



Border Force

**AUTHORITY: The Secretary of State for the Home
Department acting through Border Force**

STATEMENT OF REQUIREMENTS

**HMC Vigilant – Docking International Loadline Survey,
Planned Maintenance and Safety Equipment
Recertification**

March 2021

C20490



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Definitions

Phrase	Definition
Acceptance	The Authority will formally complete Acceptance of the docking contract at the Acceptance meeting, by issue of an Acceptance certificate to the Supplier, which will be duly signed by the BFOO on behalf of the Authority at successful completion of: _ Docking Maintenance Re-floating Basin Trial programme Sea Trial programme A formal completion at the Acceptance Meeting and Acceptance Certificate The Supplier is to provide formal minutes of the Acceptance Meeting
Agreed Facility	A single phone number for the Supplier giving access to a point of contact able to give user friendly assistance to persons experiencing technical problems with any part or operation of the Cutters.
Alongside Berth	A suitable quay/berth with at least 1m depth below Low Water Spring Tides (LWS) always complete with safe access by gangway.
Authority (BF)	Border Force
BFOO	Border Force Overseeing Officer
Cardinal Date Plan (CDP)	A plan provided by the Supplier mapping out the significant dates for a project
Cutter	Her Majesty's Cutter (HMC) Vigilant
Defect Rectification	Work undertaken to resolve any kind of defect identified and listed in the work package at Annex D.
Emergent work (EW)	Any additional work that emerges from the Planned Maintenance of equipment, which is notified to the Supplier in this Statement of Requirements. Any repairs which are required as a direct result of defects/damage found during this package of works. A Formal Emergent Work form issued by the Authority, is to be duly completed by the Supplier, is to be issued to the BFOO The BFOO is the only authorised BF Officer to authorise the Emergent Work form
Lloyd's Register	Lloyd's Register's Rules and Regulations set standards for the design, construction and lifetime maintenance of ships, offshore units and land-based installations.
Major Defect	Any defect or fault which reduces the performance of the Cutter, so it is unable to perform its duties.
MCA	Maritime and Coastguard Agency
Minor Defect	Any defect or fault which reduces the performance of the Cutter while allowing it to be safely operated for its duties.



Phrase	Definition
Original Equipment Manufacturer (OEM)	The original manufacturer of a piece of equipment.
Project Manager (PM)	The Suppliers dedicated Project Manager
Project Progress Meeting (PPO)	A formal weekly Progress Meeting
Project Completion	Formal notification by the BFOO, on behalf of the Authority, to the Supplier that the project is completed to a satisfactory standard. The Supplier will be issued a Project Completion Certificate.
Project Conclusion Meeting (PCM)	The mandated close-down meeting between Supplier and BFOO.
Project Initiation Meeting (PIM)	The initial, mandated, meeting between Supplier and BFOO.
Planned Maintenance	The package of works as detailed as detailed in the requirement.
Project Manager	A member of the Supplier's personnel who is responsible for the overall planning and execution of a project.
Progress Report	A report giving details of progress against the agreed CDP
Rectification Plan	A plan to rectify a specified defect, giving dates and reasons for relevant actions to effect full rectification of the defect.
Safe Working Load (SWL)	The maximum load a piece of equipment can safely operate under.
Slipway/Dry Dock	A Slipway or Dry Dock of suitable size, complete with dock blocks in accordance with a MTLU supplied docking plan and to the satisfaction of the Border Force Overseeing Officer complete with safe permanent means of access to the Vessel.
Spares	Unless specified as Authority supplied; all spare parts required to complete an overhaul/maintenance/service including paint/anodes
Vessel	HMC Vigilant.
Warranty	A guarantee, issued to the Authority by the Supplier, promising to repair or replace something if necessary, within a specified period.
WHO	World Health Organisation
Working Location	The area in which the Cutter is operational
Work in Wake	This is work involved due to preparation and after the repairs/maintenance works are completed.



Part 1: General

1.0 Background

- 1.1. The Authority currently operates a fleet of eleven sea going patrol craft operating in both UK National and International waters. This consists of five Cutters and six Coastal Patrol Vessels (CPV).
- 1.2. The four Damen 4207 patrol vessels, of which HMC Vigilant is one, are built in accordance with Lloyds 100A+ and hold valid MCA International Load line certification.
- 1.3. The primary roles of the Cutters are:
 - 1.3.1. To provide a mobile, flexible, seaborne force capable of maintaining an effective deterrent against illegal immigration, smuggling and other breaches of the law administered by Border Force both within and outside the territorial waters of the UK.
 - 1.3.2. To increase maritime intelligence, undertake surveillance and improve international liaison in combating illegal immigration, the smuggling of drugs and movement of instruments of terrorism by sea;
 - 1.3.3. To intercept suspect vessels in territorial and international waters; and
 - 1.3.4. To provide mutual assistance to EU countries, the Channel Isles, the Isle of Man and other partners on the UK border.
- 1.4. In addition to these primary responsibilities, Border Force also undertake tasks on behalf of the Ministry of Defence, Maritime and Coastguard Authority, National Crime Authority, Police and UK Fisheries Agencies.

Part 2: Insurance

2.0 Insurance

- 2.1 The Supplier is to provide an in-date insurance certificate that clearly states the limit of liability to be no less than £15,000,000.00.
- 2.2 The limit of liability, as expressed in 2.1, is to be for every accident or series of accidents arising from the same event.
- 2.3 The insurance certificate is to cover all employees of the Supplier and any individuals sub-contracted by the Supplier or the Authority to conduct undertaking of this requirement.
- 2.4 The insurance certificate is to be submitted to the Authority in .pdf format.



Part 3: Objectives, Location and Constraints

3.0 Objectives

- 3.1 The objective of this specification is to provide the requirements for;
 - 3.1.1 the maintenance of equipment and machinery;
 - 3.1.2 the recertification of all safety equipment;
 - 3.1.3 the rectification of specified defects; and, if applicable
 - 3.1.4 conduct modifications to the fabric of the vessel.
 - 3.1.5 issue of a new 5-year MCA International Load line certificate

4.0 Location

- 4.1 Due to the operational Working Location of the Cutter this requirement is to be undertaken inside the following geographical parameters;
 - 4.1.1 Between Portland and Cromer.

5.0 Constraints

- 5.1 All specified work must be completed by the Supplier.
- 5.2 All quotations are to be submitted in currency GBP.
- 5.3 All work must be completed in accordance with this Specification of Requirements and must be compliant to all applicable standards or Flag State regulations and in accordance with best industry standards.
- 5.4 All new parts and equipment fitted are to be supportable for a period of five years following installation.
- 5.5 All new equipment shall be provided with relevant operator & maintenance documentation, and any applicable certification.
- 5.6 For the purposes of this requirement, the working week is taken as meaning Monday to Friday and consists of five (5) working days.
- 5.7 For the purposes of this requirement, the working day is to be no less than any eight (8) hours period between 07:00am and 18:00pm.
- 5.8 The Authority expects the duration of this requirement to be no longer than thirty-five (35) working days and no less than twenty-five (25) working days.



- 5.9 The start date for this requirement is to be no earlier than; 20th March 2021.
- 5.10 The start date for this requirement is to be no later than 31st March 2021
- 5.11 All requirements should be completed with an eight-week period from vessel arrival.

Part 4: Provision of Services

6.0 General Provision

- 6.1 The Authority will appoint a BFOO for the duration of this requirement who shall be entitled to inspect any work or to have it inspected by their duly authorised representative.
- 6.2 The Authority may engage with OEM manufacturers under separate commercial arrangements. The Supplier is to afford access, as required, and assist with various tasks as instructed by the BFOO under Emergent Work process to complete specific work as arranged by the Authority under a separate arrangement with OEM to this docking contract.

For clarity the OEM's are, but not limited to;

- 6.2.1 Finning's (Caterpillar)

10 Abingdon Rd
Nuffield Industrial Estate,
Poole
BH17 0GL

- 6.2.2 Kongsberg Marine

- 6.2.3 Wartsila/ Ships Electronic Services

- 6.24. MCA Surveyor

- 6.3 The Supplier shall submit a draft CDP covering the completion of all planned work with the formal quotation for this work package, in an accessible Microsoft Office document format (.doc, .pdf or .xlsx), for approval by the Authority. Once agreed by the Authority this will form the final CDP to be followed.
- 6.4 During the contract period, the BFOO and Authority appointed contractors as necessary shall, during normal working hours, be afforded access to all premises of the yard or its suppliers where any parts are being manufactured, repaired or serviced.
- 6.5 All tasks shall be completed by suitably qualified and experienced personnel (SQEP) in relation to the equipment being worked upon.
- 6.6 All bunk space soft furnishings, including mattresses are to be removed to a secure clean environment for the duration of this requirement, or covered to adequately protect them from becoming soiled in any way. The Supplier is responsible for returning any soft furnishings,



including mattresses, that become soiled to a clean and usable state or to replace any such items with ones of similar quality.

- 6.7 A clean, secure environmentally controlled storage facility is to be provided for the crew to stow onboard domestic equipment and ancillary items of at least 30m².
- 6.8 The vessel will be formally handed over into the custody of the Supplier in accordance with the Handover Certificate (Annex J) for completion of this docking specification
- 6.9 By accepting the vessel into their custody, the Supplier understands and acknowledges that they are liable to all risks associated, whether known, unknown, identified or implied, with the removal of a water-borne vessel from the water.
- 6.10 Prior to the re-floating of the vessel require re-floating, the Supplier will issue a suitability to re-float certificate to the BFOO indicating the vessel is in a fit, suitable and watertight state to be re-floated. The BFOO will endorse the certificate once the Supplier has evidenced the vessel is fit for re-floating.

7.0 Project Management

- 7.1 The Supplier must schedule and attend a Project Initial Meeting (PIM) with the BFOO prior to any works being undertaken on the vessel.
- 7.2 During the meeting, as stated in § 7.1, the BFOO and the Supplier will confirm the following;
 - 7.2.1 the Emergent Work process;
 - 7.2.2 berthing arrangements;
 - 7.2.3 any Health and Safety arrangements pertinent to the Supplier's premises;
 - 7.2.4 Border Force crew accommodation arrangements;
 - 7.2.5 any OEM manufacturers that are expected to work on the vessel during the Supplier's CDP period; and
 - 7.2.6 The proposed date of the PCM.
- 7.3 During the course of the Supplier's CDP period the Supplier is to provide interim reports to the BFOO within twenty-four hours of the identification of any deviation from the submitted CDP. Any cost implications are to be dealt with in accordance with the EW process as stated in § 9.0.
- 7.4 The Supplier must schedule and attend a Project Progress Meeting (PPM) with the BFOO at least weekly and formal minute the meeting in addition to the brief daily meetings
 - 7.4.1 Project progress on task by task discussion
 - 7.4.2 Emergent Work and costs



7.4.3 Sub-contractors, both Supplier and The Authority

7.4.4 Technical issues

7.5 During the PCM meeting, as stated in § 7.4, the BFOO and the Supplier will confirm the following;

7.5.1 all specified requirements have been completed;

7.5.2 any variations to the specified requirements, as agreed by the BFOO, during the Supplier's CDP period, have been agreed in accordance with § 7.3;

7.5.3 all Emergent Work Individual Item Proformas have been signed and agreed by the BFOO and the Supplier in accordance with §9.0; and

7.5.4 the Supplier and the BFOO are to agree a project total cost.

7.6 Following the PCM, as stated in § 7.4, and to the satisfaction of the BFOO, formal notification of Completion will be given to the Supplier and a Project Completion Certificate issued in accordance with § 12.0.

8.0 Warranty

8.1 The Supplier shall provide an Agreed Facility for reporting faults and obtaining technical advice, covering the hours between 08:00 and 16:30, Monday to Friday. Response times for such service shall allow for all faults to be logged, given a reference number and Rectification plan agreed between all parties within a maximum of forty-eight hours of the fault being logged.

