

LAY-UP SIMPLIFIED GUIDELINES

CONTENTS

1	INTRODUCTION.....	1	3	PRESERVATION	3
2	SAFETY	1	3.1	LAY-UP PRESERVATION DECLARATION.....	3
2.1	LAY-UP DECLARATION	1	3.2	GENERAL RECOMMENDATIONS	3
2.2	LAY-UP SITE	1	3.3	LAY-UP ENVIRONMENT	3
2.3	MOORING ARRANGEMENTS.....	1	3.4	LAY-UP PLAN AND LOG	3
2.4	BALLASTING.....	2	4	RE-COMMISSIONING.....	3
2.5	POWER AVAILABILITY	2	4.1	GENERAL	3
2.6	SAFETY PRECAUTIONS	2	4.2	PRACTICAL PROCEDURES.....	3
2.6.1	<i>Manning.....</i>	<i>2</i>	4.2.1	<i>Hull.....</i>	<i>3</i>
2.6.2	<i>Protection against explosions and fire</i>	<i>2</i>	4.2.2	<i>Safety equipment.....</i>	<i>3</i>
2.6.3	<i>Fire detection and fire fighting arrangement.....</i>	<i>2</i>	4.2.3	<i>Machinery</i>	<i>3</i>
2.6.4	<i>Precautions against flooding.....</i>	<i>2</i>	4.2.4	<i>Boilers</i>	<i>3</i>
2.6.5	<i>Communication</i>	<i>2</i>	4.2.5	<i>Main engines</i>	<i>4</i>
2.6.6	<i>Navigation lights and fog signalling system.....</i>	<i>2</i>	4.2.6	<i>Electrical equipment</i>	<i>4</i>
2.6.7	<i>Lifesaving equipment</i>	<i>2</i>	4.2.7	<i>Navigation.....</i>	<i>4</i>
2.6.8	<i>Emergency contingency plan.....</i>	<i>2</i>	4.2.8	<i>Spare parts</i>	<i>4</i>
2.7	ANTI-POLLUTION MEASURES	2	4.2.9	<i>Testing.....</i>	<i>4</i>
2.8	SECURITY	3	4.2.10	<i>Antifouling coating system.....</i>	<i>4</i>

1 INTRODUCTION

This Guideline is an outline of recommendations regarding safety, preservation and re-commissioning of laid up ships.

2 SAFETY

2.1 Lay-up Declaration

A Lay-up Declaration shall be obtained from the ship's classification society covering as a minimum the following:

- the ship is safely moored with periodical mooring watch, and emergency operation of mooring winches available at short notice
- navigation lights, fire and bilge alarms are in operation
- fire extinguishing and bilge systems are operable on short notice by competent personnel
- safety arrangements for personnel on board, if any, are in place.

2.2 Lay-Up site

The lay-up site should be well sheltered from heavy wind, strong current and swell. The site should not be in tropical cyclone areas, unless sufficient tug assistance will be readily available, and there is a well established weather forecast service for the area.

The seabed characteristics should be such as to provide adequate anchor holding power if anchors are to be used.

The water depth on the site should give a sufficient clearance between seabed and vessel's keel, including the lay-up initial position as well as the area in which the vessel or block of vessels may be moving due to environmental forces.

2.3 Mooring Arrangements

The mooring arrangement shall be able to maintain a safe mooring of the vessel, or block of vessels. Vessels in lay-up position should be able to withstand wind loads from wind velocity normally 30 m/s, acting 90° and 45° to the vessel's centreline, without getting vertical forces on anchors, or unacceptable loads on shore moorings. In closed harbours,

and for vessels berthed quayside, lesser wind loads may be used if based on documented weather statistics.

The effect of current speed and directions should be considered. Normally, current of 2 knots should be used for evaluation.

2.4 Ballasting

The vessel should be ballasted in order to reduce exposure to wind forces, normally 30% to 50% of the loaded draught.

2.5 Power availability

Power for operation of navigation lights, fire and bilge alarms, and fire extinguishing and bilge systems is to be available. This may be arranged by the use of a portable diesel generator set mounted on deck.

Adequate power for operation of windlasses and mooring winches should be available. If steam-driven, the anchor windlass and any necessary mooring winches should be fitted with emergency air connections, and sufficient air capacity should be available for their operation. If electric, an emergency source of power should be available for their operation.

2.6 Safety Precautions

2.6.1 Manning

Qualified personnel shall be available in order to maintain full-time fire, leakage, moorings and security watch of the vessel, and shall be capable of operating the related equipment.

2.6.2 Protection against explosions and fire

Fire sources should be removed or minimized as far as practical.

All cargo tanks, pump rooms, cofferdams and pipelines should be clean and gas concentration of hydro-carbons is not to exceed 0.40 of the lower flammable limit (LFL).

Hot work should be carried out only with a valid hot work certificate and appropriate safety precautions in place.

Any temporary installations like space heaters, driers or heaters for electrical

equipment, stores etc. should be specially considered with respect to fire hazard.

2.6.3 Fire detection and fire fighting arrangement

The fire alarm system shall be kept in operation during lay-up. It should be arranged in such a way that it is capable of alerting the crew or watch personnel.

