CONTENTS

REPAIRS AND MAINTENANCE

This procedure defines the activities and controls necessary to ensure that vessels owned or managed by the Company are repaired and maintained in accordance with defined and authorised instructions.

1. RESPONSIBILITIES

1.1. Ship Manager

Is responsible for ensuring that ships allocated to him are maintained in a safe, efficient and fully operational condition. This pertains to statutory body requirements, budgetary requirements and at the same time meeting service requirements[1].

1.2. Master

Is responsible for ensuring that his ship is maintained in a safe seaworthy and fully operational condition, within flag and statutory requirements, and within budget while meeting service requirements. He is also responsible for the repair and maintenance of navigational aids and radio equipment.

1.3. Chief Engineer Officer

Is responsible for all structural, mechanical, electrical, hydraulic and pneumatic repairs and maintenance on board of his ship with the exception of the responsibilities allocated to the Chief Navigating Officer (see 1.4 below).

1.4. Chief Navigating Officer

Is responsible for overseeing the repair and maintenance of all LSA and FFA, cargo equipment, wires and sheaves on deck, steelwork preservation and painting including tanks, cofferdams and void spaces (except fuel and lube oil tanks). He is also responsible for identifying structural or mechanical repairs on deck and reporting the same to the Chief Engineer, who may delegate the task of supervision to him.

2. MAINTENANCE REQUIREMENTS

2.1. Each ship shall be maintained in a safe, seaworthy and responsible manner, in accordance with sound engineering practice and the Manufacturers technical instructions.

2.2. The relevant Statutory and Classification regulations shall conscientiously be complied with, and the ship and its machinery shall always be maintained fully within Class.

[1] W 36 / 2020

2.3. All repairs and maintenance shall be done on board by ships personnel except when time, manpower or operational constraints do not permit this, or the complexity of the work requires specialist attention.

2.4. Due care shall always be taken to ensure that repair and maintenance work is cost-effective and that expenses are tightly controlled without compromising safety or standards.

2.5. PMS shall be updated on EXCEL sheets provided by company for newly delivered vessels until such time as the PMS module in Mespas[2] is populated from the Makers manuals, provided by the yard on delivery. This normally takes up to 6 months from delivery of the vessel.[3]

3. PLANNED MAINTENANCE REQUIREMENTS

3.1. Maintenance Policy

The Company recognizes that the proper maintenance of all systems, structures and equipment is essential in ensuring the operational safety of the vessel and crew, and protection of the environment. An effective control process must be in place to deal with the increased risk to personnel, environment and property which may result from the failure, disarming, or deactivation of, critical alarm, critical control and shutdown systems.

Critical equipment should be determined in accordance with best practice which may be regarded as a combination of expert professional judgment and latest available information.

3.2. PMS Operating Procedure[4]

The planned maintenance system is installed on vessels as a software package loaded on the vessels server, the vessels PC's access the system via desktop short cuts. The system backs up to the head office server once every 3 hours depending on internet connectivity. Typically, the planned maintenance system is installed on Mespas[5].

3.3. Planned Maintenance is to be carried out as per the following requirements[6]:

- Statutory Regulations
- Classification Society Rules and Regulations
- Manufacturer's recommendations and instructions
- The appropriate industry Code and Standard
- The appropriate Company requirements (Critical Equipment Risk Assessment)

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[2] W 03 / 2024
[3] W 36 / 2020
[4] W 36 / 2020
[5] W 03 / 2024
[6] W 36 / 2020

The planned maintenance system is to be operated in accordance with the instructions issued by the manufacturers and the Chief Engineer is responsible for the implementation of the system, ensuring maintenance, tests and checks are carried out. The Chief Engineer is also responsible for the status and review of the system, and the correct and proper maintenance of records.

