

REPORT ON OIL ENGINE MACHINERY

No. 87212

2 JUN 1931

Received at London Office

NEWCASTLE-ON-TYNE

Date of writing Report 19... When handed in at Local Office

30/5/1931 Port of

No. in Survey held at Newcastle Reg. Book.

Date, First Survey 18 Aug 1930 Last Survey 28 May 1931 Number of Visits 98

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

Tons } Gross }
 } Net }

Built at Belfast By whom built Workman Clark & Co Ltd Yard No. 518 When built 1931

Engines made at Wallsend By whom made North Eastern Marine Co Ltd Engine No. 2411 When made 1931

Donkey Boilers made at ✓ By whom made ✓ Boiler No. ✓ When made ✓

Brake Horse Power 4000 Owners Port belonging to

Nom. Horse Power as per Rule 414 ✓ Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted

Trade for which vessel is intended 24¹³/₁₆ 43⁵/₁₆

II ENGINES, &c. Type of Engines **TWIN SCREW** Werkspoor Supercharged. 2 or 4 stroke cycle **H** Single or double acting **S.A.**

Maximum pressure in cylinders **550 lb** Diameter of cylinders **630 mm** Length of stroke **1100 mm** No. of cylinders **12** No. of cranks **12**

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge **840 mm** Is there a bearing between each crank **yes**

Revolutions per minute **135** Flywheel dia. **2260 mm** Weight **6 1/2 tons** Means of ignition **compression** Kind of fuel used **F.P. above 150°F**

Crank Shaft, dia. of journals as per Rule **398 mm** as fitted **410 mm** Crank pin dia. **410 mm** Crank Webs Mid. length breadth **440 mm** Thickness parallel to axis **245 mm**

Flywheel Shaft, diameter as per Rule **398 mm** as fitted **410 mm** Intermediate Shafts, diameter as per Rule ✓ as fitted ✓ Thrust Shaft, diameter at collars as per Rule **284 mm** as fitted **300 mm**

Tube Shaft, diameter as per Rule ✓ as fitted ✓ Screw Shaft, diameter as per Rule ✓ as fitted ✓ Is the tube screw shaft fitted with a continuous liner ✓

Bronze Liners, thickness in way of bushes as per Rule as fitted Thickness between bushes as per rule as fitted Is the after end of the liner made watertight in the propeller boss

If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner

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

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

haft If so, state type ✓ Length of Bearing in Stern Bush next to and supporting propeller ✓

Propeller, dia. ✓ Pitch No. of blades Material whether Moveable Total Developed Surface 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 **forced**

Thickness of cylinder liners **40 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

Cooling Water Pumps, No. **2 @ 250 mm x 254 Stroke D.A.** Is the sea suction provided with an efficient strainer which can be cleared within the vessel

Bilge Pumps worked from the Main Engines, No. **H** Diameter **2 @ 150 mm** Stroke **254 mm** Can one be overhauled while the other is at work **yes**

Pumps connected to the Main Bilge Line { No. and Size ✓ How driven ✓

Ballast Pumps, No. and size Lubricating Oil Pumps, including Spare Pump, No. and size **2 @ 35 TONS/HOUR ROTARY**

Are two independent means arranged for circulating water through the Oil Cooler Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

Pumps, No. and size:—In Machinery Spaces In Pump Room

in Holds, &c.

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Are the Bilge Suctions in the Machinery Spaces

and from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges

Are all Sea Connections fitted direct on the skin of the ship Are they fitted with Valves or Cocks

Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates Are the Overboard Discharges above or below the deep water line

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Are the Blow Off Cocks fitted with a spigot and brass covering plate

How are they protected

Have they been tested as per Rule

What pipes pass through the bunkers

What pipes pass through the deep tanks

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times

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

Is the Shaft Tunnel watertight Is it fitted with a watertight door worked from

On 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 **120, 440, 520 mm** Stroke **450 mm** Driven by **main engines**

