

# Means of escape from crew spaces on fishing ships

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Maritime New Zealand Position Statement

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## Purpose of this position statement

This position statement sets out Maritime New Zealand's position on the requirements for means of escape from crew accommodation spaces, and spaces in which the crew is normally employed (other than machinery spaces). It has been developed to inform ship designers, ship builders, operators and surveyors.

## Vessels it applies to

This position statement applies to fishing ships less than 45 metres that proceed to the offshore limits.

## Relevant legislation

### Maritime Rules Part 40D

This Part sets the requirements for the design, construction and equipment on New Zealand fishing ships registered under the Fisheries Acts of 1983 or 1996.

Rule 40D.57 sets out the required 'means of escape' from crew accommodation spaces and spaces where the crew is normally employed on post-27 May 2004 ships that are:

- 45 metres or more in length but less than 60 metres (in any operating limits), or
- 24 metres or more in length but less than 45 metres that proceed beyond the coastal limit.

Rule 40D.62 sets out the required 'means of escape' from crew accommodation spaces and spaces where the crew is normally employed on post-27 May 2004 ships that are:

- less than 24 metres in length (in any operating limits), or
- ships of 24 metres or more in length but less than 45 metres that **do not** proceed beyond the coastal limit.

You can read the text of these rules in Annex 2.

## Issues

1. Part 40D sets out the required 'means of escape' for post 2004 fishing ships from crew accommodation spaces, spaces where the crew is normally employed and machinery spaces. It does not set out requirements for 'means of escape' for pre 2004 fishing ships.
2. Rule 40D.57 requires the second means of escape from below the weather deck to be a trunk or stairway. A general exemption has been issued to permit open ladderways (which may be vertical) instead of trunked ladderways on vessels less than 45 metres as this is often the way that the ship has been designed.
3. Rule 40D.57 and rule 40D.62 set out the standards to be applied where one 'means of escape' may be permitted from crew accommodation spaces and spaces where the crew is normally employed. This position statement clarifies the type of space and conditions where a single 'means of escape' may be acceptable.

### Maritime NZ's position

The purpose of 'means of escape' is to safely evacuate crew, in an emergency, to a muster station and/or embarkation station.

Two 'means of escape' as widely separated as possible should be provided from each crew accommodation space and space where the crew is normally employed. The 'means of escape' should form part of a safe escape route for all reasonably foreseeable emergency situations.

The Maritime Rules constitute the minimum standards for maritime operators to achieve. Section 30 of HSWA requires duty holders to eliminate or minimise risks to health and safety, so far as is reasonably practicable. It may be 'reasonably practicable' for an operator to achieve a higher standard under the Health and Safety at Work Act 2015 (HSWA) than the standard specified in the Maritime Rules, or the terms of the general exemption. Simple compliance with the Maritime Rules, or the general exemption, may not absolve an operator of responsibility under HSWA if that higher standard is found to have been 'reasonably practicable'.

Maritime NZ considers that, where reasonably practicable, the requirement for 'means of escape' should be applied to fishing ships defined as either a pre or post 27 May 2004 ship.

Equally, Maritime NZ's position is that egress or means of escape should, where reasonably practicable, meet the required outcomes of Part C, Section 1, Chapter 5 of the Australian National Standard for Commercial Vessels (NSCV). See Annex 3.

However, under GE-01-07, if it is not reasonably practicable for two means of escape to be provided, spaces which provide only one means of escape may be permitted on existing vessels if they meet the requirements of Part C, Section 1, Chapter 5, Table 16 of the National Standard for Commercial Vessels (NSCV). See the table in Annex 4 – Spaces not required to have an alternative means of escape.

The NSCV 'required outcomes', 'deemed to satisfy solutions' and the control measures required by the exemption GE-01-17, are considered to be an effective alternative to achieving compliance with the relevant rule or the requirements of the general exemption.