Any requested changes to the planned maintenance system by the Company will be relayed to the vessel. Such instructions are to be reflected in the planned maintenance system's database and thereafter confirmation of change reported to the Company. If there is a requirement to change the interval of a scheduled job written permission must be obtained from the Company to ensure commonality and agreement with the proposal. It is not uncommon for manufacturers to be contacted for guidance on extended time between overhauls or inspections and such dialogue is encouraged based on inspections / condition monitoring.

The addition / deletion of jobs is also something that requires control. Again, it is necessary to make a written proposal to the Company for review. Such reviews will be responded to in writing by the Company and distributed to sister vessels for action as necessary.

All changes to the job intervals or addition / deletion of jobs must also be recorded with supporting written communications. These will be internally reviewed and approved by Senior Management.

The Chief Engineer or any other crew member does not have authority to make changes to the Planned Maintenance System affecting the following without written approval from the Company:

a. Interval Changes.
b. Additional Components / Additional Meters.
c. Changes to Job Instructions.
d. Changes to Database Structure in any way.
e. Renumbering of Job Cards
f. Deletion of components or jobs within the system.
g. Re-allocation of jobs.
h. Changing the department of components.

If there is a requirement to reschedule jobs due to operational requirements then this must in the first instance be cleared by your respective Ship Manager. Once confirmation has been received, historical entries within the Planned Maintenance System must be entered with reasons behind the rescheduling of jobs. Under no circumstances are jobs within the PM system to be cancelled without prior written confirmation from your Ship Manager.

3.4. Re-scheduling of the Maintenance[7]:

The equipment maintenance is to be carried out as per the schedule provided in the Mespas[8] PMS. Jobs getting due within a month will be planned for maintenance in advance in order to avoid maintenance getting overdue. However, there may be some occasions when maintenance may not be carried out in time due to time constraint, ships schedules, or concurrent maintenance on other equally important equipment or lack of availability of spares/stores on board. In such cases Chief Engineer will change the scheduled job to a job order, then chooses RESCHEDULE, and it appears on the Ship Manager's notification for approval. At the same time the Chief Engineer should do the Risk Assessment and attach it to the new job order in place. Ship Manager will review the jobs which are to be re-scheduled.

Depending upon the criticality of the equipment, Ship Manager may re-schedule the maintenance date after discussion in weekly office meeting.

While approving the re-schedule of the jobs, following points shall be considered and suitable guidance shall be provided to Chief Engeer.

- Reviewing the risk assessment.
- Present performance of the equipment.
- Reducing interval of running inspection, entry into logbook for this inspection.
- Communication with manufacturer on extending the maintenance interval or running hours if any special attention to be paid.
- Whether ship requires off hire.

3.5. Critical Equipment[9]

Critical Equipment must be given priority over non-critical equipment. Critical Equipment is highlighted in the planned maintenance system under the "Tab" Components Criticality so that all staff involved in on-board maintenance can immediately recognise the equipment designation. A list of critical equipment on-board has been identified using the Equipment Risk Assessment in Appendix A. This list shall be reviewed on an annual basis and amended as deemed necessary.

3.5.1. Critical / Not Critical Equipment Risk Matrix

See Appendix A4[10]

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[7] W 36 / 2020
[8] W 03 / 2024
[9] W 36 / 2020
[10] W 36 / 2020

3.5.2. Critical Equipment Description[11]

Equipment Description	Minimum Stock of Spares Required	Risk Assessment Required
Emergency generator & switchboard	Yes	Yes
Fuel supply system	Yes	Yes
Main engine	Yes	Yes
Steering gear	No	Yes
ECDIS as primary navigation system	No	Yes
Emergency Fire pump	Yes	Yes
Fixed CO2 system	No	Yes
Quick closing valves	No	Yes
[12]Fire line and valves	No	Yes
Fire flaps and dampers	No	Yes
General alarm	No	Yes
Lifeboats & launching device	No	Yes
Rescue boat & launching device	No	Yes
Emergency air compressor	Yes	Yes
Fixed CO2 system for cargo holds	No	Yes

3.5.3. Critical Alarm Crucial for Operational Safety and Manoeuvrability[13]

Ship staff are to immediately notify the Chief Engineer and Master if any of the listed critical equipment as detailed in Table 3.5.2 above go into alarm or fails.

