

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY

12 1938

Received at London Office

Date of writing Report 19 When handed in at Local Office 10 FEB. 1938 Port of **SUNDERLAND**

No. in Survey held at **Sunderland** Date, First Survey 31st March 37 Last Survey 4th Feb 1938
 Reg. Book. on the **S.S. GEMSTONE** (Number of Visits 95) Tons { Gross 4986
 Net 2941
 Built at **Sunderland** By whom built **W. J. Lang & Son Ltd** Yard No. 718 When built 1938
 Engines made at **Sunderland** By whom made **N.E. Marine Eng. Co. Ltd.** Engine No. 2878 When made 1938
 Boilers made at **Sunderland** By whom made **N.E. Marine Eng. Co. Ltd.** Boiler No. 2878 When made 1938
 Registered Horse Power Owners **The Minister S.S. Co. Ltd** Port belonging to **London**
 Nom. Horse Power as per Rule 353 ^{352.3} 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 valves on H.P. cyl.** Revs. per minute

Dia. of Cylinders **21 1/2", 37", 62"** Length of Stroke **42"** No. of Cylinders **3** No. of Cranks **3**

Crank shaft, dia. of journals as per Rule **apptd.** Crank pin dia. **12 5/8"** Crank webs Mid. length breadth **—** Thickness parallel to axis **7 1/2", 4 1/2", 8 1/2"**
 as fitted **12 5/8"** Mid. length thickness **—** shrunk Thickness around eye-hole **Staff 6 3/4", pin 6 1/2"**

Intermediate Shafts, diameter as per Rule **apptd.** Thrust shaft, diameter at collars as per Rule **apptd.**
 as fitted **12 1/2"** as fitted **12 5/8"**

Tube Shafts, diameter as per Rule **—** Screw Shaft, diameter as per Rule **apptd.** Is the { tube } shaft fitted with a continuous liner { **yes** }
 as fitted **—** as fitted **1 1/4"** Is the { screw }

Bronze Liners, thickness in way of bushes as per Rule **apptd.** Thickness between bushes as per Rule **—** Is the after end of the liner made watertight in the propeller boss **yes**
 as fitted **3/4"** as fitted **2 1/32"** 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 **no** If so, state type **—** Length of Bearing in Stern Bush next to and supporting propeller **4 9/16"**

Propeller, dia. **17 6/8"** Pitch **18 3/4"** No. of Blades **4** Material **Brass** whether Moveable **not** Total Developed Surface **99.5** 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 **1 10 1/2"** Can one be overhauled while the other is at work **yes**

Feed Pumps { No. and size **2, 6" x 8 1/2" x 18"** Pumps connected to the { No. and size **one, 9 1/2" x 10"** }
 { How driven **Steam** } Main Bilge Line { How driven **Steam** }

Ballast Pumps, No. and size **one, 9 1/2" 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 **3" dia one port, one Starboard in Eng. Room 3" dia one port & one Starboard in Boiler Room** In Holds, &c. **Main Hold 2 @ 3 1/2" / Main Hold "A" 2 @ 2 1/2" dia**
Trit Hold 2 @ 3" dia, after main hold 2 @ 3" dia, after hold 2 @ 3" dia / Tunnel one @ 2 1/2" 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 **Hold Suctions** How are they protected **Bilge ladders**

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 **above**

MAIN BOILERS, &c.—(Letter for record **S**) Total Heating Surface of Boilers **5087 sq. ft.** **Submerged deck in SR, M.B. 3852**

Is Forced Draft fitted on main **yes** No. and Description of Boilers **2 SB Multi tubular Cylindrical** Working Pressure **220 lbs.**

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

IS A DONKEY BOILER FITTED? **no** Aux. Boiler: If so, is a report now forwarded? **yes**

Is the donkey boiler intended to be used for domestic purposes only **—**

PLANS. Are approved plans forwarded herewith for Shafting **1 1/2 / 36** Main Boilers **yes** Auxiliary Boilers **yes** Donkey Boilers **—**
 (If not state date of approval) **retained for**

