

REPORT ON OIL ENGINE MACHINERY.

No 100073

Received at London Office

-9 JAN 1942

Date of writing Report

19

When handed in at Local Office

3/1/42 Port of

NEWCASTLE-ON-TYNE

No. in Survey held at
Reg. Book.

Newcastle on Tyne

Date, First Survey

29/1/41

Last Survey

31/12/1941

Number of Visits

81

on the
Single
Twin
Triple
Quadruple

Screw vessel

BRITISH CHARACTER

Tons
Gross 8453
Net 4897

Built at

Newcastle

By whom built

Swan, Hunter & Wigham Richardson Ltd

Yard No

1698

When built

1941

Engines made at

ditto

By whom made

ditto

Engine No

1698

When made

1941

Donkey Boilers made at

ditto

By whom made

ditto

Boiler No

1698

When made

1941

Brake Horse Power

3100

Owners

Port belonging to

London

Nom. Horse Power as per Rule

687

Is Refrigerating Machinery fitted for cargo purposes

No

Is Electric Light fitted

Yes

Trade for which vessel is intended

Ocean going, Carrying Petroleum in bulk

OIL ENGINES, &c. Type of Engines *Opposed piston, airless injection* 2 or 4 stroke cycle *2*. Single or double acting *Single*

Maximum pressure in cylinders *568 lb* Diameter of cylinders *600 mm* Length of stroke *2320 mm* No. of cylinders *4* No. of cranks *4 three throws*

Mean Indicated Pressure *85 lb* Span of bearings, adjacent to the Crank, measured from inner edge to inner edge *940 mm* Is there a bearing between each crank *between each three throws*

Revolutions per minute *105* Flywheel dia. *425 mm* Crank pin dia. *450 mm* Crank Webs *Mid. length breadth 650 mm* Thickness parallel to axis *255 mm*

Crank Shaft, *Solid forged* dia. of journals *as per Rule 425 mm* *as fitted 450 mm* *(Centre Cr. pin 432 mm)* *as per Rule 425 mm* *as fitted 450 mm* *as per Rule 425 mm* *as fitted 450 mm*

Flywheel Shaft, diameter *as per Rule 425 mm* *as fitted 450 mm* Intermediate Shafts, diameter *as per Rule 146 mm* *as fitted 167 mm* Thrust Shaft, diameter at collars *as per Rule 425 mm* *as fitted 450 mm*

Tube Shaft, diameter *as per Rule 146 mm* *as fitted 167 mm* Is the *tube* shaft fitted with a continuous liner *Yes*

Bronze Liners, thickness in way of bushes *as per Rule 24/32* *as fitted 27/32* Thickness between bushes *as per Rule 9/16* *as fitted 29/32* 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 *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 *a tight fit*

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 *Yes*

shaft *No* If so, state type *Yes* Length of Bearing in Stern Bush next to and supporting propeller *5' 8 1/2"*

Propeller, dia. *16' 3"* Pitch *12' 3"* No. of blades *4* Material *M. Rye* whether Moveable *No* Total Developed Surface *90* sq. feet

Method of reversing Engines *compressed air* Is a governor or other arrangement fitted to prevent racing of the engine when disengaged *Yes* Means of lubrication *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 *Led up*

Cooling Water Pumps, No. *2 for Distilled Water for Jackets* Is the sea suction provided with an efficient strainer which can be cleared within the vessel *In S.W. System*

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 Three 10x11x10 dup, 1 Bilge 1 Sanitary each 7x7x8 dup* *How driven 190 tons/hr each 80 tons/hr*

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 *all independent steam driven*

Ballast Pumps, No. and size *one 10x11x10 duplex* Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size *Two, one by M. Eng. 31 tons/hr, one 100 tons/hr 608 stroke*

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 *3 of 3 1/2" dia; 2 of 2 1/2" to OF Gutterways* In Pump Rooms *2 of 4" dia*

In Holds, &c. *2 of 2 1/2" dia in Fore Hold; 2 of 2" in Store Room; 1 of 2" in Fore Hold Pump Room* Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size *one 6" to Ballast P.; one 5" to Bilge Pump*

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 *None* How are they protected *Yes*

What pipes pass through the deep tanks *None* 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 machy* 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. *None (Airless type)* No. of stages *3* Diameters *11 3/4"* Stroke *7"* Driven by *Steam Eng.*

Auxiliary Air Compressors, No. *2* No. of stages *3* Diameters *11 3/4"* Stroke *7"* Driven by *Steam Eng.*

Small Auxiliary Air Compressors, No. *None* No. of stages *3* Diameters *11 3/4"* Stroke *7"* Driven by *Steam Eng.*

What provision is made for first Charging the Air Receivers *by steam driven compressor*

Scavenging Air Pumps, No. *One double acting* Diameter *1960 mm* Stroke *608 mm* Driven by *Lever from Main Engine*

Auxiliary Engines crank shafts, diameter *as per Rule 1960 mm* No. *2* Position *2" Air Compressor*

Have the Auxiliary Engines been constructed under special survey *No (Steam only)* Is a report sent herewith *Yes*

002559-007567-0162

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AIR RECEIVERS:—Have they been made under survey Yes State No. of Report or Certificate Letter 8000W.P.

