FISHING VESSEL SAFETY CERTIFICATE

OCTOBER 2007
FOREWORD

DET NORSKE VERITAS (DNV) is an autonomous and independent foundation with the objectives of safeguarding life, prop-
erty and the environment, at sea and onshore. DNV undertakes classification, certification, and other verification and consultancy
services relating to quality of ships, offshore units and installations, and onshore industries worldwide, and carries out research
in relation to these functions.

Guidelines

Guidelines are publications which give info rmation and advice on technical and formal matters related to the design, building,
operating, maintenance and repair of vessels and other objects, as well as the services rendered by the Society in this connection.
Aspects concerning classification may be included in the publication.

An updated list of Guidelines is available on request. The list is also given in the latest edition of Pt.0 Ch.1 of the "Rules for
Classification of Ships" and the "Rules for Classification of High Speed, Light Craft and Naval Surface Craft".

The Society reserves the exclusive right to interpret, decide equivalence or make exemptions to this Guideline.

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person
for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compen-
sation shall never exceed USD 2 million.

In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det
Norske Veritas.
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1. GENERAL

The requirements in this Guideline are supplementary to DNV Rules requirements for fishing vessels. Where the requirements are covered by the present class notations for fishing vessels (i.e. FISHING VESSEL and STERN TRAWLER) this is noted in the text.

1.1 Authorisation

Upon authorisation by Flag State, DNV may issue Fishing Vessel Safety Certificate (FVSC) for fishing vessels. For EU flagged ships the EU Council Directive 97/70/EC applies, and for other flags the Torremolinos’ 1977 convention for fishing vessels, as amended by the 1993 protocol, may be applied.

1.2 Background

In 1998 the EU Directive 97/70 on Fishing Vessels with length above 24 m entered into force. The Directive is applicable to all fishing vessels >24 m flying EU or EES flag, and for all vessels of that type fishing in EU/EES waters or landing catch in EU/EES. The Directive is based on the Torremolinos’ convention, with some additional requirements, and it requires a Fishing Vessel Safety Certificate (FVSC) to be issued.

Historically there have been no mandatory regulations or set of rules applicable to fishing vessels. Some flag have required fishing vessels to satisfy particular national regulations (several of which were based on the Torremolinos’ convention). Other flag authorities have accepted that fishing vessels have been equipped with non-conventional SOLAS certificates and surveyed by the Class accordingly.

For fishing vessel flying other flags than EU/EES and not landing the catch in EU/EES countries, there is an option to be certified according to the Torremolinos’ 1977 convention as amended by the 1993 Torremolinos’ protocol.

This Guideline describes the system of certificates, surveys and drawings approval offered by DNV to meet the demand for fishing vessels to be certified either in accordance with the EU requirements or the Torremolinos’ convention.

1.3 Application

Applicable to fishing vessels upon request as indicated above. Certificates issued are valid for a maximum of 4 years, with an option for extension to 5 years to harmonise with classification.

1.4 Request for initial survey

Request for survey should be submitted well in advance and clearly indicate when and how the documentation required below will be submitted. Reference to already submitted/approved plans/documents can also be made.

1.5 Regulations and forms to be used

— DNV Rules for Classification of Ships (Shiprules)
— Fishing Vessel Safety Certificate
— “Record of approved Safety Equipment” for Fishing Vessel
— Annual, periodical and renewal survey checklists.

1.6 Applicability of Torremolinos and EU regulations

The following table describes which regulation in Torremolinos ‘93 consolidated and which amendments thereto in the 97/70/EC EU directive as amended that applies to a fishing vessel based on its date of build and length.

