

## REPORT ON OIL ENGINE MACHINERY.

No. 90866

-1 JAN 1934

Received at London Office

Date of writing Report 30<sup>th</sup> Dec. 1933 When handed in at Local Office 30<sup>th</sup> Dec. 1933 Port of NEWCASTLE-ON-TYNENo. in Survey held at Newcastle-on-Tyne Date, First Survey 11.7.33 Last Survey 27.12.1933  
Reg. Book. Suppl. Number of Visits 4441067 on the Single Twin Triple Quadruple Screw vessel "PORT CHALMERS" Tons { Gross 8586  
Net 6204Built at Newcastle-on-Tyne By whom built Swan, Hunter & Wigham Richardson Ltd No. 1483 When built 1933Engines made at Glasgow By whom made Barclay Curle & Co. Ltd. Engine No. 105 When made 1933  
S.H. Reg. No. 1432Donkey Boilers made at See Separate By whom made reports Boiler No. - When made -Brake Horse Power 3750 per set Owners Commonwealth Dominion Line Ltd Port belonging to LondonNom. Horse Power as per Rule 1570 total Is Refrigerating Machinery fitted for cargo purposes yes Is Electric Light fitted yes

Trade for which vessel is intended

Type of Engines Barclay Curle - Duxford 2 or 4 stroke cycle 2 Single or double acting Single  
OIL ENGINES, &c. Type of Engines Barclay Curle - Duxford 2 or 4 stroke cycle 2 Single or double acting SingleMaximum pressure in cylinders 568 lbs. Diameter of cylinders 640 mm Length of stroke 2480 mm No. of cylinders 4 No. of cranks 4 3 throwSpan of bearings, adjacent to the Crank, measured from inner edge to inner edge 166.4" Is there a bearing between each crank yesRevolutions per minute 96 Flywheel dia. 8'-0" Weight A 3.8 tons Means of ignition Compression Kind of fuel used Diesel oilCrank Shaft, dia. of journals as per Rule 17.83" Crank pin dia. 19.7" Crank Webs Mid. length breadth 27.6" Thickness parallel to axis 11.8"  
as fitted 18.1" Mid. length thickness 11.8" Thickness around eye hole 8.85"Flywheel Shaft, diameter as per Rule 17.83" Intermediate Shafts, diameter as per Rule 14.09" Thrust Shaft, diameter at collars as per Rule 17.8"  
as fitted 18.1" as fitted 14.625" as fitted 18.1"Tube Shaft, diameter as per Rule 15.5" Is the tube shaft fitted with a continuous liner yes  
as fitted 16.5" as fitted 16.5"Bronze Liners, thickness in way of bushes as per Rule 77" Thickness between bushes as per rule 68" Is the after end of the liner made watertight in the  
as fitted 37" as fitted 27" 32propeller boss yes If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner liner in one lengthIf 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 fits full lengthIf 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 end of the tubeshaft no If so, state type ✓ Length of Bearing in Stern Bush next to and supporting propeller 6'-3"Propeller, dia. 16'-6" Pitch 17'-3" No. of blades 4 Material Bronze whether Moveable yes Total Developed Surface 92 sq. feetMethod of reversing Engines direct-hand Is a governor or other arrangement fitted to prevent racing of the engine when declutched ✓ Means of lubricationforced Thickness of cylinder liners ✓ Are the cylinders fitted with safety valves yes Are the exhaust pipes and silencers water cooled or lagged withnon-conducting material lagged If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine Ex. led to funnelCooling Water Pumps, No. 2 for Piston & 2 for fuel valves Is the sea suction provided with an efficient strainer which can be cleared within the vessel yesBilge Pumps worked from the Main Engines, No. None Diameter ✓ Stroke ✓ Can one be overhauled while the other is at work ✓Pumps connected to the Main Bilge Line { No. and Size One 6" Centrif. + One 9" Centrif.  
How driven Elec. MotorBallast Pumps, No. and size One 9" Centrif. Lubricating Oil Pumps, including Spare Pump, No. and size Two 9" x 11"Are two independent means arranged for circulating water through the Oil Cooler yes Suctions, connected to both Main Bilge Pumps and Auxiliary BilgePumps, No. and size:—In Machinery Spaces 4 @ 3" Sub 1 @ 3" to Funnel Well. In Pump Room ✓in Holds, &c. Nº 1 - 2 @ 3 1/2"; Nº 2 - 2 @ 3 1/2"; Nº 3 - 2 @ 3 1/2"; Nº 4 - 4 @ 2 1/2"; Nº 5 - 4 @ 2 1/2"; Held bet. Pumps Nº 4 - 1 @ 3 1/2"; Nº 5 - 1 @ 3 1/2";  
2 @ 6" Nº 6 - 2 @ 2 1/2"Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 2 @ 6"Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes yes Are the Bilge Suctions in the Machinery Spacesd from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges yesAre all Sea Connections fitted direct on the skin of the ship yes Are they fitted with Valves or Cocks valves + cocksAre 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 belowAre 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 yesHow are they protected ✓Have they been tested as per Rule ✓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 yes Is it fitted with a watertight door yes worked from upper deckOn a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork ✓Main Air Compressors, No. ✓ No. of stages ✓ Diameters ✓ Stroke ✓ Driven by ✓Auxiliary Air Compressors, No. 2 No. of stages 3 Diameters 250 c.f. Stroke ✓ Driven by Elec. MotorSmall Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters 25 c.f. Stroke ✓ Driven by SteamScavenging Air Pumps, No. ✓ Diameter ✓ Stroke ✓ Driven by ✓Auxiliary Engines crank shafts, diameter as per Rule See Lon. Rpt. Nº 99176 No. 3 Position 2 on p. side + 1 on S. Side of C. Room  
as fitted yesAIR RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule yesCan the internal surfaces of the receivers be examined and cleaned yes Is a drain fitted at the lowest part of each receiver yesHigh Pressure Air Receivers, No. ✓ Cubic capacity of each ✓ Internal diameter ✓ thickness ✓Seamless, lap welded or riveted longitudinal joint Material Range of tensile strength ✓ Working pressure ✓Starting Air Receivers, No. 3 Total cubic capacity 675 c.ft. Internal diameter 8'-0" thickness 1 3/32"Seamless, lap welded or riveted longitudinal joint Riv. Cl. Lms. Material Range of tensile strength 30/34 tons/in<sup>2</sup> Working pressure 600 lbs./in<sup>2</sup>



