



UNIVERSITÀ
DEGLI STUDI DI TRIESTE

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Progetto di impianti di propulsione navale

2.3 SAFE RETURN TO PORT

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Impianti di propulsione navale

Regolamento SOLAS “Safe Return to Port” - MSC 82/24/Add.1 - ANNEX 2

Chapter II-1

Regulation 8-1

System capabilities after a flooding casualty on passenger ships

1 Application

This regulation applies to passenger ships constructed on or after 1 July 2010 to which regulation II-2/21 applies.

2 Availability of essential systems in case of flooding damage *

A passenger ship shall be designed so that the systems specified in regulation II-2/21.4 remain operational when the ship is subject to flooding of any single watertight compartment.

* Refer to the Performance standards for the systems and services to remain operational on passenger ships for safe return to port and orderly evacuation and abandonment after a casualty (MSC.1/Circ.1214).

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Chapter II-2

Regulation 21

Casualty threshold, safe return to port and safe areas

1 Application

Passenger ships constructed on or after 1 July 2010 having length, as defined in regulation II-1/2.5, of 120 m or more or having three or more main vertical zones shall comply with the provisions of this regulation.

2 Purpose

The purpose of this regulation is to establish design criteria for a ship's safe return to port under its own propulsion after a casualty that does not exceed the casualty threshold stipulated in paragraph 3 and also provides functional requirements and performance standards for safe areas.

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3 Casualty threshold

The casualty threshold, in the context of a fire, includes:

- .1 loss of space of origin up to the nearest “A” class boundaries, which may be a part of the space of origin, if the space of origin is protected by a fixed fire extinguishing system; or
- .2 loss of the space of origin and adjacent spaces up to the nearest “A” class boundaries, which are not part of the space of origin.

4 Safe return to port*

When fire damage does not exceed the casualty threshold indicated in paragraph 3, the ship shall be capable of returning to port while providing a safe area as defined in regulation 3.

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To be deemed capable of returning to port, the following systems shall remain operational in the remaining part of the ship not affected by fire:

- .1 propulsion;
- .2 steering systems and steering-control systems;
- .3 navigational systems;
- .4 systems for fill, transfer and service of fuel oil;
- .5 internal communication between the bridge, engineering spaces, safety centre, fire-fighting and damage control teams, and as required for passenger and crew notification and mustering;
- .6 external communication;
- .7 fire main system;

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- .8 fixed fire-extinguishing systems;
- .9 fire and smoke detection system;
- .10 bilge and ballast system;
- .11 power-operated watertight and semi-watertight doors;
- .12 systems intended to support “safe areas” as indicated in paragraph 5.1.2;
- .13 flooding detection systems; and
- .14 other systems determined by the Administration to be vital to damage control efforts.

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5 Safe area(s)

5.1 *Functional requirements:*

- .1 the safe area(s) shall generally be internal space(s); however, the use of an external space as a safe area may be allowed by the Administration taking into account any restriction due to the area of operation and relevant expected environmental conditions;

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- .2 the safe area(s) shall provide all occupants with the following basic services* to ensure that the health of passengers and crew is maintained:
 - .1 sanitation;
 - .2 water;
 - .3 food;
 - .4 alternate space for medical care;
 - .5 shelter from the weather;
 - .6 means of preventing heat stress and hypothermia;
 - .7 light; and
 - .8 ventilation;
- .3 ventilation design shall reduce the risk that smoke and hot gases could affect the use of the safe area(s); and

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..4 means of access to life-saving appliances shall be provided from each area identified or used as a safe area, taking into account that a main vertical zone may not be available for internal transit.

5.2 Alternate space for medical care

Alternate space for medical care shall conform to a standard acceptable to the Administration.**

* Refer to the Performance standards for the systems and services to remain operational on passenger ships for safe return to port and orderly evacuation and abandonment after a casualty (MSC.1/Circ.1214).

** Refer to the Guidance on the establishment of medical and sanitation related programmes for passenger ships (MSC/Circ.1129).

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Regulation 22

Design criteria for systems to remain operational after a fire casualty

1 Application

Passenger ships constructed on or after 1 July 2010 having length, as defined in regulation II-1/2.2, of 120 m or more or having three or more main vertical zones shall comply with the provisions of this regulation.