Superheaters **—** General Pumping Arrangements **no 2886** 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 propeller shaft, main circulating pump: 1 piston rod, 1 valve spindle
one oil rings for I.P. piston, 1 set of piston & 1 set of valves and bearings
4 main condenser tubes & 25 journals
3 main check valve lids
4 1/2" check valve lids
2 blow down & 2 vacuum valve lids
6 plain tubes for main boiler
6 plain tubes for Aux. Boiler

The foregoing is a correct description,
 FOR THE NORTH EASTERN MARINE ENGINEERING CO. LTD

Archd. J. Berry
 GENERAL MANAGER

Manufacturer.



7500-0111

1937. *March 31, April 6, 19, 26, May 7, 19, 25, June 17, 29, July 2, 6, 8, 13, 15, 16, 20, 22, 27, 28*
 During progress of work in shops -- } *30, Aug. 4, 6, 10, 13, 17, 18, 19, 23, 26, 31, Sep. 1, 2, 7, 9, 13, 15, 16, 17, 23, 24, 27, 29, Oct. 5, 6, 7, 8, 15, 18*
 Dates of Survey while building } *19, 26, Nov. 5, 10, 15, 16, 19, 23, 25, 26, 29, 30, Dec. 1, 2, 3, 6, 7, 8, 9, 10, 13, 14, 15, 16, 20, 21, 22, 23*
 During erection on board vessel --- } *28, 29, 30, 1938. Jan. 5, 6, 10, 11, 14, 17, 18, 19, 20, 21, 22, 24, 26, 28 Feb. 4*
 Total No. of visits *95*

Dates of Examination of principal parts—Cylinders *25/11/37* Slides *64 20/12/37* Covers *26/11/37*
 Pistons *2/12/37* Piston Rods *2/12/37* Connecting rods *2/12/37*
 Crank shaft *16/9/37, 26/11/37* Thrust shaft *26/11/37* Intermediate shafts *29/12/37*
 Tube shaft --- Screw shaft *10/1/38* Propeller *10/1/38*
 Stern tube *6/12/37* Engine and boiler seatings *28/12/37* Engines holding down bolts *26/1/38*
 Completion of fitting sea connections *28/12/37*
 Completion of pumping arrangements *4/2/38* Boilers fixed *19/1/38* Engines tried under steam *28/1/38*
 Main boiler safety valves adjusted *28/1/38* Thickness of adjusting washers *Post. 3/8" std., 1/32" post. 7/32" Superheat. Aux? 5/16" post. 1/4" Superheat.*
 Crank shaft material *Steel* Identification Mark *9886* Thrust shaft material *Steel* Identification Mark *25*
 Intermediate shafts, material *Steel* Identification Marks *173* Tube shaft, material --- Identification Mark ---
 Screw shaft, material *Steel* Identification Mark *24* Steam Pipes, material *Steel* Test pressure *660 lb* Date of Test *30/1/37, 22/1/38*
 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 eligible, in my opinion, for the

NOTATION + L.M.C. 2.38

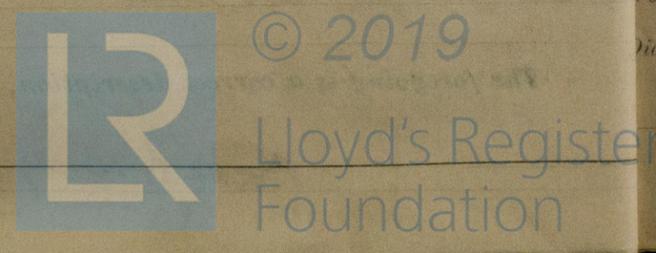
L.R. Home

The amount of Entry Fee ... £ *5* : : When applied for,
 Special ... £ *77:19* : : 19.....
 Donkey Boiler Fee ... £ : : :
 Travelling Expenses (if any) £ : : : *12/2 38*

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **TUE 1 MAR 1938**

Assigned *+ Lamb 2.38*
JD, CL
5.4 85. 9. 0. 1 amp 10



SUNDERLAND.

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