

REPORT ON OIL ENGINE MACHINERY.

No. 47350

Date of writing Report 24th Nov. 1927 When handed in at Local Office 28th Nov. 1927 Port of Glasgow
 No. in Survey held at Glasgow Date, First Survey 8. 10. 26 Last Survey 22nd Nov. 1927
 Reg. Book. PAULA Number of Visits 7

on the Single Twin Triple Quadruple Screw vessel PAULA Tons { Gross 2770
 Net 1319
 Built at Glasgow By whom built Harlands Wolff Ltd. Yard No. 7484 When built 1927-11.
 Engines made at do. By whom made do. Engine No. 7484 When made 1927-11.
 Donkey Boiler made at Belfast By whom made do. Boiler No. 7484 When made 1927.
 Brake Horse Power 1350 Owners Curacaoische Scheepv. Maats. Port belonging to Willenstad
 Nom. Horse Power as per Rule 452 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted yes
 Trade for which vessel is intended Carrying Petroleum in Bulk

II ENGINES, &c. Type of Engines Vertical, reciprocating 2 or 4 stroke cycle 4 Single or double acting Single
 Maximum pressure in cylinders 500 lbs./sq. in. Diameter of cylinders 500 mm. Length of stroke 700 mm. No. of cylinders 12 No. of cranks 12
 Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 678 mm. Is there a bearing between each crank yes
 Revolutions per minute 160 Flywheel dia. 1702 mm. Weight 3.35 tons Means of ignition Compression Kind of fuel used Diesel
 Crank Shaft, dia. of journals as per Rule 293 mm. Crank pin dia. 305 mm. Crank Webs Mid. length breadth 500 mm. Thickness parallel to axis 190 mm.
as fitted 305 mm. Mid. length thickness 190 mm. Thickness around eye-hole 135 mm.
 Flywheel Shaft, diameter as per Rule 293 mm. Intermediate Shafts, diameter as per Rule 7 5/8" Thrust Shaft, diameter at collars as per Rule 8"
as fitted 305 mm. as fitted 8 3/8" as fitted 9"
 Tube Shaft, diameter as per Rule Screw Shaft, diameter as per Rule 8 3/8" Is the tube shaft fitted with a continuous liner yes
as fitted as fitted 9 5/8" as fitted
 Bronze Liners, thickness in way of bushes as per Rule 5.8 mm. Thickness between bushes as per Rule 4.4 mm. Is the after end of the liner made watertight in the
as fitted 1 1/16" as fitted 17/32" 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 yes: Vickers Length of Bearing in Stern Bush next to and supporting propeller 3'- 3 1/2"
 Propeller, dia. 9'-0" Pitch 7'-8" No. of blades 4 (each) Material Brass whether Moveable No Total Developed Surface 25 (each) sq. feet

Method of reversing Engines Compressed air Is a governor or other arrangement fitted to prevent racing of the engine when detached yes Means of lubrication
gravity Thickness of cylinder liners 360 & 325 mm. Are the cylinders fitted with safety valves yes Are the exhaust pipes and silencers water cooled or lagged with
non-conducting material yes If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine yes
 Cooling Water Pumps, No. Two Is the sea suction provided with an efficient strainer which can be cleared within the vessel yes
 Bilge Pumps worked from the Main Engines, No. Two Diameter 130 mm. Stroke 220 mm. Can one be overhauled while the other is at work yes
 Pumps connected to the Main Bilge Line { No. and Size Two. One off Main Engines, as above. One Auxiliary 8" x 9" x 8".
 How driven Steam.

Ballast Pumps, No. and size One: 8" x 9" x 8". Lubricating Oil Pumps, including Spare Pump, No. and size Two at 34 lbs./hr. One at 25 lbs./hr.
 Are two independent means arranged for circulating water through the Oil Cooler yes Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge
 Pumps, No. and size: In Machinery Spaces One @ 3", three @ 2 1/2" & two @ 2".
 In Holds, &c. None. 1 - 3" for hold One @ 4"

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size One @ 4"
 Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes yes Are the Bilge Suctions 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 Both
 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 Below
 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 None Is it fitted with a watertight door yes worked from yes
 If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork yes
 Main Air Compressors, No. Two No. of stages Three Diameters 500, 465 & 102 mm. Stroke 270 mm. Driven by Main Engines
 Auxiliary Air Compressors, No. One No. of stages Three Diameters 230, 195 & 146 mm. Stroke 180 mm. Driven by Diesel Engine
 Small Auxiliary Air Compressors, No. One No. of stages Three Diameters 320, 280 & 62 mm. Stroke 150 mm. Driven by Steam Engine
 Scavenging Air Pumps, No. Two Diameter 177 mm. Stroke 185 mm. Driven by yes
 Auxiliary Engines crank shafts, diameter as per Rule 177 mm.
as fitted 185 mm.

