

REPORT ON OIL ENGINE MACHINERY.

No. 97140
EB-6 1939

Received at London Office

NEWCASTLE-ON-TYNE

Date of writing Report

When handed in at Local Office

1/2/39 Port of

No. in Survey held at
Reg. Book.

NEWCASTLE ON TYNE.

Date, First Survey

5/11/37

Last Survey

29/1/1939

Number of Visits 184

7760 on the ^{Single}
^{Twin}
^{Triple}
^{Quadruple} Screw vessel

"DOMINION MONARCH."

Tons { Gross 27155
Net 15813

Built at Wallsend on Tyne, Newcastle By whom built Swan, Hunter & Wigham Richd's Yard No. 1547 When built 1939-1

Engines made at Newcastle on Tyne By whom made S. H. & W. R. Ls Neptunewks Engine No. 1566 When made 1938
Sunderland. Wm Duxford & Sons Ls Engine No. 204 " " 1938

Donkey Boilers made at Renfrew By whom made Babcock & Wilcox Boilers Nos. 73/4665-6-7-8 When made 1938

Brake Horse Power 4 x 8000 = 32,000 Owners Shaw, Savell & Albion Co Ls Port belonging to SOUTHAMPTON.

Nom. Horse Power for the 4 Engines as per Rule 5056 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes

Trade for which vessel is intended Open Seas

IL ENGINES, &c.—Type of Engines Opposed piston valves injection 2 or 4 stroke cycle 2. Single or double acting Single
Maximum pressure in cylinders 680 lbs Diameter of cylinders 725 mm Length of stroke upper 950 mm lower 1300 " No. of cylinders four x 5 No. of cranks four x 5 triple throats.
Mean Indicated Pressure 94.5 lbs Centres of side cranks 1410 mm Is there a bearing between each crank three-throws.
Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 1080 mm
Revolutions per minute 133 Flywheel dia. AFT 2355 mm Weight 23 cwt Means of ignition Compression Kind of fuel used Heavy oil.
Crank Shaft, dia. of journals as approved 517. Side pins & journals 525 Centre pins Crank pin dia. 560 mm Crank Webs Mid. length breadth 820 mm Mid. length thickness 315 " Thickness parallel to axis 315 mm
Flywheel Shaft, diameter as fitted 560. Intermediate Shafts, diameter as approved 15.91 " Thrust Shaft, diameter at collars as approved 517 mm
Tube Shaft, diameter as per Rule 17.29 " Each Screw Shaft, diameter as fitted 18 5/8 " Is the shaft fitted with a continuous liner Yes.

Bronze Liners, thickness in way of bushes as per Rule 27/32 " Thickness between bushes as per rule 20/32 " Is the after end of the liner made watertight in the 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 Each in one piece

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 tight fit.

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 end of the tube shaft No If so, state type 16'-0" OUTER 18'-0" OUTER Length of Bearing in Stern Bush next to and supporting propeller 7'-9"

Propeller, dia. 16'-6" INNER Pitch 17'-0" INNER No. of blades 4 Material Mang. Brz whether Moveable Solid Total Developed Surface 110. sq. feet

Method of reversing Engines Compressed air Is a governor or other arrangement fitted to prevent racing of the engine Yes Means of lubrication Hand & forced Thickness of cylinder liners 25 mm 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 3 for Jackets & Pistons 3 for Guides 3 for S.W. Line in Coolers & Condensers Distilled water used on Main Eng. F.W. on Auxy. Engines

Cooling Water Pumps, No. 3 for Guides 3 for S.W. Line in Coolers & Condensers Bilge 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 Ball P. 225 tons/hour; Emerg. Bilge P. 190 tons; 2 Bilge Ps. 125 tons; Gen. S.P. 100 tons. How driven all Elec. motor driven

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

Ballast Pumps, No. and size One of 225 tons Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 3 of 170 tons/hour

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 In Main E.R. 4 of 4"; In Auxy. E.R. 2 of 3 1/2"; Tunnel Well 1 of 3 1/2"

In Holds, &c. No 1, 2 of 4"; No 2, 2 of 3 1/2"; No 3, 2 of 3 1/2"; No 4, 2 of 3 1/2"; No 5, 1 of 3 1/2" & 2 of 3"; No 6, 1 of 3 1/2"

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 2 of 7" in Main E.R. and 2 of 6" in Auxy. E.R.

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 both.

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 None How are they protected

What pipes pass through the deep tanks None 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 "E" deck by hand & electrically from Bridge.

If 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. None No. of stages Diameters Stroke Driven by

Auxiliary Air Compressors, No. 2 (Gls. Cent. C. 36522) 3 Diameters 14 1/2 - 3 1/2, 11 1/2, 3 1/2 Stroke 8" Driven by Elec. motors

Small Auxiliary Air Compressors, No. 1 (" " C. 36102) 2 Diameters 6 - 1 1/4, 2 1/4 Stroke 14 1/2 Driven by Steam Eng.

What provision is made for charging the Air Receivers:—The above Small Steam driven Air Compressor.

Scavenging Air Pumps, No. One on each Engine Diameter 1780 mm Stroke 1480 mm Driven by M. Eng. Crankshaft

Auxiliary Engines crank shafts, diameter as per Rule

Have the Auxy. Engines been constructed under special Survey Yes. Are reports sent here with Yes.