8.2 The Supplier shall provide warranty repairs in the event that any of the supplied or repaired parts develops a fault during the parts warranty period as detailed in § 8.3 and 8.4.

8.3 All Work carried out by the Supplier during the period of this contract shall be covered by a one-year Warranty commencing from the date of acceptance back in to the custody of the Authority.

8.4 All new parts supplied or fitted during the period of this contract shall be covered by a one-year warranty or such other provided warranty if it is longer than the minimum one year commencing from the date of acceptance back in to the custody of the Authority.

8.5 In the event that a Warranty Major Defect is notified to the Supplier that will render the Cutter non-operational. The Supplier shall provide services to ensure the Cutter is restored to full working condition within forty-eight hours, calculated from the date and time on which the Authority agrees the Supplier personnel can gain access to the Cutter. In the event a Major Defect cannot be rectified within the assigned period, a Rectification Plan must be agreed with the Authority within forty-eight hours of identification of the potential failure.

8.6 In the event that a Warranty Minor Defect is notified to the Supplier, other than those that will render the Cutter non-operational, the Supplier shall provide services to ensure the Cutter is



restored to full working condition, as quickly as possible, and in any event, within ten working days, calculated from the date and time on which the Authority agrees the Supplier personnel can gain access to the Cutter. In the event a Minor Defect cannot be rectified within the assigned period, a Rectification Plan must be agreed with the Authority within forty-eight hours of identification of the potential failure.

Part 5: Emergent Work

9.0 Emergent Work

- 9.1 Only the BFOO can authorise EW on behalf of the Authority.
- 9.2 The Supplier is to inform the BFOO if authorisation to engage on an EW task is made by any member of the vessel's crew or a member of The Authority.
- 9.3 All identified EW proposals are to be submitted to the BFOO on the attached Emergent Work Individual Item Proforma (Annex H) prior to the commencement of any work for authorisation.
- 9.4 All costs and any time delays to the completion date are to be articulated to the BFOO with the EW proposal.
- 9.5 The BFOO will authorise the Emergent Work on behalf of the Authority, if deemed appropriate by the BFO, and provide formal acknowledgement of acceptance of the proposal including costs and timeframe to complete to the Supplier.
- 9.6 Any proposals or work that has been undertaken by the Supplier, or a sub-contractor of the Supplier, and that are found to have not been authorised by the BFOO in accordance with § 9.0, upon final invoice submission, will be strictly at the expense of the Supplier and will not be remunerated by the Authority.
- 9.7 The BFOO and the Supplier are to record the cumulative Emergent Work costs on the attached spreadsheet (Annex I), or in a similar format, which will be cross checked and analysed at the Weekly progress meeting.
- 9.8 The supplier will scan all Emergent Works Individual Item proformas that have been authorised and email them to the BFOO, along with the overall Emergent Work Item Record Spreadsheet (Annex I) or Supplier equivalent agreed in advance with the BFOO.

NB: The Supplier must, therefore, liaise with the BFOO for every item of EW that requires consideration before the Supplier commences work.



Part 6: Trials, Certification and Acceptance

10.0 Trials (See Annex A, section 7)

- 10.1 The supplier is to arrange and include costs in their tender submission for all OEM Service engineers who have attended the vessel to undertake the specified work in this specification are to attend both Basin and Sea Trials,

- 10.1.1 Kongsberg
- 10.1.2 Naiad
- 10.1.3 Wartsila
- 10.1.4 Reintjes

in addition to the Suppliers own in-house engineering, electrical engineers.

The Suppliers PM is to attend both Basin and Sea Trials and complete the Basin and Sea Trial forms in conjunction with the Chief Engineer

- 10.2 On completion of all work and once the Supplier has satisfied themselves that the Cutter is in a seaworthy condition; the Sea Trials are to be conducted in accordance with Annex U (Sea Trials).
- 10.3 Where the Authority have engaged separate OEM(s), under \$ 6.2, these service engineer costs for attendance at Basin and Sea Trials will be funded by BF
- 10.4 Because of the specialist nature of the vessel, the Authority will provide a minimum of five (5) crew members familiar with the navigational, controls and engineering systems of the Cutter during the Sea trials.
- 10.5 A formal pre-Sea Trial meeting is to be held with the BF Commander and Chief Engineer

11.0 Certification and Survey Reports

- 11.1 All certification and survey reports required for regulatory compliance, or requested by the Authority, shall be supplied in hard copy enclosed in clear plastic envelopes within a four-ring ring binder, complete with index. An electronic copy of all certificates and survey reports shall also be forwarded by e-mail to the Authority in an accessible Microsoft Office format.
- 11.2 All certificates and reports, specified as required, are to be provided before acceptance.

12.0 Project Completion

- 12.1 Once approved by the BFOO, formal notification of Project Completion will be given to the Supplier by the Authority through the issuing of a Project Completion Certificate (Annex L).
- 12.2 The Project Completion Certificate will only be issued to the Supplier after:



- 12.2.1 successful completion of all specified items as stated in this requirement;
- 12.2.2 the Supplier has formally presented all certificates to the BFOO during the PCM in accordance with § 11; and
- 12.2.3 upon successful completion of any applicable trials required in response to the work undertaken.

NB: The issuing of a Project Completion Certificate to the Supplier by the Authority, or a duly authorised representative of the Authority, does in no way effect the warranty requirements as specified in this requirement nor the statutory rights of the Authority.

Part 7: Charges and Payment

13.0 Charges and Payment

- 13.1 All invoices are to be submitted in currency; GBP.
- 13.2 All invoice correspondence is to be as per instructions on the Authority-issued PO document only.
- 13.3 The Supplier will receive one (1) Purchase Order (PO) number for this requirement. It may be amended by the Authority from time to time.
- 13.4 Upon issue of a PO by the Authority, and following approval from the BFOO, the Supplier can submit an invoice(s) to the email address provided in accordance with the line-items on the PO document ensuring that all mandatory data is on the Invoice.
- 13.5 On completion, the Supplier shall provide the Authority with a completed schedule confirming the individual cost breakdown for each item of specified work and emerging work for approval. Following BFOO approval and agreement of this schedule the Supplier will invoice the Authority for 100% of the total amount.
- 13.6 All travel and subsistence costs related to warranty defect repairs shall be recharged at the Home Office reimbursable T&S rates as stipulated in Annex M. Any additional costs outside those in Annex M are to be strictly at the expense of the Supplier.
- 13.7 The Supplier is to ensure that every item of specified work has been completed in line with this Specification of Requirements or they have a formal acknowledgement from the BFOO allowing for non-completion.
- 13.8 The Supplier is to ensure that all EW tasks are approved by the BFOO, signed off by the BFOO and serialised appropriately and recorded in the EW spreadsheet (Annex i).
- 13.9 Failure, by the Supplier, to include EW that is compliant with the instructions set out at § 9.0, will result in the Authority being unable to accept them for remuneration. If non-compliant



tasks, either specified or emergent, are invoiced for payment, these costs will be rejected by the Authority and they will be at the expense of the Supplier.

NB: The Authority reserves the right to withhold payment from the Supplier, in part or in full, should any, specified or otherwise, condition as expressed in this Specification of requirements, not be successfully met by the Supplier and to the satisfaction of the BFOO.



Annex A: General Requirements of Work

1.0 Shore Power

- 1.1. The supplier is to provide 415 volt (± 5 volts) 50 Hz 63amp, three phase shore power from grid/mains for the duration of the project as required by the Authority.
- 1.2. Supplier to provide costs for;
 - 1.2.1. Connection of shore power cable
 - 1.2.2. Disconnection of shore power cable
 - 1.2.3. Unit cost per kWh.
- 1.3. If direct shore power is not available, the provision of a shore-based generator may be required after consultation with the BFOO.
 - 1.3.1. Supplier to provide costs for;
 - 1.3.1.1. Hire of generator
 - 1.3.1.2. Connection and disconnection of power cable
 - 1.3.1.3. Unit cost per kWh
- 1.4. Under 1.2.3 or 1.3.1.3, meter readings must be agreed with the BFOO before and after connection, payment of electricity consumed will be covered under the Emergent Work process.
- 1.5. Payment of electricity consumed will be covered under the Emergent Work process.

2.0 Berthing

- 2.1 The Supplier must be able to provide appropriately sized and secure alongside berthing, as required, during this period of works with a minimum depth of 1m below Low Water Spring Tides.
- 2.2 Supplier to provide costs for;
 - 2.2.1 Daily cost of berth in accordance with 2.1; and
 - 2.2.2 Suitable gangway access always at all states of the tide.
- 2.3 The Supplier must provide a means of safe access, acceptable to the BFOO

3.0 Third-Party Costs

- 3.1 Where a requirement stipulates the use of a third party, the Supplier is responsible for arranging the attendance of such suppliers. The Supplier is to include those costs in the section which stipulates the attendance.
- 3.2 Where a requirement will be carried out by a third party, the Supplier must state in their bid that the third party is available and can complete the requirement as specified in the time period specified in this Statement of Requirements.



4.0 Disposal of Waste and Cleanliness

- 4.1 The Supplier will be expected to clean any working areas, removing and disposing of those component parts that have been replaced. All waste created during this project is to be disposed of in accordance with any and all applicable national and international regulations. In so doing the Supplier will return the vessel to its original state of cleanliness on handover.
- 4.2 Supplier to provide costs for removal and disposal of the following as required by the Authority;
 - 4.2.1 petrol, diesel, oils and lubricants;
 - 4.2.2 hazardous waste; and
 - 4.2.3 general waste.

5.0 Insurance

- 5.1 Any additional costs that may be incurred by the Supplier due to the undertaking of a bespoke insurance arrangement are to be included in the quote and the Authority is to be notified and then provided with the appropriate documentary proof.

6.0 General Provision

- 6.1 The Supplier will appoint a Project Manager, as a single point of contact, for the duration of this requirement.
- 6.2 The Supplier is to confirm they will provide support to the external contractors The Authority has engaged with. This will be the provision of manual labour, cramage, tools, removal and disposal of parts if required and will be dealt with under the EW process.
- 6.3 During the contract period the Supplier shall provide reasonable secure office accommodation for use by the Authority, to include printing facilities. All costs associated with this provision are to be at included in any quote/bid submitted by the Supplier to the Authority.
- 6.4 All minor consumable fixings, sealants etc required to carry out this requirement are to be at the expense of the Supplier.
- 6.5 All flooring and bulkheads/partitions in all domestic areas, including the Wheelhouse, which will be accessed by the Supplier's personnel or Authority contractors are to be provided with non-slip floor protection, up to ½ height of the partition, the use of brown paper or paper cardboard is not enough. Such protection will be replaced as necessary to ensure integrity throughout the project.

7.0 Trials

- 7.1 Any trials required shall be to prove that the executed work has been carried out satisfactorily and that the various systems can be checked and confirmed as fully and effectively re-commissioned. Other than fuel, all costs related to the operations of test and trials will be the responsibility of the Supplier. This includes the Suppliers personnel provided for sea trials as well as all OEM service engineer attendance. See Part 6 Section 10.



8.0 Information for bidders

- 8.1 All received bids must be compliant with the above mandatory requirements. The bidder offering the lowest price with a compliant tender to the mandatory requirements will be awarded the contract.
- 8.2 Any questions, queries or clarifications regarding this tender should be submitted by 12:00pm by Thursday 4th March 2021 at the latest.
- 8.3 All written submissions should be submitted by 12:00pm on Monday 8th March 2021
- 8.4 Please note any agreement signed with your Company will be subject to the Standard UK Government Short Form Terms and Conditions for Goods and Services (attached to the tender advert on the Contracts Finder portal reference).



