

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office 15-MAR-1933

Date of writing Report Mar 3rd 1933 When handed in at Local Office 19 Port of LIVERPOOL

No. in Survey held at Birkenhead Date, First Survey 18th July/32 Last Survey 23rd Feb 1933
 Reg. Book. 91113 on the S. S. Bidston (Number of Visits 98) Tons { Gross 437
 Net 179

Built at Birkenhead By whom built Messrs Cammell Laird & Co. Yard No. 988 When built 1933
 Engines made at Birkenhead By whom made Cammell Laird & Co. Engine No. 988 When made 1933
 Boilers made at Birkenhead By whom made Cammell Laird & Co. Boiler No. 988 When made 1933
 Registered Horse Power 194 Owners Municipal Corp. of Birkenhead Port belonging to Liverpool
 Nom. Horse Power as per Rule 194 Is Refrigerating Machinery fitted for cargo purposes ✓ Is Electric Light fitted Yes
 Trade for which Vessel is intended Ferry Service

ENGINES, &c.—Description of Engines Twin screw vertical triple expansion Revs. per minute 130
 Dia. of Cylinders 15 1/2" 24" 28 1/2" 28 1/2" Length of Stroke 18" No. of Cylinders two sets of 4 No. of Cranks 14 each engine
 Crank shaft, dia. of journals as per Rule 6 3/8" Crank pin dia. 7" Crank webs Mid. length breadth 8" Thickness parallel to axis 1" Mid. length thickness 4 3/4" shrunk Thickness around eye-hole 1"
 Intermediate Shafts, diameter as per Rule 6 1/2" Thrust shaft, diameter at collars as per Rule 6 3/8"
 Tube Shafts, diameter as per Rule 6 1/2" Screw Shaft, diameter as per Rule 6 1/2" Is the screw shaft fitted with a continuous liner no
 Bronze Liners, thickness in way of bushes as per Rule 1/4" Thickness between bushes as per Rule 1/4" Is the after end of the liner made watertight in the propeller boss ✓
 If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner ✓
 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 ✓
 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 United States Metallic Co. Length of Bearing in Stern Bush next to and supporting propeller 3' 6"
 Propeller, dia. 7' 6" Pitch 12' 0" No. of Blades 3 Material Cast Iron whether Moveable no Total Developed Surface 27 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. two Diameter 4" Stroke 5" Can one be overhauled while the other is at work Yes
 Feed Pumps { No. and size two - 6 x 8 1/2 x 18 stroke Pumps connected to the { No. and size one - 6 x 5 1/2 x 15 stroke
 How driven steam Main Bilge Line { How driven steam
 Ballast Pumps, No. and size none Lubricating Oil Pumps, including Spare Pump, No. and size ✓
 Are two independent means arranged for circulating water through the Oil Cooler ✓ Suctions, connected to both Main Bilge Pumps and Auxiliary
 Bilge Pumps;—In Engine and Boiler Room 4 - 2 1/2" dia. In Holds, &c. Hold 1 - 2" dia.; forepeak 1 - 2" dia. aft peak 1 - 2" dia.

Main Water Circulating Pump Direct Bilge Suctions, No. and size 1 - 6" dia. Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 - 3" dia.
 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
 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 none How are they protected ✓
 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 ✓ Is it fitted with a watertight door ✓ worked from ✓

MAIN BOILERS, &c.—(Letter for record 3) Total Heating Surface of Boilers 36000 sq. ft.
 Is Forced Draft fitted no No. and Description of Boilers 2 Cylindrical direct tanks Working Pressure 180 lbs.
 IS A REPORT ON MAIN BOILERS NOW FORWARDED? Yes
 IS A DONKEY BOILER FITTED? no If so, is a report now forwarded? ✓
 Is the donkey boiler intended to be used for domestic purposes only ✓
 PLANS. Are approved plans forwarded herewith for Shafting ✓ Main Boilers Yes Auxiliary Boilers ✓ Donkey Boilers ✓
 (If not state date of approval) 28/6/32
 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 Two propellers, two stern bushes, two pairs connect rods & brasses, 50 Condenser tubes, 100 ferrules, one spare Armature for dynamo, other items as per spare gear list attached.

The foregoing is a correct description,
 FOR AND ON BEHALF OF

CAMMELL LAIRD & CO. LIMITED.

Manufacturer.

Rpt. No. in Reg. Bo. 21113 Master Engines Boilers Nomina MUL Manufe Total No. and Tested Area of Area of In case Smaller Smaller Larger Thickn ong. se Percen Percen Thickn Mater Length Dimen End p Tow Tub Mean Airde t cen n ear Censi Pitch Work Chich Pitch Work Nam Vork Nam

Dates of Survey while building
During progress of work in shops - - July 18, 21, 22, 26, 28 Aug 3, 5, 9, 11, 12, 16, 19, 22, 26, 26, 29, 31 Sept 8, 16, 20, 21, 22, 23, 26, 27, 28 Oct 3, 4, 7, 10, 11
During erection on board vessel - - 12, 14, 17, 18, 19, 20, 21, 25, 26, 27, 28, 31 Nov 1, 2, 3, 4, 7, 8, 9, 10, 11, 14, 16, 17, 18, 24, 25, 28, 29, 30 Dec 1, 5, 6, 8, 9, 12, 14, 15, 19, 20, 21
Total No. of visits 98

Dates of Examination of principal parts - Cylinders 3/10/32 7/10/32 14/10/32 11/11/32 8/12/32 Slides 8/12/32 Covers 7/10/32 29/11/32
Pistons 3/10/32 8/12/32 Piston Rods 3/10/32 17/11/32 Connecting rods 7/10/32 17/11/32 26/10/32
Crank shaft 27/9/32 Thrust shaft 3/10/32 15/10/32 24/10/32 Intermediate shafts 3/10/32 17/11/32 26/10/32
Tube shaft 1/10/32 4/11/32 28/11/32 Propellers 8/10/32 23/10/32
Stern tube 3/10/32 29/11/32 3/12/32 Engine and boiler seatings 3/12/32 Engines holding down bolts 2/2/33
Completion of fitting sea connections 6/1/33 Boilers fixed 17/1/33 Engines tried under steam 23/2/33 13/3/32
Completion of pumping arrangements 16/1/33 Thickness of adjusting washers Port 17/1/33 Starb 13/3/32
Main boiler safety valves adjusted 16/2/33 Crank shaft material steel Identification Mark 495 mm Thrust shaft material steel Identification Mark 1765
Intermediate shafts, material steel Identification Marks 465 Tube shaft, material steel Identification Mark
Screw shaft, material steel Identification Mark 490, 474 Steam Pipes, material Copper Test pressure 360 lb Date of Test 25/1/33
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 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
Is this machinery duplicate of a previous case No If so, state name of vessel S.S. 'Thurston'

General Remarks (State quality of workmanship, opinions as to class, &c.)
The Machinery of this vessel has been constructed under special survey, is in accordance with the Rules and the approved plans. It has been examined under full working conditions during official trial, and found satisfactory, and is eligible in my opinion for classification in Register book with record of + LMC 2.33

The amount of Entry Fee ... £ 3 : 0 : 0
Special ... £ 48 : 10 : 0
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ : :
When applied for, 14 MAR. 1933
When received, 24-3-1933

J. S. Milton
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute
Assigned + LMC - 2.33.
O.C. Elec. Light. J.R.