<table>
<thead>
<tr>
<th>EU *</th>
<th>Torremolinos for vessels &gt; 24 m</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Existing vessel</strong></td>
<td><strong>Contract before 1.1.99</strong></td>
</tr>
<tr>
<td>L &lt; 24 m</td>
<td>Torremolinos Ch. X</td>
</tr>
<tr>
<td>24 m&lt; L &lt; 45 m</td>
<td>Torremolinos Chapters: — VIII, — X</td>
</tr>
<tr>
<td>New vessel</td>
<td><strong>Contract after 1.1.1999</strong></td>
</tr>
<tr>
<td>L &lt; 24 m</td>
<td>Torremolinos Ch. X</td>
</tr>
<tr>
<td>24 m&lt; L &lt; 45 m</td>
<td>Torremolinos Chapters: — I (Amended by EU Annex I, Part A), — II, — III, — IV (as adapted by EU Annex II), — V (as adapted by EU Annex II) and (Amended by EU Annex I, Part A), — VI, — VII (Amended by EU Annex I, Part A) and (as adapted by EU Annex II), — VIII, IX (Amended by EU Annex I, Part A) and (as adapted by EU Annex II), — X</td>
</tr>
<tr>
<td>L &gt; 45 m</td>
<td>Torremolinos Ch. I – X (Amended by EU Annex I, Part A) and (as adapted by EU Annex II)</td>
</tr>
</tbody>
</table>

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**Note:** The table is a simplified representation of the regulations and amendments applicable to fishing vessels based on their date of build and length.
### 1.7 Issuance of certificate

A Fishing Vessel Safety Certificate will be issued when the required surveys are completed and necessary drawings received and approved by DNV.

Upon approval of required drawings and satisfactory surveys carried out, a short term Fishing Vessel Safety Certificate may be issued by the local DNV station. Full term certificate will be issued by DNV Høvik after having ascertained that necessary drawing are approved and surveys carried out.

### 1.8 Exemptions

Any deviations from the requirements must be approved by the Flag State.

### 1.9 Additional requirements for existing fishing vessels (as per definition by EU or Torremolinos)

EU requires an existing fishing vessel to be in compliance with Torremolinos. Torremolinos has very limited requirements for existing fishing vessels.

DNV consider the requirements below as a minimum in addition to Torremolinos in order for DNV to issue a FVSC.

<table>
<thead>
<tr>
<th>Construction and machinery</th>
<th>DNV Class rules</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stability</td>
<td>Intact stability documentation to be provided on board</td>
</tr>
<tr>
<td>Structural fire protection</td>
<td>Existing structural fire protection not to be reduced at any time</td>
</tr>
<tr>
<td>Fire extinguishing</td>
<td>DNV Class rules / IACS Unified interpretations</td>
</tr>
<tr>
<td>Lifesaving</td>
<td>IACS Unified Interpretations as minimum requirement</td>
</tr>
<tr>
<td>Radio Communications</td>
<td>To comply with GMDSS requirements for fishing vessels as required by the flag</td>
</tr>
<tr>
<td>Navigation</td>
<td>SOLAS Ch. V for pre 2000 vessels</td>
</tr>
<tr>
<td>Operational requirements</td>
<td>As for SOLAS convention vessels (and maintenance)</td>
</tr>
</tbody>
</table>

**Remarks**

When interpreting SOLAS requirements the following equivalences shall preferably be used:

- 24 m length is equivalent to 300 GT
- 45 m length is equivalent to 500 GT
- 75 m length is equivalent to 1 600 GT.

### 1.10 Certification of vessels previously issued with FVSC from the Flag State

When DNV takes over the responsibility from a Flag State (i.e. flag remains unchanged) deviations from the above requirement may have to be accepted. In such cases an appropriate MO shall be issued stating items that need to be addressed in case of a change of flag.

### 2. NEWBUILDING/INITIAL SURVEY

#### 2.1 Documentation to be submitted

- Fire Control and Safety Plan
- Escape route plan
- Structural Fire Protection
- Fire detection arrangement
- Fire extinguishing arrangement
- Fire Main System Drawing
- Penetration Details Drawing
- Arrangement Drawings for Fixed Fire Detection and Alarm Systems
- Ventilation arrangement
- Arrangement of emergency source of power
- Bridge arrangement
- Filling time calculations for vessels with periodically unattended machinery spaces
- Lifesaving arrangement
- Intact stability documentation
- Watertight integrity plan
- Freeboard Plan
- General alarm system or Public Address System
- Internal Communication systems consisting of two-way-voice communication system (example internal telephone)
- GMDSS drawings as for cargo vessels (provided authorised by Flag to approve GMDSS)
- List of all navigation and manoeuvring equipment
- Navigation lights arrangement
- Certificates and installation reports of radio equipment.

Further documentation may be required, as decided in each separate case.