Annex B: Docking for Loadline Survey and Painting

1.0 **Docking**

- 1.1 The Cutter is to be Slipped, Dry-docked or Synchro-lifted on an Authority approved facility belonging to or leased by the Supplier. All costs for docking, hire of dock, slipway or lift, towage from and to the alongside berth to the dock, slipway or lift are to be included in the Suppliers tender for the duration of the contract.
- 1.2 The underwater area is to be pressure washed off with fresh water to remove all slime, marine growth and loose flaking paint (to prevent re-contamination with salt, this should be done in conjunction with the hull and superstructure washing of required to prepare for the subsequent painting of these areas).
- 1.3 The Cutter is then to be moved into, or have constructed around it, a secure environmentally controlled covered facility, maintained at 5C above dew point, where the painting and out of water maintenance work is to be carried out.
- 1.4 When clean and dry, the Supplier is to carry out a full inspection of the underwater areas photographing and identifying any paint film damage, indentations or shell plate cracking. On completion a written report is to be issued by the Supplier and duly witnessed by the BFOO.
- 1.5 A full survey of existing antifouling paint condition and adhesion to the rudders, appendages, sea inlet, bow thruster, stabilizers etc, are to be carried out by an International Paint Representative arranged and costed by the Supplier
A written survey report with actions to be undertaken is to be provided by the Supplier
The survey report is to be duly witnessed by the BFOO
- 1.6 On completion of all underwater work inclusive of the re-application of the anti-fouling coating, the Supplier, International Paint Representative and the BFOO are to conduct a joint inspection and complete documentation in respect of a safe to launch certificate in the form of a Supplier Launching Certificate.
- 1.7 On approval of the BFOO, the Cutter is to be re-launched and moved to the alongside working berth, for commence of further work and Basin Trials

2.0 **Hull**

- 2.1 The following valves are to be removed and either replaced by Authority supply or dismantled, cleaned, reassembled using new gaskets of suitable design and construction for their intended use and pressure tested (to Lloyds requirements) as described. All removed valves are to be reinstated using new gaskets of suitable design and construction for their intended use. Pressure tests are to be witnessed by the BFOO.
- 2.2 Port and Starboard sea chests (2 x 200mm Butterfly valves) are to replace with The Authority supplied Valves



- 2.3 Bow thruster sea chest (1x 200mm Butterfly valve), replaced with The Authority supplied valve
- 2.4 Grey & Black water overboard discharge (1 x 75mm SDNR storm valve);
- 2.5 Port and Starboard Stabiliser Cooling water overboard discharge (1 x 40mm SDNR valve);
- 2.6 A/C cooling water overboard discharge (1 x 75mm SDNR valve)
- 2.7 Bow Thruster room manual bilge pump overboard discharge (1 x 40mm SDNR valve).
- 2.8 On completion of a successful test, witnessed by the BFOO, the valve hull fittings are to be re-preserved in accordance with the paint specification
- 2.9 Whilst the sea strainers are removed, the welds are to be subject to a Non-Destructive Test (NDT), a visual inspection of the Stainless-Steel housing condition/seal faces and the strainer housing pressured tested to 6 bar, test to be witnessed by the BFOO
- 2.10 Re-install using new gaskets and seals and retaining bolts and nuts, torqued to British Standard values for the bolt specification.
- 2.11 Remove and replace all 27 Hull Sacrificial Anodes: (Anodes are The Authority supply) with like for like model anodes complete with new rubber backing sheets, where appropriate.
- 2.12 Continuity test must be conducted between each anode and the hull, BFOO to witness the continuity tests

3.0 **HULL ULTRASONIC SURVEY**

- 3.1 While the vessel is out of the water and cleaned off all marine growth, and the Hakkerite planking in the after ramp well removed, and before any re-painting activity has taken place, Carryout a full ultrasonic thickness inspection of the Cutter's underwater hull and topside in accordance with Lloyds standard ultrasonic procedure and by a Lloyds approved contractor

Special attention is to be paid to hull plating in the wind & water area of the hull sides, the transom, the threshold of the ramp and plating in the after ramp well normally covered by the Hakkerite Planking.

- 3.2 Provide a written report of the hull ultrasonic results to the BFOO
- 3.3 Results are to include a graphic presentation of finding on a hull expansion drawing in accordance with Lloyds requirements and are be submitted in both paper format and electronic acrobat.pdf document.

4.0 **TANK SPACES**

- 4.1 The Vessel has the following tank spaces;
 - 4.1.1 Fresh Water Tank
 - 4.1.2 Port Fuel Oil Tank



- 4.1.3 Starboard Fuel Oil Tank
 - 4.1.4 Fuel Oil Day Tank
 - 4.1.5 Bilge Water and Dirty Oil Tank
 - 4.1.6 Black Water Tank
 - 4.1.7 Grey Water Tank
 - 4.1.8 Lube Oil Holding Tank
- 4.2 All of the above tanks are to be emptied, with the clean oil/fuel in the fuel and lube tanks retained in clean containers and all such removed fuel and lubrication oil to be replaced onboard prior to Basin Trials and with the agreement of the BFOO.
- 4.3 Each holding tank is to be opened, vented and gas free certificate issued to allow entry. Each tank is to be cleaned with fresh water and wiped dry to allow inspection/survey by the MCA and International paint surveyor of the internal structure and paint condition. Any repairs required to the structure or paint surfaces are to be made in accordance with the paint supplier specifications, carried out under the Emergent Work procedure. All materials and equipment used in the tank cleaning, especially rags and wipes, are to be removed from all tanks following the cleaning process. Prior to sealing the tank space hatch(s), the BFOO is to witness the removal of all cleaning material and confirm the hatch may be sealed, using new nitrile gaskets
- 4.4 Each tank space is to be pressure tested to 1.5psig, all blanks as required are to be provided by the Supplier, and witnessed by the BFOO, a formal record is to be issued.
- 4.5 Chain locker to be opened and vented and gas free certificate issued. Bakerite lining to be removed and internal coating and structure to be surveyed. Any repairs are to be made under the emergent work procedure and any painting is to be in accordance with the International Paints specifications.
- 5.0 HULL OPENING GRATINGS**
- 5.1 Remove, thoroughly clean and inspect the gratings to the following sea-chests: -
- 5.1.1 Port engine room
 - 5.1.2 Starboard engine room
 - 5.1.3 Bow thruster Space.
- 5.2 Thoroughly clean and inspect the internal structure of the sea chests as detailed above.
- 5.3 On completion of inspection and cleaning of the gratings, they are to be re-preserved in accordance with the anti-fouling paint scheme and safely stored until all other hull and hull valve maintenance including anti-fouling painting within the sea-chests has been carried out.



- 5.4 Re-install grating: inclusive of wire locking the fixings and present the re-installed grating to the BFOO prior to launch.

6.0 STERN DOOR AND AFT RAMP (SEE ANNEX V FOR STERN DOOR DRAWING)

- 6.1 Remove the stern door and replace the two aluminum bronze hinge bearings with new bearings. Bearings are Supplier supply
- 6.2 Replace the spherical bearings with new bearings. Bearings are Supplier supply
- 6.3 Remove all Hakkerite planking in preparation for survey and painting under § 3.0 and 9.0. All planking to be replaced following survey and painting work. Any repairs to planking or securing studding is to be carried out through the Emergent Work process.

7.0 PAINTING OF HULL

- 7.1 Outer Bottom and boot-top comprising an area of 526 m2 is to be cleaned, prepared and coated as follows: -
- 7.2 To be cleaned by high pressure water jetting to remove all marine growth;
- 7.3 To additionally be cleaned by solvent in way of oil, grease and soot contamination build-ups at the waterline, max. 25 m2;
- 7.4 To be surface prepare and feather in any areas of detachment, or damage including crazing or blistering, applying surface primer base coating where bare steel is exposed: maximum 10% (52 m2);
- 7.5 Touching up prepared damaged areas with two (2) coats of antifouling (or boot-topping paint as applicable): maximum 10% (52 m2); and
- 7.6 Lastly two full coats of antifouling including the boot top are to be applied to the wet film thickness standards as required in the International Paints Specification (attached).

8.0 PAINTING OF TOPSIDES (TOP SURFACES)

- 8.1 Topside including external and top surfaces of Bulwarks comprising an area of 340 m2 is to be cleaned, prepared and coated as follows: -
- 8.2 Removal and re-instatement of the D section fendering, using new isolation washers
- 8.3 To be cleaned by HP water jetting to remove all dirt and salt;
- 8.4 To additionally be cleaned by solvent in way of oil, grease and soot contamination together with any rust staining, max. 20 m2;



- 8.5 To be surface prepare and feather in any areas of detachment, or damage including crazing or blistering, applying surface primer base coating where bare steel is exposed; maximum area 5% (17 m²);
- 8.6 Touching up prepared damaged areas with two (2) coats of paint (as applicable) maximum area 5% (17 m²); and
- 8.7 Lastly two (2) full coats of top coat are to be applied to the wet film thickness standards as required in the International Paints Specification (attached).

9.0 PAINING OF THE SUPERSTRUCTURE (INTERNAL FACES)

- 9.1 Internal faces of Bulwarks, Ramp well and internal face or Ramp door, deck fittings, hatches, hatch coamings and deck equipment comprising an area of 112 m² is to be cleaned, prepared and coated as follows: -
- 9.2 To be cleaned by HP water jetting to remove all dirt and salt;
- 9.3 To additionally be cleaned by solvent in way of oil, grease and soot contamination together with any rust staining, max. 6 m²;
- 9.4 To be surface prepare and feather in any areas of detachment, or damage including crazing or blistering, applying surface primer base coating where bare steel is exposed; maximum area 6 m²);
- 9.4 Touching up prepared damaged areas with two (2) coats of paint (as applicable) maximum area 6 m²; and
- 9.5 One (1) full coat of top coat is to be applied to the wet film thickness standards as required in the International Paints Specification (attached); and
- 9.6 Lastly any markings or identifying paint coloring defaced by the paint re-coating is to be re-established e.g., fire hydrants and hatch opening indications.

10.0 PAINING OF THE SUPERSTRUCTURE (EXTERNAL SURFACES)

- 10.1 Superstructure (external surfaces) comprising an area of 605 m² of Aluminum structure is to be cleaned, prepared and coated as follows: -
- 10.2 To be cleaned by washing down with soapy water and rinsing with fresh water to remove all dirt and salt deposits;
- 10.3 Note: Chronologically this must be carried out before the topsides and decks have been prepared to avoid re-contamination with salt washed down from the superstructure
- 10.4 To additionally be cleaned by solvent in way of oil, grease and soot contamination together with any rust staining arising from fittings, maximum area 30 m²;
- 10.5 To be surface prepare and feather in any areas of detachment, or damage including crazing or blistering, applying surface primer base coating where bare metal is exposed; maximum area 30 m²;



- 10.6 Touching up prepared damaged areas with two (2) coats of paint (as applicable) maximum area 30 m²;
- 10.7 One (1) full coat of top coat is to be applied to the wet film thickness standards as required in the International Paints Specification (attached); and
- 10.8 Lastly any markings or identifying paint coloring defaced by the paint re-coating is to be re-established e.g., fire flap release handles.

11.0 PAINTING OF THE SUPERSTRUCTURE (EXTERNAL FITTINGS)

- 11.1 Mast, external ladders, superstructure deck lockers and railings (including main deck railings) comprising an area of 158 m² of Aluminum structure are to be cleaned, prepared and coated as follows: -
- 11.2 To be cleaned by washing down with soapy water and rinsing with fresh water to remove all dirt and salt deposits;
- 11.3 To additionally be cleaned by solvent in way of oil, grease and soot contamination together with any rust staining arising from fittings, maximum area 10 m²;
- 11.4 To be surface prepare and feather in any areas of detachment, or damage including crazing or blistering, applying surface primer base coating where bare metal is exposed; maximum area 10 m²;
- 11.5 Touching up prepared damaged areas with two (2) coats of paint (as applicable) maximum area 5% (17 m²); and
- 11.6 One (1) full coat of top coat is to be applied to the wet film thickness standards as required in the International Paints Specification (attached).

