

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office -3 SEP 1934

Date of writing Report 19 When handed in at Local Office 31 Sept 1934 Port of Newcastle-on-Tyne.
 No. in Survey held at Newcastle-on-Tyne Date, First Survey 4 May Last Survey 1st Sept 1934
 Reg. Book. 89608 on the STEEL SCREW "HAI YUAN" (Number of Visits 40.)
 Built at Newcastle-on-Tyne By whom built Swan, Hunter & Wigham Richardson Ltd. Yard No. 1456
 Engines made at Newcastle-on-Tyne By whom made Swan, Hunter & Wigham Richardson Ltd. Engine No. 1456
 Boilers made at Newcastle-on-Tyne By whom made Swan, Hunter & Wigham Richardson Ltd. Boiler No. 1456
 Registered Horse Power Owners China Merchants Steam Nav. Co. Port belonging to Newcastle
 Nom. Horse Power as per Rule 383 Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes.
 Trade for which Vessel is intended

ENGINES, &c.—Description of Engines, Triple Expansion
 Dia. of Cylinders 22" - 36" - 60" Length of Stroke 42" No. of Cylinders 3 Revs. per minute 105
 No. of Cranks 3
 Crank shaft, dia. of journals as per Rule 12" as fitted 12" Crank pin dia. 12" Crank webs Mid. length breadth 17 3/4" Thickness parallel to axis 7 1/2"
 as fitted 12" Mid. length thickness 7 1/2" shrunk Thickness around eye-hole 5 1/2"
 Intermediate Shafts, diameter as per Rule 11.42" as fitted 12 1/4" Thrust shaft, diameter at collars as per Rule 12" as fitted 12 1/4"
 Tube Shafts, diameter as per Rule - as fitted - Screw Shaft, diameter as per Rule 12.63" as fitted 12 7/8" Is the shaft fitted with a continuous liner? Yes.
 Bronze Liners, thickness in way of bushes as per Rule 22" as fitted 22" Thickness between bushes as per Rule 16.5" as fitted 22" Is the after end of the liner made watertight in the propeller boss? Yes.
 If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner? One length fits full length.
 If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive? Yes.
 If two liners are fitted, is the shaft lapped or protected between the liners? - Is an approved Oil Gland or other appliance fitted at the after end of the tube shaft? Yes. If so, state type Vickers.
 Propeller, dia. 14'-6" Pitch 13'-9" No. of Blades 4 Material C.S. Blades Whether Movable? Yes Total Developed Surface 72 sq. feet
 Feed Pumps worked from the Main Engines, No. None Diameter Stroke Can one be overhauled while the other is at work? -
 Bilge Pumps worked from the Main Engines, No. 2 Diameter 3 3/4" Stroke 22" Can one be overhauled while the other is at work? Yes.
 Feed Pumps { No. and size Two 9 1/2" x 7" x 21" + one 8" x 5" x 8" Pumps connected to the Main Bilge Line { No. and size Two 8" x 8" x 8" + one Emergency 6 1/2" x 6 1/2" x 8"
 How driven Steam How driven Steam
 Ballast Pumps, No. and size Two 8" x 8" x 8" Lubricating Oil Pumps, including Spare Pump, No. and size None
 Are two independent means arranged for circulating water through the Oil Cooler? Yes.
 Bilge Pumps;—In Engine and Boiler Room 2 @ 2 1/2" + 1 @ 2 1/2" to Tunnel Well Suctions, connected to both Main Bilge Pumps and Auxiliary
 In Pump Room - In Holds, &c. No. 1 Hold 2 @ 3"; No. 2 Hold 2 @ 3"; Deep Tank 2 @ 2 1/2"; No. 3 Hold 2 @ 3"

MAIN WATER CIRCULATING PUMP DIRECT BILGE SUCTIONS, No. and size One 9" Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 2 @ 4" + 1 @ 3 1/2"
 Are all the Bilge Suction Pipes in holds and tunnel well fitted with strum-boxes? Yes.
 Are the Bilge Suctions in the Machinery Space led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges? Yes.
 Are all Sea Connections fitted direct on the skin of the ship? Yes. Are they fitted with Valves or Cocks? Yes.
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stowhold plates? Yes. Are the Overboard Discharges above or below the deep water line? Both.
 Are they each fitted with a Discharge Valve always accessible on the plating of the vessel? Yes. Are the Blow Off Cocks fitted with a spigot and brass covering plate? Yes.
 What Pipes pass through the bunkers? Forward Hold Suctions How are they protected? Strong wood casings.
 What pipes pass through the deep tanks? None Have they been tested as per Rule? -
 Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times? Yes.
 Is the arrangement of Valves and their connections such as to prevent the possibility of water passing from the sea or from water tanks into the cargo or machinery spaces, or from one compartment to another? Yes. Is the Shaft Tunnel watertight? Yes. Is it fitted with a watertight door? Yes. worked from upper deck.