3.5.4. Routine Weekly Testing of Critical Equipment[14]

Only those personnel authorised by the Chief Engineer are to work on critical systems. For the purposes of weekly safety routine testing of certain systems designated as critical, to confirm the equipment is still in order, only the Chief Engineer permission is required. This is to be discussed in the daily work planner followed up with an RA and permit to work. For example: - Testing of the emergency air compressor/fire alarms and emergency generator. Any significant fault/deviations from a design set point found during routine testing of critical equipment must be reported to the Chief Engineer. Please note a detailed description of the testing done on critical equipment must be recorded in the PMS when closing a job. DO NOT simply state" Job done as per job description". The close out should follow the guidelines in the job description, any parameters not met should be reported to the Chief Engineer with immediate effect.

[11] W 36 / 2020
[12] W 41 / 2021 (Hyper Mist System removed)
[13] W 36 / 2020
[14] W 36 / 2020

For routine maintenance that will take less than 30 minutes, and such as cleaning the emergency fire pump strainer/ insulation testing of the electric motor, the authority of the Master or Chief Engineer is sufficient. This must be discussed in the daily work planner so that all are aware that the planned maintenance, this should be combined with an RA and permit to work. However, should the routine maintenance take more than 30 minutes to complete, the Master/Chief Engineer is to inform the Office and permission be obtained. A risk assessment and Permit to Work will be required by the Office as part of the approval process. (See Section 3.5.5). Upon completion of the planned maintenance of the critical equipment the equipment is to be tested, proven operational and the Office informed all back in order and functioning correctly.

The Master and Chief Engineer must however take note that if there is No Redundancy in the system then this rule does not apply, for example working on the Main Engine/Fire alarm System, if there is no back up whatsoever, any period that the system is in need of being taken temporarily out of service / alarms inhibited, the Company must be informed.

Critical systems operating parameters/set points as listed in the vessels “EO” lists/Manufacturer's manuals are not to be adjusted. If a change in parameters is required due to Service Letter from Manufacturer/Regulatory requirements this can only be affected after approval has been received from the Company and may only be adjusted by the Chief Engineer, any approved changes must be recorded on board within the relevant manuals along with a copy of the approval from Company and the document recommending the change.

3.5.5. Planned Maintenance of Critical Equipment[15]

None of the above critical systems, alarms/control systems may be by-passed, inhibited or taken out of service for more than 30 minutes without Company approval. Prior to carrying out any planned maintenance on critical equipment that requires the system to be shutdown, a Risk Assessment process must be completed along with a permit to work - HSE Manual 4.11.2. This is to be submitted/communicated for approval via email/telecommunication to the Company (Ship Manager) with the agreed shut down period not exceeding 8 hours. Should the work scope increase unexpectedly and the agreed shut down period will be exceeded the vessel is to conduct a meeting, review prevailing conditions and complete a further risk assessment and permit to work. The documentation is to be emailed in the Company/Ship Manager. Upon completion of the planned maintenance of the critical equipment the equipment is to be tested, proven operational and the Office informed all back in order and functioning correctly.

All Records pertaining to planned maintenance and/or repairs of critical systems, alarms, control and Shut-down systems, including temporary disarming or de-

[15] W 36 / 2020

activation shall be recorded in detail within Mespas[16] and in the Deck/Engine Logbooks as applicable.

