the situations when they may use their HLA. MO 57 is therefore written to give as much flexibility as possible to owners to arrange details such that the Master and the ship achieve the desired objective of safe arrangements.

The deck markings for helicopter landing areas should comply as much as practicable with the ICS Guide but a helicopter pilot will ultimately decide if it is safe to complete the chosen operation safely or not. For example the D diameter is something that may be varied on ships for occasional use, such as marine pilot transfer, providing the Master is offering a safe arrangement (nothing dangerous to the helicopter operation and arrangements are agreed with the helicopter service provider and the helicopter pilot).

The Master is responsible for providing a safe arrangement. There should be clear communication with the helicopter service provider before an operation commences.

Where there are deviations from the ICS Guide markings these need to be communicated to the helicopter service provider (pilot) and be clearly identified. Based on this communication the Master and helicopter pilot will decide about the safety of the intended operation and the helicopter pilot has the "final say".

AMSA does not provide helicopter services and does not operate helicopters hence AMSA is unable to assist with information regarding clearances required by any particular helicopter. The helicopter service providers will be able to provide such information (information may be obtained through the ship's Agents and/or Port Authorities).

A large number of enquires have been received in relation to the assessment of deck strength in accordance with the ICS Guide 4.14 and MO 57 provision 5.2.2. This information is required to ensure the safety of the helicopter, its pilot, the crew of the helicopter, the ship's crew and other parties involved in ship-helicopter operations. Commentators have highlighted the differences in the structural arrangement between a helideck and ship's structure, including hatch covers. Examples are; a cargo hold hatch cover, designed and approved to withstand an average sea pressure load or an area of deck approved for carrying and securing cargo.

It is a fundamental safety requirement that the intended HLA is physically capable of withstanding the forces of a helicopter landing on it. MO 57 requires that documentary evidence regarding deck strength be available on board. This information must include the maximum weight (tonnes) that can be landed on the nominated HLA. This information may be provided by: (a) a classification society that conducts the ship's surveys, (b) shipbuilder or (c) another competent organisation or authority.

AMSA accepts that a competent organisation or authority has, in attesting to the capacity of the HLA, taken into account the specific loads that a helicopter may impose in operation. AMSA's policy is based on the knowledge that ship's structures, whilst certified to cope with various loads such as seas breaking over a deck or containers or other cargo secured on deck, have proved to be limited in their ability to cope with localised loads that may be imposed by helicopters. Suitable information is required to be held onboard about the capacity of the HLA, and is necessary for the information of the master and the helicopter operator and helicopter pilot.

5.2.2 The operator of a ship on which a helicopter is likely to land must ensure that there is available on the ship information relating to ability of any deck surface to withstand the static and dynamic loads imposed by a helicopter landing on that surface.

*Note The information referred to in this provision would normally be provided by, or based on criteria provided by, the Classification Society carrying out the ship's surveys.*

5.2.3 The master of a ship must, when requested, provide the information referred to in 5.2.2 to:

- (a) the pilot of a helicopter; or
- (b) a surveyor; or
- (c) any other person with an interest in the safe operation of a helicopter on the ship."