## Maritime Transport Act 1994 and Health and Safety at Work Act 2015

The general provisions of the Maritime Transport Act 1994 (MTA) and the Health and Safety at Work Act 2015 (HSWA) apply to means of escape and evacuation procedures on board a ship.

Section 30 of HSWA requires duty holders to eliminate or minimise risks to health and safety, so far as is reasonably practicable.

### General Exemption explained

#### General Exemption GE-01-17

General Exemption GE-01-17 provides for a recognised surveyor to accept alternate 'means of escape' from crew accommodation spaces and spaces in which the crew is normally employed (other than machinery spaces) under rule 40D.57(2)(a) and 40D.57(2)(b).

Refer to the Maritime NZ website for the full text of the General Exemptions:

[maritimenz.govt.nz/rules/general-exemptions](https://maritimenz.govt.nz/rules/general-exemptions)

#### Deemed-to-satisfy solutions

Under GE-01-17, for ships not having means of escape meeting the requirements prescribed in 40D.57(2)(a) and 40D.57(2)(b) alternate means of escape must comply with the 'required outcomes' of the Australian NSCV, Part C, Section 1, Design and Construction for access, escapes and evacuation. In summary a solution needs to:

- provide for escape from hazards within spaces on the vessel
- provide for redundancy in escapes
- facilitate movement for evacuation
- facilitate movement between decks
- accommodate the needs of a large proportion of the population.

You can read the full text for the required outcomes in Annex 3.

#### Escape hatch

A hatch leading to an open deck may be used as a second means of escape from vessels less than 45 metres. The hatch must meet the standards of Rule 40D.14(10) and be:

- large enough to allow a person to pass through wearing a lifejacket and, in any event, not less than 460mm x 460mm
- capable of being opened from both sides
- clearly marked and kept clear at all times.

A bunk or other suitable furniture may be used to reach the hatch instead of a ladder. The difference in height from the top of the bunk (or furniture) to the hatch must be 750mm or less.

## Doors

Doors should be used as primary exits (egress) from spaces leading to an open deck on the same level or in combination with stairways or ladders.

## Ladders

Ladders required for egress or as a second means of escape from crew accommodation spaces and spaces in which the crew is normally employed (other than machinery spaces):

- may be an inclined or vertical conventional ladderway if the vessel is less than 45 metres in length
- may be a step ladder or rung ladder
- must have a landing if the height exceeds six metres.

## Sliding windows, portholes, popout windows and breakable windows

These may be used as a second means of escape. They must be:

- large enough to allow a person to pass through wearing a lifejacket
- clearly marked, and preferably lead to the open deck.

Glass-breaking hammers should be mounted within reach of breakable windows.

## Smoke Detectors and fire extinguishers

Where there is only one means of escape, smoke detectors should be installed to give early warning of a fire emergency that could cut off that means of escape, in addition to the requirement for fire extinguishers.

## Crew evacuation – Operators and Masters should note

The ship's maritime transport operator plan must include procedures for:

- crew familiarisation, including:
  - a) actions they must take in an emergency
  - b) location of lifesaving and fire appliances and equipment
  - c) location of emergency exits, escape routes and muster stations.
- emergency drills (recorded in the register of drills or logbook).

