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CHAPTER 6

ROYAL FLEET AUXILIARY

0601. Design Requirements

Ships of the Royal Fleet Auxiliary (RFA) are constructed to Merchant Navy standards. They are required to comply with the Safety of Life at Sea (SOLAS) regulations, issued by the International Maritime Organisation (IMO). The IMO is a specialist agency of the United Nations that aims to provide cooperation between governments on technical matters affecting international merchant shipping. SOLAS is enforced through the Maritime and Coastguard Agency (MCA), along with other statutory requirements particular to the United Kingdom. Additionally, because of their operational commitments and tasks in company with ships of the Royal Navy, many RFAs are fitted to conform to RN requirements for CBRN collective protection, eg citadel and prewetting arrangements. A large percentage of RFA ships are fitted with an automatic firefighting water spray system (quartzoid bulb) throughout their accommodation and stores areas, and a drenching system (CO₂, Halon, foam or steam) in their machinery compartments and other high risk spaces. Specialised ships, ie those that carry particularly flammable cargo, are fitted with specialised systems for fire suppression and extinction. The RFA conforms to RN standard of Damage Control and CBRN, modified to suit circumstances which are peculiar to RFAs.

0602. Location Markings

Location markings follow the standard RN practice as set out in [Chapter 3](#) of this manual. The only difference is that the numbering of frame spaces is from aft to forward in accordance with merchant ship practice (frame spaces in a warship are numbered from forward to aft), but this does not affect the use of the RN system of location markings.

0603. Risk and Control Markings

The RFA Flotilla uses a risk and control marking system that is different to that used in Royal Navy vessels. There are two categories of markings:

- a. **Watertight.** Coloured red.
- b. **Gastight.** Coloured orange or green.

0604. Watertight Markings

- a. Watertight openings on or below the first continuous deck above the deep waterline present the greatest risk to watertight integrity, and are marked by a red disc (red disc opening). These openings are to be kept closed at all times, except when access is required. 'Red disc openings' covers all statutory watertight openings.
- b. Watertight openings higher in the ship present a lower risk, but must be closed during periods of increased risk to preserve the reserve of buoyancy. These openings are marked by a red triangle (red triangle openings).

0605. Gastight Markings

- a. Gastight openings which need to be closed for collective protection against CBRN contamination, and that may normally be left closed without degrading habitability or access, are marked by an orange disk (orange disc openings).
- b. Other gastight openings, which need to be closed for collective protection, but are normally required to be open for habitability or access, are marked by an orange triangle (orange triangle openings).
- c. Gastight openings that would normally be closed, but are required to be open for recirculation when the ship is closed down for collective protection, are marked by a green disc (green disc openings).

0606. Control of Watertight Openings

The Officer of the Watch (OOW) or Officer of the Day (OOD) is to maintain the Watertight Integrity Board/Log, which indicates the status of red disc openings at all times. The Engineer Officer of the Watch (EOOW) may authorise temporary opening of red disc openings that provide access to machinery spaces. The EOOW need not obtain permission from the OOW/OOD, unless there is a specific order to do so, provided that the opening is closed immediately after transiting through it.

0607. Damage Control Conditions

- a. The Damage Control Condition reflects the posture of the ships equipment, 'shut-down' and machinery state. It encompasses the various levels of watertight and gastight integrity. There are 4 conditions: 1, 2, 3 and 4. Each one of these conditions may be suffixed by the letter N (November) to indicate collective protection from a CBRN threat. Additionally, Condition 1 indicates that machinery and equipment preparations for Action have been completed. The four condition are defined as follows:

- (1) **Condition 1.** Immediate risk of damage.
- (2) **Condition 2.** War Cruising.
- (3) **Condition 3.** Peacetime Cruising.
- (4) **Condition 4.** Harbour.

- b. The relationship between Damage Control Conditions and the closure of watertight and gastight openings, when there is no CBRN threat, is shown at [Table 6-1](#). The relationship when a CBRN threat exists is shown at [Table 6-2](#). The control of openings for each situation is explained in greater details at [Annex 6A](#) and [Annex 6B](#).

Table 6-1. Damage Control Conditions - No CBRN Threat

COND	SHUT	OPEN	SITUATION
1	   ()		Immediate Risk of Damage
2	  		War Cruising
3	 		Peacetime Cruising
4			Harbour

Table 6-2. Damage Control Conditions - With a CBRN Threat

COND	SHUT	OPEN	SITUATION
1N	   		Immediate Risk of Damage
2N	   		War Cruising
3N	   		Peacetime Cruising
4N	   		Harbour

0608. Damage Control States

In RFAs, Damage Control States relate to the state of manpower and machinery to meet the expected threat. There are various manning requirements that will be given separately depending on the threat:

- Emergency Stations, Wartime Routine - Condition 1 or 2.
- Emergency Stations, Sea-Going Wartime Routine - Condition 3.
- Harbour Emergency Stations - Condition 4.

