

# REPORT ON OIL ENGINE MACHINERY.

No. 7888

Received at London Office

31 AUG 1948

Date of writing Report 25th Aug: 1948 When handed in at Local Office 26th August 1948. Port of TORQUAY.

Survey held at DARTMOUTH. Date, First Survey 18th March, 1948 Last Survey 23rd July, 1948. Number of Visits Eight.

on the ~~Triple~~ <sup>Single</sup> Screw vessel M.V. "POLURRIAN" Tons Gross 328 Net 149

built at Dartmouth By whom built Philip & Son Ltd., Yard No. 1165 When built 1948-7

engines made at Openshaw By whom made Crossley Bros. Engine No. 137305 When made do.

Boilers made at None By whom made --- Boiler No. --- When made ---

Horse Power 350 Owners Coastal Freighters Ltd. Port belonging to Dartmouth

Power as per Rule 105 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

Use for which vessel is intended Ocean going

ENGINES, &c. Type of Engines Vertical Solid Injection 2 or 4 stroke cycle 2 Single or double acting S.A.

Maximum pressure in cylinders 950 lbs/sq" Diameter of cylinders 10 1/2" Length of stroke 13 1/2" No. of cylinders 5 No. of cranks 5

Indicated Pressure 92 lbs/sq" Ahead Firing Order in Cylinders --- Span of bearings, adjacent to the crank, measured

inner edge to inner edge 14.11/16" Is there a bearing between each crank Yes Revolutions per minute 320

Wheel dia. 37 1/2" Weight 2166 lbs Moment of inertia of flywheel (46lbs.in<sup>2</sup> or Kg.cm<sup>2</sup>) --- Means of ignition Compt. Kind of fuel used Heavy Oil

Crk dia. of journals as per Rule --- as fitted 7 1/2" Crank pin dia. 7 1/4" Crank webs Mid. length breadth 9 1/2" Thickness parallel to axis ---

Wheel Shaft, diameter as per Rule On as fitted Crankshaft Intermediate Shafts, diameter as fitted None Thrust Shaft, diameter at collars as fitted 4 3/4"

Propeller Shaft, diameter as per Rule None as fitted Screw Shaft, diameter as fitted 5" Is the tube shaft fitted with a continuous liner No

Liner thickness in way of bushes as per Rule --- as fitted --- Thickness between bushes as per Rule --- as fitted --- Is the after end of the liner made watertight in the

celler boss --- If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner ---

Does 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-

osive --- 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

of tube shaft Yes If so, state type Newark type (Brunton's) Length of bearing in Stern Bush next to and supporting propeller 20"

Propeller, dia. 70" Pitch 41" No. of blades 3 Material Bronze whether moveable Solid Total developed surface 11.8 sq. feet

Moment of inertia of propeller (46lbs.in<sup>2</sup> or Kg.cm<sup>2</sup>) --- Kind of damper, if fitted None

Method of reversing Engines Direct Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Means of

ignition Forced Thickness of cylinder liners 7/8" Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled

ugged with non-conducting material Yes If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned

to the engine funnel Cooling Water Pumps, No. One M.E. Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes

Water Pumps worked from the Main Engines, No. One M.E. Diameter 4 1/2" Stroke 3" Can one be overhauled while the other is at work ---

Pumps connected to the Main Bilge Line No. and size One 2800 galls/hr. One Hawthorthy Centrifugal 80 tons/hr. How driven Main Engine Auxiliary Engine

Is the cooling water led to the bilges No If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping

arrangements ---

Water Pumps, No. and size the above centrifugal Power Driven Lubricating Oil Pumps, including spare pump, No. and size 2-1 3/4" & 2-3/16 x 2" stroke

two independent means arranged for circulating water through the Oil Cooler Yes Suctions, connected to both main bilge pumps and auxiliary

Water pumps, No. and size: In machinery spaces 2 @ 2 1/2" & One @ 3" dia. In pump room ---

holds, &c. Hold 2 @ 2 1/2" dia Fore peak. One @ 2 1/2" dia.

Independent Power Pump Direct Suctions to the engine room bilges, No. and size One @ 3" & One 2 1/2" dia. (included above).