12.0 PAINTING OF NON-SLIP DECK AREA

- 12.1 Non-slip decking area including, main deck, superstructure deck, flying bridge deck and treads of external ladders comprising an area of 237 m² of some Aluminum and some steel structure are to be cleaned, prepared and coated as follows: -
- 12.2 To be cleaned by washing down with soapy water and rinsing with fresh water to remove all dirt and salt deposits;
- 12.3 Note: HP water jetting is not to be used, historically the use of HP water jetting on HM Cutter decks has been found to have damaged non-slip paint film (which can become porous) causing de-lamination and lifting of the paint film or blistering and subsequent later detachment.
- 12.4 To additionally be cleaned by solvent in way of oil, grease and soot contamination together with any rust staining arising from fittings, maximum area 12 m²;
- 12.5 To be surface prepare and feather in any areas of detachment, or damage including crazing or blistering, applying surface primer base coating where bare metal is exposed; maximum area 12 m²;



- 12.6 Touching up prepared damaged areas with two (2) coats of paint (as applicable) maximum area 12 m²; and
- 12.7 One (1) full coat of non-slip deck paint is to be applied to the coverage standards as required in the International Paints Specification (attached).

13.0 Anchor chain locker grating

- 13.1 The anchor chain locker is to be cleaned and the grating removed, for survey of the chain locker Vee, to include removal of the Hakkerite planking and replacement

14.0 VULKAN COUPLINGS RAT 1921-R/2210

- 14.1 Port & Starboard Main Engine Vulkan Couplings are to be inspected by the manufacture's Vulkan coupling service engineer.
- 14.2 The coupling is to be inspected without being removed for damage, excessive torque wear, mis-alignment as per OEM specifications.
- 14.3 A report is to be submitted to the BFOO upon completion.

NB: The Authority will arrange for a specialist sub-contractor at The Authority cost to check and adjust the gearbox to engine alignment

The above inspection to the Vulkan Coupling should be completed prior to The Authority arranging the gearbox alignment check.

15.0 PORT & STARBOARD MAIN ENGINE AIR CHARGE HEAT EXCHANGERS:

This task will be arranged by The Authority with Messrs. Finning at Authority cost

16.0 PORT & STARBOARD MAIN ENGINE JACKET WATER HEAT EXCHANGERS:

This task will be arranged by The Authority with Messrs. Finning at Authority cost

17.0 PORT & STARBOARD MAIN ENGINE GEARBOX BLOKSMA P13 HEAT EXCHANGERS

This service is to be completed by Messrs. Kelvion at Suppliers cost

- 17.1 Drain down the system, remove the Gearbox Coolers and dispatched to the manufactures Bloksma agent Messrs. Kelvion, for overhaul/service, to include: -

Unit 12B, Well Spring Close, Carlyon Road Industrial Estate, Atherstone CV9 1HU

Service.uk@kelvion.com. Tel 01827 908706,

- 17.2 Open and remove heat exchanger tube stacks.
- 17.3 Digitally photograph the condition of the tube stack when it is removed



- 17.4 Remove and inspect all soft iron anodes.
- 17.5 Thoroughly clean and inspect the cooler bodies and tube stacks (inclusive of pickling)
- 17.6 Renew the end of seals and new flow diverters correctly positioned to give two pass coolers.
- 17.7 Re-assemble the Coolers using all new gaskets and seals.
- 17.8 Pressure test both water and lube oil sides of the cooler to manufacturers requirements, complete with certification
- 17.9 Complete service report and issue to the BFOO
- 17.10 Re-install on Gearboxes.

18.0 PORT & STARBOARD PROPELLER SHAFTS AND BEARINGS: (See Section 20)

NB: a. This work is to be overseen, by the relevant Wartsila and Kongsberg service engineers in conjunction with the Suppliers engineering staff. Supplier costs must include all identified OEM service engineer's costs, crantage, transport, supply of covered working facility and associated labour for both removal and refitting of the propeller shafts; and

b. Forward and Aft Liners, Lip and O seals are Authority supply; and

c. The supplied Liners will be supplied in bar stock dimensions, Supplier will have to machine the internal liner dimensions to suit the supplied propeller shaft diameter, this work must be included in the costs. The Authority will supply the liners with minimal internal machining <5mm

Wartsila Service agent to attend and advise on each Liner internal machining diameter, once the propeller shaft has been removed and shaft diameter measured at the location the liner is sighted on the propeller shaft

- 18.1 Drain down and dispose of the lubricating oil (MHP153) (200 liters approx.).
- 18.2 Remove the stern tube bearing access covers and rope guards
- 18.3 Disconnect both Port and Stbd propeller shafts from the Gearbox SKF Couplings and CPP control hydraulics and withdraw the propeller shafts. Inspect the SKF coupling seals and replace as necessary under the emergent work system.



-
- 18.4 Carry out measurements of the propeller shaft journals and stern tube bearings and report findings to the BFOO.
- 18.5 Replace the stainless-steel aft propeller shaft liners and all three lip seals in the housing after machining the supplied liners internal dimensions to the propeller shaft diameter.
- 18.6 Replace the cast iron forward propeller shaft liners and both lip seals in the forward housing
- 18.7 Replace the forward seal housing O rings
- 18.8 Rebuild both seal assemblies
- 18.9 Refit the propeller shafts and seal assemblies in accordance with manufacturer's instructions and tolerances, pay attention to retain the concentricity of the liner to the propeller shaft and propeller, tolerance is 0.05mm, BFOO to witness the concentricity check.
- 18.10 Refit the SKF couplings
- 18.11 Fill the aft seals with fresh lube oil
- 18.12 Refit propeller shafts bearing housing covers and rope guards
- 18.13 Refill the stern tubes with fresh lube oil and purge the hydraulic system
- 18.14 Fully test the CPP and shaft seal systems to the satisfaction of the service engineers and BFOO.
- 19.0 STABILISERS NAIAD DYNAMICS SERIES 200**
These tasks are to be carried out by a Naiad Dynamics service engineer or approved agent in conjunction with the Suppliers engineering staff.
- 19.1 Carry out annual service of: -
- 19.2 Inspect the fins, Stocks, Bearings and Seals
- 19.3 Measure fin stock bearing clearance and check bearings for wear.
- 19.4 Unloader Manifold Block Assemblies
- 19.6 Replace all flexible hydraulic hoses, ensuring a Tar date is recorded on each hose
- 19.7 Replace the Stabiliser hydraulic pressure pump seal, reassemble and carry out a flow
-



pressure test on the pump.

- 19.8 Carry out 5-year pressure test on the system accumulator, upon completion of test, refill with nitrogen gas
- 19.12 Pass records and report all defects found, with work recommendations, to the BFOO.

20.0 PROPELLERS ROLLS ROYCE CPP (See Section 18 Service Engineers)

NB: Messrs. Kongsberg service engineer to undertake in conjunction with Suppliers engineering staff

These tasks are to be completed in conjunction with Propeller shafts removal

All Spares are Authority supply

- 20.1 Whilst the propeller shafts are removed from the vessel, the propeller hub section and blades are to be stripped down into their component parts for: -

- 20.1.1 Survey
- 20.1.2 Inspection
- 20.1.3 Wear down measurements
- 20.1.4 Replacement of O rings and seals
- 20.1.5 Fixing bolts
- 20.1.6 NDT of the propeller hubs and blades

Of all sliding shoes, quadrants, wear faces and housings etc. are within design specification tolerance. Report findings to the BFOO

- 20.2 Rebuild the propeller hubs and blades using new seals, retaining bolts, sealant and O Rings, finally refit to the propeller shaft flange
- 20.3 Refill the propeller hub with hydraulic oil
- 20.4 Clean both Port and Starboard propeller blades with "Scotch bride" or equivalent.
- 20.5 Present the cleaned propellers to the BFOO for approval.

21.0 RUDDER STOCKS

NB Spares are Authority supply

- 21.1 Remove and clean the port and starboard rudders.
- 21.2 Inspect the rudder blades, rudder stocks, bearings and seals for damage and wear.
- 21.3 Measure rudder upper and lower bearing and journal clearance.



- 21.4 Pressure test both rudder blades to 1.5 psig
- 21.5 Pass records and report all defects found, with work recommendations, to the BFOO.
- 21.6 Replace the upper bearings
- 21.7 Renew 2 off Walkers Endless shaft seals on each rudder – part no. ERKS 130-160 x 13R.
- 21.8 Renew thrust bearings – part no. AKN 21320CAN/E4
- 21.9 On completion of all agreed work, re-install the rudders and function test to the satisfaction of the BFOO.

22.0 BOWTHRUSTER PROMAC TYPE FP7--580

- 22.1 Whilst the Cutter is out of the water, the following maintenance and checks are to be carried out by the OEM service engineer on the Bow Thruster: -

- 22.1.1 Check the piping and couplings for leakage
- 22.1.2 Remove the propeller, clean and check balance
- 22.1.3 Replace the Bow thruster propeller shaft seal
- 22.1.4 Re-fit propeller
- 22.1.5 Re-charge with new oil (The Authority supply)

- 22.2 Present the re-installed propeller to the BFOO before replacing protective grills on the Bow thruster tunnel.

23.0 MAIN ENGINE EXHAUST SPRAY RINGS

NB: Before commencing removals, to provide a 'before' reference and to pre-emptively identify any serious alignment defects, inspect the spray ring gap as follows: -

The spray ring gap is to be measured with metric feeler gauges with the results presented graphically when viewed from outboard; and

The radial alignment of the top-hat section within the spray ring housing is to be measured with the results also being presented on the same graphical report.

- 23.1 On each Main Engine exhaust system dismantle as follows: -
 - 23.1.1 Remove lagging to provide access to the flanges of the bellows and after flanges of the exhaust elbow
 - 23.1.2 Remove bellows and temporarily tally to identify side removed from;



- 23.1.3 Remove elbow to provide access to the top hat insert flange
- 23.1.4 Mark the alignment of the top-hat inserts within the top hat housing, remove the top hat insert and temporarily tally to identify side removed from.
- 23.1.5 Digitally photograph condition of above items as they are removed.
- 23.1.6 Clean & Inspect bellows and top hat insert, clean & inspect top hat housing in a way of the top hat insert.

NB: To avoid damaging the surface of the bellows, no abrasive cloth (emery paper etc....) is to be used and only non-metallic or soft metal tools and wire brushes (Copper or brass) as to be used.

Report any defects to the BFOO

- 23.2 Inspect and digitally photograph the internals of the silencer for excess corrosion of the perforated liner and any evidence of salt accretion build up. Remove the silencer drain valves and as possible ensure that the drain has not become blocked internally.
- 23.3 Refit the top-hat insert ensuring that it is in its original aligned position (as marked), refitting the elbow to the top hat housing flange to clamp the top hat insert into position.

NB: When re-assembling uses all new joints.

- 23.4 Before proceeding any further, to provide an 'after' reference and to pre-emptively identify and serious alignment defects that have arisen, inspect the spray ring gap as at section 1 a) & b) above. Present these findings to the BFOO to accept or require further alignment adjustments.

NB: Spray ring gap ideal measurements / tolerances are as follows: -

a. Longitudinally, ideally the gap should be 2.5mm. Tolerance + or - 0.9mm, notwithstanding this the total gap area should not be less than 80% or exceed 120% of the designed gap area.

b. Radially, ideally it should align. Tolerances: the top hat insert may be 1.5mm radially smaller than the top hat housing at any point in its circumference, it may also be up to 1mm radially larger than the top hat housing for up to 25% of the circumference: except in the lower after quadrant where at maximum this may only be 0.5mm and this is only allowable when the gap is 2.5mm or less.

