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Technical Information

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To: All Shipowners, Relevant Departments of CCS headquarter, CCS surveyors/auditors

Notice on the ships detained by Propulsion and auxiliary machinery deficiencies recently

To all ship companies,

As from the end of last year, this Society has received some reports indicating that the ships were detained due to Propulsion and Auxiliary Machinery deficiencies. Based on follow-up analysis, most of the detainable reasons are attributed to a serious failure or lack of effective implementation of the shipboard SMS， or crew unfamiliar with the operational requirement. Considering that the Tokyo MOU and Paris MOU will start a Concentrated Inspection Campaign (CIC) on Propulsion and Auxiliary Machinery from 1 September 2013 to 30 November 2013, this technical information is an alert to draw your attention to the Propulsion and Auxiliary Machinery of the ship routine maintenance.

1. Specific deficiencies and analysis

i. A ship was detained by Spain PSC due to Compressor No.2 for the system standing and control air broken-out of order, and DG No.1 cooling fresh water system not in operative condition.

Root cause analysis: Chronic lack of normal maintenance of the ship, resulting in the No.2 air compressors and No.1 generator cooling system can not work properly, eventually the PSCO found defective items.

ii. A ship was detained by Egypt PSC due to B/R Bilge to be cleaned for oily water (Risk of fire).

Root cause analysis: The crew failed to clean up the oily wastewater, resulting in the ship detained.

iii. A ship was detained by Singapore PSC due to the emergency generator was unable to be started using No.2 battery set during the operational test.

Root cause analysis: Ship's emergency generator consists of two separate batteries for start, stand by each other. Because No. 2 battery worked longer, and showed the aging phenomenon, the charging effect is not ideal. Although the charging voltage and the proportion are normal, but once a little longer working, there will be a lack of electricity, finally leading to the No. 2 battery can not start the emergency generator when the PSC inspection. Although the ship has been equipped with a spare battery and the crew is also very easy to replace the No. 2 battery, but the lack of safety awareness, sense of duty, not in accordance with the requirements of the timely replacement of batteries by the crew, leading to the ship was detained by PSCO.

iv. A ship was detained by AMSA due to the emergency generator not able to connect to emergency switchboard automatically when main power supply lost.

Root cause analysis: The ship's emergency generator has two sets of 24V battery, one set located in the emergency generator room for the purpose of starting, another set in battery room of navigation deck for supplying 24V to the control system of emergency generator specifically, with GMDSS battery in the same battery room. Emergency generator could not switch on automatically, is due to 24V battery abnormally fed in battery room of navigation deck after many times tests. When the main power supply lost, emergency generator sets automatically closing function failure because they can not keep operating voltage. Additionally, the chief engineer and electrician boarding recently, not familiar with the equipment on board, also lack experience in troubleshooting, when closing failed, checked the closing relay in accordance with the PSCO's ideas, could not find the aging of the batteries power supplying to the control system, eventually leading to the ship detained.

v. A ship was detained by Indonesia PSC due to Aux./E No.2 (No.2 G/E) was malfunction.

Root cause analysis: After the preventive dismantling of No.2 & 3 auxiliary engine by the manufacturer in Singapore, the ship was found that the No. 2 auxiliary engine turbocharger rotor was excessively worn and torn, and could not be refitted; the No. 3 auxiliary supercharger could not operate at full capacity. Although the shipowners has booked spare parts, but compelled by the charterers pressure, not informed any class or the flag State, and decided to sail. When the ship arrived at the Indonesian port, PSCO asked to start three generators individually and paralleling then stopping the supply, running-tested separately with a load, it was found that the No. 2 auxiliary engine could not start, eventually leading to the ship detained.

2. The Relevant Requirements of Procedures for Port State Control

In accordance with the provisions of < Procedures for Port State Control, 2011> A.1052 (27), the main concern PSCO during PSC inspection:

"3 Machinery spaces

3.1 The PSCO should assess the condition of the machinery and of the electrical installations such that they are capable of providing sufficient continuous power for propulsion and for auxiliary services.

3.2 During inspection of the machinery spaces, the PSCO should form an impression of the standard of maintenance. Frayed, disconnected or inoperative quick-closing valve wires, disconnected or inoperative extended control rods or machinery trip mechanisms, missing valve hand wheels, evidence of chronic steam, water and oil leaks, dirty tank tops and bilges or extensive corrosion of machinery foundations are pointers to an unsatisfactory organization of the systems' maintenance. A large number of temporary repairs, including pipe clips or cement boxes, will indicate reluctance to make permanent repairs.