2 Purpose

The purpose of this regulation is to provide design criteria for systems required to remain operational for supporting the orderly evacuation and abandonment of a ship, if the casualty threshold, as defined in regulation 21.3, is exceeded.

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3 Systems*

3.1 In case any one main vertical zone is unserviceable due to fire, the following systems shall be so arranged and segregated as to remain operational:

- . 1 fire main;
- . 2 internal communications (in support of fire-fighting as required for passenger and crew notification and evacuation);
- . 3 means of external communications;
- . 4 bilge systems for removal of fire-fighting water;
- . 5 lighting along escape routes, at assembly stations and at embarkation stations of life-saving appliances; and
- . 6 guidance systems for evacuation shall be available.

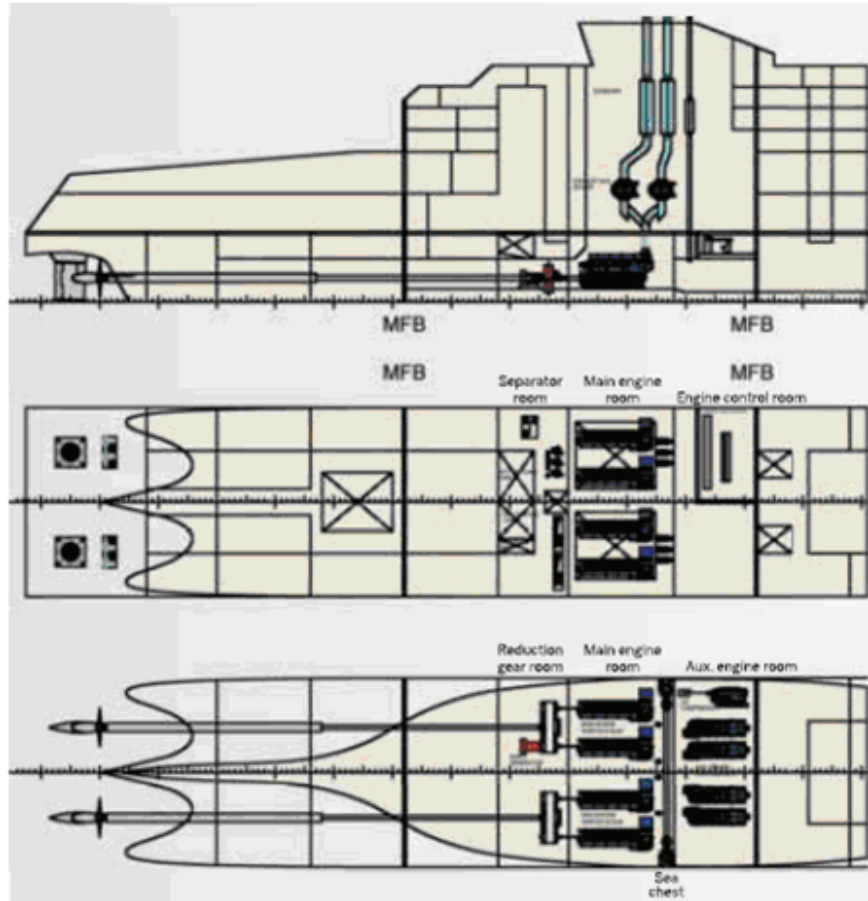
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3.2 The above systems shall be capable of operation for at least 3 h based on the assumption of no damage outside the unserviceable main vertical zone. These systems are not required to remain operational within the unserviceable main vertical zones.

