



THE ROYAL FLEET AUXILIARY, DELIVERING MARITIME OPERATIONAL SUPPORT TO DEFENCE

Captain Gareth Coomber RFA

"A WORLD CLASS, COST EFFECTIVE, MARITIME OPERATIONAL SUPORT FORCE"

The Damage Control Challenge RFA

Update on FSS programme

Current systems linking civilian experience with military requirements

The damage control comparison explained



The Damage Control Challenge RFA

Update on FSS programme



The Damage Control Challenge RFA vs RN

- The FSS Programme will deliver a class of solid stores vessels for the Royal Fleet Auxiliary which will provide munitions, stores and provisions to support the Royal Navy at sea. As a replacement for the Fort Class, FSS will form an essential supporting element to the delivery of Carrier Strike Group (CSG).
- On the 17th January 2023 the Ministry of Defence awarded Team Resolute, comprising BMT, Harland & Wolff and Navantia UK, a £1.6Bn manufacture contract to build the Fleet Solid Support Ships.
- The ships will be built to BMT's British design and provide 120 specialist jobs in design and logistics support. At 216m long, they will be the second longest UK military vessels behind the Queen Elizabeth-class aircraft carriers and have commonality with the RFA's Tide class fleet tankers, also a UK BMT design.
- All three FSS is are expected to enter service, after final equipment fits and military trials, by 2032.



The Damage Control Challenge RFA

Update on FSS programme

- Design Intent
 - In common with all of RFA vessels,
 - Damage Control Zones, Main Fire Zones
 - Fire and Repair Party Stations
 - Pressurised HPSW ring main
 - Flight Deck Foam Monitors
 - Fixed Fire Systems
 - Foam
 - Gaseous
 - Watermist
 - Automatic Quartzoid Bulb
 - Water Drench (Curtains, uptakes etc)
 - Galley Wet Chemical



The Damage Control Challenge RFA

Update on FSS programme

- Classification Society.
 - The vessels being built will use: SOLAS, DEFStan, Naval Authority Certificate Strategy and ANEP 77 NATO Naval Ship Code (NSC), which covers the following areas:
 - Structural Integrity
 - Risk of Ignition
 - Fire Growth Potential
 - Smoke Generation and Toxicity
 - Control of Smoke Spread
 - Detection and Alarm
 - Containment of Fire
 - Fire Fighting
 - Maintain Capability
 - Provision of Operational Information
 - Special Requirements
 - Carriage of low flash point fuels





The Damage Control Challenge RFA

Update on FSS programme





The Damage Control Challenge RFA



The Damage Control Challenge RFA

Update on FSS programme



The Damage Control Challenge RFA

Current systems linking civilian experience with military requirements

The International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (otherwise known as STCW) is legally binding for signatory countries. The convention gives minimum legal standards for qualifications and training at sea – captains, officers, watchkeepers and crew must all complete differing levels of MCA/STCW training.

Overseen by the International Maritime Organization (IMO), STCW was originally ratified in 1978 but major amendments were agreed in 1995 (STCW '95).

Further major revisions to the STCW Convention were adopted by IMO in Manila in June 2010 to ensure the necessary global standards are in place to train and certify seafarers to operate technologically advanced ships. Known as the 'Manila amendments to the STCW Convention and Code', these amendments came into force on 1 January 2012, with the new STCW 2010 training and certification requirements being adopted from July 2013.



The Damage Control Challenge RFA

Current systems linking civilian experience with military requirements

- In particular there are the following requirements as per Merchant Shipping Notice 1865:
 - Proficiency in Survival Techniques
 - Firefighting prevention and fire fighting Proficiency in Advanced Fire Fighting
 - Proficiency in Survival Craft and Rescue Boats (other than fast rescue boats)



The Damage Control Challenge RFA

Current systems linking civilian experience with military requirements

- Proficiency in Survival Techniques:
 - Don a lifejacket
 - Don and use an immersion suit
 - Safely jump from a height into the water
 - Right an inverted liferaft
 - Swim while wearing a lifejacket
 - Keep afloat without a lifejacket
 - Board a survival craft from ship and water while wearing a lifejacket
 - Take initial actions on boarding survival craft to enhance chance of survival
 - Stream a drogue or sea-anchor
 - Operate survival craft equipment
 - Operate location devices, including radio equipment
 - Cut, stream, close, maintain



The Damage Control Challenge RFA

Current systems linking civilian experience with military requirements

- Firefighting prevention and fire fighting:
 - Understand and be able to minimise the risk of fire on board,
 - Know the on board equipment, procedures and personal safety requirements in fire situations, and
 - Be able to fight and extinguish fires.



The Damage Control Challenge RFA

Current systems linking civilian experience with military requirements

- Proficiency in Advanced Fire Fighting:
 - Understand the principles involved in controlling fire fighting operations on board a vessel,
 - Be able to control the fire fighting operations on board ship,
 - Be able to organise and train fire parties,
 - Be able to inspect and service fire detection and extinguishing systems and equipment,
 - Be able to investigate and compile reports on incidents involving fire,
 - Know how to carry out fire fighting operations on board tankers (oil, chemical, liquefied gas). (Dangerous cargo endorsement).