3.5.6. Failure / Breakdown of Critical Equipment[17]

In the event of failure/breakdown of a critical system the following procedures must be followed as appropriate.

a. Notify the Master and Chief Engineer.

b. Chief Engineer / Master to inform the Company/Ship Manager via email / Telecommunication.

c. Carry out a risk assessment.

d. Agree on temporary measures to reduce risk and/or rectify the fault.

e. Agree an action plan to address the problems. The plan shall address: Alternative backup equipment / systems and modified operational procedure (if necessary) with authorization from Master & Chief Engineer.

f. Forward documentation such as RA, Permit to Work and remedial measures to the Company / Ship Manager.

g. Inform Flag State and Classification Society to obtain dispensation by the Ship Manager and / or Marine Superintendent[18].

h. In the possible event of the shut-down duration / repair period exceeding 8 hours, a further risk assessment to be carried out by ship-staff, to take into account changes in environmental conditions, crew fatigue or operational parameter.

i. Advise the Ship Manager when normal operations resumed.

j. If any down time or immobilization of the vessel is involved, the Ship Manager / Marine Superintendent must advise the Operations Manager, Fleet Manager and copy to Chief Engineer[19]. Approval for vessel immobilization for planned repairs must be authorized by the Fleet Manager[20] in collaboration with operations department.

k. Make appropriate entries in Mespas[21] as well as Deck/Engine Logbooks as applicable. These communications are to be retained for a period of at least twelve months.

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[16] W 03 / 2024
[17] W 36 / 2020
[18] W 09 / 2024
[19] W 09 / 2024
[20] W 09 / 2024
[21] W 03 / 2024

3.6. System Monitoring[22]

Monitoring of the planned maintenance system is to be carried out through the requirements of internal audit procedures.
In addition to the above requirements the Company will endeavour to complete an annual planned maintenance audit by IT Department. This audit will be completed by a competent planned maintenance engineer and results discussed on-board and the findings circulated within the Company.

The Ship Manager will review the effectiveness of the PMS during the ships technical inspection.

Before the weekly meeting in the Office, the Ship Manager will review the overdue items as recorded in Mespas[23] and report on any actions required.

4. ESSENTIAL SPARES[24]

The Ship Manager will determine a list of essential spares to be carried aboard the vessel. While these spares are not Critical, they will assist in ensuring the operational integrity of the ship is not unduly compromised.

These spares will be determined by a number of factors, which include:

- Reliability of components of some on board systems
- Type of cargo operations and availability of spares at those ports
- Type of vessel
- Lead time and availability of some components

Some items that may be considered for this list are extra:

- Crane Wires
- Grab Spares
- Thermocouples
- Hydraulic oils
- Generator spares
- Turbo Chargers
- Incinerator spares

[22] W 36 / 2020
[23] W 03 / 2024
[24] W 35 / 2018 (Entire Section)

5. DEFECT REPORTING

All persons are to report any defects noted aboard the vessel. These reports should be made to their Superior Officers for the attention of the Chief Engineer[25], and recorded in the Defects Book[26]. The Chief Engineer is responsible for administrating the Defect Book[27] and collating the Defect Management Form (FORM NUMBER 6.5.1)[28]

The ship staff will record minor defects in the company published Defect Book aboard to which all crew members should have access. For example, if there is a leaking tap which was fixed on the same day within 24 hours it can be recorded and closed in the Defect Book and there is no need to record this in Form 6.5.1.[29]

The Chief Engineer will use this Defect Book as a source document and will ensure all the defects aboard are recorded along with the proposed close out time. He will review all reported defects, and in conjunction with the Master, Chief Officer and himself transfer the unresolved defects from Defect Book to FORM NUMBER 6.5.1 and allocate the required resources to close out the defect. An unresolved defect is a defect that is not repaired in 24 hours.[30]

The Chief Engineer shall ensure the Defect Book is kept in a location where all crew can have access. However Chief Engineer shall ensure that the book is not made available to any shore authorities.[31]

On review the Ship Manager and Chief Engineer will discuss issues that:

- Need to be moved to Mespas[32]
- Need to be moved to the dry dock list.
- Need to be carried out by specialist Shore service or external contractors, (job card to be raised.)
- Need to be prioritised.
- Requires spares or stores[33]

The Defect Management Form will be endorsed “item removed to Mespas[34] or Drydock list” etc.[35]

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[25] W 36 / 2020
[26] W 35 / 2018
[27] W 36 / 2020
[28] W 35 / 2018
[29] W 35 / 2018
[30] W 35 / 2018
[31] W 35 / 2018
[32] W 03 / 2024
[33] W 35 / 2018
[34] W 03 / 2024
[35] W 35 / 2018

Once the issue is completely rectified it will be closed. The Ship Manager will then move the entry to the closed list.

