

REPORT ON OIL ENGINE MACHINERY.

See also Lth Rpt No 20437.

No. 60558

Received at London Office JAN 11 1939

Date of writing Report

When handed in at Local Office

3: 1: 39 Port of

Glasgow.

No. in Survey held at
Reg. Book.20402 on the
Single
Twin
Triple
Quadruple

Screw vessel

Underwood

Date, First Survey 31: 3: 38 Last Survey 28th Dec 1938

Number of Visits 14

Tons { Gross 1490
Net 1359

Built at

Leith

By whom built Henry Robb Ltd

Yard No. 291 When built 1938

Engines made at

Glasgow

By whom made British Auxiliaries Ltd

Engine No 302/3 When made 1938

Donkey Boilers made at

By whom made

Boiler No. When made

Brake Horse Power 1280

Owners Union Steamship Co of New Zealand

Port belonging to London

Nom. Horse Power as per Rule 250

Is Refrigerating Machinery fitted for cargo purposes

Is Electric Light fitted

Trade for which vessel is intended

OIL ENGINES, &c.—Type of Engines Heavy Oil type M-44M. 2 or 4 stroke cycle 2 Single or double acting Single

Maximum pressure in cylinders 780 lbs. Diameter of cylinders 340 7/8 Length of stroke 570 7/8 No. of cylinders 8 No. of cranks 8

Mean Indicated Pressure 95 lbs. Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 484 7/8

Revolutions per minute 250 Flywheel dia. 1550 7/8 Weight 4200 lbs. Means of ignition Compression Kind of fuel used Diesel

Crank Shaft, { Solid forged as per Rule 211 7/8 Crank pin dia. 220 7/8 Crank Webs Mid. length breadth 308 7/8 Thickness parallel to axis

{ Semi built dia. of journals as fitted 220 Crank pin dia. 220 7/8 Crank Webs Mid. length thickness 122 Thickness around eyehole

Flywheel Shaft, diameter as per Rule 211 7/8 Intermediate Shafts, diameter as per Rule 144 7/8 Thrust Shaft, diameter at collars as fitted 260 7/8

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

Bronze Liners, thickness in way of bushes as per Rule Thickness between bushes 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

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 Direct Is a governor or other arrangement fitted to prevent racing of the engine when decelerated Yes Means of lubrication

Thickness of cylinder liners 25.5 7/8 Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled or lagged with

Insulating 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. 1 off 120 7/8 x 140 7/8 S.A. (each) Is the sea suction provided with an efficient strainer which can be cleared within the vessel

Bilge Pumps worked from the Main Engines, No. One Diameter 90 7/8 Stroke 140 7/8 Can one be overhauled while the other is at work

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

If the cooling water led to the bilges. 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 Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 2 off 135 litres per min each

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

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

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

What pipes pass through the bunkers How are they protected

What pipes pass through the deep tanks 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

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

apartment 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. One each engine No. of stages 2 Diameters 175 7/8 70 7/8 Stroke 350 Driven by Main engine

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

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

Is provision made for first Charging the Air Receivers

Suctioning Air Pumps, No. One each engine Diameter 770 7/8 Stroke 350 7/8 Driven by Main engine

Auxiliary Engines crank shafts, diameter as per Rule as fitted Position

Have the Auxiliary Engines been constructed under special survey Is a report sent herewith

W266-0177

AIR RECEIVERS:—Have they been made under survey yes State No. of Report or Certificate 635354, 636443, 142

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. ✓ Cubic capacity of each ✓ Internal diameter ✓ thickness ✓
Seamless, lap welded or riveted longitudinal joint ✓ Material ✓ Range of tensile strength ✓ Working pressure ✓
Starting Air Receivers, No. 3 Total cubic capacity 3000 litres Internal diameter 25 1/2" thickness 9/16"
Seamless, lap welded or riveted longitudinal joint Riveted Material Steel Range of tensile strength 24/28 tons Working pressure by Rules 376 lbs
Actual 355 lbs

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 2-11-35 Receivers 20-7-34 Separate Fuel Tanks
(If not, state date of approval)

Donkey Boilers General Pumping Arrangements Pumping Arrangements in Machinery Space
Oil Fuel Burning Arrangements SPARE GEAR.

Has the spare gear required by the Rules been supplied yes
State the principal additional spare gear supplied

The foregoing is a correct description,
For BRITISH AUXILIARIES LIMITED
General Manager
Manufacturer.

Dates of Survey while building { During progress of work in shops - - }
{ During erection on board vessel - - - }
Total No. of visits 14
Dates of Examination of principal parts—Cylinders 1-11-38 Covers 1-11-38, 2-11-38 Pistons 1-11-38 Rods 8-11-38 Connecting rods 8-11-38
25-10-38 3-11-38 24-11-38 25-10-38 27-10-38 Intermediate shafts ✓ Tube shaft ✓
Crank shaft 27-10-38 Flywheel shaft and Thrust shaft 27-10-38 Engine sealings ✓ Engines holding down bolts ✓
Screw shaft ✓ Propeller ✓ Stern tube ✓ Engines tried under working conditions ✓
Completion of fitting sea connections ✓ Completion of pumping arrangements ✓
Crank shaft, Material steel Identification Mark 302 LLOYDS No 9965 PK 22-10-37 Flywheel shaft, Material ✓ Identification Mark and
Thrust shaft, Material steel Identification Mark 303 610, 884 ERB 15-12-37 Intermediate shafts, Material ✓ Identification Marks ✓
Tube shaft, Material ✓ Identification Mark 303 609, 909 ERB 7-1-38 Screw shaft, Material ✓ Identification Mark ✓
Identification Marks on Air Receivers LLOYDS No. 35354 LLOYDS No. 36443/1 LLOYDS No. 36443/2
Tested to 555 lbs Tested to 555 lbs Tested to 555 lbs
W.P. 350 " " W.P. 350 " " W.P. 350 lbs
H.C. 18-3-38 T.M. 30-8-38 T.M. 30-8-38

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
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 yes If so, state name of vessel M.V. XOPARA. Gls report No. 5983

General Remarks (State quality of workmanship, opinions as to class, &c.) These engines have been built under Special Survey in accordance with the Rules and approved plans. The materials and workmanship are good. They have been tried on the bench at full load with satisfactory results. They have been shipped to Messrs Henry Robb Ltd of Leith for fitting on board a vessel No. 269 build at their yard and eligible in my opinion for the record of + L.M.C. with date when properly secured on board and tried under full working condition

31/1/39

The amount of Entry Fee £ 4 0 0 When applied for, 6/11/39
Special £ 62 10 0 When received, 22/3/39
Donkey Boiler Fee £ :
Travelling Expenses (if any) £ :

Committee's Minute
Assigned signed

G. E. Murdoch.
Engineer Surveyor to Lloyd's Register of Shipping.

FRI. 11 JUL 1941 2019
See Gls. R. 20437
Lloyd's Register Foundation