3.3 While it is not possible to determine the condition of the machinery without performance trials, general deficiencies, such as leaking pump glands, dirty water gauge glasses, inoperable pressure gauges, rusted relief valves, inoperative or disconnected safety or control devices, evidence of repeated operation of diesel engine scavenge belt or crankcase relief valves, malfunctioning or inoperative automatic equipment and alarm systems, and leaking boiler casings or uptakes, would warrant inspection of the engine-room logbook and investigation into the record of machinery failures and accidents and a request for running tests of machinery.

3.4 If one electrical generator is out of commission, the PSCO should investigate whether power is available to maintain essential and emergency services and should conduct tests.

3.5 If evidence of neglect becomes evident, the PSCO should extend the scope of an investigation to include, for example, tests on the main and auxiliary steering gear arrangements, overspeed trips, circuit breakers, etc.

3.6 It must be stressed that while detection of one or more of the above deficiencies would afford guidance to a substandard condition, the actual combination is a matter for professional judgement in each case."

"13 Operation of the machinery

13.1 The PSCO may determine if responsible ship's personnel are familiar with their duties related to operating essential machinery, such as:

.1 emergency and stand-by sources of electrical power;
.2 auxiliary steering gear;
.3 bilge and fire pumps; and
.4 any other equipment essential in emergency situations.

13.2 The PSCO may verify whether the responsible ship's personnel are familiar with, inter alia:

.1 emergency generator:
  .1 actions which are necessary before the engine can be started;
  .2 different possibilities to start the engine in combination with the source of starting energy; and
  .3 procedures when the first attempts to start the engine fail.
.2 stand-by generator engine:
  .1 possibilities to start the stand-by engine, automatic or by hand;
  .2 blackout procedures; and
  .3 load-sharing system.

13.3 The PSCO may verify whether the responsible ship's personnel are familiar with, inter alia:

.1 which type of auxiliary steering gear system applies to the ship;
.2 how it is indicated which steering gear unit is in operation; and
.3 what action is needed to bring the auxiliary steering gear into operation.

13.4 The PSCO may verify whether the responsible ship's personnel are familiar with, inter alia:

.1 bilge pumps:
  .1 number and location of bilge pumps installed on board the ship (including emergency bilge pumps);
  .2 starting procedures for all these bilge pumps;
  .3 appropriate valves to operate; and
  .4 most likely causes of failure of bilge pump operation and their possible remedies.
.2 fire pumps:
  .1 number and location of fire pumps installed on board the ship (including the emergency fire pump);
  .2 starting procedures for all these pumps; and
  .3 appropriate valves to operate.

13.5 The PSCO may verify whether the responsible ship's personnel are

familiar with, inter alia:

.1 starting and maintenance of lifeboat engine and/or rescue boat engine;

.2 local control procedures for those systems which are normally controlled from the navigating bridge;

.3 use of the emergency and fully independent sources of electrical power of radio installations;

.4 maintenance procedures for batteries;

.5 emergency stops, fire detection system and alarm system operation of watertight and fire doors (stored energy systems); and

.6 change of control from automatic to manual for cooling water and lube oil systems for main and auxiliary engines."

3. The Relevant Requirements of CCS Rules about the Failure Propulsion and Auxiliary Machinery which may affect the invalidation of the classification certificate

According to the CCS rules-"Rules For Classification Of Sea-Going Steel Ships" Part 1, Chapter 2, Section 9 of the provisions of 2.9.2.1 (2):"***Any damage, defect, failure or grounding that may affect the validity of the assigned class may, if not reported to CCS without inappropriate delay or prior agreement of CCS to foreseen repairs not obtained, lead to suspension of the class and invalidation of the classification certificate.***"

In view of the above situation, combined with the CIC on Propulsion and Auxiliary Machinery from 1 September 2013 to 30 November 2013 published by the Tokyo MOU and Paris MOU recently (see CCS Technical Information No.9 Total No.39), this Society remind the ship companies may strengthen the regular maintenance of the ship's Propulsion and Auxiliary Machinery, and the proper attention paid by the ship companies to take effective measures to avoid the recurrence of such defeciencies will be highly appreciated. Please not to hesitate to report to CCS without inappropriate delay or prior agreement of CCS to foreseen repairs not obtained, once any damage, defect, failure or grounding occurred that may affect the invalidation of the classification certificate.

This Classification Information is published on CCS website (www.ccs.org.cn) and is to be forwarded by CCS branches to relevant shipping companies in relevance to their business area.

Hereby notify the above.

Classed Ship In Service Department
China Classification Society