CONTENTS

MISCELLANEOUS PROCEDURES AND PRACTICES

The following Technical Procedures apply to all vessels owned or managed by the Company.

1. PUMPING OF TANKS

In the interests of safety and protection of the environment no pumping is to take place either at sea or in port without first notifying the Duty Deck Officer and receiving confirmation that it is safe and convenient to proceed. Cognisance must be taken of the procedures for the “Control of Operational Discharges of Oil” contained in the HSE Manual Section 6.2.

To avoid exposure of tank structures and related piping to unnecessary strain when pumping, the air vent and/or overflow pipes must always be open to the atmosphere and when filling, tanks are not to be overflowed. Instead, the control should be by means of sounding.

The Chief Engineer Officer is to ensure that all Fuel-, Lubricating oil-, drain-, sump-, and feed tanks as well as cofferdams, void spaces and bilges in the engine room are regularly sounded and soundings appropriately recorded.

Chief Engineer Officers are to ensure that all officers under their direction are fully aware of the risk of damage which may be caused to the ships structure, and that care is taken before and during pumping of tanks.

NOTE: Depending upon the speed of pumping and the area of overflow or air vent pipe serving the tank being pumped, so will the pressure on the tank structure vary independently of the static head. The potential force exerted on a tank by a pump is considerable and is not readily appreciated by all operators.

Damage can just as easily be caused by vacuum when drawing from a tank, as by overpressure when filling it.

2. OIL RECORD BOOK

It is extremely important that the Oil Record Book is maintained correctly and is a true reflection of the handling and disposal of oils, oily residues, engine room bilge water and water from fuel oil tanks. Reference must be made to the HSE Manual, Section 6.6 and to MARPOL, Annex I, Appendix III, “Oil Record Book Part 1”.

The Chief Engineer is required to carefully verify the entries in the Oil Record Book and ensure that they are correct. The Authorities are known to impose stiff penalties and lay criminal charges if they find Oil Record Book entries have been falsified or are incorrect.

3. RECORDING ABNORMAL OPERATING CONDITIONS

It is extremely important to ensure that when any item associated with the machinery spaces is not in a normal or safe operational condition, is clearly noted on the Engine Room notice board and the details entered in the Logbook. In addition, a tag-out or lock-out should be applied to prevent the use of the equipment. Reference should be made to the HSE Manual, Section 4.11.12, “Safe Working Practices; Tag-out/Lock-out System”.

4. OXY-ACETYLENE EQUIPMENT - ADDITIONAL SAFETY PROTECTION

It is Company policy to have flashback arrestors are installed in the oxygen and acetylene regulators in use on board and that they are maintained in a safe, working condition. Independent non-return check valves must be fitted in both hoses at their point of connection with the torch. The system must be serviced annually, including pressure testing the hard piped components to the engine room. A visual inspection is to be carried out by the person operating the equipment prior to use. Any unsafe equipment is to be removed from the system and landed for repair or destroyed and landed as garbage.[1]

5. OILY MIST DETECTORS

Chief Engineer Officers shall ensure that Oily Mist Detectors are checked daily during operation, and that they are serviced annually.

The value of these devices has been amply demonstrated when the Oily Mist Alarms have sounded and Main Engines shut down timeously. Inspection revealed serious piston ring and bearing failure which, if the mist detector had not operated, would most certainly have resulted in a crankcase detonation and severe engine damage.

6. MACHINERY FAIL SAFE DEVICES

If the facility does not already exist, Chief Engineer Officers shall ensure a fail safe device activating system is fitted to the Main and auxiliary engines. This is required in order to demonstrate to Surveyors / ship's personnel the ability of a machine to shut down on overspeed, low lubrication pressure and high temperature.

The system decided upon is to be submitted to the relevant Ship Manager for final approval before fitting.

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7. CHIEF ENGINEERS' STATION WHILE MANOEUVRING

The station the Chief Engineer Officer is to occupy during any manoeuvring, or close-quarter situation shall be in the engine room, at all times unless he has dedicated this responsibility to the 2EO due to work rest hours.