2.6.4 Precautions against flooding

All overboard valves not in use and all sea inlet valves not in use should be closed.

Level and bilge alarms are to be kept in operation.

Bilge lines to holds, pump rooms, cofferdams and engine room to be kept ready for use. Sufficient electric power should be available for the bilge pump.

2.6.5 Communication

Reliable means of 24 hours communication should be available for immediate contact for local assistance or rescue facilities.

2.6.6 Navigation lights and fog signalling system

Anchor lights, and if necessary, additional position markings, e.g. lights marking the bow and stern, should be well maintained.

Fog signalling system should be kept readily available.

2.6.7 Lifesaving equipment

Lifesaving equipment and distress signals appropriate for the lay-up site and the total complement on board should be kept available..

2.6.8 Emergency contingency plan

An emergency contingency plan should be available.

2.7 Anti-pollution measures

As far as possible a zero discharge policy should be adhered to. If laid up near populated areas care should be taken to keep noise and visual disturbance to a minimum.

2.8 Security

Means to prevent unauthorized access to the ship should be established. Doors and openings should be kept locked, bearing in mind emergency escape possibilities for the persons onboard.

Regular watch-keeping routines, reflecting the security situation at the lay-up site should be established.

3 PRESERVATION

3.1 Lay-up Preservation Declaration

A Lay-up Preservation Declaration should be obtained from the ship's classification society stating that the ship with machinery and equipment has been properly preserved.

3.2 General recommendations

It is encouraged to seek manufacturer's recommendations for preservation of specific equipment and machinery.

It is recommended to protect all spaces containing machinery and sensitive equipment by the use of a dehumidified atmosphere with a relative humidity below 50%.

This is particularly important for spaces containing sensitive electronic equipment. For such equipment additional protection by the use of vapour phase corrosion inhibitors or similar is recommended.

3.3 Lay-up environment

Preservation measures should in general reflect the environmental conditions at the lay-up site. If laid-up in a location that may be subject to sub-zero temperatures, measures to prevent damages due to freezing should be taken.

3.4 Lay-up plan and log

A lay-up plan outlining the preservation and maintenance routines during the lay-up period should be available. All preservation actions should be logged. The log should include required actions at re-commissioning for each item.

A log of equipment and spares removed from the vessel should be kept.

4 RE-COMMISSIONING

4.1 General

In general both the length of the lay-up and the preservation and maintenance carried out during the lay-up have great impact on the required extent of re-commissioning work.

4.2 Practical procedures

All temporary arrangements or installations in connection with the lay-up should be removed, such as temporary drying, heating and ventilation systems as well as locking of valves or temporary anode installations.

Necessary consideration should be given to protective oils or inhibitors applied; that they are either removed or that it is confirmed that they will not have harmful effects if remaining in the systems.

4.2.1 Hull

If the vessel has been laid-up for more than 12 months the submerged hull should be checked by a diver. The sea chests should either be confirmed free from excessive marine fouling, or such fouling should be removed.

4.2.2 Safety equipment

All equipment should be checked to the satisfaction of relevant authorities.

4.2.3 Machinery

Samples of lube oil should be submitted for full analysis.

All systems should be checked for completeness and sufficient operation.

Representative samples of all fuel oils kept on board during lay up (residual and distillates) should be taken and thoroughly analyzed prior to use in diesel engines.

4.2.4 Boilers

All burners should be dismantled and cleaned. Fuel oil should be circulated through the oil burning system.

All safety measurers and emergency shut-off should be tested.

Care should be taken to proceed slowly when raising steam production.

4.2.5 *Main engines*

If rust-prevented oil has been used, this should be removed in accordance with supplier's recommendations.

A complete survey of one cylinder unit with gear as well as two main bearings should be carried out to check condition of contact surfaces.

Fuel valves should be cleaned and adjusted and the fuel system checked for leakage.

4.2.6 *Electrical equipment*

All circuits should be checked for insulation resistance to earth.

All electrical cables and equipment should be examined.

Overload trips of all generator breakers should be checked for satisfactory operation.

4.2.7 *Navigation*

All navigation equipment should be verified to be in good order.

All required charts and publications should be up to date.

4.2.8 *Spare parts*

Spare parts removed from the vessel during the lay-up period should be replenished.

4.2.9 *Testing*

Testing should include at least the following equipment:

- Main engine safety alarms
- Engine should be run ahead and astern by engine room and bridge controls, incl. testing of shut-down and slow-down functions
- Aux. engines with connected automation equipment
- All pumping, pneumatic and hydraulic systems
- All alarms covering ME, auxiliaries with steering gear

- Remote operation of fuel oil and lube oil, pumps and valves
- Cargo and ballast pumps
- Bilge pumping systems
- All communication systems
- Steering gear, including emergency operation
- All deck machinery and equipment
- All navigation and sounding lights and signals.

4.2.10 *Antifouling coating system*

All ships will experience fouling during lay-up. The extent of the fouling is dependent on time, location and duration among other factors. Hence there can be a need to clean the hull prior to re-commissioning the ship.