IS A DONKEY BOILER FITTED? *Yes - three* If so, is a report now forwarded? *Separate Reports here*Is the donkey boiler intended to be used for domestic purposes only? *one - yes.*PLANS. Are approved plans forwarded herewith for Shafting *Lundel & Curvey's letter to Messrs. Forster 7.2.33* Receivers *17.2.33 plan* Separate Tanks *27.3.33 plan*  
(If not, state date of approval)  
Donkey Boilers *See Rep. Rpts. herewith* General Pumping Arrangements *6.2.33* Oil Fuel Burning Arrangements *—*

## SPARE GEAR.

Has the spare gear required by the Rules been supplied? *Yes.*State the principal additional spare gear supplied. *See list attached to Glo. Rpt. No 53853 herewith.*

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building

During progress of work in shops -- During erection on board vessel -- Total No. of visits	1933 Jul. 11. 14. 18. 24. 27. Aug. 1. 4. 9. 11. 15. 22. 24. 29. Sep. 1. 5. 7. 11. 13. 18. 20. 21. Oct. 2. 4. 6. 11. 17. 19.
	23. Nov. 1. 3. 10. 15. 20. 22. 24. 28. 30. Dec. 4. 12. 15. 18. 20. 22. 27.
	44

Dates of Examination of principal parts—Cylinders *Glo. Rpt. 53853* overs *✓* Pistons *Glo. Rpt.* Rods *Glo. Rpt.* Connecting rods *Glo. Rpt.*

Crank shaft *Glo. Rpt.* Flywheel shaft *Glo. Rpt.* Thrust shaft *Glo. Rpt.* Intermediate shafts *18.9.33 + 21.9.33* Tube shaft *✓*

Screw shaft *13.9.33 + 18.9.33* Propeller *13.9.33 + 18.9.33* Stern tube *13.9.33 + 20.9.33* Engine seatings *4.10.33* Engines holding down bolts *10.11.33*

Completion of fitting sea connections *13.9.33* Completion of pumping arrangements *15.12.33* Engines tried under working conditions *20.12.33*

Crank shaft, Material *See Glo. Rpt.* Identification Mark *See Glo. Rpt.* Flywheel shaft, Material *See Glo. Rpt.* Identification Mark *See Glo. Rpt.*

Thrust shaft, Material *See Glo. Rpt.* Identification Mark *See Glo. Rpt.* Intermediate shafts, Material *Steel* Identification Marks *See below.*

Tube shaft, Material *✓* Identification Mark *✓* Screw shaft, Material *Steel* Identification Mark *P. 711. MAB, E.J. 5.7.15, MAB, H.C.F. 729 MAB, H.C.F.*

Is the flash point of the oil to be used over 150° F. *✓*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? *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? *✓*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, &amp;c.)

Identification Marks on Intermediate Shafts:—

Port: 761, 783, 751, 809, 765, MAB, H.C.F. 18.9.33  
 9294, 9291, 9303, J.P. H.C.F. 18.9.33

Starb: 778 MAB, H.C.F. 21.9.33; 759 MAB, H.C.F. 21.9.33;  
 741, 761, 809, MAB, H.C.F. 21.9.33; 9295, 9320 J.P., H.C.F. 21.9.33

This machinery has been constructed under special survey in accordance with the Rules; the materials and workmanship are good. The main Engines were constructed by Barclay Curle & Co. Ltd., Glasgow (their Engine No 105 - See Glo. Rpt. No 53853), and the starboard air receivers, intermediate and propeller shafting etc. by Messrs. Swan, Hunter & Wigham Richardson, Ltd. (their Engine No 1432). The machinery has been satisfactorily installed in the vessel, examined under working conditions and found satisfactory, and is eligible, in my opinion, for classification with the record *L.M.C. 12.33.*

The amount of Entry Fee .. £

1/5 Special ... £ 27: 17

Donkey Boiler Fee

3 Charting Air Receivers

£ 9: 9

Traveling Expenses (if any) £

Committee's Minute

Assigned

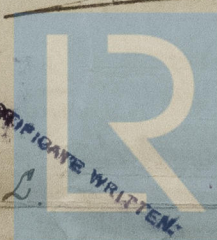
FRI. 5 JAN 1934

+ done 12.33

2 D.B. - 100 lb.

A.B. Forster.

Engineer Surveyor to Lloyd's Register of Shipping.



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