Auxiliary Air Compressors, No. No. of stages Diameters Stroke Driven by

Small Auxiliary Air Compressors, No. No. of stages Diameters Stroke Driven by

Refrigerating Air Pumps, No. Diameter Stroke Driven by

Auxiliary Engines crank shafts, diameter as per Rule as fitted No. Position

RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule

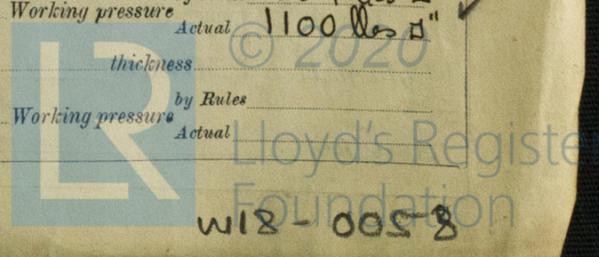
Are the internal surfaces of the receivers be examined and cleaned Is a drain fitted at the lowest part of each receiver

High Pressure Air Receivers, No. **Two** Cubic capacity of each **400 litres** Internal diameter **450 mm** thickness **21 mm**

Unless, lap welded or riveted longitudinal joint **seamless** Material **Steel** Range of tensile strength **32 to 36 tons sq"** Working pressure **155 lbs sq"** Actual **1100 lbs sq"**

Low Pressure Air Receivers, No. Total cubic capacity Internal diameter thickness by Rules Actual

Unless, lap welded or riveted longitudinal joint Material Range of tensile strength Working pressure by Rules Actual



w18-0058

IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

Is the donkey boiler intended to be used for domestic purposes only

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

Receivers

Separate Tanks

Donkey Boilers

General Pumping Arrangements

Oil Fuel Burning Arrangements

SPARE GEAR.

Has the spare gear required by the Rules been supplied

State the principal additional spare gear supplied as per list enclosed.

THE NORTH EASTERN MARINE ENGINEERING CO., LTD.
The foregoing is a correct description,

W. Blaylock
SECRETARY

Manufacturer.

Dates of Survey while building
During progress of work in shops - 1930 Aug. 18, 22, 25, Sep. 1, 8, 19, Oct. 3, 9, 15, 18, 20, 21, 23, 26, 28, 31, Nov. 4, 10, 11, 13, 17, 18, 20, 21, 22
During erection on board vessel - 1931 Dec. 1, 2, 4, 5, 9, 16, 17, 18, 23, Jan. 5, 7, 12, 13, 16, 19, 20, 21, 26, Feb. 4, 5, 6, 9, 11, 12, 16, 17, 19, 24, 25, 27, Mar. 2, 3, 4, 5, 6, 9, 12, 13, 16, 19, 23, 26, 27, 30, 31, Apr. 2, 8, 9, 10, 13, 17, 20, 22, 27, May 1, 5, 6, 7, 13, 14, 18, 20, 22, 28.
Total No. of visits 90.

Dates of Examination of principal parts - Cylinders 29.8.30, 8.8.30, Flywheel shaft 20.10.30, Thrust shaft 20.10.30, Intermediate shafts, Tube shaft, Screw shaft, Propeller, Stern tube, Engine seatings, Engines holding down bolts, Completion of fitting sea connections, Completion of pumping arrangements, Engines tried under working conditions.
Crank shafts Material Ingot steel Identification Mark 3804 JQ. 9158 MB Flywheel shaft, Material Ingot steel Identification Mark 3887/8 WB
Thrust shafts Material Identification Mark 3887.8 WB Intermediate shafts, Material Identification Marks
Tube shaft, Material Identification Mark Screw shaft, Material Identification Mark

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
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
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.)
These twin sets of engines have been constructed under special survey in accordance with rule requirements & the materials and workmanship are good. The starboard set was run on bench trials for several days under full load & the trials were satisfactory. The engines have now been dismantled & shipped to Belfast where they will be installed on board and on completion the vessel will be eligible in our opinion for record of +LMC (with date)

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

The amount of Entry Fee .. £ 6 : 0 : 0
Special 4.15 hrs. per £ 88-11-0
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ : :
When applied for, JUN 1931
When received, 15 June 1931
FRI. 1 JUN 1932

Committee's Minute

Assigned

See Bel J.E. 10750

William Butler
Engineer Surveyor to Lloyd's Register of Shipping.
E. J. Stoddart