#### 2.2 Additional SOLAS requirements

Supplementary requirements in Chapter III, IV and V:

SOLAS amendments to the chapters implemented after 1993 are applicable.
2.3 Initial Survey (FVSC.I)
Complete survey to be carried out and approved drawings and documentation verified in order.

3. SHIPS IN OPERATION SURVEYS

3.1 Annual survey
Annual survey should be carried out in connection with other annual surveys, and the certificate endorsed upon completion.

3.2 Periodical survey
Periodical survey for safety equipment should be carried out in connection with the second annual survey, and the certificate endorsed upon completion.

3.3 Renewal survey
Renewal surveys shall be carried out. Upon completion the full term certificate may, upon authorisation from Flag State, be extended by adding the text;
“Based on satisfactory renewal survey this certificate is extended to (maximum 12 months from current expiry date of certificate if survey is carried out during the 3 months prior to the expiry of the renewed certificate, otherwise 5 months from survey date).”
Alternatively a short term certificate may be issued.

3.4 Survey scheme
The following table displays the survey scheme:

<table>
<thead>
<tr>
<th>Survey cycle / Year</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>FVSC Certificate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FVSC.E.R Renewal</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>FVC.R.P Radio</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FVSC.E.P Periodical (cec. p)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FVSCC.In Intermediate (ccc. a.I)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FVSCC.R Renewal (ccc. a.R)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Footnotes:
* A sighting survey with the extent of an intermediate/periodic survey will normally allow a one year extension of the 4 year period of the FVS Certificate. A Memo to Owner will be issued in connection with issuance of FVSC, describing this option.
It should be noted that the +3 month window will not apply at the 4th anniversary. CRC to follow the GMDSS requirements for all ships.
Light weight survey for fishing vessels to be carried out with a time window of 10 years for EU (FVSCLWS.C).

4. TECHNICAL REQUIREMENTS IN ADDITION TO DNV CLASS

The requirements below are supplementary to DNV Rules’ requirements for fishing vessels. The requirements are extracted from the consolidated text of the Torremolinos Protocol of 1993. Where applicable the requirements as given by EU directive 97/70 on Fishing Vessels are also added.
Where the requirements are covered by Class notations for fishing vessels (FISHING VESSEL and STERN TRAWLER) this is noted in the text. The regulations are applicable according to Table 1-1.

4.1 General Provisions
Ch.1 Reg.2: Definitions
(6) “The forward and after perpendiculars” shall be taken at the forward and after ends of the length (L). The forward perpendicular shall be coincident with the foreside of the stem on the waterline on which the length is measured.
(15) “Working deck” is generally the lowest complete deck above the deepest operating waterline from which fishing is undertaken. In vessels fitted with two or more complete decks, the Administration may accept a lower deck as a working deck provided that that deck is situated above the deepest operating waterline.
(22) "Collision bulkhead" is a watertight bulkhead up to the working deck in the forepart of the vessel which meets the following conditions:
   a) The bulkhead shall be located at a distance from the forward perpendicular:
      (iii) in no case, less than 2.0 metres.

4.2 Construction, watertight integrity and equipment
Ch.2 Reg.1: Watertight integrity and equipment
(7) In vessels of 75 metres in length and over, a watertight double bottom shall be fitted, as far as practicable, between the collision bulkhead and the after peak bulkhead.
Ch.2 Reg.2: Watertight doors
(2) In vessels of less than 45 metres in length, such doors may be of the hinged type, which shall be capable of being operated locally from each side of the door and shall normally be kept closed at sea. A notice shall be attached to the door on each side to state that the door shall be kept closed at sea.
(3) In vessels of 45 metres in length and over, watertight doors shall be of the sliding type in:
   a) spaces where it is intended to open them at sea and if located with their sills below the deepest operating waterline, unless the, Administration considers it to be impracticable or unnecessary taking into account the type and operation of the vessels; and
   b) the lower part of a machinery space where there is access from it to a shaft tunnel.
Otherwise watertight doors may be of the hinged type.
(5) Sliding watertight doors whether manually operated or otherwise shall be capable of being operated locally from each side of the door; in vessels of 45 metres in length and over these doors shall also be capable of being operated by remote control from an accessible position above the working deck except when the doors are fitted in crew accommodation spaces.
Ch.2 Reg. 3: Hull Integrity

(1) External openings shall be capable of being closed so as to prevent water from entering the vessel. Deck openings which may be open during fishing operations shall normally be arranged near to the vessel’s centreline. However, the Administration may approve different arrangements if satisfied that the safety of the vessel will not be impaired.

