CLUB CIRCULAR

Friday, 22 November, 2013
BSM-RM-10/008/13

To: All members

Recommendations for the Safety of Cargo Vessel of less than Convention Size

Part III / IV

Continued with BSM-RM-10/007/13

5. Fire Fighting Recommendation

Section 2: Fire Safety Measures
The purpose of this Recommendation should contain a fire in the space of origin. For this purpose, the following functional Recommendations should be met:

- the vessel should be subdivided by thermal and structural boundaries;
- thermal insulation of boundaries should have due regard to the fire risk of the space and adjacent spaces;
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The minimum fire integrity of bulkheads and decks should be as prescribed in Table:

[Item]	Space	Separation By	From Space
[1]	Machinery Space Class 'A'	A-60	Accommodation/control stations/corridors/staircases/service spaces of high fire risk/ro-ro spaces/ vehicle spaces
[2]	Machinery Space Class 'A'	A-0	Other than above [item 1]
[3]	Galley	A-0	Unless specified otherwise
[4]	Service space of	B-15	Unless specified above [item 1]

	high fire risk other than galley		
[5]	Corridor Staircase	B-0	Unless specified above [item 1]
[6]	Cargo Space (other than ro-ro spaces and vehicle space)	A-0	Unless specified above [item 1]
[7]	Ro-ro space and vehicle space (except weather deck)	A-60	Control stations/machinery spaces of category ‘A’
[8]	Ro-ro space and vehicle space (except weather deck)	A-0	Unless specified above [item 1]

Category ‘A’ machinery spaces should be enclosed by A-60 Class divisions, where adjacent to:
1. Accommodation spaces
2. Control stations
3. Corridors and staircases
4. Service spaces of high fire risk,

and by A-0 Class divisions elsewhere.

The divisions used to separate spaces, not mentioned above, should be of non-combustible material.

The hull, superstructure, structural bulkheads, decks and deckhouses should be constructed of steel or other equivalent material. For the purpose of applying the definition of steel or other equivalent material, as given in SOLAS, the 'applicable fire exposure' should be one hour. Vessels built of materials other than steel should be specially considered.

Stairways should be enclosed, at least at one level, by divisions and doors or hatches, in order to restrict the free flow of smoke to other decks in the vessel and the supply of air to the fire. Doors forming such enclosures should be self-closing.

Openings in 'A' Class divisions should be provided with permanently attached means of closing which should be at least as effective for resisting fires as the divisions in which they are fitted.

Interior stairways serving machinery spaces, accommodation spaces, service spaces or control stations should be of steel or other equivalent material.

Doors should be self-closing in way of Category 'A' machinery spaces and galleys, except where they are normally kept closed.

Where 'A' Class divisions are penetrated for the passage of electric cables, pipes, trunks, ducts, etc., or for girders, beams or other structural members, arrangements should be made to ensure that the fire resistance is not impaired. Arrangements should also prevent the transmission of heat to un-insulated boundaries at the intersections and terminal points of the divisions and penetrations by insulating the horizontal and vertical boundaries or penetrations for a distance of 450 mm.

Materials

Paints, varnishes and other finishes used on exposed interior surfaces should not be capable of producing excessive quantities of smoke, toxic gases or vapours and should be of the low flame spread type in accordance with the IMO FTP Code, Annex 1, Parts 2 and 5.

Except in cargo spaces or refrigerated compartments of service spaces, insulating materials should be non-combustible.

Where pipes penetrate 'A' or ‘B’ Class divisions, the pipes or their penetration pieces should be of steel or other approved materials having regard to the temperature and integrity Recommendations such divisions are required to withstand.

Pipes conveying oil or combustible liquids through accommodation and service spaces should be of steel or other approved materials having regard to the fire risk.

Materials readily rendered ineffective by heat should not be used for overboard scuppers, sanitary discharges and other outlets which are close to the waterline, and where the failure of the material in the event of fire would give rise to the danger of flooding.

Primary deck coverings within accommodation spaces, service spaces and control stations should be of a type which will not readily ignite, or give rise to toxic or explosive hazards at elevated temperatures in accordance with the IMO FTP Code, Annex 1, Parts 2 and 6.

Materials used for insulating pipes, etc., in machinery spaces and other compartments containing high fire risks should be non-combustible. Vapour barriers and adhesives used in conjunction with insulation, as well as the insulation of pipe fittings, for cold service systems need not be of non-combustible materials, but they should be kept to the minimum quantity

practicable and their exposed surfaces should have low flame spread characteristics.

In spaces where penetration of oil products is possible, the surface of the insulation should be impervious to oil or oil vapours. Insulation boundaries should be arranged to avoid immersion in oil spillage.

Ventilation systems
Ventilation fans should be capable of being stopped and main inlets and outlets of ventilation systems closed from outside the spaces being served.

Ventilation ducts for Category 'A' machinery spaces, ro-ro spaces and vehicle spaces should not pass through accommodation spaces, galleys, service spaces or control stations, unless the ducts are constructed of steel and arranged to preserve the integrity of the division

Ventilation ducts for accommodation spaces, service spaces or control stations should not pass through Category 'A' machinery spaces or galleys unless the ducts are constructed of steel and arranged to preserve the integrity of the division.