The Damage Control Challenge RFA

Current systems linking civilian experience with military requirements

- Proficiency in Survival Craft and Rescue Boats (other than fast rescue boats):
 - Take charge of a survival craft or rescue boat during and after launch:
 - Interpret the markings on survival craft as to the number of persons they are intended to carry
 - Give correct commands for launching and boarding survival craft, clearing the ship and handling and disembarking persons from survival craft
 - Prepare and safely launch survival craft and clear the ship's side quickly
 - Safely recover survival craft and rescue boats
 - Manage survivors and survival craft after abandoning ship:
 - Steer a boat and steer by compass
 - Use individual items of equipment of survival crafts, except for pyrotechnics
 - rig devices to aid location
 - Use locating devices, including communication and signalling apparatus
 - Use of portable radio equipment for survival craft
 - Apply first aid to survivors
 - Use of the first aid kit and resuscitation techniques
 - Manage injured persons, including control of bleeding and shock



The Damage Control Challenge RFA

Current systems linking civilian experience with military requirements

- Confined Space
 - HSE (broken into rescue and working)
 - MN
- Firefighting techniques
 - Make up of teams
 - Re-Entries
 - Investigate, Evaluate, Engage/Evacuate



The Damage Control Challenge RFA

Current systems linking civilian experience with military requirements

- Firefighting equipment
 - Nozzles
 - TICs
 - Hoses
- Damage Control Equipment
- Personal survival
- Use of fixed systems
 - Water Mist
 - Peace time versus war footing (Gaseous Command Decision)



The Damage Control Challenge RFA

Current systems linking civilian experience with military requirements



The Damage Control Challenge RFA

Current systems linking civilian experience with military requirements



Musters, Drills and Training	Frequency	Comments
Class 1 Fire Drill	Weekly	The entire crew need not be involved in every drill, but each crew member must participate in an abandon ship drill and a fire drill each month as required in Chapter III Regulation 19.3.2. At each fire drill at least one extinguisher should be discharged by a different crew member in order that crew members in fire parties, and other crew members, gain experience in using fire extinguishers.
Class 1 Abandon Ship Drill	Weekly	This should be conducted to follow on from the Class 1 Fire Drill.
Class 7 Fire Drill	Monthly	At each fire drill at least one extinguisher should be discharged by a different crew member in order that crew members in fire parties, and other crew members, gain experience in using fire extinguishers.
Class 7 Abandon Ship Drill	Monthly	This should be conducted to follow on from the Class 7 Fire Drill.
Enclosed Space Rescue	2 Monthly	In accordance with Code of Safe Working Practices for Merchant Seafarers, SOLAS Chapter 3 Regulations 19 and SI 096-2022 Regulation 8.2
Class 1 Damage Control Drill	3 Monthly	Drill is to be carried out in accordance with SOLAS Chapter II-1 Regulations 19-1 Damage Control Drills for Passenger Ships. At least one damage control drill each year shall include activation of the shore-based support.
Lifeboat Launching Drills	Quarterly	Each lifeboat must be launched with its assigned operating crew aboard and manoeuvred in the water once every 3 months during an abandon ship drill.
Rescue Boat Launching Drill	Monthly	As far as is reasonable and practicable rescue boats where carried, other than those which are also lifeboats, must be launched each month with their rescue boat crews and manoeuvred in the water. The interval between such drills must not exceed 3 months.
Davit-launched Liferaft On-Board Training	4 Monthly	On ships fitted with davit-launched liferafts, on-board training in the use of them must take place. Whenever practicable this training includes the inflation and lowering of a liferaft.
Lifeboat Water Spray Systems	Quarterly	In lifeboats with water spray systems, each system should be tested at intervals of not more than 3 months in accordance with the manufacturer's instructions. The system should be flushed through with fresh water after testing with sea water.

The Damage Control Challenge RFA

Current systems linking civilian experience with military requirements

- RN BSSC training schedule
 - Firefighting is based on a 5 person team as to the 2 person team often used in the MN
 - There is an increase in equipment and procedural techniques
 - TIC
 - Firefighters helmet with communications
 - Voice procedure for hydrant operation
 - RAM fans
 - Heat stress
 - BA controller boards
 - Compartment markings
 - Smoke boundaries
 - Search and rescue, pathfinders



The Damage Control Challenge RFA

Current systems linking civilian experience with military requirements

- RN BSSC training schedule
 - Damage Control
 - Shoring techniques
 - Bulkheads
 - Decks
 - Hatches
 - Flood boundaries
 - Pumping arrangements
 - Leading up to the DRIU and practicing in a moving ships simulator.



The Damage Control Challenge RFA

Current systems linking civilian experience with military requirements



The Damage Control Challenge RFA

Current systems linking civilian experience with military requirements

As we move forward, what can we learn from the MN:

- Reduced staffing levels, size of fire parties (5 versus 2)
- Future fuels:
 - Ammonia
 - Hydrogen
 - Lithium Batteries
 - Methanol
 - LNG/LPG
- Automated systems.

What can the MN learn from the RN:

- Damage control
- Dealing with Multiple incidents



The Damage Control Challenge RFA

Current systems linking civilian experience with military requirements

Damage Control exercise, yearly company exercise to meet the requirements of the ISM code and MCA.

A commercial requirement is to conduct an exercise between a company headquarters and a ship in distress to test the companies capability to deal with an incident and provide support to the vessel. The incident could be anything from a grounding to a fire and could also involve casualties.

One of the benefits of a classification society is that they will operate a Ships Emergency Response Service. This enables access to a team of naval architects, ex-mariners and specialists to provide guidance and advice on an Incident. Frequently they will already have detailed drawings of the vessels and are able to assist on impact of structural defects.

The RN/RFA conduct a yearly exercise which is planned and table topped by NCHQ and then controlled/coordinator through the Maritime Operation Centre in Northwood. With the capability of drawing support from the various MoD agencies, Lloyds and the MCA.



The Damage Control Challenge RFA

Any Questions?

