

Amendments of the Guidance to the Rules for Classification of Steel Ships

Pt. 8

(For External opinion inquiry)



2022.8.

Machinery Rule Development Team

- Main Amendments -

(1) Effective date : 1 July 2023 (based on the contract date for construction)

- Deletion of Annex 8-8 as per the deletion of IACS UR M69
- Guidance Pt.8 Ch.12 201.4.(1) modified as per ENP4800-4079-2022

Amendment	Note
<p style="text-align: center;"><u>Annex 8-8 . Qualitative Failure Analysis for Propulsion and Steering on Passenger Ships - <Void> (2023)</u></p> <p>1. The scope is to be as specified in the followings.</p> <p>— A qualitative failure analysis for propulsion and steering for new passenger ships including those having of 120m or more or having three or more main vertical zones.</p> <p>2. The objectives are to be as specified in the followings.</p> <p>(1) For ships having at least two independent means of propulsion and steering to comply with SOLAS requirements for a safe return to port, the following requirements are applicable:</p> <p>(A) Provide knowledge of the effects of failure in all the equipment and systems due to fire in any space, or flooding of any watertight compartment that could affect the availability of the propulsion and steering:</p> <p>(B) Provide solutions to ensure the availability of propulsion and steering upon such failures in item (a):</p> <p>(2) Ships not required to satisfy the safe return to port concept will require the analysis of failure in single equipment and fire in any space to provide knowledge and possible solutions for enhancing availability of propulsion and steering.</p> <p>3. The systems shall consider the following requirements and the analysis is to address the location and layout of equipment and systems to consider the effects of fire or flooding in a single compartment.</p> <p>(1) The qualitative failure analysis is to consider the propulsion and steering equipment and all its associated systems which might impair the availability of propulsion and steering.</p> <p>(2) The qualitative failure analysis should include:</p> <p>(A) Propulsion and electrical power prime movers, e.g.:</p> <p>(a) Diesel engines</p> <p>(b) Electric motors</p> <p>(B) Power transmission systems, e.g.:</p> <p>(a) Shafting</p> <p>(b) Bearings</p> <p>(c) Power converters</p> <p>(d) Transformers</p> <p>(e) Slip ring systems</p> <p>(C) Steering gear, e.g.:</p> <p>(a) Rudder actuator or equivalent for azimuthing propulsor</p> <p>(b) Rudder stock with bearings and seals</p> <p>(c) Rudder</p> <p>(d) Power unit and control gear</p> <p>(e) Local control systems and indicators</p> <p>(f) Remote control systems and indicators</p> <p>(g) Communication equipment</p>	<p>- Deletion of IAC S UR M69</p>

Amendment	Note
<p>(D) Propulsors, e.g.:</p> <ul style="list-style-type: none"> (a) Propeller (b) Azimuthing thruster (c) Water jet <p>(E) Main power supply systems, e.g.:</p> <ul style="list-style-type: none"> (a) Electrical generators and distribution systems (b) Cable runs (c) Hydraulic (d) Pneumatic <p>(F) Essential auxiliary systems, e.g.:</p> <ul style="list-style-type: none"> (a) Compressed air (b) Oil fuel (c) Lubricating oil (d) Cooling water (e) Ventilation (f) Fuel storage and supply systems <p>(G) Control and monitoring systems, e.g.:</p> <ul style="list-style-type: none"> (a) Electrical auxiliary circuits (b) Power supplies (c) Protective safety systems (d) Power management systems (e) Automation and control systems <p>(H) Support systems, e.g.:</p> <ul style="list-style-type: none"> (a) Lighting (b) Ventilation <p>4. The failure criteria is to be as specified in the followings:</p> <ul style="list-style-type: none"> (1) Failures are deviations from normal operating conditions such as loss or malfunction of a component or system such that it cannot perform an intended or required function. (2) The qualitative failure analysis should be based on single failure criteria,(not two independent failures occurring simultaneously). (3) Where a single failure cause results in failure of more than one component in a system(common cause failure), all the resulting failures are to be considered together. (4) Where the occurrence of a failure leads directly to further failures, all those failures are to be considered together. 	<p>- Deletion of IAC S UR M69</p>

