

Rpt. 4.

REPORT ON MACHINERY.

Sou. Report No. 11075
No. 8475.

Date of writing Report **1 APR 1921** When handed in at Local Office **1 APR 1921** Port of **London & Southampton**
No. in Survey held at **Newbury** Date, First Survey **14th June 1920** Last Survey **10 March 1921**
Reg. Book. on the **Thornhill Motor M358 M.V. "PHILO"** (Number of Visits **12**) Gross **332.47**
Master **Gosport** Built at **Gosport** By whom built **Camp & Nicholson Ltd** Tons **Net 208.93**
Engines made at **Newbury** By whom made **Plentydon Ltd** when made **1921**
Boilers made at **BRAKE** By whom made **when made**
Registered Horse Power **180** Owners **British Oil Bunkering Co. Ltd** Port belonging to **London**
Nom. Horse Power as per Section 28 **51.4** Is Refrigerating Machinery fitted for cargo purposes **No** Is Electric Light fitted **yes**

ENGINES, &c.—Description of Engines **Thornhill Motor, 2 stroke cycle** No. of Cylinders **4** No. of Cranks **4**
Dia. of Cylinders **335 $\frac{1}{2}$** Length of Stroke **350 $\frac{1}{2}$** Revs. per minute **300** Dia. of Screw shaft **as per rule 143.6 $\frac{1}{2}$** Material of **steel**
the screw shaft fitted with a continuous liner the whole length of the stern tube **no liner** Is the after end of the liner made water tight
the propeller boss **✓** If the liner is in more than one length are the joints burned **✓** 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
rers are fitted, is the shaft lapped or protected between the liners **✓** Length of stern bush **2'-0"**
Dia. of Tunnel shaft **as per rule 124.7** Dia. of Crank shaft journals **as per rule 122.2 $\frac{1}{2}$** Dia. of Crank pin **135 $\frac{1}{2}$** Size of Crank webs **76.7 $\frac{1}{2}$** Dia. of thrust shaft under
bars **130 $\frac{1}{2}$** Dia. of screw **4-9"** Pitch of Screw **3'-6"** No. of Blades **4** State whether moveable **no** Total surface **809 ft**
No. of Feed pumps **✓** Diameter of ditto **✓** Stroke **✓** Can one be overhauled while the other is at work **✓**
No. of Bilge pumps **one** Diameter of ditto **105 $\frac{1}{2}$** Stroke **65 $\frac{1}{2}$** Can one be overhauled while the other is at work **✓**
No. of Donkey Engines **one** Sizes of Pumps **Rotary-plunger type** No. and size of Suctions connected to both Bilge and Donkey pumps
Engine Room **2-2" and 1-2 $\frac{1}{2}$ "** In Holds, &c. **1-2"**

No. of Bilge Injections **✓** sizes **✓** Connected to condenser, or to circulating pump **✓** Is a separate Donkey Suction fitted in Engine room & size **yes 2"**
Are all the bilge suction pipes fitted with roses **yes** Are the roses in Engine room always accessible **yes** Are the sluices on Engine room bulkheads always accessible **✓**
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**
That pipes are carried through the bunkers **✓** How are they protected **✓**
Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times **yes**
Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges **yes**
Is the Screw Shaft Tunnel watertight **✓** Is it fitted with a watertight door **✓** worked from **✓**

BOILERS, &c.—(Letter for record **✓**) Manufacturers of Steel **✓**
Total Heating Surface of Boilers **Is Forced Draft fitted** No. and Description of Boilers
Working Pressure **Tested by hydraulic pressure to** Date of test **No. of Certificate**
Can each boiler be worked separately **Area of fire grate in each boiler** No. and Description of Safety Valves to
each boiler **Area of each valve** Pressure to which they are adjusted **Are they fitted with easing gear**
Smallest distance between boilers or uptakes and bunkers or woodwork **Mean dia. of boilers** Length **Material of shell plates**
Thickness **Range of tensile strength** Are the shell plates welded or flanged **Descrip. of riveting: cir. seams**
Long. seams **Diameter of rivet holes in long. seams** Pitch of rivets **Lap of plates or width of butt straps**
Percentages of strength of longitudinal joint **Working pressure of shell by rules** Size of manhole in shell
Size of compensating ring **No. and Description of Furnaces in each boiler** Material **Outside diameter**
Length of plain part **Thickness of plates** Description of longitudinal joint **No. of strengthening rings**
Working pressure of furnace by the rules **Combustion chamber plates: Material** Thickness: Sides **Back** Top **Bottom**
Pitch of stays to ditto: Sides **Back** Top **If stays are fitted with nuts or riveted heads** Working pressure by rules
Material of stays **Area at smallest part** Area supported by each stay **Working pressure by rules** End plates in steam space:
Material **Thickness** Pitch of stays **How are stays secured** Working pressure by rules **Material of stays**
Area at smallest part **Area supported by each stay** Working pressure by rules **Material of Front plates at bottom**
Thickness **Material of Lower back plate** Thickness **Greatest pitch of stays** Working pressure of plate by rules
Diameter of tubes **Pitch of tubes** Material of tube plates **Thickness: Front** Back **Mean pitch of stays**
Pitch across wide water spaces **Working pressures by rules** Girders to Chamber tops: Material **Depth and**
Thickness of girder at centre **Length as per rule** Distance apart **Number and pitch of stays in each**
Working pressure by rules **Steam dome: description of joint to shell** % of strength of joint
Diameter **Thickness of shell plates** Material **Description of longitudinal joint** Diam. of rivet holes
Pitch of rivets **Working pressure of shell by rules** Crown plates **Thickness** How stayed
SUPERHEATER. Type **Date of Approval of Plan** Tested by Hydraulic Pressure to
Date of Test **Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler**
Diameter of Safety Valve **Pressure to which each is adjusted** Is Easing Gear fitted

