

# REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office - MAY 1927

Writing Report 23 April 27 When handed in at Local Office 27.4.1927 Port of **WEST HARTLEPOOL**  
 Survey held at **West Hartlepool** Date, First Survey 15<sup>th</sup> March 26 Last Survey 22nd April 1927  
 on the **S.S. "ARABISTAN"** (Number of Visits 144)  
 at **West Hartlepool** By whom built **Wm Gray & Co. Ltd.** Yard No. **982** Tons { Gross 5236 Net 3201 }  
 made at **ditto** By whom made **Central Marine** Engine No. **982** when made **1927**  
 made at **ditto** By whom made **Engine Works** Boiler No. **982** when made **1927**  
 rated Horse Power Owners **J. & S. Shick Co.** Port belonging to **London**  
 Horse Power as per Rule **590** Is Refrigerating Machinery fitted for cargo purposes **no** Is Electric Light fitted **yes**  
 for which Vessel is intended **Ocean going**

**ENGINES, &c.**—Description of Engines **Triple expansion** Revs. per minute **75**  
 Cylinders **28" 46" 74"** Length of Stroke **48"** No. of Cylinders **3** No. of Cranks **3**  
 shaft, dia. of journals as per Rule **14.24"** Crank pin dia. **14.2"** Crank webs Mid. length breadth **21.76"** Thickness parallel to axis **9"**  
 as fitted **14.2"** Mid. length thickness **9"** shrunk Thickness around eye-hole **6.4"**  
 Intermediate Shafts, diameter as per Rule **13.56"** Thrust shaft, diameter at collars as per Rule **14.24"**  
 as fitted **13.2"** as fitted **14.2"**

Shafts, diameter as per Rule **15.06"** Is the **tub** shaft fitted with a continuous liner **yes**  
 as fitted **16"** as fitted **16"** Is the **screw** shaft fitted with a continuous liner **yes**  
 Liners, thickness in way of bushes as per Rule **.76"** Thickness between bushes as per Rule **.57"** Is the after end of the liner made watertight in the  
 as fitted **.32"** as fitted **.76"** If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner **yes**  
 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**  
 liners are fitted, is the shaft lapped or protected between the liners **no** Is an approved Oil Gland or other appliance fitted at the after  
 the tube shaft **no** Length of Bearing in Stern Bush next to and supporting propeller **64"**

eller, dia. **18'-0"** Pitch **17'-0"** No. of Blades **4** Material **Bronze** whether Moveable **yes** Total Developed Surface **104** sq. feet  
 Pumps worked from the Main Engines, No. **2** Diameter **4.2"** Stroke **32"** Can one be overhauled while the other is at work **yes**  
 Pumps worked from the Main Engines, No. **2** Diameter **4.2"** Stroke **32"** Can one be overhauled while the other is at work **yes**  
 No. and size **2 main, 2 10.2" x 8" x 24" simplex** Pumps connected to the Main Bilge Line No. and size **2 main, 1 10" x 11.2" x 10" duplex**  
 How driven **steam** **1 7.2" x 5" x 6" duplex** Main Bilge Line How driven **steam**

st Pumps, No. and size **1. 10" x 11.2" x 10" duplex** Lubricating Oil Pumps, including Spare Pump, No. and size **1**  
 independent means arranged for circulating water through the Oil Cooler **yes** Suctions, connected to both Main Bilge Pumps and Auxiliary  
 Pumps;—In Engine and Boiler Room **Three of 3" dia. One of 2.4" dia. to transfer pump only.**  
 No. 1. two of 3" No. 2. two of 3.2" No. 3. two of 2.2" No. 4. two of 2.4" Deep tank  
 two of 2.2" Tunnel one of 2.4"

Water Circulating Pump Direct Bilge Suctions, No. and size **1 of 10"** Independent Power Pump Direct Suctions to the Engine Room Bilges,  
 and size **1 of 5"** Are all the Bilge Suction Pipes in holds and tunnel well fitted with strum-boxes **yes**  
 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**  
 All Sea Connections fitted direct on the skin of the ship **yes** Are they fitted with Valves or Cocks **yes**  
 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**  
 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**  
 Pipes are carried through the bunkers **none** How are they protected **yes**  
 pipes pass through the deep tanks **none** Have they been tested as per Rule **yes**  
 All Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times **yes**  
 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  
 department to another **yes** Is the Shaft Tunnel watertight **see ship report** fitted with a watertight door **yes** worked from **yes**

**MAIN BOILERS, &c.**—(Letter for record **S**) Total Heating Surface of Boilers **8874** sq. ft  
 Forced Draft fitted **yes** No. and Description of Boilers **3 single ended** Working Pressure **180 lbs**  
 A REPORT ON MAIN BOILERS NOW FORWARDED? **yes**  
 A DONKEY BOILER FITTED? **no** If so, is a report now forwarded? **no**

**PLANS.** Are approved plans forwarded herewith for Shafting **yes** Main Boilers **yes** Auxiliary Boilers **yes** Donkey Boilers **yes**  
 (If not state date of approval)  
 Arrangements **yes** General Pumping Arrangements **yes** Oil fuel Burning Piping Arrangements **yes**

**ARE GEAR.** State the articles supplied:—**2 bolts & nuts for connec. rods top ends. 2 ditto bottom**  
**rods. 2 ditto main bearings. 1 set ditto for couplings. 1 set valves for feed,**  
**bilge and donkey pumps. 1 set springs for H.P. piston. 1 air pump bucket**  
**and rod, head valve seat, valves & guards. 1 circulating pump bucket**  
**and rod & set of valves, 2 seats & guard. 1 pair crank pin bearings**  
**eccentric strap. 1 propeller shaft 2 cast iron blades & 4 studs & nuts.**  
**9 boiler tubes, 50 condenser tubes. 2 feed check valves. 2 safety**  
**valve springs 1 escape valve spring of each size. Various spare parts**  
**for fan engine. Bolts, nuts and iron assorted.**

The foregoing is a correct description,  
 FOR THE CENTRAL MARINE ENGINE WORKS,  
 (W. Gray & Co. Ltd.)