(2) Fish flaps on stern trawlers shall be power-operated and capable of being controlled from any position which provides an unobstructed view of the operation of the flaps.

Ch.2 Reg. 5: Hatchways closed by wood covers

(2) The finished thickness of wood hatchway covers shall include an allowance for abrasion due to rough handling. In any case, the finished thickness of these covers shall be at least 4 millimetres for each 100 millimetres of unsupported span subject to a minimum of 40 millimetres and the width of their bearing surfaces shall be at least 65 millimetres.

(3) Arrangements for securing wood hatchway covers weather-tight shall be provided to the satisfaction of the Administration.

Ch.2 Reg. 6: Hatchways closed by covers other than wood

(2) For the purpose of strength calculations, it shall be assumed that hatchway covers are subjected to the weight of cargo intended to be carried on them or to the following static loads, whichever is the greater:

a) \( 10.0 \text{kN/m}^2 \) for vessels of 24 metres in length;

b) \( 17.0 \text{kN/m}^2 \) for vessels of 100 metres in length and over.

For intermediate lengths the load values shall be determined by linear interpolation. The Administration may reduce the loads to not less than 75 per cent of the above values for covers to hatchways situated on the superstructure deck in a position abaft a point located 0.25L from the forward perpendicular.

(3) Where covers are made of mild steel, the maximum stress calculated according to paragraph (2) multiplied by 4.25 shall not exceed the minimum ultimate strength of the material. Under these loads the deflections shall not be more than 0.0028 times the span.

(4) Covers made of materials other than mild steel shall be at least of equivalent strength to those made of mild steel, and their construction shall be of sufficient stiffness ensuring weather-tightness under the loads specified in paragraph (2).

Ch.2 Reg. 7: Machinery space openings

(1) Machinery space openings shall be framed and enclosed by casings of a strength equivalent to the adjacent superstructure. External access openings therein shall be fitted with doors complying with the requirements of Regulation 4.

Ch.2 Reg. 8: Other deck openings

(1) Where it is essential for fishing operations, flush deck scuttles of the screw, bayonet or equivalent type and manholes may be fitted provided these are capable of being closed watertight and such devices shall be permanently attached to the adjacent structure. Having regard to the size and disposition of the openings and the design of the closing devices, metal-to-metal closures may be fitted if the Administration is satisfied that they are effectively watertight.

Ch.2 Reg. 12: Sidescuttles and windows

(5) Toughened safety glass or its equivalent shall be used for the wheelhouse windows.

Ch.2 Reg. 15: Anchor and Mooring Equipment

Anchor equipment designed for quick and safe operation shall be provided which shall consist of anchoring equipment, anchor chains or wire ropes, stoppers and a windlass or other arrangements for dropping and hoisting the anchor and for holding the vessel at anchor in all foreseeable service conditions. Vessels shall also be provided with adequate mooring equipment for safe mooring in all operating conditions. Anchor and mooring equipment shall be to the satisfaction of the Administration.

4.3 Stability and associated seaworthiness

Ch.3 Reg. 2: Stability criteria

(1) The following minimum stability criteria shall be met unless the Administration is satisfied that operating experience justifies deviations:

a) the area under the righting lever curve (GZ curve) shall not be less than 0.055 metre-radians up to 30° angle of heel, and not less than 0.090 metre-radians up to 40° or the angle of flooding \( \theta_f \) if this angle is less than 40°. Additionally, the area under the righting lever curve (GZ curve) between the angles of heel of 30° and 40° or between 30° and \( \theta_f \) if this angle is less than 40° shall not be less than 0.030 metre-radians. \( \theta_f \) is the angle of heel at which openings in the hull, superstructure or deckhouses which cannot rapidly be closed weathertight commence to immerse.