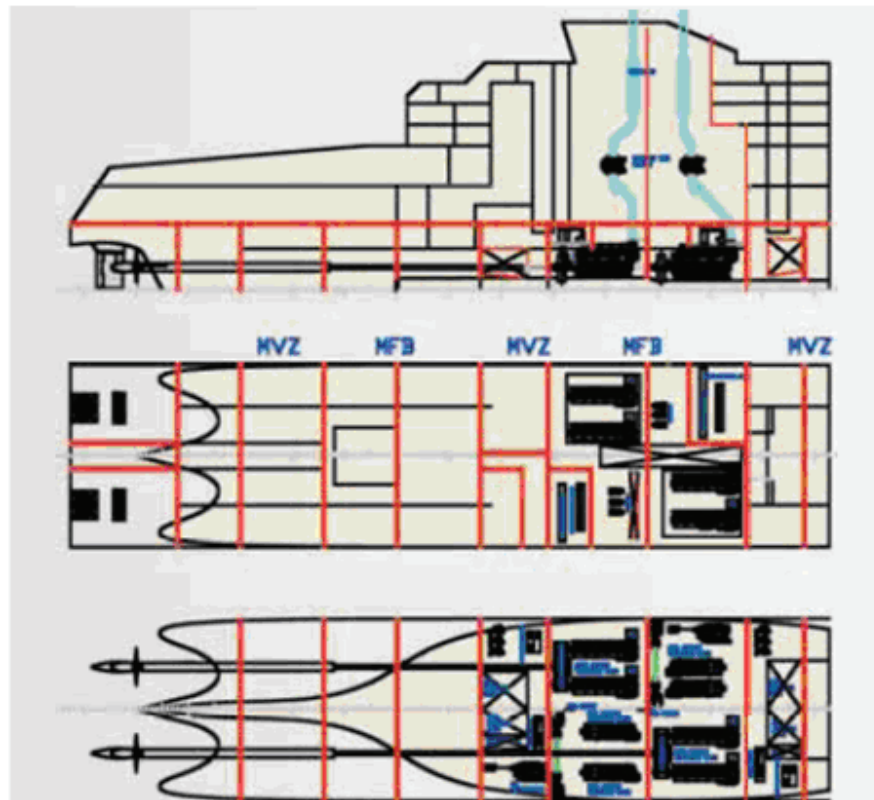
3.3 Cabling and piping within a trunk constructed to an “A-60” standard shall be deemed to remain intact and serviceable while passing through the unserviceable main vertical zone for the purposes of paragraph 3.1. An equivalent degree of protection for cabling and piping may be approved by the Administration.

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■ Fig. 1 - Conventional RoPax machinery arrangement that does not comply with the safe return to port requirements.

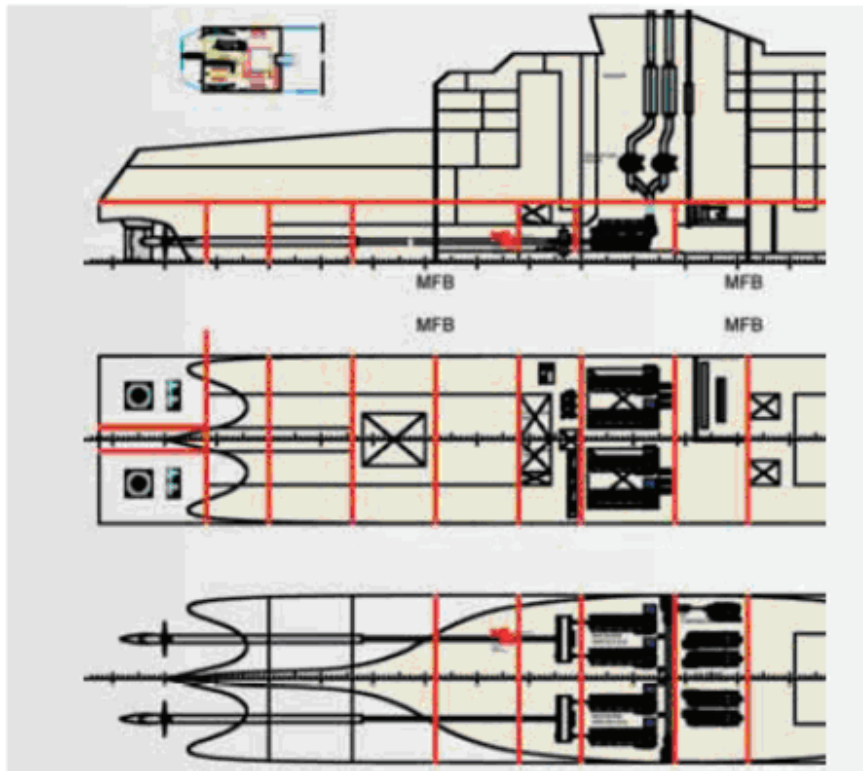
Sistemazioni apparato motore di navi RoPax



