

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Date of writing Report 19... When handed in at Local Office **29 MAR 1939** Port of **SUNDERLAND** Received at London Office **MAR 30 1939**

No. in Survey held at **SUNDERLAND** Date, First Survey **8 June '38** Last Survey **25 March 1939**
 Reg. Book. on the **SS. BRETWALDA** (Number of Visits **91**) Tons { Gross **4906** Net **2766**

Built at **Sunderland** By whom built **J. H. Thompson & Sons, Ltd.** Yard No. **591** When built **1939**
 Engines made at **do.** By whom made **F. E. Harris Eng. Co. (1918) Ltd.** Engine No. **2920** When made **1939**
 Boilers made at **do.** By whom made **do.** Boiler No. **do.** When made **do.**
 Registered Horse Power **365** Owners **Hall Bros** Port belonging to **Liverpool**
 Nom. Horse Power as per Rule **365** Is Refrigerating Machinery fitted for cargo purposes **no** Is Electric Light fitted **yes**
 Trade for which Vessel is intended **General**

ENGINES, &c.—Description of Engines **Triple expansion, fitted valves H.P. & I.P. & Exhaust** Revs. per minute

Dia. of Cylinders **23", 38", 65"** Length of Stroke **42"** No. of Cylinders **3** No. of Cranks **3**

Crank shaft, dia. of journals **as per Rule appl.** Crank pin dia. **1-1"** Crank webs **shrunk** Thickness parallel to axis **8 1/2"**
 as fitted **1-2" in hole.** Mid. length breadth **---** Thickness around eye-hole **6 1/2"**
 as per Rule **as fitted.** Mid. length thickness **---** Thrust shaft, diameter at collars **as per Rule appl.**
 as fitted **1-0 1/2"** as fitted **1-1"**

Tube Shafts, diameter **as per Rule ---** Screw Shaft, diameter **as per Rule appl.** Is the tube screw shaft fitted with a continuous liner **yes**
 as fitted **---** as fitted **1-2 1/2"**

Bronze Liners, thickness in way of bushes **as per Rule appl.** Thickness between bushes **as per Rule appl.** Is the after end of the liner made watertight in the propeller boss **yes**
 as fitted **3/4"** as fitted **5/8"** 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 **---** Length of Bearing in Stern Bush next to and supporting propeller **4'-10"**

Propeller, dia. **18'-0"** Pitch **18.13** No. of Blades **4** Material **Mng. Bm** Whether Moveable **not** Total Developed Surface **113.5** sq. feet

Feed Pumps worked from the Main Engines, No. **---** Diameter **---** Stroke **---** Can one be overhauled while the other is at work **---**
 Bilge Pumps worked from the Main Engines, No. **2** Diameter **3 1/2"** Stroke **22 1/2"** Can one be overhauled while the other is at work **yes**
 Feed Pumps { No. and size **2. 8 1/2" x 6 x 18"** Pumps connected to the { No. and size **1. 9 x 11 x 10"**
 { How driven **Steam** Main Bilge Line { How driven **Steam**

Ballast Pumps, No. and size **1. 9 x 11 x 10"** 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 **Eng. Rm. 2 @ 3" dia. Btr. Rm. 2 @ 3 1/2" dia.**
 In Pump Room **---** In Holds, &c. **Fore, 2 @ 3 1/2"; Main, 2 @ 3 1/2" dia.;**
After main, 2 @ 3" dia.; No. 5. 2 @ 3" dia.; Tunnel well, 1 @ 3" dia.

Main Water Circulating Pump Direct Bilge Suctions, No. and size **1 @ 4" dia.** Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size **1 @ 5" 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 **yes**
 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 **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 **none** How are they protected **---**
 What pipes pass through the deep tanks **---** 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 **---**

MAIN BOILERS, &c.—(Letter for record **S**) Total Heating Surface of Boilers **5075 sq. ft.**

Which Boilers are fitted with Forced Draft **2 main** Which Boilers are fitted with Superheaters **2 main**

No. and Description of Boilers **3 cylindrical multitubular** Working Pressure **220 lbs.**

IS A REPORT ON MAIN BOILERS NOW FORWARDED? **yes**

IS A DONKEY BOILER FITTED? **no** If so, is a report now forwarded? **---**

Can the donkey boiler be used for domestic purposes only **---**

PLANS. Are approved plans forwarded herewith for Shafting **15/10/37** Main Boilers **yes** Auxiliary Boilers **yes** Donkey Boilers **---**
 (If not state date of approval)
 Superheaters **details** 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 screw shaft.