The defect Management Form will be ready at all times (Sharepoint 6.5.1) and will be available to an Office Staff member inspecting the vessel. Form 6.5.1 is a planning document and is not to be handed to inspectors or auditors. Instructions page in the form 6.5.1 shall be read carefully for further details.[36]

This form will be discussed at the ships Daily Planning Meeting.[37]

The advantages of this form, which is a planning document, rather than a record, are:

- both the office and ship have access in “virtual real time”
- it requires input from both ship and shore which encourages discussion.
- it indicates job list and gives an indication of pressure points in the system.
- assists in organising services, requisitions and support.
- assists in indicating urgency of logistic support.
- assists in indicating staffing needs.
- assists in prioritising jobs.
- gives the ship manager a snap shot of the actual job load aboard.
- helps Ship Managers identify defect trends across sister vessels.
- assists with the Daily Work Plan aboard.
- in event of a Ship Manager handing the ship over the incoming Manager has all the information in a single source.
- will allow Technical Inspections to become more focused[38]

This document is not to be discussed with Inspectors, Auditors or any other third-party representatives.[39]

Any observation pointed out a third-party organisation (PSC, Charterers, Flag State, Class auditors, terminals etc), shall be captured in Mespas[40]. The Chief Engineer will transfer the ship defects to Form 6.5.1[41]

Critical Equipment defects must be addressed according to section 5 of this instruction.

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[36] W 35 / 2018
[37] W 35 / 2018
[38] W 35 / 2018
[39] W 35 / 2018
[40] W 03 / 2024
[41] W 35 / 2018

All defective equipment must be isolated, if possible removed, clearly labelled defective, and removed from service.

It is the responsibility of the Ship Manager to ensure that all defects identified are properly followed until completion of required repairs or other corrective action in a timely manner.

5.1. Definition[42]

Defect: Any machinery or equipment or structural member that has failed and impairs or may impair the safety, statutory compliance (SOLAS, MARPOL, LOAD LINE, MLC, etc), operational effectiveness, commercial, environmental performance, reliability of the vessel.

5.2. Procedure[43]

Drydock items, items requiring spares or items that require external assistance to repair shall be entered in Mespas[44] after discussion with Ship Manager.

The system shall be provided with as much information as possible on the Defect Management item, such as:

- Maker, type of equipment/machinery.
- Details of defects, symptoms, actions already taken to rectify & results.
- Spares needed and if they can be hand carried by technician.
- Whether any parts are to be landed for replacement, inspection or repair, including their size, weight, if any crane or barge was required.
- Any access work, removals, cutting of deck or shell, staging requirements, hot works.
- Copies of manual pages, drawings, or hand-drawn sketch, photographs.
- Line sketches of pipes to be repaired with flange sizes, material, pressure rating.
- Bolt sizes, PCD (pitch circle diameter), number of bolts, material, type, head type.
- Testing requirements, class certification needs, priming, heat treatment, calibration.
- Details of location by frame number, which hold, height, compartment, draught mark, strake.
- Preparatory cleaning works, cooling down, gas-freeing, sludge removal.

As appropriate the Ship Manager will assist the Chief Engineer to determine the best solution for the rectification and arrange spare parts and/or specialist contractor services.

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[42] W 36 / 2020
[43] W 36 / 2020
[44] W 03 / 2024

The Ship Manager shall ensure that the vessel is kept informed of details relating to the arrival of specialist contractors and/or delivery/uplift of spare parts, equipment, etc.

