

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

SEP 22 1938

Date of writing Report 19 When handed in at Local Office 16 Sep 1938 Port of Sunderland
 No. in Survey held at Sunderland Date, First Survey 14 Oct 37 Last Survey 8 Sep 1938
 Reg. Book. on the S.S. "GRAYBURN" (Number of Visits 42)
 Built at Sunderland By whom built W. J. Laing & Sons Ltd. Yard No. 421 Tons { Gross 6342 Net 3439 }
 Engines made at Sunderland By whom made G. Black (1938) Ltd. Engine No. 1211 When made 1938
 Boilers made at Sunderland By whom made G. Black (1938) Ltd. Boiler No. 1211 When made 1938
 Registered Horse Power 523 Owners Waller & Co Ltd. Port belonging to London
 Nom. Horse Power as per Rule 523 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 (Poppet Valve & H.P.) Revs. per minute 60
 Dia. of Cylinders 25"-43"-42" Length of Stroke 51" No. of Cylinders 3 No. of Cranks 3
 Crank shaft, dia. of journals 14 1/2" as per Rule 14 1/2" Crank pin dia. 14 1/2" Crank webs 1' 10 1/2" Mid. length breadth 9 1/8" Thickness parallel to axis 9 1/8"
 as fitted 14 1/2" as fitted 13 1/8" as fitted 14 1/2" as fitted 14 1/2" as fitted 14 1/2"
 Intermediate Shafts, diameter 13 1/8" as per Rule 13 1/8" Thrust shaft, diameter at collars 14 1/2" as per Rule 14 1/2"
 as fitted 13 1/8" as fitted 15 1/2" as fitted 15 1/2" Is the { tube } shaft fitted with a continuous liner { yes. }
 Tube Shafts, diameter 15 1/2" as per Rule 15 1/2" as fitted 15 1/2" as fitted 15 1/2"
 Screw Shaft, diameter 15 1/2" as per Rule 15 1/2" as fitted 15 1/2"
 Bronze Liners, thickness in way of bushes 1/4" as per Rule 1/4" Thickness between bushes 1/8" as per Rule 1/8"
 as fitted 1/8" as fitted 1/8" 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.
 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 yes. Is an approved Oil Gland or other appliance fitted at the after end of the tube shaft no.
 If so, state type 19'-0" at tips Length of Bearing in Stern Bush next to and supporting propeller 5'-2 1/4"
 Propeller, dia. 19'-0" Pitch 16'-4" at 2'-0" radius No. of Blades 4 Material Brass whether Moveable no. Total Developed Surface 125 sq. feet
 Feed Pumps worked from the Main Engines, No. 2 Diameter 4 1/4" Stroke 2 1/2" Can one be overhauled while the other is at work yes.
 Bilge Pumps worked from the Main Engines, No. 2 Diameter 4 1/4" Stroke 2 1/2" Can one be overhauled while the other is at work yes.
 Feed Pumps { No. and size 2 @ 4" x 9 1/2" x 21" x 10 1/2" x 5 1/8" Pumps connected to the { No. and size Levo 10" x 12" x 12" duplex. }
 How driven Steam Main Bilge Line How driven Steam.
 Ballast Pumps, No. and size 2 @ 10" x 12" x 12" Lubricating Oil Pumps, including Spare Pump, No. and size 1
 Are two independent means arranged for circulating water through the Oil Cooler yes. Suctions, connected to both Main Bilge Pumps and Auxiliary
 Bilge Pumps;—In Engine and Boiler Room 3 @ 3" in E.R. 1 @ 2 1/4" in Tunnel well.
 In Pump Room 3" p.r.s. N°5. 3 @ 3 1/2" (2 for 1 & 1 ft.) In Holds, &c. N°1. 3" p.r.s. N°2. 3" p.r.s. N°3. 3" p.r.s. N°4.