In applying this criterion, small openings through which progressive flooding cannot take place need not be considered as open

b) the righting lever GZ shall be at least 200 millimetres at an angle of heel equal to or greater than 30°

c) the maximum righting lever \( GZ_{\text{max}} \) shall occur at an angle of heel preferably exceeding 30° but not less than 25°

d) the initial metacentric height \( GM \) shall not be less than 350 millimetres for single deck vessels. In vessels with complete superstructure or vessels of 70 metres in length and over the metacentric height may be reduced to the satisfaction of the Administration but in no case shall be less than 150 millimetres.

Note:
The above stability requirements are covered by the class notations: Fishing Vessel and Stern Trawler, ref. Pt.5 Ch.6 F101 in the DNV Classification of Ships, rules.

---c-a-d---of---N-o-t-e---

Ch.3 Reg. 4: Particular fishing methods

Vessels engaged in particular fishing methods where additional external forces are imposed on the vessel during fishing operations, shall meet the stability criteria of regulation 2(1) increased, if necessary, to the satisfaction of the Administration.

Vessels engaged in beam trawling shall comply with the following increased stability criteria:

a) the criteria for the area's under the righting lever and for the righting levers as given in Reg.2 (1)(a) and (b) shall be increased by 20%.

b) the meta centric height shall not be less than 500 mm

c) the criteria as given under (a) shall be applicable only to vessels with an installed propulsion power not exceeding the value in kilowatts as given in the following formulas:

\[
N = 0.6 \left( L_s \right)^2 \quad \text{for vessels with a length of 35 m or less, and}
\]
\[
N = 0.7 \left( L_s \right)^2 \quad \text{for vessels with a length of 37 m and over,}
\]
at intermediate length of the vessel the coefficient for \( L_b \)
has to be determined by interpolation between 0.6 and 0.7. \( L_b \)
is the overall length according to the Tonnage Certificate.

If the installed propulsion power exceeds the values for the
standard propulsion power as given in the above formulas the
criteria as mentioned under (a) shall be increased directly propor-
tional to the higher propulsion power.

The Administration shall be satisfied that the above increased
stability criteria for beam trawlers are met in the operating con-
tions mentioned under regulation 7(1) of this chapter.

For the calculation of the stability, the beams shall be assumed to be hoisted up to an angle of 45° with the horizontal.

### 4.4 Machinery and electrical installations and periodically unattended machinery spaces

**Ch. 4 Reg. 4: Machinery [Part B-Machinery installations]**

(5) Main propulsion machinery and, where applicable, auxilia-
ry machinery shall be provided with automatic shut-off ar-
rangements in the case of failures, such as lubricating oil
supply failure, which could lead rapidly to damage, complete
downbreak or explosion. An advance alarm shall also be pro-
vided so that warning is given before automatic shut-off but the
Administration may permit provisions for overriding automat-
ic shut-off devices. The Administration may also exempt ves-
sels from the provisions of this paragraph, giving consideration
to the type of vessel or its specific service.

**Guidance note:**
The requirement for "advance alarm" is given in SOLAS for
+1A1, but will normally be covered when an alarm system is in-
stalled as required by our E0 Rules.

---end---of---Guidance---note---

**Ch. 4 Reg. 5: Means of going astern**

(1) Vessels shall have sufficient power for going astern to se-
cure proper control of the vessel in all normal circumstances.

(2) The ability of the machinery to reverse the direction of
thrust of the propeller in sufficient time and so to bring the ves-
sel to rest within a reasonable distance from maximum ahead
service speed shall be demonstrated at sea.

**Ch. 4 Reg. 6: Steam boilers, feed systems and steam piping ar-
rangements**

(1) Every steam boiler and every unfired steam generator shall
be provided with not less than two safety valves of adequate
capacity. Provided that the Administration may, having regard
to the output or any other features of a steam boiler or unfired
steam generator, permit only one safety valve to be fitted if sat-
isfied that adequate protection against overpressure is thereby
provided.

**Ch. 4 Reg. 7: Communication between the wheelhouse and ma-
chniny space**

Two separate means of communication between the wheel-
house and the machinery space control platform shall be pro-
vided, one of which shall be an engine-room telegraph.