AIR RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule yes
 Can the internal surfaces of the receivers be examined yes What means are provided for cleaning their inner surfaces Loose ends; man-holes
 Is there a drain arrangement fitted at the lowest part of each receiver yes
 High Pressure Air Receivers, No. Three Cubic capacity of each One @ 400 lbs. Internal diameter One @ 295 mm. thickness One @ 75 in.
One @ 280 mm. One @ 64 in.
 Seamless, lap welded or riveted longitudinal joint Seamless Material Steel Range of tensile strength 28-32 tons Working pressure by Rules 1100 lbs./sq. in.
 Starting Air Receivers, No. Three Total cubic capacity 750 ft³ Internal diameter 540 in. thickness 27/32 in.
 Seamless, lap welded or riveted longitudinal joint Riveted Material Steel Range of tensile strength 28-32 tons Working pressure by Rules 356 lbs./sq. in.

IS A DONKEY BOILER FITTED?

PLANS. Are approved plans forwarded herewith for Shafting

Donkey Boiler Approved 15-6-26 General Pumping Arrangements

SPARE GEAR

If so, is a report now forwarded?

Receivers

Oil Fuel Burning Arrangements

The foregoing is a correct description,
For HARLAND & WOLFF, LTD.

J. C. Green
MANAGER FINNIESTON WORKS

Manufacturer.

Dates of Survey while building
During progress of work in shops -- 1926 Oct 8-26 Nov 22-30 Dec 10-17-20 (1927) Jan 11-13-20-26-27 Feb 3-8-17-18-23 Mar 1-2-8-9-18-23-25 Apr 4-7-11
During erection on board vessel -- 19-22-25-27-29 May 2-8-9-16-18-23-24-27 Jun 3-6-8-23-30 July 1-4-6 Aug 4-6-13-25-30-31 Sep 2-6-7-14-19-21
Total No. of visits 72

Dates of Examination of principal parts—Cylinders 18-5-27 23-5-27 3-6-27 Covers 18-5-27 23-5-27 3-6-27 Pistons 16-27-5-27 16-27-5-27 608-6-27 Rods 608-6-27 Connecting rods 23-8-27
Crank shaft 23-6-27 Flywheel shaft 23-6-27 Thrust shaft 24-5-27 Intermediate shafts 4-8-27 Tube shaft 23-6-27

Screw shafts 4-7-27 Propellers 5-9-27 Stern tube 5-9-27 Engine seatings 21-9-27 Engines holding down bolts 2-11-27 4-11-27
Completion of fitting sea connections 21-9-27 Completion of pumping arrangements 17-11-27 Engines tried under working conditions 22-11-27

Crank shafts Material Steel Identification Mark 40705 40705 8362 8362 5DB 5DB Flywheel shaft, Material Steel Identification Mark 40705 40705 8362 8362 5DB 5DB
Thrust shafts Material Steel Identification Mark 40705 40705 8362 8362 5DB 5DB Intermediate shafts, Material Steel Identification Marks 40705 40705 8362 8362 5DB 5DB
Tube shaft, Material Steel Identification Mark 40705 40705 8362 8362 5DB 5DB Screw shafts Material Steel Identification Mark 40705 40705 8362 8362 5DB 5DB

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

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo Oil Tanker If so, have the requirements of the Rules been complied with Yes

Is this machinery duplicate of a previous case Yes If so, state name of vessel M.V. "Petronella"

General Remarks (State quality of workmanship, opinions as to class, &c.) These Engines have been built under

Special Survey in accordance with the Rules & the approved plans: the materials & workmanship are good: along with the Donkey Boiler - Bel. Rpt. No 9745 and the Air Reservoir - Bel. Rpt. No 9765, they have been properly fitted on board and tried at sea under full power with satisfactory results. The Machinery is duplicate of that recently fitted in the sister ship "Petronella".

This Machinery is eligible, in our opinion, to be classed in the Register Book with notations: L.M.C. - 11, 27. Oil Engines: T.S. - (P. & S.) C.L.

The amount of Entry Fee ... £ 5 : -
Special ... £ 92 : 16/-
Donkey Boiler Fee ... £ - : -
Travelling Expenses (if any) £ - : -

When applied for, 6-DEC-1927

When received, 13-12-27

Committee's Minute GLASGOW 6 DEC 1927

Assigned + LMC 11, 27.



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