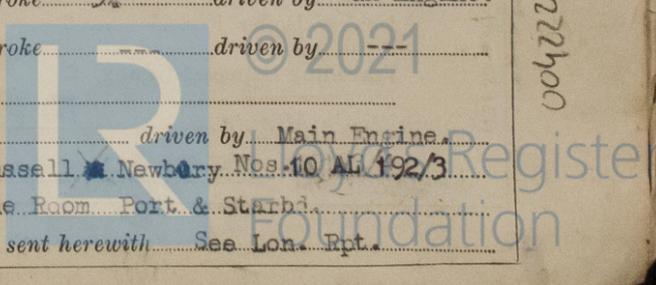
Are all the bilge suction pipes in holds and tunnel well fitted with strum-boxes Yes Are the bilge suction in the machinery spaces led from easily

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 platform plates Yes Are the overboard discharges above or below the deep water line Above

5200 622400-22400



AIR RECEIVERS:—Have they been made under survey... Yes... State No. of report or certificate... Safety valve on Air compressor... Can the internal surfaces of the receivers be examined and cleaned... Yes... Is a drain fitted at the lowest part of each receiver... Yes... Injection Air Receivers, No. None... Cubic capacity of each... Internal diameter... thickness... Seamless, welded or riveted longitudinal joint... Material... Range of tensile strength... Working pressure... Starting Air Receivers, No. 2... Total cubic capacity 30 cub ft. Internal diameter 2' 0 1/8" thickness 3/8" Rivetted & Welded Material Steel Range of tensile strength 26/30 & 28/32 tons/sq" Working pressure Actual 350

IS A DONKEY BOILER FITTED No. If so, is a report now forwarded... Is the donkey boiler intended to be used for domestic purposes only... PLANS. Are approved plans forwarded herewith for shafting 7.5.47. Receivers See Not. Rpt. Separate fuel tanks. Donkey boilers None General pumping arrangements 18.1.47. Pumping arrangements in machinery space 2.4.47. Oil fuel burning arrangements 18.1.47. Have Torsional Vibration characteristics been approved Yes Date of approval 7.5.47. & 29.7.48.

SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes State the principal additional spare gear supplied See attached list.

Auxiliary Machinery :- Russell & Newbury 9 H.P. Engine No. 1193 driving David McClure 3 KW Generator No. 10794 @ 1000 R.P.M.; Hamworthy's Compressor No. 74392 & Hamworthy Pump No. 73089. Russell & Newbury 9 H.P. Engine No. 1192 driving David McClure 3 K.W. Generator No. 10795 only at 1000 R.P.M. FOR PHILIP & SON, LIMITED.

The foregoing is a correct description, J. Phillip Manufacturer. MANAGING DIRECTOR

Dates of Survey while building During progress of work in shops - - During erection on board vessel - - 1948. March. 18; April. 9, 14; June. 2, 30; July. 9, 20, 23. Total No. of visits.

Dates of examination of principal parts—Cylinders Man. Rpt. No. 13207 Covers Man. Pistons Man. Rods --- Connecting rods Man. Crank shaft Man. Flywheel shaft --- Thrust shaft Man. Intermediate shafts --- Tube shaft --- Screw shaft Ips. Rpt. D. 18366 Propeller Ips. & 16.7.48 Stern tube Ips. Engine seatings 18.3.48 Engine holding down bolts 9.7.48 Completion of fitting sea connections 18.3.48 Completion of pumping arrangements 20.7.48 Engines tried under working conditions 21.7.48 Crank shaft, material Steel Identification mark 3148 AS 7.11.47 Flywheel shaft, material, --- Identification mark --- Thrust shaft, material Steel Identification mark 3135 R. McL. 14.4.47 Intermediate shafts, material --- Identification marks --- Tube shaft, material --- Identification mark --- Screw shaft, material Steel Identification mark 185-DB. 4.1.48 Identification marks on air receivers E.6145 & E.6148. Lloyd's test 700 lbs. W.P. 350 lbs. T.D.S. 10.3.48

Welded receivers, state Makers' Name Ruston & Hornsby Lincoln. Is the flash point of the oil to be used over 150°F Yes Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with Yes Description of fire extinguishing apparatus fitted Pyrene 1 @ 10 galls. & 2 @ 2 galls. 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 No. 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 installed under Special Survey in accordance with the Rules, the approved plans and the Secretary's letters. The workmanship and materials are good and when tried at sea under full power for 4 hours were found satisfactory in every respect. Torsiagraph records were taken by Mr. A. Wood. The machinery of this vessel, is eligible in my opinion to have the record of + L.M.C. 7.48 and O.G. 7.48. Oil Eng. 2 S.C. SA. 5 Cy. 10 1/2-13 1/2 105 MV.

Torsionals app. 29/7/48 for 3400 ft. with restricted speed max. of 190 to 215 r.p.m.

The amount of Entry Fee 1/3 ... £ 14 : 0 : Special ... £ : : Donkey Boiler Fee... £ : : Travelling Expenses (if any) £ : : When applied for 19 When received 19

Signature of Engineer Surveyor to Lloyd's Register of Shipping



Committee's Minute FRI. 17 SEP 1948 Assigned + LMC 7.48 Oil Eng. O.G.

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