**Ch. 4 Reg. 8: Wheelhouse control of propulsion machinery**

(1) Where remote control of propulsion machinery is provided
from the wheelhouse, the following shall apply:

a) under all operating conditions, including manou-
evring, the speed, direction of thrust and, if applicable,
the pitch of the propeller shall be fully controllable
from the wheelhouse

b) the remote control referred to in sub-paragraph (a)
shall be performed by means of a control device to the
satisfaction of the Administration with, where neces-
sary, means of preventing overload of the propulsion
machinery

c) the main propulsion machinery shall be provided with
a emergency stopping device in the wheelhouse and
independent from the wheelhouse control system re-
ferred to in sub-paragraphe (a)

(2) remote control of the propulsion machinery shall be
possible only from one station at a time: at any control
station interlocked control units may be permitted.
There shall be at each station an indicator showing
which station is in control of the propulsion machin-
ery. The transfer of control between the wheelhouse
and machinery spaces shall be possible only in the ma-
chniny space or control room

e) indicators shall be fitted in the wheelhouse for:

1) propeller speed and direction in the case of fixed propell-
ers

2) propeller speed and pitch position in the case of control-
lable pitch propellers, and

3) advance alarm as required in regulation 4(5)

f) it shall be possible to control the propulsion machin-
ery locally, even in the case of failure in any part of the
remote control system

g) unless the Administration considers it impracticable
the design of the remote control system shall be such
that if it fails an alarm will be given and the pre-set
speed and direction of thrust will be maintained until
local control is in operation

h) special arrangements shall be provided to ensure that
automatic starting shall not exhaust the starting possi-
bilities. An alarm shall be provided to indicate low
starting air pressure and shall be set at a level which
will still permit main engine starting operations.

**Ch. 4 Reg. 10: Arrangements for fuel oil, lubricating oil and
other flammable oils**

(4) Subject to the satisfaction of the Administration, fuel oil
pipes which, if damaged, would allow oil to escape from a stor-
age, settling or daily service tank situated above the double
bottom, shall be fitted with a cock or valve on the tank capable
of being closed from a safe position outside the space con-
cerned in the event of a fire arising in the space in which such
tanks are situated. In the special case of deep tanks situated in
any shaft or pipe tunnel or similar space, valves on the tank
shall be fitted but control in the event of fire may be effected
by means of an additional valve on the pipe or pipes outside the
tunnel or similar space. If such additional valve is fitted in the
machinery space it shall be capable of being operated outside
this space.

(5) Pumps forming part of the fuel oil system shall be separate
from any other system and the connectors of any such pumps
shall be provided with an efficient relief valve which shall be
in closed circuit. Where fuel oil tanks are alternatively used as
liquid ballast tanks, proper means shall be provided to isolate
the fuel oil and ballast systems.

(8) As far as practicable, fuel oil tanks shall be part of the ves-
sel's structure and shall be located outside machinery spaces of
Category A. Where fuel oil tanks, other than double bottom
tanks, are necessarily located adjacent to or within machinery
spaces of Category A, at least one of their vertical sides shall
be contiguous to the machinery space boundaries, and shall
preferably have a common boundary with the double bottom
tanks where fitted and the area of the tank boundary common
with the machinery space shall be kept to a minimum. When
such tanks are sited within the boundaries of machinery spaces
of Category A they shall not contain fuel oil having a flash-
point of less than 60º Celsius (closed cup test). In general, the
use of free-standing fuel oil tanks shall be avoided in fire hazard areas, and particularly in machinery spaces of Category A. When free-standing fuel oil tanks are permitted, they shall be placed in an oil-tight spill tray of ample size having a suitable drain pipe leading to a suitably sized spill oil tank.

(9) The ventilation of machinery spaces shall be sufficient under all normal conditions to prevent accumulation of oil vapour.

Ch.4 Reg.17: Emergency source of electrical power (Part C - Electrical Installations)

(1) A self-contained emergency source of electrical power located, to the satisfaction of the Administration, outside the machinery spaces shall be provided and so arranged as to ensure its functioning in the event of fire or other causes of failure of the main electrical installations.

