

REPORT ON OIL ENGINE MACHINERY.

No. 10434

15 AUG 1930

Received at London Office

Date of writing Report

19 When handed in at Local Office

14th Aug. 1930 Port of Belfast.

To, in Survey held at

Belfast

Date, First Survey 10th May 1929.

Last Survey 12th Aug. 1930

eg. Book.

Number of Visits 114

6096. on the ^{Single} ~~Twin~~ ^{Triple} ~~Quadruple~~ Screw vessel

"TAYBANK"

Tons { Gross 5630.
Net 3440.

Built at Belfast

By whom built Workman, Clark (1928) Ltd. Yard No. 512. When built 1930.

Engines made at Belfast.

By whom made Workman, Clark (1928) Ltd. Engine No. 512. When made 1930.

Donkey Boilers made at Belfast.

By whom made Workman, Clark (1928) Ltd. Boiler No. 512. When made 1930.

Brake Horse Power 4500.

Owners Bank Line Ltd. Port belonging to Belfast.

Nom. Horse Power as per Rule 1246. Is Refrigerating Machinery fitted for cargo purposes Yes. Is Electric Light fitted Yes.

Trade for which vessel is intended Ocean going.

IL ENGINES, &c.—Type of Engines Sulzer - diesel 2 or 4 stroke cycle 2 Single or double acting Single.

Maximum pressure in cylinders 500 lbs. Diameter of cylinders 680 mm. Length of stroke 1200 mm. No. of cylinders 10. No. of cranks 10.

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 880 mm. Is there a bearing between each crank Yes.

Revolutions per minute 100. Flywheel dia. 7'-3". Weight 14 tons. Means of ignition Compression Kind of fuel used Diesel oil.

Crank Shaft, dia. of journals as per Rule 436 mm. Crank pin dia. 460 mm. Crank Webs Mid. length breadth Semi built. Thickness parallel to axis 270 mm.

Flywheel Shaft, diameter as per Rule 436 mm. Intermediate Shafts, diameter as per Rule 12-58" Thrust Shaft, diameter at collars as per Rule 436 mm.

Tube Shaft, diameter as per Rule 13-8" Is the shaft fitted with a continuous liner Yes.

Bronze Liners, thickness in way of bushes as per Rule 23" Thickness between bushes as per rule 35" 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 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 No. If so, state type Yes. Length of Bearing in Stern Bush next to and supporting propeller 4'-10".

Propeller, dia. 14'-9" Pitch 14'-9" No. of blades 4 Material Bronze whether Moveable No. Total Developed Surface 75 sq. feet

Method of reversing Engines Hand reversing. Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes. Means of lubrication

Forced. Thickness of cylinder liners 30 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. 2-180 ton/hr. 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. 1/none. Diameter Stroke Can one be overhauled while the other is at work Yes.

Pumps connected to the Main Bilge Line No. and Size 1-200 ton/hr. Centrif. 1-100 ton/hr. 8"x8" Duplex. How driven 24/26 HP motor 16-HP motor (Elec.)

Ballast Pumps, No. and size 1-200 ton/hr. Centrif. Lubricating Oil Pumps, including Spare Pump, No. and size 1-50 ton/hr. 30 lb/oil.

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 2-3" (2-2 1/2" to transfer pump). 1-2 1/2" to tunnel well.

In Holds, &c. 2-3" no 1 hold. 2-3 1/2" no 2 hold. 2-3" deep tank 2-3" no 4 hold. 2-3" no 5 hold.

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1-6" 9 1-7"

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-bones 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 Yes.

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 Bilge pipes only. 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 decks.

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. Two. No. of stages Three. Diameters HP 150 mm. LP 480-150 mm. Stroke 600 mm. Driven by Main engines.

Auxiliary Air Compressors, No. One. No. of stages Three. Diameters HP 120 mm. LP 50 mm. Stroke 120 mm. Driven by Electric motor.

Small Auxiliary Air Compressors, No. One. No. of stages Two. Diameters 20 " " " " " " Driven by Steam.

Scavenging Air Pumps, No. Two. Diameter 1400 mm. Stroke 620 mm. Driven by Main engines.

Auxiliary Engines crank shafts, diameter as per Rule 148.5 mm. as fitted 160 mm. Driven by Main engines.

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 Open ends & manholes.

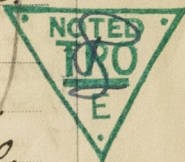
Is there a drain arrangement fitted at the lowest part of each receiver Yes. 2-150 litres. 300 mm. thickness 16 mm.

High Pressure Air Receivers, No. 10. Cubic capacity of each 8-800 litres. Internal diameter 540 mm. Working pressure by Rules 1295 lbs.

Seamless, lap welded or riveted longitudinal joint Yes. Material Steel. Range of tensile strength 26/30. Working pressure by Rules 1295 lbs.

Starting Air Receivers, No. 2. Total cubic capacity 560 cu. ft. Internal diameter 5'-0". Working pressure by Rules 436 lbs.