During this period in the engine room the Chief Engineer / Second Engineer Officer is to personally ensure that the plant is operating normally, and that the engine/propulsion mechanism promptly and correctly responds to signals from the bridge. If the Chief Engineer / Second Engineer Officer is not at the controls himself, he must be so positioned in the engine room that he will immediately inform himself of any manoeuvring malfunction and react appropriately with the minimum of delay.

This instruction holds whether or not the propulsion system is bridge-controlled.

8. USE OF DETERGENTS IN THE ENGINEROOM

See HSE Manual, Section 6.7.

9. ENERGY CONSERVATION

See HSE Manual Section 6.10.

10. TREATMENT OF SEWAGE

See HSE Manual Section 6.11

11. CONTROL OF EMMISSIONS FROM SHIPS

See HSE Manual Section 6.12.

12. ORDERING AND CARE OF SPARE PARTS

Chief Engineer Officers shall ensure the following.

12.1. Spares are ordered in sufficient time to minimise costly air freight charges. Delivery instructions shall be inserted on the spares Mespas[2] requisition.

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12.2. Manufacturers spares manual is studied carefully and the full and correct description and number of the part is inserted clearly on the spares Mespas[3] requisition.

12.3. Care is taken to ensure that sufficient spares are ordered which are necessary to complete a job, and that no unnecessary spares are ordered.

12.4. Discretion must be used in ordering of spares from manufacturers spare parts manuals to ensure that expensive parts are not ordered when generic parts are available (e.g. ball or roller bearings).

12.5. Spare parts must always be properly protected and stowed to avoid damage or deterioration while being stored. All spares removed from safe stowage positions must be returned to such stowage if not used.

13. CHIEF ENGINEERS GUIDELINES FOR UMS OPERATIONS

The Chief Engineer's Instructions are to take the form of a **written procedure** covering all aspects of Unmanned Machinery Operations and included in the Onboard Procedures Manual within the Safety Management System.

This procedure should include, but is not restricted to:

- A definition of the normal period during which the Machinery Space should be unmanned.
- A checklist to be used as a tool in ensuring, as far as possible:
- Comprehensive coverage during the check
- Ease of understanding of the pre-UMS procedures
- Consistent quality of checks.
- Instructions regarding:
- Procedures for changing from manned to unmanned condition.
- Safety precautions to be taken in the event of an alarm sounding, e.g. informing the Bridge, informing the Chief Engineer etc.
- Instructions regarding a Night Checking period
- The number and extent of such entries to be made in the Engine Room Logbook as is deemed necessary for the class of the vessel.
- The designated basic route, with reference to each space or area to be visited by the Duty Engineer when carrying out pre-UMS checks in accordance with a checklist.
- A reference to each item on the basic route to be checked.
- A reference to the Chief Engineer's Night Order Book.

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The above-mentioned Chief Engineer's Standing Instructions regarding UMS Operations are to be reviewed by each Chief Engineer on joining the vessel whether for the first or subsequent time, and also reviewed by the Shipboard Management Team at least twice each year.

Duty engineers that are carrying out final evening checks during unattended periods should, inform the bridge prior to entry, then activate the dead man alarm upon entry and advise the bridge once he has returned safely back to the accommodation. The dead man alarm is set for 15 minutes intervals once activated.

When responding to an alarm within the machinery space, the dead man alarm will be automatically activated and there is no requirement for the duty engineer to call the bridge prior entry. He should however advise the bridge once he is safely out of the machinery space. Should the response to the alarm require extended work to be carried out, a second person is to be summoned to the engine room and status of the machinery space changed to manned.

During UMS operations, except for the duty engineer no other person should enter the engine room during unattended periods.

OOW to make suitable entries in the deck log to record times of entry and when machinery space is clear of personal.

14. CHIEF ENGINEERS GUIDELINES ON STANDING ORDERS FORMAT

A Night Order Book is to be used by the Chief Engineer to give those extra orders or instructions for which a written record to Engineer Officers on watch or on duty in UMS operations is desirable. Any standing order additional to Company's Standing Orders that the Chief Engineer may want to be observed, are to be written on a page provided for this purpose at the beginning of the book. These additional orders are to be dated and signed. When a Chief Engineer is relieved, the new Chief Engineer must, at the time of relieving, either write in his acceptance of any additional standing orders and date and sign this acceptance or remove the additional standing orders from the book. The relieving Chief Engineer may substitute his own additional standing orders, dated and signed, at any time.

