

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office

24 JAN 1925

of writing Report 21. 1. 25 When handed in at Local Office 21. 1. 25 Port of **PLYMOUTH**
 in Survey held at **Dartmouth** Date, First Survey 30. 1. 24 Last Survey **21. 1. 1925**
 (Number of Visits **45**)
 Book. Tons { Gross 1082
 Net 514
 on the S.S. "**SUNFLOWER**"
 at **Dartmouth** By whom built **Philip & Son** Yard No. **640** When built **1925**
 Engines made at **do.** By whom made **do.** Engine No. **263** when made **1925**
 Makers made at **Glasgow** By whom made **J. Neilson & Son** Boiler No. **3914** when made **1924**
 Registered Horse Power Owners **Vacuum Oil Co. Ltd.** Port belonging to **Lisbon**
 m. Horse Power as per Rule **130** Is Refrigerating Machinery fitted for cargo purposes **no** Is Electric Light fitted **Yes**

GINES, &C.—Description of Engines **Triple expansion surface condensing**
 a. of Cylinders **15" 25" 40"** Length of Stroke **27"** Revs. per minute **120** No. of Cylinders **3** No. of Cranks **3**
 i. of Crank shaft journals as per rule **4.4** Dia. of Crank pin **8 1/2"** Crank webs Mid. length breadth **13"** Thickness parallel to axis **5 3/4"**
 as fitted **8 1/2"** Mid. length thickness **5 3/4"** shrunk Thickness around eye-hole **3 7/8"**
 Diameter of Thrust shaft under collars as per rule **4.4** Diameter of Tunnel shaft as per rule **4.34** Diameter of Screw shaft as per rule **8.14** Is the Screw shaft
 as fitted **8 1/2"** as fitted **none** as fitted **9"**
 ed with a continuous liner the whole length of the stern tube **Yes** Is the after end of the liner made watertight in the propeller boss **Yes**
 the liner is in more than one length are the joints burned **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**
 two liners are fitted, is the shaft lapped or protected between the liners. **Yes** Is an approved appliance fitted at the after end of the shaft to permit
 it being efficiently lubricated **ordinary bush** Length of Stern Bush **3'-6"** Diameter of Propeller **10'-0"**
 Pitch of Propeller **10'-0"** No. of Blades **4** State whether Moveable **yes** Total Surface **41.46** square feet.
 No. of Feed Pumps fitted to the Main Engines **none** Diameter of ditto **3** Stroke **13 1/2"** Can one be overhauled while the other is at work **Yes**
 No. of Bilge Pumps fitted to the Main Engines **two** Diameter of ditto **3** Stroke **13 1/2"** Can one be overhauled while the other is at work **Yes**
 Total number and size of power driven Feed and Bilge Auxiliary Pumps **2 Weis Feed - 8" x 4 1/2" x 12"**
 No. and size of Pumps connected to the Main Bilge Line **ER = 2 Duplex 8" x 7" x 10" and 4 1/2" x 4 1/2" x 10" Forward - 1-5 1/2" x 4 1/2" x 5" from 1-5 1/2" x 4 1/2" x 6"**
 No. and size of Ballast Pumps **1 Duplex 8" x 7" x 10"** No. and size of Lubricating Oil Pumps, including Spare Pump **none**
 Are two independent means arranged for circulating water through the Oil Cooler **Yes** No. and size of suction connected to both Main Bilge Pumps and Auxiliary
 Bilge Pumps;—In Engine and Boiler Room **3 - 2 1/4"** and in Holds, &c. **No 1 - 2 - 2 1/2"; No 4 - 2 - 2 1/2"**
 Are two independent means arranged for circulating water through the Oil Cooler **Yes** No. and size of suction connected to both Main Bilge Pumps and Auxiliary
 Bilge Pumps;—In Engine and Boiler Room **3 - 2 1/4"** and in Holds, &c. **No 1 - 2 - 2 1/2"; No 4 - 2 - 2 1/2"**

No. and size of Main Water Circulating Pump Bilge Suctions **1 - 4 1/2"** No. and size of Donkey Pump Direct Suctions **Yes**
 the Engine Room Bilges **1 - 2 1/4"** 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 connections with the sea direct on the skin of the ship **Yes** Are they 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 Discharge Pipes 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 are carried through the bunkers **none** How are they protected **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 Screw Shaft Tunnel watertight **none** Is it fitted with a watertight door **worked from**

MAIN BOILERS, &C.—(Letter for record **S.**) Total Heating Surface of Boilers **2548 sq ft**
 Is Forced Draft fitted **no** No. and Description of Boilers **2 - S.E. Marine** 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? **Yes**

PLANS. Are approved plans forwarded herewith for Shafting **Yes** Main Boilers **Yes** Auxiliary Boilers **Yes** Donkey Boilers **Yes**
 General Pumping Arrangements **Yes** Oil fuel Burning Piping Arrangements **Yes**