(2) The emergency source of electrical power shall be capable, having regard to starting current and the transitory nature of certain loads, of serving simultaneously for a period of at least three hours:

a) the VHF radio installation required by regulation IX/6(1)(a) and (b), and if applicable:
   i) the MF radio installation required by regulation IX/8(1)(b) and regulation IX/9(1)(b) and (c)
   ii) the ship earth station required by regulation IX/9(1)(a), and
   iii) the MF/HF radio installation required by regulation IX/9(2)(a) and (b) and regulation IX/10(1).

b) internal communication equipment, fire detecting systems and signals which may be required in an emergency

c) the navigation lights if solely electrical and the emergency lights:
   i) of launching stations and over the sides of the vessel
   ii) in all alleyways, stairways and exits
   iii) in control stations, and
   iv) in spaces containing machinery or the emergency source of power
   v) in fish handling and fish processing spaces, and

d) the operation of the emergency fire pump, if any.

(3) The emergency source of electrical power may be either a generator or an accumulator battery.

(4)

a) Where the emergency source of electrical power is a generator, it shall be provided both with an independent fuel supply and with efficient starting arrangements to the satisfaction of the Administration. Unless a second independent means of starting the emergency generator is provided the single source of stored energy shall be protected to preclude its complete depletion by the automatic starting system.

b) Where the emergency source of electrical power is an accumulator battery it shall be capable of carrying the emergency load without recharging whilst maintaining the voltage of the battery throughout the discharge period within plus or minus 12 per cent of its nominal voltage. In the event of failure of the main power supply this accumulator battery shall be automatically connected to the emergency switchboard and shall immediately supply at least those services specified in paragraph (2) (b) and (c). The emergency switchboard shall be provided with an auxiliary switch allowing the battery to be connected manually, in case of failure of the automatic connexion system.

(5) The emergency switchboard shall be installed as near as is practicable to the emergency source of power and shall be located in accordance with paragraph (1). Where the emergency source of power is a generator, the emergency switchboard shall be located in the same place unless the operation of the emergency switchboard would thereby be impaired.

(6) An accumulator battery fitted in accordance with this regulation shall be installed in a well ventilated space which shall not be the space containing the emergency switchboard. An indicator shall be mounted in a suitable place on the main switchboard or in the machinery control room to indicate when the battery constituting the emergency source of power is being
discharged. The emergency switchboard is to be supplied in normal operation from the main switchboard by an inter-connector feeder which is to be protected at the main switchboard against overload and short circuit. The arrangement at the emergency switchboard shall be such that in the event of failure of the main power supply an automatic connection of the emergency supply shall be provided. When the system is arranged for feedback operation, the inter-connector feeder shall also be protected at the emergency switchboard at least against short circuit.

(7) The emergency generator and its prime mover and any accumulator battery shall be so arranged as to ensure that they will function at full rated power when the vessel is upright and when rolling up to an angle of 22½º either way and simultaneously pitching 10º by bow or stern, or is in any combination of angles within those limits.

(8) The emergency source of electrical power and automatic starting equipment shall be so constructed and arranged as to enable adequate testing to be carried out by the crew while the vessel is in operating condition.

Ch.4 Reg.19: Fire Safety [Part D-Periodically unattended machinery space]

Fire prevention

(1) Special consideration shall be given to high pressure fuel oil pipes. Where practicable, leakages from such piping systems shall be collected in a suitable drain tank which shall be provided with a high level alarm.

(3) Where fuel oil daily service tanks or settling tanks are fitted with heating arrangements, a high temperature alarm shall be provided if the flashpoint of the fuel oil can be exceeded.

Fire detection

(4) An approved fire detection system based on a self-monitoring principle and including facilities for periodical testing shall be installed in machinery spaces.

(5) The detection system shall initiate both audible and visual alarm in the wheelhouse and in sufficient appropriate spaces to be heard and observed by persons on board, when the vessel is in harbour.

(6) The fire detection system shall be fed automatically from an emergency source of power if the main source of power fails.

(7) Internal combustion engines of 2 500 kilowatts and over shall be provided with crankcase oil mist detectors or engine bearing temperature detectors or equivalent devices.

Ch.4 Reg.22 Alarm system [Part D]

(1) An alarm system shall be provided which shall indicate any fault requiring attention.