Have they been made under Survey. Yes. State his Report or Certify Nos 182 tested
AIR RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule. Yes. Nos 384 tested 3
Can the internal surfaces of the receivers be examined and cleaned Yes Is a drain fitted at the lowest part of each receiver Yes
High Pressure Air Receivers, No. None Cubic capacity of each Internal diameter thickness
Seamless, lap welded or riveted longitudinal joint Material Range of tensile strength Working pressure by Rules Actual
Starting Air Receivers, No. 4 Total cubic capacity 1400 cub ft Internal diameter 69" thickness 1 1/32"
Seamless, lap welded or riveted longitudinal joint T.R. Material Steel Range of tensile strength 30-34 tons Working pressure by Rules 600 lbs
Actual 600 lbs
ARE DONKEY BOILERS FITTED? YES (2 waste heat Blrs in E.R. casing on 2 St. Cyls. 2 oil fired Blrs in Auxiliary E.R. If so, is a report now forwarded? Yes. Glo Rpts 60311 & 60350.
Is the donkey boiler intended to be used for domestic purposes only Yes & for heating coils in O.F. Tanks
PLANS. Are approved plans forwarded herewith for Shafting Crank sh 29/4/37 & 13/11/37 Receivers 11/11/37 Separate Fuel Tanks 25/11/37
(If not, state date of approval) 19/6/37, 21/7/37
Donkey Boilers See Glo rpts General Pumping Arrangements 11/3/38 Pumping Arrangements in Machinery Space 30/11/37
Oil Fuel Burning Arrangements 1/4/38.

SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes
State the principal additional spare gear supplied 3 Cyls Liners, 2 upper & 2 lower pistons complete with piston rods & skirts,
5 piston heads, 3 fuel valves, 4 non return starting valves, 4 cyls relief valves, 2 lower half top end bearings,
1 bottom end bearing for centre conn. rod, 6 upper half & 2 lower half top end bearings, 3 bottom end bearings for
side conn. rods, 2 main bearings, 1 top end bearing & 1 bottom end bearing for Scavenger pump connecting rod
2 roller Chains for Crank shaft drive

The foregoing is a correct description,
SWAN, HUNTER, & WIGHAM RICHARDSON, LTD.

Manufacturer.

1937
Dates of Survey while building { During progress of work in shops - Jan. 5. Dec. 2. 1937 Feb. 16. 17. 23. 24. 25. Mar. 9. 21. 28. Apr. 1. 12. 19. 21. 25. May 2. 6. 9. 12. 17. 20. 23. 25. 26. 27. 28. 29. 30. June 1. 2. 3. 7. 8. 10. 14. 15. 16. 28. 30. July 1. 5. 6. 7. 8. 11. 12. 13. 14. 15. 18. 19. 20. 21. 22. 23. 25. 26. 27. 28. 29. 30. Aug. 4. 5. 11. 15. 16. 18. 19. 22. 24. 25. 26. 29. 30. 31. Sep. 1. 2. 5. 6. 7. 8. 9. 12. 13. 14. 16. 19. 20. 21. 22. 23. 26. 27. 28. 29. 30. Oct. 2. 3. 4. 5. 6. 11. 12. 13. 14. 17. 18. 21. 24. 25. 26. 27. 28. 31. Nov. 1. 3. 4. 7. 8. 10. 11. 14. 15. 17. 21. 22. 23. 24. 25. 28. Dec. 1. 5. 6. 7. 9. 12. 13. 16. 21. 22. 29. 1939 Jan. 3. 4. 6. 9. 10. 12. 13. 16. 19. 20. 21. 27. 28. 29.
Total No. of visits 184
Dates of Examination of principal parts—Cylinders 7/9/38 Covers 7/9/38 Pistons 7/9/38 Rods 10/10/38 Connecting rods 7/9/38
Crank shaft 20/9/38 Flywheel shaft as crank sh Thrust shaft as crank sh. Intermediate shafts 13/5/38 Tube shaft 10/10/38
Screw shafts 8/7/38 Propellers 19/7/38 Stern tubes 8th, 11th, 12th & 13th July 1938 Engine seatings 19/7/38 Engines holding down bolts 15/11/38
Completion of fitting sea connections 25/7/38 Completion of pumping arrangements 29/12/38 Engines tried under working conditions 19/1/38 & 29/1/38
Crank shaft, Material 7 Steel Identification Mark SO 4463 GOC Flywheel shaft, Material 7 Steel Identification Mark as crank sh
Thrust shaft, Material 7 Steel Identification Mark do. Intermediate shafts, Material 7 Steel Identification Marks See Attached
Tube shaft, Material Identification Mark Screw shafts, Material 7 Steel Identification Mark Post outfit 1298 HK
Is the flash point of the oil to be used over 150° F. Yes Outer - fwd inner - aft
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. The Machinery has been constructed & installed under special survey in accordance with the Rules & approved plans, and the materials & workmanship are good. During installing, the Thrust Pedestal (cast iron) of the Port Inner main Engine was fractured on its starboard corner and was repaired by fitting a M. Steel plate inside and a G.M. plate outside around the corner, all securely bolted together as a permanent repair. This was agreed to by the owners' representatives. The five 600 KW Auxiliary Oil Engine Dynamo Sets are each fitted on "CORESIL" cork pads (see Secy. Letter of 3rd Dec 1938).

The machinery was satisfactorily tested at sea under working conditions, and the vessel is eligible in my opinion for records + LMC. 1.39, TS. CL. 4 DB. 100lb wt

The amount of Entry Fee £ 3 : 0 : When applied for, 4 FEB 1939
Special £ 175 : 17-6
Elev. welded constrn £ 18 : 18
Donkey Boiler Fee £ 12 : 12
Travelling Expenses (if any) £ : : When received, 11. 2 19. 39
Certificate (if required) to be sent to Newcastle-on-Tyne

Committee's Minute

Assigned

A Watt

Engineer Surveyor to Lloyd's Register of Shipping.



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