Seamless, lap welded or riveted longitudinal joint Yes. Material Steel. Range of tensile strength 28/32. Working pressure by Rules 436 lbs.



IS A DONKEY BOILER FITTED?

PLANS. Are approved plans forwarded herewith for Shafting (If not, state date of approval)

If so, is a report now forwarded? *yes.*

Donkey Boilers *28/5/29.*

General Pumping Arrangements

Receivers *6/7/29.*

Separate Tanks *6/11/29.*

Oil Fuel Burning Arrangements

SPARE GEAR 1 cylinder cover complete, with all valves, valve casings, springs & other fittings. 1 complete set of valves for one cyl. with their springs & other fittings. 5 fuel needle valves. 1 piston complete with all piston rings, studs & nuts. in addition, 1 set of piston rings for one piston. telescopic cooling pipes for one piston. 1 set screw wheels for cam shaft drive of one engine. 1 " of studs & nuts for one cyl cover of each design. 2 crosshead bearing bolts & nuts. 2 crankpin " " " 2 main " " " 1 set of bolts for one intermediate shaft coupling. for main engine air compressor & pumps. 1 set of piston rings for one piston of each size used, in the air compressor. 1 set of suction & delivery valve for each size used in air compressor. 10% of " " " for scavenge air pump.

All working parts for one fuel pump. 1 water circulating pump fitted & connected ready for use for aux pumps. 1 suction & 1 delivery valve for daily fuel supply pump. 1 " " " Barge pump. A quantity of assorted bolts & nuts. A length of pipe of each size used for the fuel delivery and injection air pipes to the main & aux power cylinders and air delivery from the main & aux compressors to receivers, with unions & flanges suitable for each.

The foregoing is a correct description,

FOR WORKMAN CLARK (1928) LIMITED.

J. Cunningham

Manufacturer. Secretary.

Dates of Survey while building
During progress of work in shops - May 10. 15. 27. June 7. July 1. 5. 8. 11. 23. Aug 2. 5. 7. 9. 10. 19. 21. 23. 30. Sept 2. 5. 11. 24. Oct 1. 4. 8. 11. 18. 21. 22. Nov 1. 12. 22. Dec 2. 3. 9. 12. 16. 30. 1930 Jan 3. 13. 14. 16. 21. 23. 30. Feb. 3. 5. 10. 17. Mar 6. 17. 21. 24. 27. 28. 31. Apr 10. 11. 14. 15. 16. 17. 18. 25. 28. 29. 30. May 7. 8. 9. 16. 19. 22. 23. 26. 27. 29. June 2. 3. 4. 10. 11. 12. 16. 17. 18. 19. 20. 24. 25. 27. 30. July 2. 4. 7. 9. 21. 22. 23. 29. 31. Aug 1. 3. 4. 5. 6. 12.

Dates of Examination of principal parts - Cylinders *21/3/30.* Covers *21/3/30.* Pistons *21/3/30.* Rods *21/3/30.* Connecting rods *24/3/30.* Crank shaft *P. 17/4/30.* Flywheel shaft *✓* Thrust shaft *P. 17/4/30.* Intermediate shafts *17/4/30.* Tube shaft *✓* Screw shaft *18/4/30.* Propeller *18/4/30.* Stern tubes *24/3/30.* Engine seatings *24/6/30.* Engines holding down bolts *24/6/30.* Completion of fitting sea connections *114* Completion of pumping arrangements *114* Engines tried under working conditions *114*

Crank shaft, Material *Steel.* Identification Mark *P. LLOYD'S No 78. J.K.W. 17/4/30.* Flywheel shaft, Material *✓* Identification Mark *✓* Thrust shaft, Material *Steel.* Identification Mark *S. LLOYD'S No 79. J.K.W. 8/4/30.* Intermediate shafts, Material *Steel.* Identification Marks *✓* Tube shaft, Material *✓* Identification Mark *P. LLOYD'S No 78. J.K.W. 17/4/30.* Screw shaft, Material *Steel.* Identification Marks *✓*

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 *Bean oil.* 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 *Dooclebank.*

General Remarks (State quality of workmanship, opinions as to class, &c.) The machinery of this vessel has been constructed under special survey. The materials and workmanship are sound and good. The main engine and auxiliaries have been tried out under working conditions at moored and sea trials with satisfactory results. In my opinion, the vessel is now eligible for notation in the Society's Register Book + LMC 8.30. CL. Donkey boiler pressure 120 lbs. fitted for oil fuel 8.30. FP above 150° F. Electric light.

It is submitted that this vessel is eligible for THE RECORD. + LMC 8.30. CL. DB 120 lb.

My JPR oil engines 25 C.S.A. 10cy. 26 3/4 - 47 1/4. N.H.O. 16/8/30.

The amount of Entry Fee ... £ 6 : 0 : When applied for, Special ... £ 131 : 3 : 14th Aug 1930 Donkey Boiler Fee ... £ 6 : 6 : When received, Travelling Expenses (if any) £ : : 23. 8. 30

John K. Williams. Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned + L.M.C. 8.30

DB 120 lb.

C.L.



Has the Steel been tested as required by the Rules?