Main Water Circulating Pump Direct Bilge Suctions, No. and size 1 @ 9" Independent Power Pump Direct Suctions to the Engine Room Bilges,
 No. and size 1 @ 5" 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 Both.
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates yes. Are the Overboard Discharges above or below the deep water line above deep water line.
 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 bilge Suctions How are they protected Strong wooden Casings.
 What pipes pass through the deep tanks none Have they been tested as per Rule yes.
 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 E.R. top
 Is the Shaft Tunnel fitted with a watertight door yes. worked from E.R. top

MAIN BOILERS, &c.—(Letter for record S.) Total Heating Surface of Boilers 4,499 sq. ft.
 Is Forced Draft fitted yes. No. and Description of Boilers 3 S.B. (Spt.) Working Pressure 220.
 IS A REPORT ON MAIN BOILERS NOW FORWARDED? yes.
 IS A DONKEY BOILER FITTED? no. If so, is a report now forwarded? yes.

Is the donkey boiler intended to be used for domestic purposes only yes.
 PLANS. Are approved plans forwarded herewith for Shafting yes. Main Boilers yes. Auxiliary Boilers yes. Donkey Boilers yes.
 (If not state date of approval) Superheaters None. General Pumping Arrangements yes. Oil fuel Burning Piping Arrangements yes.

SPARE GEAR.
 Has the spare gear required by the Rules been supplied yes. (Latest requirements)
 State the principal additional spare gear supplied one cast iron propeller, one screw shaft, one impeller
Shaft for Circulating pump.

The foregoing is a correct description,
 FOR GEORGE CLARK (1938) LTD.

M. Blackie

Manufacturer.



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12169-0013

During progress of work in shops - - 1937. Dec. 14. Jan. 17. Dec. 16. 1938. Jan. 13. Feb. 8. 22. Mar. 2. 4. 17. 22. 31. Apr. 4. 7.
20. 25. 28. May. 6. 10. 11. 16. 18. 30. June 2. 7. 13. 17. 21. 27. July. 4. 7. 11. 14. 18. 22. Aug. 3. 4. 12. 16. 26.
Sep. 2. 8
Dates of Survey while building
During erection on board vessel - - -
Total No. of visits 42

Dates of Examination of principal parts—Cylinders 20/4/38 31/3/38 Slides 14/6/38 Poppet 18/7/38 Covers 25/4/38.
Pistons 22/3/38 Piston Rods 11/4/38 Connecting rods 13/6/38.
Crank shaft 20/4/38. Thrust shaft 20/4/38. Intermediate shafts 11/4/38 22/4/38.
Tube shaft * Screw shaft 4/4/38. Propeller 10/5/38.
Stern tube 18/4/38. Engine and boiler seatings 14/4/38. Engines holding down bolts 16/8/38
Completion of fitting sea connections 14/4/38.
Completion of pumping arrangements 8/9/38 Boilers fixed 16/8/38 Engines tried under steam 26/8/38
Main boiler safety valves adjusted 26/8/38 Thickness of adjusting washers 11/32" p. 3/8" s. 3/8" independent.
Crank shaft material Infot. Steel Identification Mark N° 990 WHF Thrust shaft material Infot. Steel Identification Mark N° 31 WHF
Intermediate shafts, material Infot. Steel Identification Marks N° 24, 4, 5, 34, 35 11/4/38 Tube shaft, material Identification Mark ✓
Screw shaft, material Infot. Steel Identification Mark N° 946 22/7/38 S.D. Steel Test pressure 660 Date of Test 4/4/38.
Is an installation fitted for burning oil fuel Yes. Is the flash point of the oil to be used over 150°F. Yes. 16/8/38
Have the requirements of the Rules for the use of oil as fuel been complied with Yes.
Is the vessel (not being an oil tanker) fitted for carrying oil as cargo No. 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 not desired.
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.)

This machinery has been built under Special Survey in accordance with the Rules of the Society.

The materials & workmanship are good.

The machinery has been securely fitted on board the vessel & tried under steam with satisfactory results & is eligible in our opinion to have notation

of L.M.C. 9. 38, T.S. (cl), 3 S.B. (Spl.), fitted for oil fuel F.P. above 150°F. F.D.

The amount of Entry Fee ... £ 6 : - : When applied for,
Special ... £ 101 : 3 : 20 SEP. 1938
Donkey Boiler Fee ... £ : : When received,
Travelling Expenses (if any) £ : : 27/12/1938

Committee's Minute

Assigned

+ L.M.C. 9. 38
Fitted for oil fuel 9. 38 F.P. above 150°F.

F.D. C.L. Spl.

L.R. Home
J. R. Fraser

Engineer Surveyor to Lloyd's Register of Shipping.



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