## Annex 1

### Definitions

<b>Accommodation spaces</b>	Means those spaces used for lounges, mess rooms, recreational rooms, corridors, lavatories, cabins, offices, hospitals, pantries containing no cooking appliances, and similar spaces.
<b>Conventional ladderway</b>	General Exemption – GE-01-17 refers to ‘conventional ladderway’. ‘Conventional ladderway’ is taken to mean a step ladder (with flat or curved steps) or rung ladder. The ladder has handrails on each side, enabling crew to move between two levels.
<b>Deemed to satisfy</b>	This position statement refers to ‘deemed to satisfy solutions’. The phrase ‘deemed to satisfy solutions’ is not defined in the rules, but refers to an acceptable means of compliance with the relevant rule or general exemption.
<b>Egress</b>	A means of going out or exiting a space.
<b>Embarkation station</b>	Means a place from where a survival craft is boarded.
<b>Machinery spaces</b>	Means those machinery spaces of category A and all other spaces containing propulsion machinery, boilers, fuel oil units, steam and internal combustion engines, generators, steering gear, major electrical machinery, oil filling stations, refrigerating, stabilising, ventilating and air conditioning machinery and similar spaces, and trunks to such spaces.
<b>Means of escape</b>	Rule 40D refers to ‘means of escape’. ‘Means of escape’ is not defined in the rules, but is taken to mean the structural items that provide a safe escape route from a deck, compartment or accommodation space such as doors, hatches, ladderways or stairways leading to a muster station or embarkation station.
<b>Muster Station</b>	Means an area where passengers and crew are assembled in the event of an emergency.
<b>Normal egress</b>	A means of going out or exiting a space in routine situations. For example, <i>“the door was the normal means of access and egress from the cabin”</i> .
<b>Opening hatch</b>	General Exemption – GE-01-01-07 refers to ‘opening hatch’. ‘Opening hatch’ is taken to mean an ‘escape hatch’ as described in Rule 40D.14(10). The escape hatch must be capable of being opened from both sides.
<b>Service spaces</b>	Means those spaces used for galleys, pantries containing cooking appliances, lockers and store-rooms, workshops other than those forming part of the machinery spaces, and similar spaces and trunks to such spaces.
<b>Trunk</b>	Rule 40D.57(2)(a) requires the second of two means of escape from below the weather deck to be a ‘trunk or a stairway’. ‘Trunk’ is not defined in the rules. In 40D.57 ‘trunk’ is taken to mean the same as ‘trunked ladderway’.
<b>Trunked ladderway</b>	Rule 40A.19(6) requires the second of two means of escape from below the weather deck to be a ‘trunked ladderway’. ‘Trunked ladderway’ is not defined in the rules, but is taken to mean a vertical passageway fitted with a ladder, which is protected by a structural trunk, offering a protected egress from fire.
<b>Weather deck</b>	Means a deck exposed to the weather and sea.

## Annex 2

### Rule extracts

#### 40D.57 Means of escape

- (1) Except as provided in rule 40D.57(3), at least two widely separated means of escape, including the normal means of access, must be provided from all accommodation spaces and spaces in which the crew is normally employed, to the open deck, and from there, to survival craft.
- (2) Each means of escape referred to in rule 40D.57(1) must comply with the following:
  - (a) below the weather deck the main means of escape must be a stairway and the second means of escape must be a trunk or a stairway; and
  - (b) above the weather deck the means of escape must be stairways or doors to an open deck or a combination thereof; and
  - (c) a corridor or part of a corridor from which there is only one route of escape must not exceed 7m in length; and
  - (d) the width and continuity of each means of escape must be acceptable to the surveyor.
- (2A) The surveyor may permit only one means of escape, due regard being paid to the nature and location of spaces and to the number of persons who normally might be accommodated or employed there.
- (3) Two means of escape must be provided from every machinery space of category A which must be as widely separated as possible. Vertical escapes must be by means of steel ladders. Where the size of the machinery spaces makes it impracticable, one of these means of escape may be omitted. In such cases special consideration must be given to the remaining exit.
- (4) Lifts must not be considered as forming one of the required means of escape.

#### 40D.62 Means of escape

- (1) Where reasonable and practicable, and having regard to the number of crew utilising the space and size of space, at least two means of escape, one of which may be the normal means of access, as widely separated as possible, must be provided from each section of accommodation and service spaces.
- (2) Normal means of access to accommodation and service spaces below the open deck must be arranged so that it is possible to reach the open deck without passing through intervening spaces containing a potential source of fire.
- (3) The second means of escape may be through portholes, windows or hatches of adequate size and preferably leading to the open deck.
- (4) Where the means of escape from a machinery space is by ladder, a steel ladder must be fitted.
- (5) Where the surveyor considers a machinery space to be sufficiently large, the space must have two means of escape as widely spaced as possible.

