

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office

13 SEP 1930

Date of writing Report 12.9.1930 When handed in at Local Office 12.9.1930 Port of **SUNDERLAND.**

No. in Survey held at **SUNDERLAND.** Date, First Survey **5/4/30** Last Survey **10/9/30** 19
Reg. Book. **90822** on the **S.S. "HARPENDEN"** (Number of Visits **39**) Tons { Gross **4,678**
Net **2,774**.
When built **1930**

Built at **SUNDERLAND.** By whom built **BARTRAM & SONS. LD.** Yard No. **270**

Engines made at **SUNDERLAND.** By whom made **N.E. MARINE ENG. CO. LD.** Engine No. **2748** when made **1930**

Boilers made at **SUNDERLAND.** By whom made **N.E. MARINE ENG. CO. LD.** Boiler No. **2748** when made **1930**

Registered Horse Power Owners **J. C. HARRISON LD.** Port belonging to **LONDON.**

Nom. Horse Power as per Rule **408** Is Refrigerating Machinery fitted for cargo purposes **No.** Is Electric Light fitted **Yes**

Trade for which Vessel is intended **GENERAL CARGO.**

ENGINES, &c.—Description of Engines **TRIPLE EXPANSION STEAM.** Revs. per minute **66.**
Dia. of Cylinders **25" 41" 68"** Length of Stroke **45"** No. of Cylinders **3** No. of Cranks **3.**
Crank shaft, dia. of journals as per Rule **12.9** Crank pin dia. **13 1/8"** Crank webs Mid. length breadth **8 1/4"** Thickness parallel to axis **6 1/16"**
as fitted **13 1/8"** Mid. length thickness **8 1/4"** Thickness around eye-hole **6 1/16"**
Intermediate Shafts, diameter as per Rule **12.28** Thrust shaft, diameter at collars as per Rule **12.9**
as fitted **12.5"** as fitted **13 1/8"**

Tube Shafts, diameter as per Rule **13.78** Is the { tube } shaft fitted with a continuous liner { **Yes.**
as fitted **14 1/2"** as fitted **14 1/2"** screw }

Bronze Liners, thickness in way of bushes as per Rule **0.719** Thickness between bushes as per Rule **0.539** Is the after end of the liner made watertight in the
as fitted **3/4"** as fitted **2 3/32"** 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 **Yes.**

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.**

Propeller, dia. **16'-0"** Pitch **17'-3"** No. of Blades **4** Material **BRONZE** whether Movable **No.** Total Developed Surface **98** sq. feet
Length of Bearing in Stern Bush next to and supporting propeller **4'-9"**

Feed Pumps worked from the Main Engines, No. **2** Diameter **4"** Stroke **24"** Can one be overhauled while the other is at work **Yes**
Bilge Pumps worked from the Main Engines, No. **2** Diameter **4"** Stroke **24"** Can one be overhauled while the other is at work **Yes**

Feed Pumps { No. and size **2 @ 7" x 9 1/2" x 21"** Pumps connected to the { No. and size **1 - 10 1/2" x 12 1/2" x 21"**
{ How driven **STEAM.** Main Bilge Line { How driven **STEAM.**
Ballast Pumps, No. and size **1 - 10 1/2" x 12 1/2" x 21"** 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 at 3"** **1 at 3" Dry Tank.**
In Holds, &c. **2 @ 3" Fore hold - 2 @ 3 1/2" Fore main hold - 2 @ 3" Aft main hold - 2 @ 3" Aft hold.**
1 @ 2 1/2" Tunnel Well.