- 23.5 On completion of re-installation of bellows and before lagging is replaced, present work content to the BFOO for his acceptance of the achieved spray ring gap alignment.

Provide formal report including before and after readings and e-copies of pre-cleaning photographs.

24.0 BILGE SUCTION STRUM BOXES

- 24.1 Inspect and clean the listed Bilge Suction strum boxes.
 - 24.1.1 1 off 1 frame aft of the fwd. engine room bulkhead.
 - 24.1.2 2 off 3 frames aft of the fwd. engine room bulkhead

- 24.2 Pass inspection report to the BFOO



25.0 PORTABLE SALVAGE PUMP YAMAR L48 4.8HP

- 25.1 Remove the Portable diesel engine driven Salvage Pump and associated hoses from their stowage's and transport to a suitable shore side workshop.
- 25.2 Clean the Engine and Pump and inspect for damage and deterioration.
- 25.3 Carry out a 1000 Hours Service on the Engine i.e. with the manufacturers' recommendation.
- 25.4 Strip the Pump and inspect components for damage and wear.
- 25.5 Survey the two (2) associated Suction Hoses, Couplings and Strainer.
- 25.6 Report all defects found with work recommendations to the BFOO.
- 25.7 Re-assemble the Pump.
- 25.8 Whilst the unit is ashore, function test (to the satisfaction of the BFOO) the Engine, Pump and associated Hoses etc.,
- 25.9 On completion of successful test, flush and dry the equipment, pass Inspection/Test Certificate to the BFOO and reinstall the equipment in their respective stowage's on the Cutter.

26.0 PORT AND STBD MAIN ENGINE ALPHA LAVAL M4 FUEL COOLERS

- 26.1 Remove both Alfa Laval main engine fuel plate coolers.
- 26.2 Carry out a full overhaul of both coolers including new plates
- 26.3 On completion of overhaul carry out a pressure test and issue test certificate.
- 26.4 Re-install with new joints etc and function test to the satisfaction of the BFOO

27.0 WESTFALIA OTC 2 FUEL PURIFIER

NB This service is to be completed by a Westfalia Service Engineer

- 27.1 5-year full service, to include, but not limited to;
 - 27.1.1 Renew the drive belt
 - 27.1.2 Carry out lube oil change, Oil is to be Contractor supply
 - 27.1.3 Replace grooved ball bearings Items 30 & 40 in the manual
 - 27.1.4 Renew the gasket 10, see fig 10
 - 27.1.5 Renew the sealing ring, see fig 50



27.1.6 Renew rubber-metal cushion 50, see fig 50

27.1.7 Function test the satisfaction of the BFOO

28.0 PORT AND STBD GENERATOR ALFA LAVAL WATER HEAT EXCHANGERS

28.1 Remove both Alfa Laval plate heat exchangers.

28.2 Carry out a full overhaul of both exchangers including new plates by an Alfa Laval approved service agent

28.3 On completion of overhaul carry out a pressure test and issue test certificate.

28.4 Re-install with new joints etc and function test to the satisfaction of the BFOO

29.0 OVERHAUL LISTED VENTILATION FANS

29.1 The following ventilation fans are to be overhauled

29.1.1 2 Off Engine Room Ventilation Type SALOR HU80

29.1.2 1 off Galley Extraction Type Type SALOR TZA 225-4

29.1.3 1 Off Shower/Laundry

29.2 Disconnect the listed fan motors and transport to a suitable shore-side workshop

29.3 Protect exposed cables from damage/ingress of moisture.

29.4 Carry out overhaul of the motors in accordance with the manufacturer's recommendations.

29.5 Clean and re-preserve all 4 fans.

29.6 Whilst galley fan is removed from vessel the ductwork is to be de-greased and cleaned

29.7 On completion of the overhaul, reinstall the motors and carry out earth bonding, continuity insulation tests.

30.0 ENGINE WASTE HEAT ACCUMULATOR

30.1 Drain down system and remove accumulator.

30.2 Renew the accumulator.

30.3 Reinstall the accumulator and refill the system with antifreeze and pressurise to 1.8 bar.



31.0 PORT AND STBD GENERATOR FULL OVERHAUL

NB: Overhaul of both Generators will be contracted separately by the Authority with an approved Caterpillar Agent. The Supplier is to allow any access required to undertake this work and provide any necessary assistance as required by the Authority. In any circumstances this will include the following which must be costed by the Supplier to include labour, crange transport and provision of working facility costs:

- 31.1 Remove the main engine room 'soft-patch' access hatch together with all requisite engine room systems including lights, smoke detectors and piping disconnected to allow removal of the Port and Stbd Generators on their bed-plates.
- 31.2 Disconnect both generators electrically and mechanically, remove from the engine room with the diesel engine and alternator components still coupled on the bed-plate.
- 31.3 Following full overhaul, both generators are to be reassembled on their bedplates using new anti-vibration mounts, and returned and re-fitted to their original locations, re-coupled electrically and mechanically together with all systems and equipment previously dismantled.
- 31.4 Main engine room soft patch hatch is to be re-installed using new seals, any damaged fittings are to be replaced with new to the original specification.

31.5 A shore side load bank is to be provided to enable the overhaul generators to be load tested;

31.5.1 4 hours at max load

31.5.2 Load sharing

The Supplier is to supply

31.5.3 Suitable cables to conduct the above tests and attach/remove as and when required

31.5.4 Services of electrical engineer to assist the Finning service agent; and

31.5.5 Fill the generators with The Authority supplied lube oils and water

32.0 MAIN AND EMERGENCY 12 VOLT BATTERIES

32.1 The following 12-volt battery sets are to be:

32.1.1 Port and Stbd Engine Room

32.1.2 Port side Weather deck (Emergency Set)

32.2 Clean the Battery Sets and inspect for damage, corrosion and electrolyte leaks.

32.3 Carry out capacity discharge test on each 12-volt battery

32.4 Clean connectors / terminals and coat with no-oxide grease (petroleum jelly).



32.5 On completion of all approved work, ensure the Battery is fully charged and restored to the normal operational state.

32.6 Pass inspect and test results to the BFOO

33.0 ANCHOR WINDLASS OVERHAUL RELIEVED KRA-E-16D

NB: Spares will be Authority supply

33.1 The windlass is to be removed from the vessel.

33.2 Dismantle, clean and grease all components.

33.3 Renew the following: -

- 33.3.1 Brake band for a KS16D
- 33.3.2 Brake rod RS1;
- 33.3.3 Renew the lube oil charge and grease all components
- 33.3.4 Brake block RB1
- 33.3.4 Nut RM1

33.4 To the satisfaction of the BFOO

34.0 ANCHOR CABLE

34.1 The anchor cable is to be removed from the Cutter

34.2 Thoroughly clean the cable

34.3 Survey and measure the cable stud links against a Lloyds cable specification and report details to the BFOO

34.4 Reapply cable chain length markings, by paint and cable tie methods

34.5 Oil the cable with preserving oil, suitable for environmentally immersion in salt water

34.6 Re-stow the cable in the chain locker with rope tie and lock onto the anchor

35.0 PORT AND STBD AFT CAPSTANS IMATRANS EKS 1150

35.1 Both Port and Stbd aft capstans are to have their gearbox lubrication charge replenished with The Authority Lubricating Oil

36.0 MOB DAVIT LOAD OVERHAUL & LOAD TEST SEC MS2-7-40 ALUMINUM

NB: This service is to be carried out by a SEC or Ned-Deck of Shat Harding approved service agent using approved supplied spares

36.1 Carry out full overhaul of the Mob Davit in accordance with manufacture's and extant MCA/SOLAS lifting regulations

36.2 Renew the wire rope falls using anti-twist wire



- 36.3 Preserve the davit in accordance with the vessel's paint specification
- 36.4 Renew the gearbox lubricating oil charge
- 36.5 Overhaul the electric winch motor
- 36.6 Upon completion carry out both;
 - 36.6.1 Static load test to 1150 kgs SWL
 - 36.6.2 Dynamic load test to 750 kgs SWL
- 36.7 To the satisfaction of the BFOO



Annex C: Inspection, Testing and Certification of Safety Equipment

1.0 **Requirements for Certification.**

- 1.1 The following items shall be Inspected and Tested where required in accordance with relevant Legislation and Standards as appropriate. All items shall be issued a separate Certificate of Inspection and Testing.
- 1.2 All tasks are to be carried out by an approved examination test house, unless otherwise stated.
- 1.3 On completion of all work the supplier should provide inspection reports and certification for each separate task in the format detailed in Part 5 Section 8.

2.0 **Documentation**

- 2.1 Two copies of all certification required for regulatory compliance, or as requested by the Authority, shall be supplied enclosed in clear envelopes within two four-ring ring binders.
- 2.2 Each binder shall be assembled using the ordering and numbering shown in the Authority's document SOP 08 (SOP 08 will be issued to the successful Supplier).
- 2.3 Additionally, an electronic copy of all certificates and test reports shall be forwarded by e-mail to the Authority in .pdf format.
- 2.4 All certificates and survey reports, as specified and required, are to be provided before the Acceptance meeting.
- 2.5 All certificates and reports specified and required are to be provided in hard copy folders to the vessel before departure and electronically emailed to the Authority.

NB: Although these sets of certifications are to be presented at the Acceptance Meeting, to minimize time spent in checking these during the acceptance meeting prior opportunity shall have been given to the BFOO to check the contents and the index.

3.0 **Fire Fighting and Fire Detection (See Annex E Item 7)**

NB: These tasks are to be carried out by an approved Marine Fire & Safety Contractor. Supplier to arrange.

- 3.1 Inspect, clean and function test the following Fire Detection System Detector Heads: -



- 3.1.1 26x Smoke Detectors
- 3.1.2 1x Flame Detector
- 3.1.3 1x Heat Detector
- 3.1.4 Function Test the following: -
 - 3.1.4.1 12x Call Points
 - 3.1.4.2 9x Audible Alarm Units
 - 3.1.4.3 2x Alarm Indicator beacons.
- 3.1.5 Inspect the control panel Power Supply Unit (PSU), Batteries and connections: noting expiry dates. If batteries are within three months expiry date, they are to be replaced under the EW system.
- 3.1.6 Fully function test the system including secondary power mode.
- 3.1.7 Update test tally and submit formal tabulation of reading results.
- 3.2 Service, Survey and Certify the Engine Room Fixed CO2 Extinguishing System as follows:
 - 3.2.1 Disconnect the Main CO2 cylinders from the system and insert blanks;
 - 3.2.2 Visually inspection the whole CO2 system;
 - 3.2.3 Blow through discharge pipe work system with clean air at a minimum pressure of at least 20 bar.
 - 3.2.4 Check the contents and levels of the 3 main 45kg CO2 cylinders and the operating cylinders;
 - 3.2.5 Check all flexible hoses for ageing;
 - 3.2.6 Check pilot bottle pressures are greater than 120 Bar and within 10% of one another;
 - 3.2.7 Function check of the pull handle to activate the cylinder valves, close valves and check for leakage;
 - 3.2.8 Fill CO2 manifold with (+/- 25 bar) from a CO2 test cylinder (Main valves closed, or sections sealed).
 - 3.2.9 Close and disconnect the CO2 test cylinder, check thread connections for leakage;
 - 3.2.10 Check operation of pressure gauge and blow through the CO2 pipe work with the CO2 gas in the manifold
 - 3.2.11 On completion, re-connect / re-commission the system.
 - 3.2.12 Present the re-commissioned system to the BFOO for acceptance.