1 Top end bearing

2 main bearing rollers.

4 Condenser tubes & 75 ferrules.

3 main & 3 auxiliary check valve lids.

2 screw, 2 blow down, 2 circulating valve lids.

1 main & 1 auxiliary safety valve spring.

6 main & 6 auxiliary boiler plain tubes.

Superheaters:

20% total number jointing rings

10% " " stud plugs.

5% " " studs & nuts.

2% " " clamps.

1 safety valve spring for each valve.

1 element, (one plate, for each (main) boiler.

The foregoing is a correct description.
 THE NORTH EASTERN MARINE ENGINEERING CO. (1888) LTD.

J. H. Lambert
 RESIDENT MANAGER. Manufacturer.



W11-0077

1938. June 8, 14, 20, 27, 28, 30. July. 1, 12, 15, 17. Aug. 5, 15, 17. Sep. 6, 12, 15, 19, 20, 22, 26, 30. Oct. 3, 5, 6, 7, 10, 11. During progress of work in shops --
 3, 5, 6, 7, 10, 11. Oct. 17, 18, 19, 20, 21, 25, 26, 28, 31. Nov. 1, 4, 16, 17, 18, 22, 28, 29, 30. Dec. 2, 6, 8, 13, 15, 16, 17, 19, 21, 23, 29, 30. 1939. Jan. 3, 5, 9, 10, 12, 13, 16, 17, 18, 20, 24, 25, 26, 30, 31. Feb. 6, 7, 8, 13, 14, 15, 17, 18, 20, 21, 22, 24, 25, 27, 28. During erection on board vessel ---
 Feb. 6, 13, 20, 25.
 Total No. of visits 91

Dates of Examination of principal parts—Cylinders 21/10/38 Slides *9/10/38, 31/10/38, 23/11/38* Covers 30/11/38
 Pistons 20/10/38 Piston Rods 28/10/38 Connecting rods 19/10/38
 Crank shaft 12/9/38 Thrust shaft 12/9/38 Intermediate shafts 24/1/39
 Tube shaft — Screw shaft 25/1/39, *Spec 30/1/39* Propeller 14/2/39
 Stern tube 5/1/39 Engine and boiler seatings 26/1/39 Engines holding down bolts 28/2/39
 Completion of fitting sea connections 26/1/39
 Completion of pumping arrangements 20/3/39 Boilers fixed 22/2/39 Engines tried under steam 28/2/39
 Main boiler safety valves adjusted 27/28/2/39 Thickness of adjusting washers *Main 3/8" Auxiliary 5/16" Super heat 1/32" Stearboard 5/16" port.*
 Crank shaft material *steel* Identification Mark 538 Thrust shaft material *steel* Identification Mark 569
 Intermediate shafts, material *steel* Identification Marks 779 Tube shaft, material — Identification Mark —
 Screw shaft, material *steel* Identification Mark 777 Steam Pipes, material *steel* Test pressure 660 lbs Date of Test 7/2/39 to
 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 *not required*
 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 approved plans, Secretary's letters and the requirements of the Rules. Workmanship and materials are good. The machinery has been efficiently fitted on board and tried under working conditions with satisfactory results and is slight, in my opinion, for the

NOTATION + L. M. C. 3-39.

SUNDERLAND.

Certificate to be sent to
The Surveyors are requested not to write on or below the space for Committee's Minute.

The amount of Entry Fee ... £ 5 : : } When applied for,
 Special ... £ 79 : 15 : } 29 MAR 1939
 Donkey Boiler Fee ... £ : : }
 Travelling Expenses (if any) £ : : } 5.48.19.39

L. D. Home
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute WED 12 APR 1939

Assigned to Lmb J. 39
 2 S.B. (Sp.) J.D.
 1 Ant. J.B. Ck



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