The Ship Manager is to monitor the progress of the corrective actions and should any defect or deficiency be of the magnitude that the commercial operation of the ship will be affected then it must be discussed with the Marine /General Manager for necessary action.

5.3. Statutory Defects and Reporting[45]

Where the nature of the damage, defect, or equipment failure could invalidate the conditions for which Class has been assigned, this must be reported to Class.

If the defect is /or is likely to invalidate any of the vessels statutory certificates, or seaworthiness then Classification society / flag state authority must be consulted and an appropriate exemption obtained.

In addition, prior to entry into port, advance notice must be given by the Master to the port authority/ harbour master of any defect affecting statutory certification even if repairs have been arranged in that port. The relevant local forms must be completed in conjunction with the agent.

The co-ordination of the reporting to Flag / Class should be carried out by the Ship Manager.

Any safety related defects identified should be rectified as soon as possible. Any resource that may be required may be communicated to the company to ensure early correction.

The Master will determine the severity of the defect and a risk assessment shall be carried out and necessary control measures to be implemented to safeguard the immediate risk exposure, if deemed necessary.

6. JOB CARDS

6.1. The Chief Engineer must submit a Job Card in Mespas[46] for all repair and maintenance jobs requiring assistance of shore contractors. The Chief Engineer shall first verify that the job cannot reasonably be done by ships personnel.

6.2. The Chief Navigating Officer shall notify the Chief Engineer of jobs on deck requiring the assistance of shore contractors. The Chief Engineer will verify the need for shore assistance and if required will submit a job card.

6.3. Job cards must be discussed with the Master prior to submission to the Ship Manager.

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[45] W 36 / 2020
[46] W 03 / 2024

6.4. The Master ensure that job cards are submitted to the Ship Manager for authorisation in sufficient time for the work to be arranged.

6.5. The Chief Engineer shall maintain a Defect List in Mespas[47], listing job cards submitted and a record of the status of the job.

6.6. A separate Dry Dock/Refit repair list shall be maintained for jobs that will be done during the vessels next dry dock or refit.

6.7. A job card shall be completed for each job providing details of the component, its location on board, details of the work to be performed including sizes, and services required.

7. REPAIR AUTHORISATION

7.1. All repair jobs that require the services of shore contractors require the authorisation of the Ship Manager (except emergency repairs, see 9.4[48] below). No deviation from the authorised job specification is permitted without the permission of the Ship Manager concerned.

7.2. The Ship Manager shall arrange the services of the shore contractors and will keep the Master and Chief Engineer advised of the arrangements.

7.3. The Ship Manager may at his discretion delegate to the Master the authority to arrange the repairs locally with the assistance of the ships Agents. The Master assisted by the Chief Engineer shall be responsible for ensuring that the repair work is successfully completed within the financial limits set by the Ship Manager. A quote must be obtained for the repair and the work clearly specified.

7.4. In the case of an emergency when the safety of the ship is jeopardized the Master may arrange for shore assistance to effect repairs. A quote should be obtained before commencing the job if time permits. An order number shall be obtained from the Ship Manager who is to be advised as soon as possible of the action taken and costs incurred.

7.5. Official order numbers for work to be performed can only be issued by the Ship Manager. This order number is to be quoted on all invoices submitted by subcontractors.

8. SAFETY DURING MAINTENANCE AND CONTRACTOR SAFETY

8.1. Reference should be made to the following:

a. Maintenance Safety Precautions as per CSWP

b. HSE Manual – Shipyard Safety Section 4.24

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[47] W 02 / 2024
[48] W 36 / 2020

8.2. Company's Permit to Work requirements shall be strictly adhered to throughout any maintenance periods aboard. Reference must be made to the relevant sections in the HSE Manual:

8.3. The Master is responsible for the overall safety of his ship and of everyone on board including shore contractors and shall ensure that all reasonable steps and precautions have been taken to protect them. He shall make it his duty to personally inspect work areas daily during refit or dry dock periods and if the level of repair and maintenance work warrants it.