Amendment	Note
<p>5. The verification of Solutions is to be as specified in the followings:</p> <p>(1) The shipyard is to submit a report to the Societies that identifies how the objectives have been addressed. The report is to include the following information:</p> <ul style="list-style-type: none">(A) Identify the standards used for analysis of the design.(B) Identify the objectives of the analysis.(C) Identify any assumptions made in the analysis.(D) Identify the equipment, system or sub-system, mode of operation of the equipment.(E) Identify probable failure modes and acceptable deviations from the intended or required function.(F) Evaluate the local effects (e.g. fuel injection failure) and the effects on the system as a whole (e.g. loss of propulsion power) of each failure mode as applicable.(G) Identify trials and testing necessary to prove conclusions. <p>(2) The report is to be submitted prior to approval of detail design plans. The report may be submitted in two parts:</p> <ul style="list-style-type: none">(A) A preliminary analysis as soon as the initial arrangements of different compartments and propulsion plant are known which can form the basis of discussion. This is to include a structured assessment of all essential systems supporting the propulsion plant after a failure in equipment, fire or flooding in any compartment casualty.(B) A final report detailing the final design with a detailed assessment of any critical system identified in the preliminary report. <p>(3) Verification of the report findings are to be agreed between the Society and the shipyard.</p>	<p>- Deletion of IAC S UR M69</p>

Present	Amendment	Note
<p style="text-align: center;">CHAPTER 12 CARRIAGE OF DANGEROUS GOODS</p> <p style="text-align: center;">Section 2 Special Requirements</p> <p>201. Special requirements [See Rule] <Omitted></p> <p>4. Ventilation arrangement [See Rule]</p> <p>(1) In applying 201. 4 of the Rules, mechanical ventilation systems provided in enclosed cargo spaces are to be of exhaust type. If the space has access from another enclosed space, the door shall be self-closing.</p> <p>(2) In applying 201. 4 of the Rules, the following requirements are to be complied with.</p> <p>(A) If adjacent spaces are not separated from cargo spaces by gastight bulkheads or decks, then they are considered as part of the enclosed cargo space and the ventilation requirements are to apply to the adjacent space as for the enclosed cargo space itself.</p> <p>(B) Where the IMSBC Code requires 2 fans per hold, a common ventilation system with 2 fans connected is acceptable.</p> <p>(C) Where the IMSBC Code requires continuous ventilation, this does not prohibit ventilators from being fitted with a means of closure as required for fire protection purposes under Ch 2, 201. 1 (1) of the Rules provided the minimum height to the ventilator opening is to be in accordance with ICLL(4.5 m for Position 1 and 2.3 m for Position 2).</p> <p>(D) For open top container ships, power ventilation is to required only for the lower part of the cargo hold for which purpose ducting is required. The ventilation capacity is to be at least 2 air changes per hour, based on the empty hold volume below weather deck.</p> <p><Omitted></p>	<p style="text-align: center;">CHAPTER 12 CARRIAGE OF DANGEROUS GOODS</p> <p style="text-align: center;">Section 2 Special Requirements</p> <p>201. Special requirements [See Rule] <Omitted></p> <p>4. Ventilation arrangement [See Rule]</p> <p>(1) In applying 201. 4 of the Rules, mechanical ventilation systems provided in enclosed cargo spaces are to be of exhaust type. If the <u>enclosed cargo</u> space has access from another enclosed space, the door shall be self-closing.</p> <p>(2) In applying 201. 4 of the Rules, the following requirements are to be complied with.</p> <p>(A) If adjacent spaces are not separated from cargo spaces by gastight bulkheads or decks, then they are considered as part of the enclosed cargo space and the ventilation requirements are to apply to the adjacent space as for the enclosed cargo space itself.</p> <p>(B) Where the IMSBC Code requires 2 fans per hold, a common ventilation system with 2 fans connected is acceptable.</p> <p>(C) Where the IMSBC Code requires continuous ventilation, this does not prohibit ventilators from being fitted with a means of closure as required for fire protection purposes under Ch 2, 201. 1 (1) of the Rules provided the minimum height to the ventilator opening is to be in accordance with ICLL(4.5 m for Position 1 and 2.3 m for Position 2).</p> <p>(D) For open top container ships, power ventilation is to required only for the lower part of the cargo hold for which purpose ducting is required. The ventilation capacity is to be at least 2 air changes per hour, based on the empty hold volume below weather deck.</p> <p><Omitted></p>	<p>- ENP4800-4079 -22</p>