## Annex 3

### National Standards for Commercial Vessels, Part C, Section 1, Chapter 5 – Access, escapes and evacuation

#### Required outcomes

##### 5.3 Required outcome — escape from hazards within spaces on the vessel

Enclosed spaces on a vessel must have escape routes of sufficient number and size to eliminate or reduce to acceptable levels the exposure of persons on board the vessel to hazards such as fire, smoke, and flooding.

##### 5.4 Required outcome — redundancy in escapes

Alternative escape routes on a vessel must control the risk of entrapment from the blocking of a single escape, having regard to the magnitude of risk if the escape route is blocked (eg the likelihood and consequences of exposure to hazards).

##### 5.5 Required outcome — facilitate movement for evacuation

A vessel must be designed, constructed and furnished to facilitate in an emergency the orderly and timely movement of persons to:

- a) places of assembly; and
- b) disembarkation points for evacuation into survival craft.

##### 5.6 Required outcome — facilitate movement between decks

Means of access between different deck levels on the vessel must be designed and constructed to facilitate the rapid movement of persons in an emergency and to avoid tripping hazards.

##### 5.7 Required outcome — accommodate the needs of a large proportion of the population

Means of escape must be designed to accommodate at least a 95 percentile range of potential users, assuming users are wearing lifejackets of the type required to be provided on board the vessel.

## Annex 4

### NSCV Part C, Section 1, Chapter 5

Table 16: Spaces not required to have an alternative means of escape

Type of space	Conditions
Accommodation space	<p>(a) the space does not accommodate more than 6 passengers or more than 8 persons in total</p> <p>(b) the single means of escape is not through a watertight door</p> <p>(c) the maximum actual horizontal travel distance to the point of escape does not exceed 5 m for passenger accommodation or 7 m for accommodation for crew only</p> <p>(d) The single means of escape does not lead to a space that does not itself have direct access to open decks</p> <p>(e) the space is not also of moderate fire risk (containing a small galley or a moderate fire risk machinery space)</p> <p>(f) the single means of escape does not lead to a space classified as high fire risk or moderate fire risk.</p>
High fire risk machinery space arranged for unmanned operation, dedicated moderate fire risk machinery space or galley	<p>(a) the maximum actual horizontal travel distance to the point of escape does not exceed 5 m</p> <p>(b) the single means of escape is not through a watertight door</p> <p>(c) the single means of escape does not lead to a space that does not itself have direct access to open decks</p> <p>(d) the single means of escape does not lead to a space classified as high fire risk or moderate fire risk.</p>
Space of low fire risk	<p>(a) it is only entered by crew</p> <p>(b) it is only occupied occasionally.</p>

(Extract from NSCV, Part C, Section 1, Table 16)

### NSCV Part C, Section 4, Chapter 3

Table 3 - Categories of spaces

Space category	Description
High Fire Risk Spaces	<p>Spaces where, without appropriate controls, the likelihood and consequence of fire are high.</p> <p>Within such spaces, there is:</p> <ol style="list-style-type: none"> <li>potential for the spillage or escape of potentially dangerous quantities of flammable liquid or explosive vapour, and</li> <li>the presence of one or more sources of heat or other sources of ignition.</li> </ol>
Moderate Fire Risk Spaces	<p>Spaces that:</p> <ol style="list-style-type: none"> <li>contain potentially dangerous quantities of flammable liquids but where the sources of ignition have relatively low frequency; or</li> <li>contain heat sources or other sources of ignition but where the quantity or nature of material within the space to fuel a fire is such that the risk is significantly reduced.</li> </ol>

Accommodation Space	Spaces that are likely to contain persons who: a) are unfamiliar with the vessel, b) may be asleep or disoriented at the time of an emergency, or c) may inadvertently or deliberately initiate a fire.
Minor Fire Risk Spaces	Spaces where the likelihood and/or consequence of fire is low.

(Extract from NSCV, Part C, Section 4, Table 3)