8.4. During repair, refit or dry dock the Master should ensure compliance with the requirements of the relevant local and Flag State laws, rules and regulations governing health and safety, and in particular regulations governing Enclosed Space Entry, Hot Work and Immobilisation. The Master should seek advice from the local ships Agents or the P&I Correspondent taking care to ensure that all reasonable precautions have been taken to protect shore contractors employed on board his ship.

8.5. The Chief Engineer and Chief Navigating Officer are responsible for on-site safety for the jobs under their jurisdiction and shall ensure that the work area is made safe. The Ship Manager is responsible for the provision and control of the services of shore contractors and may at his discretion delegate this to the Master.

8.6. The Master shall ensure that repairs and maintenance requirements are coordinated and planned to minimise off hire and overtime work. All necessary support services such as an Industrial Chemist for the issue of a gas free certificate, scaffolding or cleaning services should be arranged well in advance to prevent any delays to the job.

8.7. The Master and/or the Chief Engineer shall arrange the services of a Classification surveyor when necessary and liaise closely with him to ensure no delays ensue.

8.8. The Chief Engineer is responsible for commencing any repair or maintenance work and maintained in a safe condition throughout the work period. Particular attention shall be given to isolating the job/area from volatile liquids and electric current, hot work procedures, entry into and work in enclosed spaces, good housekeeping, fire watch and the provision of good lighting and safe scaffold if needed.

8.9. Contractors and riding squads must complete the necessary Indemnity Declarations when boarding or sailing on the vessel.[49]

[49] W 36 / 2020

9. REPAIR SUPERVISION

9.1. The supervision of all repairs and maintenance except navigational aids, radio gear and those repair and maintenance responsibilities directly assigned to the Chief Navigating Officer such as the LSA and FFA etc. will be the Chief Engineer's responsibility[50].

9.2. The Chief Engineer will keep[51] the Master fully briefed and up to date on the progress of all repair and maintenance work.

9.3. The Chief Engineer will ensure that spares are readily available, correct for the job, and the right size.

9.4. The Chief Engineer will encourage[52] the use of instruction and technical information sheets. Photocopies of the instructions should be made available to shore contractors and ships staff.

9.5. The Chief Engineer will ensure[53] that machinery calibrations are recorded on every occasion that major components are opened. These records will be entered into Mespas[54].

9.6. The Chief Engineer shall ensure that[55] the job is inspected on completion and if necessary, run up and tested by a ship's officer to his satisfaction, prior to acceptance of the job. The completed item must be struck from the repair list, the job card signed off and the Ship Manager advised accordingly.

9.7. The Chief Engineer shall ensure[56] that a record of all repair and maintenance work is recorded fully in Mespas[57].

9.8. The Chief Navigating Officer is expected to assist the Chief Engineer Officer with the supervision of repairs and maintenance on deck (steelwork, hatch covers, anchors and cables, cargo gear and accommodation repairs etc.).

9.9. NOx Technical file and CMS to be updated at the same time[58].

10. EQUIPMENT UNDER WARRANTY

10.1. Defects noted on equipment under warranty are to be documented and passed to the Ship Manager for action by the Contractor or Warranty holder.

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[50] W 36 / 2020
[51] W 36 / 2020
[52] W 36 / 2020
[53] W 36 / 2020
[54] W 03 / 2024
[55] W 36 / 2020
[56] W 36 / 2020
[57] W 03 / 2024
[58] W 36 / 2020

10.2. The Master and Chief Engineer must familiarise themselves with, and adhere to warranty requirements, notification terms and procedures which may be imposed by equipment suppliers or the ship building yard. It is not uncommon for shipyards to insist on a set procedure for notice of and follow up action on defects while the ship is under guarantee. If this procedure is not followed it could invalidate the guarantee.