3.3 Fire Extinguishers

- 3.3.1 Inspect all fire extinguishers as listed.
- 3.3.2 Carry out annual testing as per manufacturer's instructions for each item.
- 3.3.3 5 kg CO2 x 8 (7x require 10 yearly hydraulic pressure test)
- 3.3.4 6 KG Dry Powder x 7 (5x require 10 yearly hydraulic pressure test)
- 3.3.5 2 kg Dry Powder x2
- 3.3.6 9 litre Foam x 5 (3 require 10 yearly hydraulic pressure test)
- 3.3.7 Fire Blanket x 2

3.4 Fire Hoses and Nozzles.

- 3.4.1 The following fire hoses and nozzles are to be examined. On completion of examination they should be tested to 5.25 bar. A certificate of examination and testing shall be issued.
- 3.4.2 1x 20 metre 1 ½ diam. fire hose & nozzle (Boat Deck)
- 3.4.3 2x 10 metre 1 ½ diam. fire hoses & 1 nozzle (Fwd. Deck Port)
- 3.4.4 1x 10 metre 1 ½ diam. fire hose & 1 nozzle (Aft Deck)
- 3.4.5 1x 15 metre 1 ½ diam. fire hose & 1 nozzle (Forward Machinery Space)
- 3.4.6 1x 20 metre 1 ½ diam. fire hose (Forward Machinery Space)
- 3.4.7 2x 10 metre 1 ½ diam. fire hoses & 1 nozzle (Engine Room)
- 3.4.8 On completion of survey, pressure test the hoses and nozzles to 5.25 bar.

3.5 Carryout required maintenance, survey and testing of Breathing Apparatus Equip, as indicated:

NB: These tasks are to be carried out by an approved Draeger service agent.

- 3.5.1 3 x Drager PA90 plus (Annual survey and maintenance)
- 3.5.2 2 x Draeger CF10 EEBD (Annual survey and maintenance)
- 3.5.3 9 x 9 litre carbon fibre BA cylinders (5 yearly hydraulic test, annual survey and maintenance)
- 3.5.4 2 x EEBD air cylinders (5 yearly hydraulic test, annual survey and maintenance)
- 3.5.5 3 sets Fireman's Equipment (jackets, trousers, flash hoods, helmets, lifeline)
- 3.5.6 Supply certificates of 5 yearly hydraulic testing for each individual item so tested



3.5.7 Supply individual certificates for each item's annual survey and maintenance.

4.0 Survival Equipment.

4.1 Inspect, service and test inflatable lifejackets:

NB: These tasks are to be carried out by an MCA/ UK Flag State approved MRT service agent.

4.1.1 10x Crewsaver Sea crusader SOLAS approved inflatable lifejackets, complete with McMurdo locating beacons, are to be Inspected, serviced and tested

4.1.2 Replace CO2 inflation cylinders as necessary

4.1.3 Issue individual certificates of inspection and test

4.1.4 Report all defects found to the BFOO

4.2 EPIRB

NB: This Inspection/Service to be carried out by an approved service agent whose details will be notified to the Authority with the submission of the formal quotation in accordance with the guidelines in MSC/Circ.1040, carryout annual testing of the 406Mhz satellite Jotron EPIRB as required by SOLAS regulation IV/15.9 from 01-July-2002.

4.2.1 Remove the EPIRB from the vessel and dispatch to approved service agent.

4.2.2 Survey & Service EPIRB

4.2.3 Inspect EPIRB Hydrostatic release expiry date and if less than 1 year remains, renew EPIRB hydrostatic release unit and plastic retaining bolt.

4.2.4 Check EPIRB, if less than one year remaining, renew batteries as required.

4.2.5 Issue a service report with a list of the test results and maintenance performed

5.0 Safety & Rescue Equipment

5.1 Survey & Certify the 'Helicopter Strop' rescue sling.

5.2 Survey and Certify the following personal Safety Harness equipment:

5.2.1 2x KRATOS full body harnesses

5.2.2 2x Seago safety lines.



5.2.3 2x Waist Harnesses

5.2.4 4x 2m restraint lanyards

5.2.5 KRATOS two-point body harness

5.2.6 1x Saviour Technical stretcher

5.3 Survey and Certify the fixed components of the GlideLoc Mast Installation

NB: These tasks are to be carried out by a Soll approved GlideLoc / SALA Service Agent.

5.3.1 2x GlideLoc Fall Arrest Traveller

5.3.2 Fall Arrest Block

5.3.3 2x Work Positioning Strap

5.4 Survey and Certify the following GlideLoc/SALA Mast Access Equipment personal safety equipment:

NB: These tasks are to be carried out by an approved GlideLoc / SALA Service Agent

5.4.1 2x Miller Full Body Harness to EN361 with back strap

5.4.2 2x Petzl climbers Helmet

5.4.3 1x AG 10 rescue kit including 30m rope and webbing straps

5.4.4 2x Inertia Lanyard

5.5 MARS (Man overboard Recovery Ladder)

5.5.1 The MARS recovery equipment is to be dispatched to the manufacturer Messrs SWL Ropes and Rigging Southampton for annual survey at;

Messrs SWL Ropes and Rigging
65 Bernard Street
Southampton
SO1 1BA
Tel: 02380 338286

5.6 Carry out thorough survey of the scrambling net (including the securing arrangement) and issue certificate.

5.7 Carry out thorough survey of the Jason's Cradle including captive slings and issue certificate.

5.8 Carry out thorough survey of the Fiberlite frame and issue certificate.



6.0 Deck Equipment

NB: All equipment to be tested under Lifting Operations and Lifting Equipment (LOLER) and MGN 332 regulations.

6.1 Emergency Anchor Recovery Equipment

NB: The service is to be carried out by an approved test house whose details will be notified to the Authority with the submission of the formal quotation.

6.1.1 The following anchor recovery equipment is to be examined, certified and where appropriate tested:

6.1.2 1x Tractel Turffer tackle block and wire 3200kgs SWL

6.1.3 1x GS Double fall manual chain block x 6metres HOL 3000 SWL

6.1.4 1x Duplex polyester web belt sling terminating in a captive eyed latch hook one end only EWL 840 mm 3000 kgs SWL

6.1.5 1x Ace grade 8 alloy steel single leg chain, complete with 16/8 Bergok one end and 16/8 shortening clutches the other, EWL 400mm 3,500kgs SWL @ 90 degree

6.1.6 1x 16 mm diam. single leg wire rope sling terminating in soft eyes EWL 850mm 3000 kgs SWL

6.1.7 1x 1" Bow shackle 3750 kgs SWL

6.1.8 8x Screw pin bow shackles

6.2 Emergency Towing Equipment:

6.2.1 Remove the 32mm x 200 metre 8 strand Multi-plait Towing Line and associated towing shackles from vessel

6.2.2 Undertake visual survey of Towing Line and load test the shackles

6.2.3 Report all defects found, with work recommendations, to the BFOO

6.2.4 Return and re-store Towing Line and Towing Shackles onboard Cutter

6.3 Inspect and certify the RHIB recovery and securing equipment.

6.3.1 RHIB screw pin "D" shackle

6.3.2 RHIB wire rope sling



6.3.3 RHIB turnbuckle

6.3.4 RHIB quick release pin

6.3.5 RHIB 10mm connector

6.4 Carry out a Dynamic Load Test of the anchor windlass using a horizontal load of 1.6 tonnes. On completion of successful test, update test tally and supply test certificate

6.5 Carry out a Dynamic Load Test of the RHIB Recovery Capstan using a perpendicular load of 1.6 tonnes. On completion of successful test, update test tally and supply test certificate

6.6 Carry out a Dynamic Load Test of the Port and Starboard After Mooring Capstans to 1.15 tonnes. On completion of successful test, update test tally and supply test certificate

6.7 Survey and certify the RIB recovery equipment 12mm stainless steel rope, safety hook and swivel to a SWL of 1.6 tonnes. On completion of successful survey, update test tally and supply test certificate

6.8 Man Overboard Boat (MOB) System

NB: the following items are to be carried out by an approved Schat Harding service agent whose details will be notified to the Authority with the submission of the formal quotation. The normal practise from Messrs Schat Harding is to use a service exchange QRH.

6.8.1 Carry out Annual Inspection and Maintenance of SEC MS2-7-40 MOB Davit.

6.8.2 Carry out Annual Inspection and Maintenance of Schat-Harding RRH15 MOB quick release hook

6.8.3 Carry out load testing of Schat-Harding RRH15 MOB quick release hook.

6.9 Zodiac 4.2 metre MOB Boat

NB 1. These tasks are to be carried out by an MCA or UK Flag State Zodiac approved service agent(s) whose details must be notified to the Authority with the submission of the formal quotation. Work on the Outboard Engine is to be conducted by an approved Yanmar service agent.

NB 2. On return the outboard is to be re-installed on the MoB Boat.

6.9.1 Remove MOB boat and send for service, survey & certification.

6.9.2 Survey & Certify 4 leg lifting sling and 4 lifting points.

6.9.3 Remove MOB Boat 25hp Yamaha Long Shaft Outboard Engine and send for annual service as per manufacturer's instructions. All parts are Supplier supply

6.9.4 Issue service report, test and survey certificates on successful completion of work



7.0 Miscellaneous

7.1 Microwave Ovens

7.1.1 Inspect and Radiation test 2 x Microwave Ovens located in galley and mess deck.

7.2 Oxygen Therapy Kit (NB: There are 2 x Oxygen cylinders)

7.2.1 The onboard Oxygen therapy kit, including Oxygen cylinders, is to have its annual service carried out by an approved service agent

7.3 Gangway Brow

7.3.1 The gangway brow is to be inspected for weld/construction defects

7.3.2 If item is satisfactory, a load deflection test of 450 kgs is to be conducted

7.3.3 Associated brow safety net is to be thoroughly surveyed

7.3.4 Test and survey certificates are to be supplied on successful completion

7.4 Steering gear chain blocks

7.4.1 4x chain blocks are to be thoroughly surveyed and tested

7.4.2 Survey and test certificates are to be supplied on successful completion

7.5 Boarding Ladders

7.5.1 The 2m Pilot ladder is to be dispatched to the manufacturer Messrs SWL Ropes and Rigging, Southampton (5.5.1) for annual survey.

7.5.1.1 Carry out thorough inspection of ships Boarding ladder.

7.5.1.2 On completion of successful test issue certificate.



Annex D: Vessel Maintenance Tasks

NB: Where it is stipulated in this Requirement that approved engineers/agents are to be used, the Supplier shall submit details, to include business address and contact details, to the Authority, of these engineers/agents who will carry out the work alongside the formal quotation.

1.0 Deck

- 1.1 Overhaul Raised Coaming water tight hatches;
 - 1.1.1 Weather deck Fwd./Lower Deck Fwd. Accommodation;
 - 1.1.2 Weather deck / Waist Main Engine Room Access;
 - 1.1.3 Weather deck / Port Aft Peak Steering Compartment Access; and
 - 1.1.4 Weather deck / Stbd Aft Steering Compartment Access.
- 1.2 On completion of all work, function test the hatches to prove security and water tight integrity to the satisfaction of the BFOO.

2.0 Main Engine: Caterpillar 3516B

NB: Main Engine lubrication oil capacity is 405 litres (Castrol Vectron 15/40), Oil and Filters will be supplied by Authority. In addition to the work detailed herein, both main engines will be subject to a major top end overhaul contracted separately by the Authority. Work under this requirement must be chronologically arranged to coincide with the engine overhaul work.

- 2.1 Change oil and filters on both Port and Stbd Caterpillar 3516B main engines:
- 2.2 Existing main engine lubrication oil charge is to be pumped out and disposed of in accordance with extant regulations.
- 2.3 Renew the lubrication oil filters.
- 2.4 Replenish the lubrication oil charge.
- 2.5 Change the main engine fuel filters (only change the 5x main filters).

