

TONNAGE
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Built at
Owners The Shipping Controller Port belongs

L I V E R P O O L

15th March 1920.

J. Dykes, J.E. Milton, and H.P. Southwell,

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Messrs The Cunard S.S. Co., Ltd., acting on behalf of the Ministry of Shipping, attend on board the S.S. "IMPERATOR" 52022 tons gross register on January 7th 1920 and subsequently, whilst the vessel was lying in the Gladstone Dry Dock, Liverpool for the purpose of ascertaining the present condition of her machinery.

The port L.P. ahead, starboard L.P. astern and port H.P. ahead turbines were examined throughout the top casings and rotors being lifted in order to permit of a complete inspection being made of the blading. One entire stage of blading in the starboard L.P. astern casing was found to have been removed at some previous date, the blading of rotor however had been left undisturbed. One half of gland casing at forward end of the starboard L.P. astern rotor (broken during the operation of lifting the rotor) has been renewed. These three turbines were found generally in clean and satisfactory condition. The main and auxiliary circulating engines and pumps were opened out and examined. The forward main pump cover flange (cracked in two places) has been repaired with efficient brass patches. New rings fitted to L.P. piston of main circulating engine in starboard L.P. room. Cylinder of port auxiliary circulating engine in L.P. room rebored and new rings fitted to piston, rod skimmed up and rebushed, impeller shaft



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repaired; new piston rings fitted to starboard auxiliary circulating pump and rod trued and rebushed, new valve fitted and spindle skimmed and rebushed. The working parts of pumps generally overhauled and adjusted.

Main and Auxiliary Air Pumps opened out and examined new rings fitted to pistons where necessary, cylinder of forward Auxiliary Air Pump Engine rebored and new piston hood fitted, rods skimmed up and rebushed; steam valves faced up where required, a number of Kinghorn valves in pumps renewed, and the working parts generally overhauled and adjusted.

Doors were removed from the Steam Condensers and these were examined and found to be in satisfactory condition. The water ends were scaled and together with Main Injection pipes coated with Bitumastic solution.

The feed pumps in Engine Room, and the assistant feed pumps in stokeholds have been examined, new rings fitted to pistons and buckets where required and glands repacked and working parts generally adjusted. General service pumps in the machinery space overhauled and water ends repaired as found necessary, glands repacked and working parts adjusted. Evaporators in L.P. rooms opened out and examined, shells and coils tested by hydraulic pressure and afterwards examined under steam.

Ballast and bilge pumps ash ejectors and hoppers in stokehold spaces overhauled, repaired and repacked as found necessary. Bilge piping cleared. Forced draught and ventilating fan engines in engine and stokehold spaces have been opened out, new rings fitted to pistons and rods trued up where required, glands repacked and working parts adjusted. The forced draught installation for boilers in Nos 1, 2, 3 sections has been put in working order and 102 new furnace fronts (Howden's) fitted and a number of ash pit doors renewed.

The Hydraulic pumps have been opened out, pump chambers rebored, new group valve seats fitted, piston rods and rams skimmed up, steam pistons fitted with new rings and pumps generally overhauled. The bulkhead watertight doors (hydraulically operated) have been overhauled and worked.

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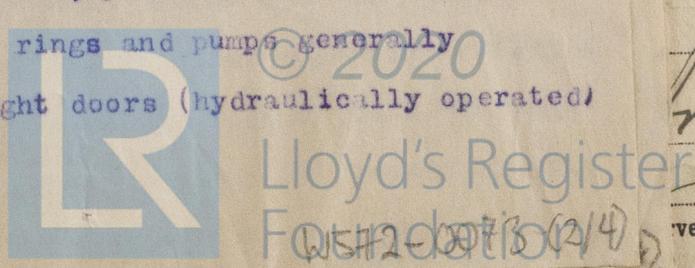
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The Main Steam pipes in stokehold and Engine Room spaces have been tested by hydraulic pressure 470 lbs sq in, and found satisfactory.

Port and starboard Steering Engines opened out examined, and working parts adjusted.

The three refrigerating machines (C O₂) opened out, compressor rods buffed up, piston rods trued and rebushed, Condenser coils drawn and cleaned, and machines together with circulating and brine pumps generally overhauled.

The four turbo generators have also been overhauled, and small general repairs effected to same.

Note: It was found that the wire lacing of the blading of port main L.P. turbine rotors was parted in several places.

Ten boilers comprising No.1 section were examined in Southampton. The thirty six boilers (water tube Vulcan Type) in Nos 2,3,4, sections have now been examined and found generally as far as could be seen, in satisfactory condition. The boilers in all four sections were afterwards tested by hydraulic pressure 450 lbs sq in. About 36 split tubes required to be renewed - this has been done. These defective tubes were practically confined to the boundary rows adjacent to the fire grates in No.4 section and in our opinion an early opportunity should be taken for renewing the boundary rows of tubes in this section. The boiler mountings, including the automatic float gear have been examined, overhauled and adjusted.

In dry dock the sea connections and discharge valves were all opened out and examined, together with their fastenings, the valves were ground in and glands repacked. One length of bilge discharge piping (thin) has been renewed.

The muff couplings were removed from the four screw shafts and the shafts drawn and examined. These shafts are fitted with three liners (with rubber sheathing between the liners) and are in good condition. The wear down of stern bushes was found to be inconsiderable, and with the exception of a few defective strips at ends of bushes which have been renewed, the lignum vital bearings were found satisfactory. The blades of the bronze propellers were slightly pitted but otherwise the propellers are in good condition.

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The cast iron cones over the propeller nuts were badly corroded and holed, and four new brass cones have now been fitted.

On completion of overhaul the machinery was examined under working conditions, and the safety valves of all boilers adjusted to 235 lbs sq in.

In our opinion, judging from our inspection of the parts which have now been examined, the machinery of this vessel appears to be in a fit condition to run for a period of six months.

John Dykes.
J. Milton
A. G. Southwell
Surveyors to Lloyd's Register.

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Travelling Expenses (if chargeable) £

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James