MAIN BOILERS, &c.—(Letter for record S) Total Heating Surface of Boilers 5927 sq. ft.
 Is Forced Draft fitted? Yes. No. and Description of Boilers Two Single Ended Working Pressure 200 lb./sq. in.
 IS A REPORT ON MAIN BOILERS NOW FORWARDED? Yes.
 IS A DONKEY BOILER FITTED? Yes. If so, is a report now forwarded? Yes. Sls. Rpt. No. 54822
 Is the donkey boiler intended to be used for domestic purposes only? No.

PLANS. Are approved plans forwarded herewith for Shafting? - Main Boilers? Yes. Auxiliary Boilers? - Donkey Boilers? Yes.
 Superheaters? - General Pumping Arrangements? Yes. Oil fuel Burning Piping Arrangements? -

SPARE GEAR.

Has the spare gear required by the Rules been supplied? Yes.
 State the principal additional spare gear supplied: one section of crank shaft, one propeller shaft, one piston rod, 2 propeller blades, one set of top and bottom End brasses, one air pump rod, one circulating pump impeller shaft, one valve spindle, 2 check valves, 6 cylinder cover studs, 12 gunk ring studs, one set of main bearing bushes, 100 condenser tubes, 2 safety valve springs, one set of cylinder relief valve springs, 36 plain and 13 stay tubes for main boilers.

The foregoing is a correct description,
 SWAN, HUNTER & WIGHAM RICHARDSON, LTD.

G. J. Dineen
 DIRECTOR, Manufacturer.



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Lloyd's Register Foundation

1934
 May 8. 10. 15. 17. 18. 24. 28. 29. 30. 31. June 1. 5. 11. 14. 20. July 2. 5. 9. 13. 16. 18. 19. 20.
 25. 26. 27. 28. 30. 31. Aug. 2. 7. 8. 13. 15. 16. 21. 23. 31. Sept 1.

Dates of Survey while building
 During progress of work in shops --
 During erection on board vessel --
 Total No. of visits 40.

Dates of Examination of principal parts—Cylinders 2.7.34 Slides 19.7.34 Covers 2.7.34
 Pistons 19.7.34 Piston Rods 19.7.34 Connecting rods 19.7.34
 Crank shaft 19.7.34 Thrust shaft 13.7.34 Intermediate shafts 13.7.34
 Tube shaft — Screw shaft 13.7.34 Propeller 13.7.34
 Stern tube 13.7.34 Engine and boiler seatings 26.7.34 Engines holding down bolts 15.8.34
 Completion of fitting sea connections 26.7.34
 Completion of pumping arrangements 1.9.34 Boilers fixed 15.8.34 Engines tried under steam 31st. August.
 Main boiler safety valves adjusted 31.8.34 Thickness of adjusting washers PA 3/8 S 5/16
 Crank shaft material Steel Identification Mark 1456.H.C.F. Thrust shaft material Steel Identification Mark 7306.T.D.
 Intermediate shafts, material Steel Identification Marks 7306.T.D.H.C.F. Tube shaft, material — Identification Mark —
 Screw shaft, material Steel Identification Mark 7306.T.D.H.C.F. Steam Pipes, material Sp Steel Test pressure 600 lbs. Date of Test 31.7.34 to 2
 Is an installation fitted for burning oil fuel No Is the flash point of the oil to be used over 150°F.
 Have the requirements of the Rules for the use of oil as fuel been complied with —
 Is the vessel (not being an oil tanker) fitted for carrying oil as cargo — If so, have the requirements of the Rules been complied with —
 If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with —
 Is this machinery duplicate of a previous case No If so, state name of vessel —

General Remarks (State quality of workmanship, opinions as to class, &c.)
 The machinery of this vessel has been constructed under special survey in accordance with the Rules and approved plans; the materials and workmanship are good. The machinery has been satisfactorily installed in the vessel, examined under working conditions and found satisfactory, and is eligible, in my opinion, to have the record L.M.C. 9.34 - C.L. (O.G.) in the Register Book.

The amount of Entry Fee ... £ 5 : 0 : 0 When applied for.
 Special ... £ 82 : 9 : 0
 Donkey Boiler Fee ... £ : : : When received.
 Travelling Expenses (if any) £ : : : 8.9.34

A. B. Forster
 E. J. Stoddart
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute
 Assigned
 FRL 7 SEP 1934
 + Lmb 9.34
 22.09.34



CERTIFICATE WRITTEN