The following are typical examples of the orders, of limited duration, to be put into writing instructions to subordinates regarding:

- Machinery to be made ready for sea.
- Special instructions related to the Chief or Second Engineer's special interests; viz to inform him in certain specific circumstances.
- Attention to be paid to particular and unusual safety aspects.
- Anything of significant importance to warrant instant attention etc.
- Specific work to be progressed and/or completed to meet the Second Engineer's instructions.

- Specific circumstances which call for abnormal machinery operation to meet certain circumstances e.g. machinery out of action for overhaul or repair which reduces stand/by capacity.
- Known defects affecting the operation of the plant in accordance with the ship's requirement, e.g. known limits on exhaust temperatures on the main engine which must not be exceeded; known defects in the alarms systems etc.
- Specific operational changes to be made to meet the Second Engineer's future needs for maintenance, e.g. shutting-down plant to enable it to cool prior to reaching port.
- Specific operational arrangements of systems and valves to conform to the ship's policy regarding optimum running efficiency.

Although reference is made above to "Night Order Book" these books shall cover periods **night or day** when the Senior Officers are unlikely to be, or need not be, in direct charge of operations.

The orders to be written are in general those of a relatively transitory nature, which formerly would have been written up on the machinery Control Room whiteboard, i.e. those for the immediate 24 hours or the voyage.

The Engineer's Night Order Book referred to above is to be kept adjacent to the Machinery Control position so that instant references can be made to it by Watchkeepers or Duty Officers. After writing the instructions the Chief Engineer must pass the Book to the Watchkeeping or Duty Engineer(s) who must sign it, acknowledging receipt and understanding of the contents, and then returning it to the Control position. At the end of the Watchkeeping or Duty Engineer(s) Officer's Duty period, signing of the Book by the relieving Officer(s) is to be treated as an essential part of the handover of responsibilities.

If other Officers are to be involved in specific Night Orders such as bunkering instructions, control of shore labour, etc., then the Chief Engineer or Duty Engineer must also ensure that these Officers sign the Book before the duty concerned is started. Where orders in these books affect or have a related interest to other Departments e.g. Deck, Catering, etc., the appropriate Officers in the latter Departments are to be informed accordingly.

15. FUEL FOR EMERGENCY EQUIPMENT[4]

LSA Code 4.4.6.2 on Lifeboat propulsion requires: “The engine starting systems and starting aids shall start the engine at an ambient temperature of -15°C within 2 min of commencing the start procedure unless, in the opinion of the Administration having regard to the particular voyages in which the ship carrying the lifeboat is constantly engaged, a different temperature is appropriate.”

SOLAS II-1, Reg.44 on starting arrangements for emergency generating sets requires: ‘’Emergency generating sets shall be capable of being readily started in the cold conditions at a

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temperature of 0°C. If this is impracticable, or if lower temperatures are likely to be encountered, provision acceptable to the Administration shall be made for the maintenance of heating arrangements, to ensure ready starting of the generating sets."

Marine gas oil (MGO grade DMA) is used on board for various purposes and is not to be used to fill up the storage tanks on emergency equipment. DMA grades do not have the necessary specification for long-term storage nor cold-flow properties for use in emergency equipment. One of these properties is the Cloud Point and is the temperature at which wax or other solid substances begins to separate from the fuel, which in turn can lead to clogging of filters and fuel pipes and eventually to fuel starvation and engine stoppage.

The ISO 8217 fuel standard DMX grade, which is specifically intended for use in emergency equipment, DMX fuel distillates have a cold flow properties particularly low Pour Point, the lowest temperature at which the fuel will continue to flow and is the only grade in the ISO 8217 standard with a Cloud Point specification and which is suitable for long-term storage.

When ordering distillates for the use in emergency equipment (Lifeboat, rescue boat, emergency generator), specify distillate **fuel grade DMX and sulphur content of less than 0.1% m/m** usable in all areas. Also refer the maker's requirement for the fuel, if it is different inform your Ship Manager before ordering the fuel.