3.0 Main engine Port and Stbd Reintjes WLS930 Reduction Gearboxes

NB: This service is to be completed by an approved Reintjes service agent.

- 3.1 Annual external inspection;



- 3.2 Open the Inspection plates and carryout an internal inspection of the pinions and gearwheels in accordance with Reintjes WLS & WVS maintenance service routines.
- 3.3 Test all temperature and pressure shut down devices.
- 3.4 Test all sensors, inter-switches and alarm systems for correct operation
- 3.5 Existing gearbox lubricating oil charge is to be pumped out and disposed of in accordance with extant regulations.
- 3.6 Renew the in-use lubricating oil filters (only change the in-use oil filter).
- 3.7 Change the sinter filters.
- 3.8 Replenish the lubricating oil charge.

NB: Main Gearbox lubrication oil capacity is 90 litres (Castrol MHP 153), Lube Oil to be Authority supply.

- 3.9 On completion, a Reintjes Service Report is to be provided to the BFOO in both hard and electronic copy formats.

4.0 Generators Port and Starboard maintenance overhaul

NB: A major overhaul of both generator engines will be contracted separately by the Authority with an approved Caterpillar Agent. The Supplier is to allow any access required to undertake this work and provide any necessary assistance required by the Authority. Costs of any such assistance, other than those already tendered under Annex B section 31, will be dealt with under the EW provisions.

5.0 Steering Gear Installation

NB: There are two electronically linked Steering Gear installations each installation has two hydraulic pumps and consequently two starters.

- 5.1 Carry out visual and physical inspection of the Port & Starboard steering gear installations checking for:
 - 5.1.1 Hydraulic leaks;
 - 5.1.2 Replace 10 x Hydraulic Hoses, with like for like specification
 - 5.1.3 Cylinders and rams for leakage;
 - 5.1.4 Tightness / security of linkages & connection; and
 - 5.1.5 Inspect tank anti-vibration mounts.
- 5.2 Inspection Report is to be provided to the BFOO in both hard and electronic copy formats.



6.0 Bow Thruster

- 6.1 Check the condition of the Bow Thruster flexible coupling element and the mounting bolts.
- 6.2 Report findings to the BFOO.
- 6.3 The following Bow Thruster hydraulic power pack hydraulic oil filters are to be changed:
 - 6.3.1 Filter Element No E26N - Off Line Filter
 - 6.3.2 Tank Top Return Filter H33O R20N
 - 6.3.3 Tank Top Return Filter H160 R20
- 6.4 Remove, clean and inspect hydraulic power pack oil heat exchanger.
- 6.5 Reassemble using new seals and conduct pressure test to the satisfaction of the BFOO.
- 6.6 Refit heat exchanger.

NB: Filters are Authority supplied.

7.0 Emergency Fire Pump

NB: This work is to be undertaken by an approved Lombardini service agent.

- 7.1 50hr service on Lombardini Diesel Firefighting Pump Engine as per manufacturer's instructions for 250 hours.
- 7.2 Service Report is to be provided to the BFOO in both hard and electronic copy formats.

8.0 Portable Salvage Pump

NB: This work is to be undertaken by an approved Yanmar service agent.

- 8.1 Carry out 50 Hour service on the Yanmar L48 4.8HP diesel engine as per manufacturer's instructions for 250 hours.
- 8.2 Service Report is to be provided to the BFOO in both hard and electronic copy formats.

9.0 Separ Fuel Filters Fuel Oil System

- 9.1 Three (3) engine SEPAR coalescer fuel filters are to be:
 - 9.1.1 Removed, stripped, cleaned and inspected.
 - 9.1.2 Renew filter elements as necessary.
 - 9.1.3 Refill with FO when finished.



NB: two (2) are in use and one (1) is on standby. Filters are Authority supplied.

10.0 Domestic Water System

10.1 Hydrophore (BT) Fresh Water Hydrophore Unit.

10.1.1 Disconnect and drain the hydrophore.

10.1.2 Inspect the hydrophore cylinder and rubber bladder.

10.1.3 Remove the bladder, clean it with freshwater and sterilize it.

10.1.4 Inspect the cylinder for excess corrosion, leaks or damage.

10.1.5 Inspect the bladder for damage, leaks or signs of perishing: renew the bladder if necessary.

10.2 Re-pressurise the air space between the hydrophore cylinder and bladder to 0.2 bar.

10.3 On completion of all work re-commission the system and function test to the satisfaction of the BFOO and report details.

10.4 Domestic Hot FW System:

10.4.1 2 x Daalder domestic fresh water calorifier Heaters (No.1 and No.2)

10.4.2 Inspect & Pressure Test Calorifiers (carry out pressure test to 6 bar for 15 minutes).

10.4.3 Inspect for leaks and damage.

10.4.4 Check pressure setting of PRV, replace if more than 2 years old, **the Authority will supply any necessary replacements**

10.5 Supply local tallies to record the pressure and test date and issue ISO 9001 standard certificate of test.

10.6 Carry out and record insulation test on the 6 kW Heating elements in both calorifiers.

10.7 Inspection Report is to be provided to the BFOO in both hard and electronic copy formats.

11.0 Air Conditioning System

11.1 Replace the AC Compressor drier filling.

11.2 Inspect the condition of the V- belts driving the ventilation fan.

11.3 Measure the deflection/tension of the v-belts and adjust as required.

11.4 Inspect refrigeration system pipework and system.



11.5 Carry out function test and provide Inspection Report to the BFOO.

12.0 Electrical Distribution

12.1 Check insulation readings on listed circuits.

12.2 Check and record insulation readings on all circuits from the following locations:

12.2.1 Main switchboard (Engine Room) 415/240V 50Hz.

12.2.2 P1 power/lighting distribution board (Engine Room) 415/240V 50Hz

12.2.3 P2 power/lighting distribution board (Forward Machinery Space) 415/240V 50Hz

12.2.4 L3 lighting distribution board (Main Deck Technical Room) 415/240V 50 Hz.

12.2.5 L4 lighting distribution board (Wheelhouse) 415/240V 50 Hz.

12.2.6 Central distribution board (Wheelhouse) 415/240V 50Hz.

12.2.7 AC plant distribution board (Forward Machinery Space) 415/240V 50 Hz.

12.3 Submit formal tabulation of reading results in the format of the attached Annex P

12.4 Shore Power Supply:

12.4.1 Inspect & Test Shore Power Connection Box & Cable;

12.4.2 Submit formal tabulation of reading results;

12.5 Earth Bonding:

12.5.1 Check Earth Bonding of Shafts, Rudders & Stabilizers;

12.5.2 Submit formal tabulation of reading results, in the format of the attached Annex P;

12.6 Clean, Inspect and Test Starters and Motors for the following:

12.6.1 Anchor Windlass

12.6.2 Port and starboard capstans (2 in total)

12.6.3 MOB Boat Davit

12.6.4 Steering gear system pumps (4 in total)

12.6.5 Bilge/general service pumps (2 in total)

12.6.6 FW hydrophore pumps (2 in total)



12.6.7 AC pump

12.6.8 AC compressor

12.6.9 Tasks for 12.6.1 – 12.6.8 to include:

12.6.9.1 Insulation testing

12.6.9.2 Continuity testing of earth bonding

12.6.9.3 Function test of current overload devices

12.6.9.4 Function test of anti-condensation heaters

12.9.6.5 Motor bearing condition checks

12.7 On completion of all work, restore power supply and function test to the satisfaction of the BFOO.

12.8 Inspection Report is to be provided to the BFOO in both hard and electronic copy formats.

13.0 240v Portable Appliances

13.1 Carryout & Document PAT on, approximately, 180 items of 240v Appliances.

13.2 On completion of satisfactory test, label each appliance with a suitable identification label indicating:

13.2.1 Pass.

13.2.2 Date of Test and Initials of tester.

13.3 Submit formal tabulation of reading results.

14.0 Magnetic Compasses, Lilley and Gillie SR-3

14.1 Inspect & carryout compass Swing on the binnacle mounted Lilley & Gillie SR-3 magnetic compasses on the wheelhouse top.

14.2 Inspect the spare Lilley & Gillie SR-3 magnetic compass held in the messroom.

14.3 Inspect & carryout compass Swing on the binnacle mounted Lilley & Gillie SR-3 magnetic compasses on the wheelhouse top.

14.4 Inspect the spare Lilley & Gillie SR-3 magnetic compass held in the messroom.

14.5 On completion of the compass swing issue a deviation card for the compass to the onboard crew and pass copies to the BFOO.



- 14.6 The compass swing is to be carried as early as possible after the completion of the annual maintenance period: at the convenience of the vessel's Commander, when the vessel is fully operational with all equipment embarked.

NB: It is important that the spare compass is stowed inverted so that wear on the bearing is avoided.

15.0 Super Chlorination of the Domestic Fresh Water System

- 15.1 Super chlorinate the Fresh Water Holding Tank.
- 15.1.1 Open the fresh water holding,
 - 15.1.2 Carry out visual survey of the tank coating in conjunction with International Paints representative/BFOO
 - 15.1.3 Once the tank coating is acceptable, re-fit the holding tank lids, using new nitrile material gaskets
 - 15.1.4 Press up the holding tank with treated super chlorination mixture
 - 15.1.5 Run water through ALL taps, hoses and shower heads: ensuring the super-chlorination concentrate levels are monitored and maintained.
 - 15.1.6 De-chlorinate the freshwater tank: run through ALL taps, hoses and shower heads.
 - 15.1.7 Drain down the system & the holding tank.
 - 15.1.8 Super chlorinate the Fresh Water Holding Tank.
 - 15.1.9 Re-fill up Fresh Water tank, take water samples of the onboard system and shoreside
 - 15.1.10 Submit samples for analysis of potability and legionary's disease
 - 15.1.11 Provide a certificate of potability and no legionary present upon completion of satisfactory tests.

NB: Failure to achieve WHO test standards for both potable water and legionella will require re super-chlorination and re-testing at the Suppliers cost, until satisfactory test results, which meet WHO standards for potable water, are obtained.



Annex E: Modifications and Defect Rectification

1.0 **The vessel Intruder alarm system is to;**

- 1.1 Have all 13x access doors and hatches roller contact switches replaced with Telemecanique XCKS131 switches including mounting bracketry where necessary; and
- 1.2 Tested to prove operation to the satisfaction of the BFOO

2.0 **The 7x fresh water windscreen washer injection nozzles are to be;**

- 2.1 Removed
- 2.2 Cleaned and orifices checked for blockages
- 2.3 Re-installed and tested

3.0 **The 7 Wynn windscreen wiper assemblies are to be;**

- 3.1 Opened for inspection
- 3.2 Survey completed on their drive assemblies
- 3.3 Reported to the BFOO any remedial action will be dealt with under the emergent work procedure

4.0 **The Freeman Rope locker foredeck flush hatch is to be;**

- 4.1 Cleaned back of all corrosion
- 4.2 The sealing sill is to be checked for concentricity of height and thickness
- 4.3 The sealing sill height to be built-up to provide a concentric level of height and thickness
- 4.4 A new The Authority supplied seal is to be installed in the hatch
- 4.5 Chalk tested to prove seal contact and hose test to prove the seal is water tight
- 4.6 All exposed metalwork is to be re-preserved in accordance with the vessel's paint specification.