004603-004611-0200

IS A DONKEY BOILER FITTED?

yes

If so, is a report now forwarded?

yes

SPARE GEAR.

State the articles supplied:-

1 Glinder case. 6 Piston rings. 1 Top end bush.
4 Ignition plates. 1 Governor spring. 2 lengths of fuel pipes. 1 fuel pump.
2 Bottom end bolts & nuts. 1 Eccentric strap. 1 set of bilge pump valves.
1 set of circ. pump valves. 12 Coupling bolts. 2 leather valves for crank case.

The foregoing is a correct description,

J. D. Plentz

Manufacturer.

Dates of Survey while building { During progress of work in shops - - (1920) Jun 17. July 7. 15. Aug 19. Sep 8. 15. 29. Oct 14. Nov 11. (1921) Jan 27. FEB 15. MAR 10.
During erection on board vessel - - - 31st May. 7th July. 23rd Sept. 19th Oct. 3rd Nov. 1921.
Total No. of visits 2. and 6

Is the approved plan of main boiler forwarded herewith

Dates of Examination of principal parts - Cylinders 8.9.20 Slides ✓ Covers 15.9.20 Pistons 14.10.20 Rods ✓
Connecting rods 14.10.20 Crank shaft 10.5.20 Thrust shaft 7.7.20 Tunnel shafts 16.2.21 Screw shaft 15.2.20 Propeller 16.2.21
Stern tube 15.2.20 Steam pipes tested ✓ Engine and boiler seatings 31-5-21 Engines holding down bolts 19-10-21
Completion of pumping arrangements 19-10-21 Boilers fixed ✓ Engines tried 3-11-21
Completion of fitting sea connections 23-9-21 Stern tube 23-9-21 Screw shaft and propeller 19-10-21
Main boiler safety valves adjusted ✓ Thickness of adjusting washers ✓
Material of Crank shaft Steel Identification Mark on Do. 10.5.20 Material of Thrust shaft Steel Identification Mark on Do. 15.2.21
Material of Tunnel shafts Steel Identification Marks on Do. 15.2.21 Material of Screw shafts Steel Identification Marks on Do. 15.2.21
Material of Steam Pipes ✓ Test pressure ✓

Is an installation fitted for burning oil fuel IN DONKEY BOILER. Yes. Is the flash point of the oil to be used over 150°F. yes

Have the requirements of Section 49 of the Rules been complied with

yes

Is this machinery duplicate of a previous case

If so, state name of vessel

General Remarks

(State quality of workmanship, opinions as to class, &c.)

Engines constructed under survey material tested, workmanship good. Cylinders, cylinder heads tested to 400 lbs per sq inch & all joints & silencers tested to 100 lbs per sq inch hydraulic & found tight & sound. Two fuel tanks (as per approved plan) tested by hydraulic pressure to 13 ft head & found tight. Two (2) air bottles tested to 1000 lbs per sq inch & found tight. All above stamped L.R.

Engines examined on test bench running & forming satisfactory. Engines stated forwarding to Messrs Camper & Nicholson's L^{td} Report Southampton to be fitted on board a vessel building by them.

The above engine has been efficiently fitted on board and on trial proved satisfactory.

The machinery is eligible in my opinion to have notation + L.M.

The report on the Electric Light Installation will be forwarded when received from the Contractors.

The amount of Entry Fee ... £ 2 : 0 : 0 When applied for, 1 APR 1921
Special ... £ 15 : 0 : 0
Donkey Boiler Fee ... £ : : :
Travelling Expenses (if any) £ 3 : 11 : 1 14 April 1921
SOUTHAMPTON " £ 2 : 7 : 7 8/11/21
Committee's Minute TUE. 15 NOV. 1921

Assigned

+ L.M.B. 11.21
oil engines.

Thomas Blackie & A. H. Boy
Engineer Surveyor to Lloyd's Register of Shipping.



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Lloyd's Register
Foundation

MACHINERY CERT
WRITTEN.