Main Water Circulating Pump Direct Bilge Suctions, No. and size **1 @ 8" dia.** Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size **1 @ 4 1/2" 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 **MAIN BELOW 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 **Yes.** How are they protected **Yes.**
What pipes pass through the deep tanks **Yes.** 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 **TOP GRATINGS.**

MAIN BOILERS, &c.—(Letter for record (r).) Total Heating Surface of Boilers **5704 sq. ft.**
Is Forced Draft fitted **No.** No. and Description of Boilers **2 Cyl. MARINE TYPE** 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? **—**

PLANS. Are approved plans forwarded herewith for Shafting Main Boilers **Yes** Auxiliary Boilers **Yes** Donkey Boilers **—**
(If not state date of approval)

Superheaters **—** General Pumping Arrangements **Yes.** Oil fuel Burning Piping Arrangements **—**
SPARE GEAR. State the articles supplied:— **1. Cl. Propeller - 1 Propeller shaft - 2 each Top end, Bottom end & Main Bearing bolts nuts - 6 Coupling bolts nuts - 2 each Feed & Bilge pump valves - 6 Boiler tubes - 10 Condenser tubes - 1 set Air Pump valves - 1 set Ballast Pump valves - 2 cast. iron plate - 1 cast. iron bar - 50 assorted bolts & nuts.**

The foregoing is a correct description,
FOR THE NORTH EASTERN MARINE ENGINEERING CO. LD.
John Neill
GENERAL MANAGER

Manufacturer.



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Foundation
005387-00539-0223

If not, state whether, and when, one will be sent. In a Report also sent on the Hull of the Ship. NOTE.—The stories which do not apply should be deleted.

30/ Apr. 15. May 30. June 8, 16, 20, 23, 27. July 1, 2, 4, 7, 9, 11, 14, 16, 17, 18, 21, 22, 23, 24
 25, 28, 29, 31. Aug. 1, 6, 7, 8, 11, 19, 20, 21, 25, 26, 28. Sept. 1, 3, 10.

Dates of Survey while building
 During progress of work in shops - -
 During erection on board vessel - - -
 Total No. of visits 39

Dates of Examination of principal parts—Cylinders 16-7-30 Slides 23-6-30 Covers 9-7-30
 Pistons 9-7-30 Piston Rods 1-7-30 Connecting rods 2-7-30
 Crank shaft 11-7-30 Thrust shaft 11-7-30 Intermediate shafts 28-7-30
 Tube shaft ✓ Screw shaft S. 24-7-30 Propeller S. C.I. 7-7-30
 Stern tube 9-7-30 Engine and boiler seatings 19-8-30 Engines holding down bolts 19-8-30
 Completion of fitting sea connections 16-7-30
 Completion of pumping arrangements 26-8-30 Boilers fixed 19-8-30 Engines tried under steam 26-8-30
 Main boiler safety valves adjusted 26-8-30 Thickness of adjusting washers P. 5 1/2" S. 5 7/16" Aux. 5 7/16"
 Crank shaft material STEEL Identification Mark 3591 T.D.S. Thrust shaft material STEEL Identification Mark 3591 T.D.S.
 Intermediate shafts, material STEEL Identification Marks 3591 T.D.S. Tube shaft, material ✓ Identification Mark ✓
 Screw shafts material STEEL Identification Marks 3591 T.D.S. Steam Pipes, material STEEL Test pressure 540 lbs. Date of Test 20-8-30
 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 carrying and burning oil fuel been complied with ✓
 Is this machinery duplicate of a previous case Yes If so, state name of vessel "HARPATHIAN." "HARMATTAN."

General Remarks (State quality of workmanship, opinions as to class, &c. The Engines and Boilers of this vessel have been built under Special Survey and the materials & workmanship are good. On completion the machinery was fitted in the vessel and tried under steam with satisfactory results.

The machinery of this vessel as now seen, is in a good and efficient condition, and eligible, in my opinion, to have the notation L.M.C. 9.30 marked in red in the Society's Register Book.

Vessel placed in Dry Dock. propeller, stem bush and outside fastenings of sea connections examined.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 9.30 C-L
 2SB & 1 Aux SB. G.S. 180 H.S. 7277.

J. 15/9/30.

The amount of Entry Fee ... £ 5 : 0 : 0 When applied for,
 Special ... £ 86 : 4 : 0 1 SEP 1930
 Donkey Boiler Fee ... £ : : :
 Travelling Expenses (if any) £ : : :
 When received, 12 SEP 1930

J. Scott.
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 23 SEP 1930
 Assigned + L.M.C. 9.30 C.L.

CERTIFICATE WRITTEN.



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