5.0 **Praxis Mega Guard Installation**

Due to the complexity of description, the Authority will arrange, at their own cost, for a Wartsila electronic service engineer to attend and give instruction on installation: - Annex W



The attendance of Wartsila Service Engineers to commission the system and all Parts supply are at Border Force cost

All Cables, glands etc to be Supplier supply and covered under Emergent Work

- 5.1 The existing Praxis Machinery monitoring system is to be upgraded by :-
- 5.2 Removal of existing and disposal of existing Praxis DOS based equipment
- 5.3 Running of cables from the Engine Room, through fire proof bulkhead glands to the wheelhouse
- 5.4 Mounting of :-
 - 5.4.1 UPS cabinet in the Wheelhouse
 - 5.4.2 Technical cabinet in the Engine Room
- 5.5 Mounting of new touch screen and tracker ball in the Wheelhouse Engineer's console
- 5.6 Additional work to be agreed by the BFOO
- 5.7 Schematic Drawing of the wiring installation by the Supplier

6.0 Mess Deck Seating

- 6.1 The mess deck back rest and squabs are to be recovered in an anti-bacteriologic easy wipe down clean material, similar colour to the existing dark blue
- 6.2 Samples of the proposed re-covering material and colour are to be given to the BFOO for approval





7.0 New Fire Detection Monitoring system (See Annex C Item 3 Testing)

The existing fire detection system is to be removed, and a new The Authority supply, Tyco 1204 fire detection monitoring system installed.

7.1 The Supplier will be responsible for the following work: -

- 7.1.1 Removal of hard ware and electrical standby battery/wiring etc;
- 7.1.2 Provision of cut outs in chart table;
- 7.1.3 Hardware installation in chart table.

7.2 The Authority will arrange for Messrs Tyco to: -

- 7.2.1 Disconnect the existing Servoteknikk system;
- 7.2.2 Commission and set to work the new Tyco T1204 system;



New Fire Detection Monitoring Control Panel



Battery back-up enclosure



8.0 Generator Exhaust Cleaning

- 8.1 Both port and stbd generator dry exhaust runs from the connection to the engine turbocharger to the overboard discharge are to be:-
- 8.1.1 Disconnected and removed ashore ;
 - 8.1.2 All carbon deposits, broken free from the internal(s) of the exhaust pipes;
 - 8.1.3 Once the exhaust pipes are cleaned, an inspection carried of the external and internal surfaces;
 - 8.1.4 Once the BFOO has agreed the exhaust pipes are sufficiently cleaned, the exhaust system using new suitable gaskets;
 - 8.1.5 New exhaust lagging applied.



9.0 Stbd Upper Ventilation Plant Room and Bosun's locker

- 9.1 Investigation and rectification of water ingress and leaking into fwd. lower accommodation is to be undertaken.
- 9.2 Air supply jalousies are to be removed, inspected, cleaned and repaired as necessary. Any damage, corrosion or other defects are to be rectified. Jalousies are to be replaced using new seals and gaskets as necessary.



- 9.3 Deck plates are to be removed and sub structure cleaned to ascertain location of leaks into lower accommodation. Repairs are to be undertaken as necessary and deck plates are to be refitted with any repairs/replacements being undertaken as necessary. 6.3 Existing external temporary repairs are to be assessed and made good as necessary.
- 9.4 Door seal combing is to be inspected and built up as necessary to ensure a watertight seal can be achieved. New seals are to be fitted to the door recesses.
- 9.5 Post repair painting is to be conducted in accordance with the International Paints specification and external painting is to be aligned with the general superstructure painting as detailed in the requirement.

10.0 Seepex Black and Grey water pumps

- 10.1 Both Seepex Type 05-24 Black/Grey water discharge pumps are to be disconnected and dispatched for overhaul to :-
- Messrs Seepex Ltd, Unit 3, Armtech Row, Houndstone Business Park, Yeovil BA22 8RW
- 10.2 Upon return both Seepex pumps are to be re-installed and tested
- NB Seepex pump(s) overhaul at Border Force cost under a separate contract

11.0 Hakkerite Planking Locating Bolts (See Annex B Section 3)

- 11.1 Whilst the Hakkerite planking is removed under Annex B section 3
- a. Remove the 50mm spacer under the centre section
 - b. Cut off approx. 50mm off the length of 150 retaining bolts

12.0 Bow Thruster Hydraulic system

- 12.1 The bow thruster/stern door hydraulic tank is to be :-
- a. Drained down
 - b. The outboard Bowman cooler removed, stripped down, cleaned, pressure tested, replaced
 - c. The system refilled, once the BF have arranged for the Amot directional flow control Valve to be replaced

NB Lube oil BF supply

14.0 SAT M Dome

- 14.0 The SAT M dome up the mast is to be removed and all cables, cable glands made watertight




Statement of Requirements
The Authority Maritime
Contract Reference: C20490

Annex F: General Arrangements






Annex G: Vessel Details

 Border Force	Name	MMSI	Callsign
	HMC VIGILANT		ZITI4
Length overall (LOA)	42.80 m		
Length waterline (LWL)	42.80 m		
Beam Overall	6.95 m		
Draught aft full load	2.5 m		
Ht Overall USK to mast	17.8 m		
Displacement	251.1 tons		
Deadweight	69.3 tons		
Gross Tonnage	235 tons		
Construction	Steel Hull Aluminium Superstructure		
Main Engines	2x Caterpillar 3156B		
Gearbox	2x Reintjes WLS		
Propulsion	2x Controllable Pitch Propellers		
Speeds	26.50 knots		
Manoeuvrability	2x Rudders		
Range / Endurance	Up to 2150 nautical miles at 12 knots		
Fuel	23 cubic metres		
Fuel Consumption	Variable		
Fresh water	6 cubic metres		
Black Water	2 cubic metres		
Accommodation	16 persons		
Built to	Lloyd's 100A1 SCC		



Annex H: Emergent Work Individual Item Proforma

Emergent Work (EW) Individual Item Proforma		 Border Force
EMERGENT WORK ITEM No: C20490		
Description		
Signed, BFOO:	Date:	
PART I: By Supplier		
The above item is accepted as a genuine Emergent work item.		
Our Firm Price is* ^Δ Our Realistic Estimate is* ^Δ	£	
Signed:	Position:	
	Dated:	
TIME PENALTY (if any) The completion date of the contract* will/will not be affected by this item.		
PART II: By BFOO		
It is agreed that this is a genuine emergent work item and authority is given for the work to be undertaken.		
The Above Firm Price/Realistic Estimate* of £	ACCEPTED	REJECTED
Signed:	Date:	
Notes: 1 * Delete as required 2 ^Δ If the costing of an EW task, upon further examination, is projected to vary by $\pm 10\%$, the quote must be re- authorised by the BFOO 3 All interactions pertaining to Emergent Work are to be carried out strictly in accordance with Pt. 5, § 8.0.		



Statement of Requirements
The Authority Maritime
Contract Reference: C20490

HMC Vigilant



XXXXXXX

C20490

TBC

**%
COMP**



Annex J: Handover Certificate

HMC Vigilant



Border Force

This Handover Certificate is to be duly signed by a representative of the Authority and the Supplier should the aforementioned vessel, for whatever reason, be required to be lifted from the water and moved to a berth on land.

Immediately upon signing this Handover Certificate by the Supplier, the responsibility and safe custody of HMC Vigilant is accepted by the Supplier and the responsibility, safe custody and seaworthiness of the vessel will always thereafter remain with the Supplier until issued with an Authority-signed Acceptance Certificate.

Statement of Condition issued by (BFOO):

HMC Vigilant is in a safe and stable condition. All systems have been shut down, (except those as listed below, commensurate with the systems as required by the Supplier).

Tank Contents

Fuel		litres	
Fresh water		litres	
Black Water Tank		litres	

Systems Still Operational

Signed:

Signed:

For and on Behalf of the Supplier:

For and on Behalf of the Authority:

Name:

Name:

Position / Capacity:

Position / Capacity



Annex K: Acceptance Certificate

Acceptance Certificate



Border Force

PART I: to be completed by Supplier

HMC Vigilant

HMC Vigilant having been removed from the water to perform maintenance tasks associated with contract C20490 and having been successfully returned to the water and re-floated in a seaworthy condition, and to the satisfaction of the BFOO

, is this day offered for acceptance by the Authority.

Signed:

For and on Behalf of the Supplier:

Print Name:

Date:

PART II: to be completed by The Authority

I attended the re-floating of HMC Vigilant and have satisfied myself that all systems, machinery and equipment are working satisfactorily. I have inspected the Cutter and consider she is in a condition suitable for return to the Authority and is hereby accepted.

By Vessel Commander:

Signed:

Print Name / Post:

By BFOO:

Signed:

BFOO

Print Name:

Date:

PART III: Notes

Distribution

Original - Retained by the Supplier
Copies to - BFOO



Annex L: Project Completion Certificate

Project Completion Certificate



Border Force

PART I: to be completed by Supplier

HMC Vigilant

HMC Vigilant, having completed contract C20490 to the satisfaction of the Authority and having successfully completed any applicable trials and provided all documentation required under this requirement, Contract Number C20490 is this day offered as completed to the Authority.

Signed:

For and on Behalf of the Supplier:

Print Name:

Date:

PART II: to be completed by The Authority

By Vessel Commander:

I attended the Project Completion Meeting of HMC Vigilant and have satisfied myself that all systems, machinery and equipment are working satisfactorily. I have inspected the vessel and consider she is in a condition suitable for return to operational service.

Signed:

Print Name / Post:

By BFOO:

HMC Vigilant having completed contract C20490 to the satisfaction of the Authority and having completed all appropriate trials and received all documentation required under the Contract is hereby accepted at..... hours.

Signed:

BFOO

Print Name:

Date:

PART III: Warranty

The issuing of a Project Completion Certificate to the Supplier by the Authority, or a duly authorised representative of the Authority, does in no way effect the warranty requirements as specified in this requirement nor the statutory rights of the Authority

Distribution

Original - Retained by the Supplier
Copies to - BFOO



Annex M: Reimbursable Expenses

The Supplier may claim the following Reimbursable Expenses at the rates set out below:

1. Travel

Standard rate of allowance for private cars

Initial 10,000 miles	40p per mile
Additional miles over the initial 10,000	25p per mile
Public transport rate	23.8p per mile

2. Hotel rates

London	£125 per night
All other locations other than London	£90 per night



Annex N: Paint Specification

Please see attached document.



Annex O: Lubrication Specification

Please see attached document.



Annex P: Table of Readings

Please see attached document.



Annex Q: Border Force SOP 08

SOP 08 will be made available to the Supplier post contract award.



Annex R: Survey reports

1. Portable Appliance Testing
2. Electrical insulation test results
3. Alternator insulation test results
4. Reintjes Gearbox
5. Intentionally Blank
6. Hatches, water test
7. Steering Gear inspection
8. Bow thruster coupling
9. Potable Fire pump service
10. Emergency Fire pump
11. Hydrophore
12. Air Conditioning
13. Electrical Starters
 - 13.1 GS pumps x 2
 - 13.2 Capstans x 2
 - 13.3 Anchor Windlass
 - 13.4 Davit
 - 13.5 AC pump
 - 13.6 Hydrophore pumps x 2
14. Davit



Annex S: PCM and PPM Meeting Agenda

1. Attendees
2. Defects Outstanding
3. Certificates and Survey Reports
4. Certificates as per Annex P
5. Survey Reports per Annex R
6. Completed work forms
7. Financial
8. Contract
9. Emergent work
10. Invoicing
11. Completed signed maintenance work orders
12. Return of all drawings and manuals
13. Spares to be returned
14. Unused spares
15. Point of contact for warranty - including out of hours
16. The Authority Project Completion Certificate - Annex L
17. AOB

NB: The meeting minutes are to be recorded by the Supplier and emailed to the BFOO.



Annex T: Basin Trials Report Form

Please see attached document.



Annex U: Sea Trials Report Form

Please see attached document.

Annex V: Stern Drawing details

To be issued post contract award.

Annex W: Praxis Mega Guard Installation

Please see attached



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