10.3. Ship's staff shall not attempt to carry out repairs to equipment under warranty without prior authority of the Ship Manager. Under exceptional circumstances when the safety of the ship, the crew or cargo is affected they may effect repairs but the Ship Manager must be advised as soon as possible. This excludes routine servicing work as set out in the relevant operator's manual.

10.4. The Master and Chief Navigating Officer are to familiarise themselves with the terms, conditions and obligations contained in the guarantee of the paint coatings, and to keep accurate records in a dedicated log of any event or circumstance likely to be of interest to the paint suppliers in terms of guarantee.

11. REPAIRS CARRIED OUT ASHORE

11.1. When removing items of equipment for repair ashore the site from which the equipment is removed must be made safe. Power must be isolated from all electrical leads and terminals, and precautions taken to ensure that it is kept isolated until the equipment is reinstalled. Pipeline connections must be blanked off or isolating valves closed and sealed. If necessary, the area should be roped off to prevent access and possible injury.

Goods Landed Advice Form 6.5.4 shall be completed, with a copy filed aboard in Sharepoint.[59]

11.2. All items of equipment sent ashore for repair must be labelled as follows.

a. The Vessels name.
b. The Components identity e.g. Port Main Engine No 3 left bank unit, forward exhaust valve.
c. Date landed.
d. Job number.
e. Details of repairs or modifications to be performed.
f. Signature of responsible Officer with a Ships Stamp.

11.3. All labels are to be of hard card and securely fastened to the piece of equipment to which it refers.

[59] W 36 / 2020

11.4. In the case of electrical equipment, the following procedures are to be followed.

a. All leads and terminals shall be clearly and securely marked before being disconnected so as to leave no doubt as to which terminal a lead is to be reconnected on return of the equipment.

b. All loose leads must be secured to prevent damage during transport and repair.

c. All covers, fans, switches etc that have been taken off to assist removal of the component must be replaced securely before being sent ashore.

d. All electrical components sent ashore must be adequately protected against the weather and accidental mechanical damage during transport.

11.5. The Chief Engineer shall avail himself or his staff every opportunity to visit the repair workshop ashore to sight the repair work and assist the Ship Manager with the supervision of it.

12. EQUIPMENT NO LONGER ACTIVE[60]

Equipment no longer active (e.g., obsolete or having been replaced) must be clearly and permanently marked and isolated, or removed if it presents a hazard or could adversely affect the safe operation of the vessel. The equipment is to be appropriately tagged 'DO NOT OPERATE' or 'WITHDRAWN EQUIPMENT'.

13. CONTROL SYSTEMS SOFTWARE MAINTENANCE[61]

A number of items of equipment in the Engine room contain software and programmed PCB boards, to optimise the efficiency and operation of the equipment.

These range from Engine control systems, Lubricators Governors, OWS, Purifiers, Computers, and BWT plants etc.

Company practice is to have equipment service agents attend the vessel every drydock (on a 2.5 year cycle), to ensure optimal functioning of the equipment and update of software.

Any software issued by equipment manufacturers out of this cycle, and deemed necessary to optimise operation of equipment, may be uploaded. This updating will be managed by the Ship Manager, in consultation with the IT Manager.

No software may be downloaded until it is established by IT, that it is secure and not compromised. This may involve software being loaded remotely by IT, using temporary connections to equipment.

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[60] W 36 / 2020
[61] W 05 / 2022

Software may NOT be downloaded from the internet or USB sticks without IT departments knowledge or permission.

Any corruption or malfunctioning of any software will be reported to the Ship Manager immediately and recorded of the defects list (Form 6.5.1).

Software update or installation will not be attempted with any disc, or USB's carried aboard, until these sources are verified to be uncompromised.

The Ship Manager will manage a process of installing the software in consultation with the IT Manager.

The vessel will maintain the official company form indicating what equipment has software in the engine room. This form will indicate the version of software (if information is available), and any upgrades undertaken with version numbers.

Any software for engine room equipment that is kept aboard (Discs or USB), is to be kept in the custody of the Chief Engineer.