(2) 

a) The alarm system shall be capable of sounding an audible alarm in the machinery space and shall indicate visually each separate alarm function at a suitable position

b) The alarm system shall have a connection to the engineers' cabins through a selector switch to ensure connection to one of those cabins and to the engineers' public rooms, if any. The Administration may permit alternative arrangements which provide an equivalent measure of safety

c) An engineers' alarm and an alarm to the wheelhouse for persons on watch shall be activated if an alarm function has not received attention within a limited period as specified by the Administration

d) Audible and visual alarms shall be activated in the wheelhouse for any situation requiring action by the responsible person on watch or which should be brought to his attention

e) The alarm system shall as far as is practicable be designed on the fail-safe principle.

(3) The alarm system shall be:

a) continuously powered with automatic change-over to a stand-by power supply in case of loss of normal power, and

b) activated by failure of the normal power supply.

(4) 

a) The alarm system shall be able to indicate at the same time more than one fault and the acceptance of any alarm shall not inhibit another alarm

b) Acceptance at the position referred to in paragraph (2)(a) of any alarm condition shall be indicated at the positions where it was shown. Alarms shall be maintained until they are accepted and the visual indications shall remain until the fault has been corrected. All alarms shall automatically reset when the fault has been rectified.

Ch.4 Reg.23: Special requirements for machinery, boiler and electrical installations

(3) Automatic control and alarm systems shall be provided as follows:

a) the control system shall be such that through the necessary automatic arrangements the services needed for the operation of the main propulsion machinery and its auxiliaries are ensured

b) means shall be provided to keep the starting air pressure at the required level where internal combustion engines are used for main propulsion

c) an alarm system complying with regulation 22 shall be provided for all important pressures, temperatures, fluid levels, etc., and

d) where appropriate an adequate control position shall be arranged with the necessary alarm panels and instrumentation indicating any alarmed fault.

Ch.4 Reg.24: Safety system

A safety system shall be provided so that serious malfunction in machinery or boiler operations, which presents an immediate danger, shall initiate the automatic shut-down of that part of the plant and an alarm shall be given. Shut-down of the propulsion system shall not be automatically activated except in cases which could lead to serious damage, complete breakdown, or explosion. Where arrangements for overriding the shut-down of the main propelling machinery are fitted, these shall be such as to preclude inadvertent activation. Visual means shall be provided to show whether or not it has been activated.

4.5 Fire protection, fire detection, fire extinction and fire fighting


Reference is made to Table 1-1 for applicability of the particular EU amendments to the Torremolinos’ convention.

4.6 Protection of the crew


Reference is made to Table 1-1 for applicability of the partic-
ular EU amendments to Torremolinos’ convention.

4.7 Lifesaving appliances and arrangements


Reference is made to Table 1-1 for applicability of the particular EU amendments to Torremolinos’ convention.

For easy reference a summary of Ch.7 of the Torremolinos’ convention and the corresponding EU amendments is made (see below).

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<tr>
<td>— survival craft for 100% each side — rescue boat.</td>
<td>L &lt; 75 m (but above 45 m): — 200% survival craft aggregate capacity and 100% available each side — rescue boat, unless considered unnecessary by the Administration.</td>
<td>— EU med directive applicable to LSA and arrangements — more specific requirements for stowage of survival crafts and readiness and availability — smaller rescue boats (at least 3.3 m versus 3.8 m length) for vessel with L &lt; 45 m.</td>
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Survival craft for vessels with L 75 m:
— 100% survival craft each side,
— can be reduced to 50% if increased damage stability and fire safety above Ch. III/14 Ch. V. Liferafts for at least 50% each side to be provided.
— rescue boat.
— lifejackets for all persons
— immersion suits for the rescue boat crew
— immersion suits for persons not covered by lifeboats or liferafts with launching appliances or other means which do not require entry into the water
— 3 immersion suits in each lifeboat
— TPA for persons not covered with immersion suits
— Immersion suits and TPAs in lifeboats are not required if enclosed lifeboats or trading only in warm climates.

Reference is made to Table 1-1 for applicability of the particular EU amendments to Torremolinos’ convention.

4.8 Emergency procedures, musters and drills


Reference is made to Table 1-1 for applicability of the particular EU amendments to Torremolinos’ convention.

For all practical purposes this is covered by SOLAS 1974 as amended, Ch.5.

5. References

— DNV Rules for Classification of Ships
— Torremolinos International Convention for the Safety Of Fishing Vessels, 1977, as modified by the Torremolinos Protocol of 1993 relating thereto