

# 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-TYNE

No. in Survey held at Newcastle-on-Tyne Date, First Survey 11.7.33 Last Survey 27.12.1933  
Reg. Book Suppl. Number of Visits 44

41067 on the Single Twin Triple Quadruple Screw vessel "PORT CHALMERS" Tons {Gross 8586  
Net 6204

Built at Newcastle-on-Tyne By whom built Swan, Hunter & Wigham Richardson Ltd No. 1483 When built 1933

Engines made at Glasgow By whom made Barclay Curle & Co. Ltd Engine No. 105 When made 1933  
S.H. Reg. No. 1432

Donkey 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 London

Nom. 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 25916 9798

See also Pl. Rpt. N° 63853  
OIL ENGINES, &c. Type of Engines Barclay Curle - Doxford 2 or 4 stroke cycle 2 Single or double acting Single

Maximum pressure in cylinders 568 lbs. Diameter of cylinders 640 mm Length of stroke 2480 mm No. of cylinders 4 x 2 No. of cranks 4 - 3 throw

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 166.4" Is there a bearing between each crank yes

Revolutions per minute 96 Flywheel dia. 8'-0" Weight F 3.8 tons Means of ignition Compression Kind of fuel used Diesel oil

Crank 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" Crank Webs 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 water 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 27/32" as fitted 27/32"

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 liner in one length

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 fits full length

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 no If so, state type yes 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. feet

Method of reversing Engines direct-hand Is a governor or other arrangement fitted to prevent racing of the engine when declutched yes Means of lubrication  
forced Thickness of cylinder liners yes Are the cylinders fitted with safety valves yes Are the exhaust pipes and silencers water cooled or lagged with  
non-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 Exp. led to funnel

Cooling Water Pumps, No. 2 for Piston & Spckls + 2 for fuel valves 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. None Diameter - Stroke - Can one be overhauled while the other is at work yes

Pumps connected to the Main Bilge Line { No. and Size One 6" Centrif. + One 9" Centrif.  
How driven Elec. Motor

Ballast 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 Bilge  
Pumps, No. and size:—In Machinery Spaces 4 @ 3" and 1 @ 3" to Funnel Well In Pump Room yes

in Holds, &c. N°1 - 2 @ 2 1/2"; N°2 - 2 @ 2 1/2"; N°3 - 2 @ 3 1/2"; N°4 - 4 @ 2 1/2"; N°5 - 4 @ 2 1/2"; Hold bet. Pumps N°4 - 1 @ 3 1/2"; N°5 - 1 @ 3 1/2";  
N°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 Spaces  
fitted 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 valves + cocks

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

How are they protected yes Have they been tested as per Rule yes

Are all 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 yes Is it fitted with a watertight door yes worked from upper deck

On 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. 2 No. of stages 3 Diameters 250 c.f. Stroke 3" Driven by Elec. Motor

Auxiliary Air Compressors, No. 2 No. of stages 3 Diameters 250 c.f. Stroke 3" Driven by Elec. Motor

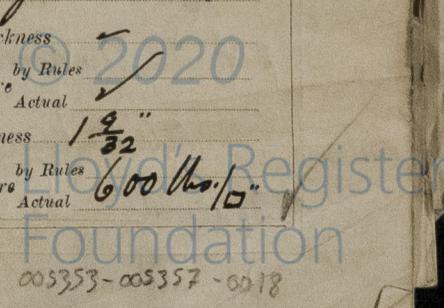
Small Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters 25 c.f. Stroke 3" Driven by Steam

Scavenging Air Pumps, No. 3 Diameter See Lon. Rpt. N° 99176 Stroke 3" Driven by Steam

Auxiliary Engines crank shafts, diameter as per Rule Position 2 on p. side + 1 on s. side of C. Room  
as fitted yes

AIR RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule yes Is a drain fitted at the lowest part of each receiver yes

Can the internal surfaces of the receivers be examined and cleaned yes Internal diameter - thickness -  
High Pressure Air Receivers, No. 3 Cubic capacity of each 675 c.ft. Internal diameter 8'-0" Working pressure 600 lbs./sq. in.  
Seamless, lap welded or riveted longitudinal joint Material Steel Range of tensile strength 30/34 tons/in² Working pressure 600 lbs./sq. in.  
Starting Air Receivers, No. 3 Total cubic capacity 675 c.ft. Internal diameter 8'-0" thickness 1 1/2"  
Seamless, lap welded or riveted longitudinal joint Riv. Cl. Lms. Material Steel Range of tensile strength 30/34 tons/in² Working pressure 600 lbs./sq. in.



005353-005357-0018

IS A DONKEY BOILER FITTED? *Yes - three* If so, is a report now forwarded? *Separate Reports herewith*

Is the donkey boiler intended to be used for domestic purposes only? *one - yes.*

PLANS. Are approved plans forwarded herewith for Shafting *Sunderland Surveyors Letter to Messrs. Forster 7.2.33* Receivers *17.2.33 plan* Separate Tanks *27.3.33 plans*  
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 - *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.*  
During erection on board vessel - *23. Nov. 1. 3. 10. 15. 20. 22. 24. 28. 30. Dec. 4. 12. 15. 18. 20. 22. 27.*  
Total No. of visits *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 sealings *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, H.C.F. 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, &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*  
*Starboard: 775 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* :  
*3 Donkey Boiler Fee* £ *9.9* :  
*Charting Air Receivers* £ :  
*Traveling Expenses (if any)* £ :

When applied for, *30 DEC 1933*  
When received, *11.1.1934*  
*A.B. Forster.*  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI. 5 JAN 1934*  
Assigned *+ done 12.33*  
*2 D.B. - 100 lb. C.L.*



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