SPARE GEAR. State the articles supplied:—**As per Rules + 1 tail shaft, 1 eccentric strap, 1 valve spindle, 1 thrust shoe,
 2 propeller blades, 1 set piston springs (hockwood & Carlisle), 1 pair bottom end brass, 1 pair top end brass, 1 air
 pump bucket and rod, 1 impeller shaft for circulating pump, 1 set air pump valves, 2 main & 2 donkey
 check valves, 12 piston ring studs, 2 safety valve springs, 3 escape valve springs, 1 feed & escape valve
 spring, quantity of condenser tubes, boiler tubes, tube stoppers, condenser ferrules, gauge glass
 washers, assatid bolts & nuts and iron of various sizes
 In oil fuel plant: 4 piston rings, 2 pump rings, filler basket, burner burner tips, valves & springs
 In electric light plant: one armature & quantity fuses, lamp connectors, switches &c.**

For PHILIP & SON LIMITED.
 The foregoing is a correct description

G. Towell. Philip
 MANAGER

Manufacturer.



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 Lloyd's Register
 Foundation

1924 - Jan. 30. Feb. 11, 18 March 5, 12, 19, 24. Apr. 3, 10, 14, 23, 25, 30.
 May 4, 11, 22, 24, 30 June 30. July 15, 22, 30 Aug. 6, 13, 25
 Sept 2, 10, 22 Oct 1, 4, 11, 14, 22. Nov. 5, 12, 19, 26 Dec. 3, 12, 22, 31
 1925 - Jan. 13, 16, 14, 21.
 Total No. of visits **48.**

Dates of Examination of principal parts - Cylinders 30. 4. 24 Slides 5. 3. 24
 Covers 23. 4. 24 Pistons 23. 4. 24 Rods 5. 3. 24
 Connecting rods 30. 1. 24 Crank shaft 12. 3. 24 Thrust shaft 6. 8. 24
 Tunnel shafts ✓ Screw shaft 6. 8. 24 Propeller 6. 8. 24
 Stern tube 6. 8. 24 Engine and boiler seatings 13. 8. 24 Engines holding down bolts 12. 11. 24
 Completion of pumping arrangements 12. 11. 24 Boilers fixed 12. 12. 24 Engines tried under steam 14. 1. 25
 Completion of fitting sea connections 1. 10. 24 Stern tube 1. 10. 24 Screw shaft and propeller 1. 10. 24
 Main boiler safety valves adjusted 31. 12. 24 Thickness of adjusting washers Port $\frac{25}{32}$ $\frac{5}{8}$ Star $\frac{3}{4}$ $\frac{13}{16}$
 Material of Crank shaft steel Identification Mark on Do. LLOYDS No. 1161 A.T.T. 24. 12. 23.
 Material of Thrust shaft " Identification Mark on Do. LLOYDS No. 4008 6. 8. 24 P.T.B.
 Material of Tunnel shafts ✓ Identification Marks on Do. ✓
 Material of Screw shafts steel Identification Marks on Do. LLOYDS No. 11006 6. 8. 24 P.T.B.
 Material of Steam Pipes Coppe. ✓ Test pressure 3 bolts. ✓ Spare shaft LLOYDS No. 4004 6. 8. 24 P.T.B.
 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.) *The materials and workmanship are good. The machinery of this vessel has been built and installed under special survey and is in accordance with the Rules and approved plans and, in my opinion, is suitable for classification with record + L.M.C. 1.25 fitted for burning oil fuel F.P. above 150° 1.25.*

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 1.25. CL.
 Fitted for oil fuel 1.25. F.P. above 150°F.

[Signature]
 26/1/25
 P. J. Man.
 Engineer Surveyor to Lloyd's Register of Shipping.

CERTIFICATE WRITTEN

The amount of Entry Fee ... £ 3-0-0 When applied for,
 3/5 Special ... £ 19-10-0 23. 1. 25.
 Donkey Boiler Fee ... £ : : When received,
 Travelling Expenses (if any) £ 22-0-0 28. 1. 25.

Committee's Minute FRI. 30 JAN 1925
 Assigned + L.M.C. 1.25
 C.L.

Fitted for oil fuel 1.25 F.P. above 150°F.

Plymouth Office

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

No. in Reg. Book. 10406
 Date of writing
 Master
 Engines made
 Boilers made
 Nominal Horsepower
 MULTIPLE
 Manufactured
 Total Heat
 No. and Description
 Tested by
 Area of Flues
 Area of each
 In case of
 Smallest diameter
 Smallest diameter
 Largest diameter
 Thickness
 long. seams
 Percentage
 Percentage
 Thickness
 Material
 Length of
 Dimensions
 End plates
 How are
 Tube plates
 Mean pitch
 Girders
 at centre
 in each
 Tensile
 Pitch of
 Working
 Thickness
 Pitch of
 Working
 Diameter
 Working
 Diameter