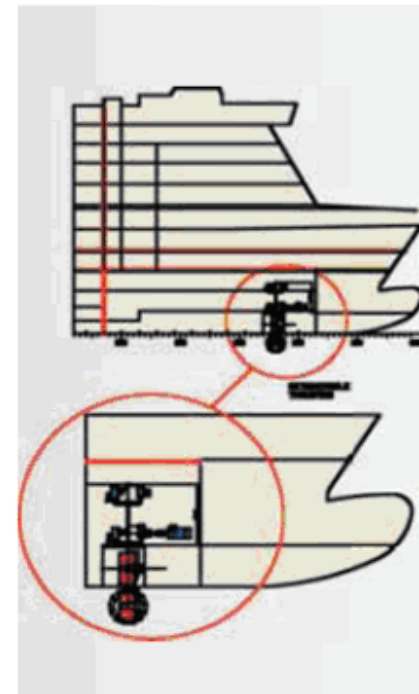
■ Fig. 2 - Fully redundant RoPax machinery arrangement that complies with the safe return to port requirements.

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Sistemazioni apparato motore di navi RoPax



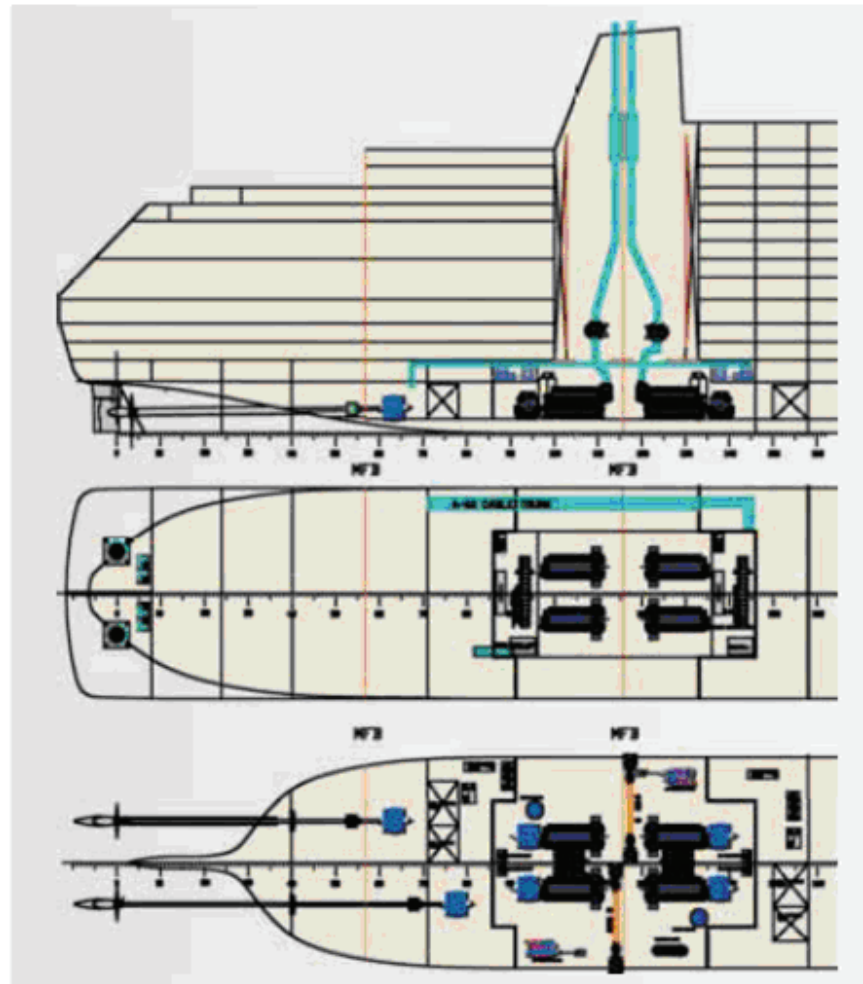
■ Fig. 4 – RoPax machinery with single main engine room and PTI arrangement to comply with the safe return to port requirements.



■ Fig. 5 – Passenger vessel with a retractable thruster acting as the take me home device.

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Sistemazioni apparato motore di navi
Passeggeri/Crociera



■ Fig. 6 – Cruise ship with fully redundant diesel-electric machinery.