

Safety Management Manual

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5: Planned Maintenance Procedure

5.1. PLANNED MAINTENANCE SCHEDULE (PMS)

5.1.1. Establishment basis for PMS

- 1. Object machinery of PMS shall include the object machinery of C.M.S.
- 2. In case of not object machinery of C.M.S (Propeller, hull, nautical and communication equipments), they shall be maintained on time to class survey. But, when abnormality found on routine inspection or when the special cases (class survey for accident, incident etc., after voyage rough seas)
- 3. Shipboard Dept. Manager should establish "Maintenance Plan Table" with maintenance Interval considering to the Internal Maker's Instructions in principle, but priority apply the ship's present conditions, Age, Compulsory rules and regulations, class rules, etc.
- 4. The "Maintenance Plan Table" shall be describe inspection item each machinery and establish the maintenance Interval.

5.1.2. Important equipment and technical system

- 1. Master shall identify with reference to the following basis and mark "*" on "Maintenance Plan Table" for equipments and technical systems the sudden operational failure of which may result in hazardous situations.
 - 1) Type of vessel and change of operating specification for ship.
 - 2) Equipments and technical systems which are troubled continuously, repeatedly.
 - 3) Necessity of monitoring and confirmation of performing the maintenance accurately.
- 2. Minimum equipments and technical systems which are adopted on the above ".1" shall include the folio wings.
 - 1) Main engine & it's starting system
 - 2) Generating engine & it's starting system
 - 3) Safety device for M/E & G/E (Alarm and Emergency stop/shut down system)
 - 4) Essential nautical equipments (Gyro, Radar)
 - 5) Windlass, capstan and it's driving system
 - 6) The equipment for Testing before arrival/departure (Emergency



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steering, Emergency G/E, Emergency fire pump, Telegraph)

- 7) Safety device and system (Fire detector, Gas detector)
- 8) Steering gear and it's driving system
- 3. Master should apply all or partial among the method as follows which may improve the confidence for the equipment and technical system of above .2 , so as to operate emergency or alternative equipments immediately to prepare sudden accidents or troubles.
 - 1) Installation of spare machinery in addition to the regulations required for M/E TERMINATION TO THE REGION OF THE PROPERTY O
 - 2) Periodical testing for Remote control and change over system for Engine side
 - 3) Plan and perform planned maintenance for relevant machinery/system (including change-over system & for stand by equipment)
 - 4) Periodical testing for Emergency G/E SYSTEM, checking for emergency air Compressor of maintenance condition
 - 5) Control the Gauge of Temp., Pressure in Machinery side
 - 6) Prepare the Table of TROUBEE SHOOTING
 - 7) Posting of PIPING DIAGRAM
 - 8) Calibration of inspection, measuring and test equipment.
 - 9) In case that cannot repair within planned maintenance term, request support maintenance and the spare part to be needed shall be prepared in advance

5.2. ESTABLISH THE PEANNED MAINTAINED TABEE

- 1. Officer in charge of the machinery should establish "Maintenance Plan Table" with latest maintained records after considering ship's maker's instructions, present conditions, age, compulsory rules and regulations, class survey, etc.
- 2. C/E shall review "Maintenance Plan Table" prepared and also review satisfactions with maintaining of capacity and extension of life for maintenance items and maintenance interval.
- 3. C/E shall report "Maintenance Plan Table" reviewed will be performed with Master's approval to The head of Technical Division.



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5.3. PERFORM THE PEANNED MAINTENANCE

- 1. Perform the maintenance according to "Maintenance Plan Table" and if there isn't any guide, it will be followed the maker's instruction book.
- 2. Maintenance should perform according to maintenance interval recommended and it may be over 20% of maintenance interval, if unavoidable (at sea, operation schedule, accident, class survey). However, machinery that the sudden operational failure of which may result in hazardous situations shall be maintained first of all.
- 3. Master can request any support matters and any maintenance guidance to be required for performing maintenance plan to the superintendent.
- 4. In case that cannot maintain on board, it shall be requested to shore support maintenance when establishing a quarterly "Maintenance Plan"
- 5. The keeping of maintenance history should be written and keep by the engineer of P.I.C. after chief engineer's approval.

5.4. VERIFICATION OF THE PLANNED MAINTENANCE

- 1. The maintained result of planned maintenance shall be verified and shall be reflected on next maintenance plan.
- 2. Superintendent should confirm onboard ship in spot whether planned maintenance of each ship is performed properly, through periodical (over 1 time per year) visiting inspection onboard ship.