Ventilation arrangement for store rooms containing highly flammable products should be specially considered. Ventilation systems serving Category 'A' machinery spaces and galley exhaust ducts should be independent of systems serving other spaces.

Ventilation should be provided to prevent the accumulation of gases that may be emitted from batteries. Ventilation openings may be fitted in and under the lower parts of cabin, mess and dayroom doors in corridor bulkheads. The total net area of any such openings is not to exceed 0,05 m2. Balancing ducts should not be permitted in fire divisions.

Oil fuel arrangements
In a cargo vessel in which oil fuel is used, the arrangements for the storage, distribution and utilization of the oil fuel should be such as to ensure the safety of the vessel and persons on board.

Oil fuel tanks situated within the boundaries of Category 'A' machinery spaces should not contain oil fuel having a flashpoint of less than 60°C. Oil fuel, lubricating oil and other flammable oils should not be carried in fore peak tanks.

For vessels of 150 GT or more, and as far as practicable:

- Oil fuel lines shall be arranged far apart from hot surfaces, electrical

installations or other sources of ignition and shall be screened or otherwise suitably protected to avoid oil spray or oil leakage onto the sources of ignition. The number of joints in such piping systems shall be kept to a minimum.

- Surfaces with temperatures above 220°C which may be impinged as a result of a fuel system failure shall be properly insulated. Precautions shall be taken to prevent any oil that may escape under pressure from any pump, filter or heater from coming into contact with heated surfaces.
- External high-pressure fuel delivery lines between the high pressure fuel pumps and fuel injectors shall be protected with a jacketed piping system capable of containing fuel from a high-pressure line failure. A suitable enclosure on engines having an output of 375 kW or less having fuel injection pumps serving more than one injector may be used as an alternative to the jacketed piping system.

Special arrangements in Category 'A' machinery spaces and where necessary other machinery spaces

The number of skylights, doors, ventilators, openings in funnels to permit exhaust ventilation and other openings to machinery spaces should be reduced to a minimum consistent with the needs of ventilation and the proper and safe working of the cargo vessel.

Skylights should be of steel and are not to contain glass panels. Suitable arrangements should be made to permit the release of smoke, in the event of fire, from the space to be protected.

Windows should not be fitted in machinery space boundaries. This does not preclude the use of glass in control rooms within the machinery spaces.

Means of control should be provided for:

- opening and closure of skylights, closure of openings in funnels which normally allow exhaust ventilation, and closure of ventilator dampers;
- permitting the release of smoke;
- closing power-operated doors or actuating release mechanism on doors other than power-operated watertight doors;
- stopping ventilating fans; and
- stopping forced and induced draught fans, oil fuel transfer pumps, oil fuel unit pumps and other similar fuel pumps.

The controls required should be located outside the space concerned, where they will not be cut off in the event of fire in the space they serve. Such controls and the controls for any required fire-extinguishing system should be situated at one control position or grouped in as few positions as possible. Such positions should have a safe access from the open deck.

Arrangements for gaseous fuel for domestic purposes
Where gaseous fuel is used for domestic purposes, the arrangements for the storage, distribution and utilization of the fuel should be specially considered.

Space heating
Space heaters, if used, should be fixed in position and so constructed as to reduce fire risks to a minimum. The design and location of these units should be such that clothing, curtains or other similar materials cannot be scorched or set on fire by heat from the unit.

Means of escape
The purpose of this Recommendation is to provide means of escape so that persons onboard can safely and swiftly escape to the lifeboat and liferaft embarkation deck. For this purpose, the following functional Recommendations should be met:

- safe escape routes should be provided;
- escape routes should be maintained in a safe condition, clear of obstacles; and
- additional aids for escape should be provided as necessary to ensure accessibility, clear marking, and adequate design for emergency situations.

Stairways, ladders and corridors serving crew spaces and other spaces to which the crew normally have access should be arranged so as to provide ready means of escape to a deck from which embarkation into survival craft may be effected.

There should be at least two means of escape, as widely separated as possible, from each section of accommodation and service spaces and control stations.

- The normal means of access to the accommodation and service spaces below the open deck should be arranged so that it is possible to reach the open deck without passing through spaces containing a possible source of fire (e.g. machinery spaces, storage spaces of flammable liquids).
- The second means of escape may be through portholes or hatches of adequate size and preferably leading directly to the open deck.
- Dead-end corridors having a length of more than 7m should not be accepted

At least two means of escape should be provided from machinery spaces, except where the small size of a machinery space makes it impracticable. Escape should be by steel ladders that should be as widely separated as possible.

Section 3 Fixed fire detection and fire-alarm systems

An approved and fixed fire detection system should be installed in all Category 'A' machinery spaces and cargo pump rooms.

To be continued…

If our valued member has any doubt, please contact our Risk Management Department at riskmanagement@britishsteamship.com.

Yours faithfully
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