*W. Gray*  
 MANAGING DIRECTOR, C.M.E.W.

Manufacturer.



W150-0210

1926 Mar. 15, 16, 17, 18, 19, 22, 23, 24, 29. Apr. 7, 21, 22, 23. May, 3, 5, 6, 7, 17, 18, 19, 20, 21, 26, 27, 28, 31. June, 1, 2, 4, 7, 8, 9, 10, 11, 14, 16, 17, 18, 22, 24, 28, 29.  
 During progress of work in shops -- 29, 30. July 1, 5, 7, 9, 12, 13, 15, 16, 19, 22. Aug. 10, 12, 17, 19, 24. Sep. 1, 3, 13, 16, 20. Oct. 1, 5, 6, 7, 13, 15, 19, 22, 26, 29. Nov. 2, 5, 9, 12, 16, 19, 23, 26, 30. Dec. 14, 15, 16, 17.  
 Dates of Survey while building During erection on board vessel --- 20, 22, 23, 29. - 1927 - Jan. 4, 6, 11, 13, 14, 17, 18, 19, 20, 21, 24, 25, 26, 27, 28. Feb. 1, 2, 3, 4, 9, 10, 14, 15, 16, 17, 18, 21, 22, 23, 24, 25, 28. Mar. 1, 2, 3, 4, 9, 10, 11.  
 14, 17, 18, 21, 22, 23, 24, 28, 29, 30. April 1, 6, 9, 11, 12, 22.  
 Total No. of visits 144.

Dates of Examination of principal parts—Cylinders 29.3.26 - 23.7.26 Slides 28.6.26 - 14.11.26 Covers 28.5.26 - 28.6.26  
 Pistons 21.5.26 - 15.12.26 Piston Rods 15.3.26 - 16.9.26 Connecting rods 3.5.26 - 22.12.26  
 Crank shaft 19.5.26 - 19.8.26 Thrust shaft 21.4.26 - 21.2.27 Intermediate shafts 20.5.26 - 28.2.27  
 Tube shaft ✓ Screw shaft 17.5.26 - 28.2.27 Propeller 22.10.26 - 28.2.27  
 Stern tube 4.1.27 - 28.2.27 Engine and boiler seatings 14.3.27. Engines holding down bolts 23.3.27 - 29.3.27  
 Completion of pumping arrangements 12.4.27 Boilers fixed 21.3.27 Engines tried under steam 12.4.27.  
 Main boiler safety valves adjusted 12.4.27 Thickness of adjusting washers FP  $\frac{1}{32}$ " S  $\frac{5}{16}$ " PP  $\frac{3}{8}$ " S  $\frac{3}{8}$ " SP  $\frac{3}{8}$ " S  $\frac{13}{32}$ "  
 Crank shaft material *Sm. Ingot Steel* Identification Mark 6375H. Thrust shaft material *Sm. Ingot Steel* Identification Mark 6686  
 Intermediate shafts, material *ditto* Identification Marks 1063, 1065, 1066. Tube shaft, material ✓ Identification Mark ✓  
 Screw shaft, material *Scrap iron* Identification Mark 6392H Steam Pipes, material *Lap welded steel* Test pressure 600 lbs. Date of Test 9.2.27-14.27  
 Is an installation fitted for burning oil fuel *yes* ✓ Is the flash point of the oil to be used over 150°F. *yes* ✓  
 Have the requirements of the Rules for carrying and burning oil fuel been complied with *yes* ✓  
 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.)  
 An evaporator and a feed heater fitted, the bodies of which have been tested to 50 lbs, and the coils of the former to 400 lbs.  
 An oil burning installation made by Messrs Whites Patent Oil Burning Co Ltd has been fitted.  
 This vessel's machinery has been built and installed under Special Survey. The materials and workmanship are good and efficient. On completion it was tried under full steam satisfactorily and is now eligible to have the notation **⊕ L.M.C. 4.27.**

It is submitted that this vessel is eligible for THE RECORD, ⊕ L.M.C. 4.27. F.D. CL.  
 Fitted for oil fuel 4.27. F.P. above 150°F.

*J.W.D.*  
 4/5/27.

The amount of Entry Fee ... £ 6 : 0 :  
 Special ... £ 104 : 10 :  
 Donkey Boiler Fee ... £ ✓ :  
 Travelling Expenses (if any) £ ✓ :  
 When applied for, 29.4.19  
 When received, 11.5.27  
 R.D. Shilston & Robert Rae  
 Engineer Surveyors to Lloyd's Register of Shipping.

Committee's Minute FRI, 6 MAY 1927  
 Assigned ⊕ L.M.C. 4.27 ⊕ D. CL  
 Fitted for oil fuel 4.27 F.P. above 150°F



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