0609. Ship Safety Plans (Fire Control Plans)

Under SOLAS all RFA ships should have Ship Safety Plans displayed for the guidance of the ships staff. All ships should hold a duplicate set of plans permanently stored in a prominently marked weather-tight enclosure outside the deckhouse for the assistance of shoreside firefighting personnel. The information on the plans should show clearly for each deck the control stations, various fire sections enclosed by 'A' and 'B' class divisions (see [Para 0217](#)) together with particulars of the fire detection and fire alarm systems, the sprinkler installation and fire extinguishing appliances. A fuller description of the requirements can be found in the consolidated version of SOLAS. Attention is drawn to the requirement for these plans to be kept up to date. For RFAs the plans are produced and supplied by SSA/ADS(RFA)/DASG; any amendments are to be addressed through COMRFA in accordance with CBRN/ Damage Control Amendments.

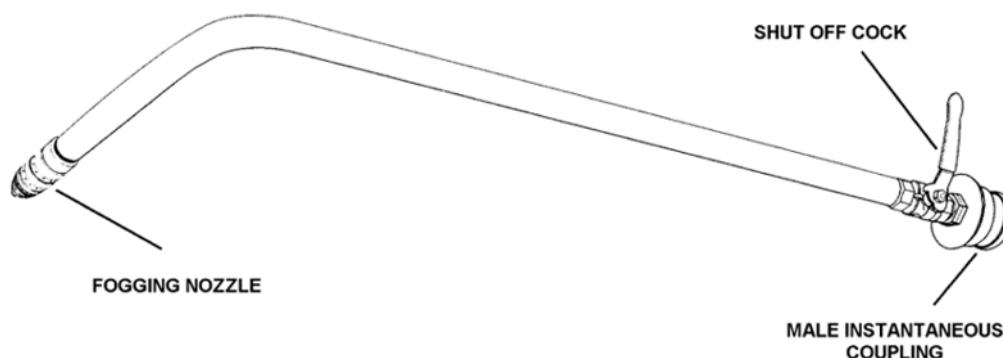
0610. BRd 875

BRd 875 is COMRFA's Quality and Safety Management System. It meets the requirements of IMO's International Safety Management Code. BRd 875 contains the procedures to be used by the RFA flotilla in respect of Damage Control. Where no procedures exist in BRd 875 then the RN standards are to be adopted as detailed in the BR 2170 series, BR 4007 and in BR 4008.

0611. Water Fog Lance

There is a SOLAS/MCA requirement that Class 1 (passenger) ships be equipped with water fog lances for firefighting; they are therefore carried in LSLs. The water fog lance (see [Fig 6-1](#)) produces an elongated spherical cloud of very fine water mist/fog and it is used for fighting fires in inaccessible areas such as under vehicles. The fine water fog is suitable for extinguishing fires in Class A (solid) materials and small pools of high flash point fuels, such as Dieso or AVCAT. The lance is fitted with a male instantaneous connection and a ball valve for controlling the flow. Utilising an inline inductor and feeding the lance with an AFFF solution, can considerably extend its capability and performance.

Fig 6-1. Water Fog Lance



Note. The lines are only to be used for signalling and as guides; they are not to be used for lifting equipment.

0612. Signalling/Guide Lines

SOLAS/MCA require RFAs to carry signalling/guide lines. A technical description for the line can be found in SOLAS and MSN 1665(M), Schedule 5: Breathing Apparatus. The lines are fire proof, wire cored, stored wrapped around BA stowages. One end is fitted with a brass quick release clip the other has secured to it instructions for signalling. The wire core of the line is susceptible to corrosion and is not readily accessible for inspection. The outer wrap of the line is to offer better grip in wet conditions and does not contribute to the lines strength

0613. International Shore Connection

There is a SOLAS/MCA requirement for all RFAs to be equipped with an international shore connection constructed to exact dimensions. One end is to have a standard international shore connection flange (178 mm OD, 64 mm ID, 8 x 132 mm PCD holes slotted to flange periphery) and the other is to have a coupling that will fit the particular ships hydrants and hoses.

In the majority of RFAs this is a 2½ in instantaneous male coupling. The connection is to be kept onboard each RFA, ready for immediate use, together with its gasket, bolts and washers. The connection is illustrated at [Fig 6-2](#).

Fig 6-2. International Shore Connection