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 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, lap welded or riveted longitudinal joint ✓

Material

Range of tensile strength

Working pressure by Rules

Actual

Starting Air Receivers, No. 2

Total cubic capacity 280 cu. ft.

Internal diameter 4'-1 1/2"

thickness 1 3/32"

Seamless, lap welded or riveted longitudinal joint ✓

T.R. 1/2" butt strap

Material 5

Range of tensile strength 29 & 38 tons

Working pressure by Rules 602 lb

Actual 600 lb

IS A DONKEY BOILER FITTED? Yes

If so, is a report now forwarded? Yes

Is the donkey boiler intended to be used for domestic purposes only No. - also for Steam Amplifiers

PLANS. Are approved plans forwarded herewith for Shafting 1/8/40

Receivers 4/10/40

Separate Fuel Tanks

Donkey Boilers 9/9/40

General Pumping Arrangements 5/11/40

Pumping Arrangements in Machinery Space 1/2/41

Oil Fuel Burning Arrangements 18/2/41

SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes

State the principal additional spare gear supplied

1 Main Special Bearing, 1 non-ret. Air Starting valve, 1 Gp. relief valve, 1 Fuel pump body complete with Suct. & del. valves, 1 upper & 1 lower piston skirts, 5 piston rings for 4 cyls, 4 Scraper rings, 6 Rubber hose pipes for upper piston water service, one 6 feed lubricator for 4 cyls, 2 complete sets of springs, 2 complete sets of joints, 1 day gauge glasses, with 1 day packing rings, 1 lid for Feed Check Valve, 12 boiler tubes, 1 Sept. Valve Spring, 1 set of cages for feed water filter, 1 set of Springs & valves for Aux. Compr., 5 strainer bags, 2 burner bodies & caps, 12 Wyzles & 12 diaphragms for O.F. burning installation

The foregoing is a correct description,

SWAN, HUNTER, & WILKINSON, LTD.

J. J. Sweeney

Manufacturer.

Dates of Survey while building
During progress of work in shops-- 1941 Jan 29. Mar. 17. 18. Apr. 9. 18. May 1. 5. 9. 21. 23. 28. June 5. 10. 11. 18. 20. 25. 27. July 1. 3. 16. 18. 23. 24. Aug. 1. 5. 8. 11. 13. 14. 17. 18. 19. 20. 21. 22. 28. 29. Sep. 1. 4. 5. 8. 9. 12. 16. 17. 18. 22. 25. 26. Oct. 3. 6. 8. 9. 10. 13. 17. 20. 21. 22. 23. 27. 28. 30. 31. Nov. 10. 11. 12. 13. 14. 17. 18. Dec. 2. 9. 12. 15. 17. 22. 24. 29. 31.
During erection on board vessel--
Total No. of visits 81

Dates of Examination of principal parts—Cylinders 9th to 12th/10/41 Covers ✓ Pistons 30/10/41 Rods 30/10/41 Connecting rods 31/10/41
Crank shaft 13/10/41 Flywheel shaft 13/10/41 Thrust shaft 13/10/41 Intermediate shafts 16/10/41 Tube shaft ✓
Screw shaft 21/5/41 Propeller 21/5/41 Stern tube 17/8/41 Engine seatings 1/9/41 Engines holding down bolts 2/12/41
Completion of fitting sea connections 1/9/41 Completion of pumping arrangements 12/12/41 Engines tried under working conditions 15th, 17th & 31st Decr 1941
Crank shaft, Material F.S.H. Identification Mark 9165.L.C.D. Flywheel shaft, Material F.S.H. Identification Mark as Crank shaft
Thrust shaft, Material " Identification Mark as Crank shaft Intermediate shafts, Material F.S.H. Identification Marks 10377 HAI 27 & 28.
Tube shaft, Material ✓ Identification Mark ✓ Screw shaft, Material F.S.H. Identification Mark 10377 HAI. 25.
Identification Marks on Air Receivers Lloyd's 2nd 8000 lbs. WP 600 lbs. 13-10-41 A.W. and

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 ✓

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 Not required.

Is this machinery duplicate of a previous case Yes

If so, state name of vessel British Harmony. Yard No 1696.

Nov. Rpt No.

General Remarks (State quality of workmanship, opinions as to class, etc.)

The Machinery of this Vessel has been constructed under Special Survey in accordance with the approved plans and the Society's Rules, and the materials and workmanship are good. The Main Engine was tested under full load in the works and afterwards the Elec. Welded construction Bedplate, Columns & Entablature were examined and found in good condition.

The Machinery has been efficiently installed on board the vessel, tested under working conditions (vessel moored) with satisfactory results, and is eligible in my opinion for record + LMC 12.41, and the notations 2 DB. WP. 150 lb. ce. Oil Sup. machy aff.

The amount of Entry Fee .. £ 6 : 0 :
Special .. £ 109 : 7 :
2 W. Coast .. £ 12 : 12 :
Donkey Boiler Fee .. £ 23 : 10 :
2 Starting Air Receivers .. £ 4 : 4 :
Travelling Expenses (if any) .. £ : :
When applied for, 8 JAN 1942
When received, 19

Committee's Minute FRI. 23 JAN 1942

Assigned

+ LMC 12.41 CL
2 DB 150 lb

A. Watt

Engineer Surveyor to Lloyd's Register of Shipping.



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