

REPORT ON OIL ENGINE MACHINERY.

No. 12491

Received at London Office

13 NOV 1939

of writing Report

19 When handed in at Local Office

10 11 39 Port of Belfast

in Survey held at Belfast

Date, First Survey 6 July 1938 Last Survey 5 Nov 1939

Number of Visits 193

on the Single Screw vessel
Twin
Triple
Quadruple

"AUCKLAND STAR"

Tons Gross 12389.11
Net 7507.77

at Belfast By whom built Haland, Wolff Ltd. Yard No. 1017 When built 1939
 ines made at Belfast By whom made Haland, Wolff Ltd. Engine No. 1017 When made 1939
 key Boilers made at Belfast By whom made Haland, Wolff Ltd. Boiler No. 1017 When made 1939
 ce Horse Power 12000 Owners Blue Star Ltd. Port belonging to Belfast
 Horse Power as per Rule 2463 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes
 de for which vessel is intended Ocean-going

ENGINES, &c.—Type of Engines Haland - B.W. Diesel Injection 2 or 4 stroke cycle 2 Single or double acting Double
 mum pressure in cylinders 700 lb/sq" Diameter of cylinders 24 7/8 620 mm. Length of stroke 55 1/8 1400 mm No. of cylinders 12 No. of cranks 12
 Indicated Pressure 100 lb/sq"
 of bearings, adjacent to the Crank, measured from inner edge to inner edge 1164 mm Is there a bearing between each crank Yes
 utions per minute 98 Flywheel dia. 2483 mm. Weight 2500 Kg. Means of ignition Compression Kind of fuel used Diesel oil.
 Solid forged dia. of journals as per Rule approved Crank pin dia. 486 mm Crank Webs Mid. length breadth 1040 mm Thickness parallel to axis 250 mm
 Semi-trait dia. of journals as fitted 285 mm. Crank Webs Mid. length thickness 250 mm shrunk Thickness around eyehole 272.5 mm
 All built as per Rule approved Thrust Shaft, diameter at collars as fitted 460 mm.
 Wheel Shaft, diameter as per Rule approved Intermediate Shafts, diameter as fitted 1734 Thrust Shaft, diameter at collars as fitted 460 mm.
 Shaft, diameter as per Rule approved Screw Shaft, diameter as fitted 19 Is the screw shaft fitted with a continuous liner Yes.
 size Liners, thickness in way of bushes as per Rule 39/32 Thickness between bushes as per Rule 39/32 Is the after end of the liner made watertight in the
 as fitted 15/16 as fitted 39/32
 If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner One length.
 e 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.
 o 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.
 If so, state type None Length of Bearing in Stern Bush next to and supporting propeller 78"

eller, dia. 17'-9" Pitch 18'-9" No. of blades Three Material 70% Bronze whether Moveable No. Total Developed Surface 78.5 sq. feet
 od of reversing Engines Oil, Oil Brake Cylinders Is a governor or other arrangement fitted to prevent racing of the engine when declatched Yes. Means of lubrication forced.
 Thickness of cylinder liners 42 mm. Are the cylinders fitted with safety valves Yes. Are the exhaust pipes and silencers water cooled or lagged with
 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. Yes.

ing Water Pumps, No. 3 P.W. 280 Gals/h. 2 F.W. 280 Gals/h. Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes.
 e Pumps worked from the Main Engines, No. None Diameter None Stroke None Can one be overhauled while the other is at work Yes.
 ps connected to the Main Bilge Line None No. and Size Three - Bilge 110 Gals/h. Ballast 200 Gals/h. General Service 80 Gals/h.
 How driven Electric Motors.
 e 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
 gements None.

ast Pumps, No. and size One 200 Gals/h. Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size Three, each 250 Gals/h.
 wo independent means arranged for circulating water through the Oil Cooler Yes. Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge
 ps, No. and size:—In Machinery Spaces Two @ 2 1/2", Two @ 3 1/2", Four @ 2" Moleh Rom, One @ 3" in 2 1/2" tunnel In Pump Room None
 olds, &c. Six @ 3 1/2" from three fore holds, one @ 4 1/2" from scupper drain tanks for aft hold, one @ 2" duct keel
 pendent Power Pump Direct Suctions to the Engine Room Bilges, No. and size Three - Bilge 6" G.P. Pump 6" Ballast 9 7"
 All the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Yes Are the Bilge Suctions in the Machinery Spaces
 om easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges Yes

ll Sea Connections fitted direct on the skin of the ship Yes. Are they fitted with Valves or Cocks Yes.
 hey 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 Two above
 hey 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.
 pipes pass through the bunkers None. How are they protected None.
 pipes pass through the deep tanks None. Have they been tested as per Rule Yes.
 All Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes.

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
 artment to another Yes. Is the Shaft Tunnel watertight Yes. Is it fitted with a watertight door Yes. worked from Upper Deck.
 wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork None.
 Air Compressors, No. Two No. of stages Two Diameters 400, 350 mm. Stroke 260 mm Driven by Electric Motor
 liary Air Compressors, No. None No. of stages None Diameters None Stroke None Driven by None
 Auxiliary Air Compressors, No. One No. of stages Two. Diameters 100, 88 mm. Stroke 80 mm. Driven by Steam Engine
 Provision is made for first charging the Air Receivers Yes. Steam driven Compressor Yes.
 ing Air Pumps, No. Four - Capacity of each 291.5 M³ Diameter 98 mm. Stroke 1.2 kg/cm² abs. pressure. Driven by Chain from Main Engine
 ry Engines crank shafts, diameter as per Rule approved No. Three Position Wings of Main Motor Room
 as fitted 280 mm. Journals, 220 mm. Position Wings of Main Motor Room
 Auxiliary Engines been constructed under special survey Yes. Is a report sent herewith Yes.

AIR RECEIVERS:—Have they been made under survey *Yes at Belfast* State No. of Report or Certificate *Yes (on line)*

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*

REFRIGERATOR
 Injection Air Receivers, No. *Two* Cubic capacity of each *725 cu. ft.* Internal diameter *6'-0 7/8"* thickness *1"*
 Seamless, lap welded or riveted longitudinal joint *TR DBP* Material *Steel* Range of tensile strength *28/32 Tens.* Working pressure *360 lb*
 Actual *356 lb*

EMERGENCY
 Starting Air Receivers, No. *Two* Total cubic capacity *360 litres* Internal diameter *2'-0 1/8"* thickness *1/2"*
 Seamless, lap welded or riveted longitudinal joint *EW* Material *Steel* Range of tensile strength *28/32 Tens.* Working pressure *360 lb*
 Actual *356 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*

PLANS. Are approved plans forwarded herewith for Shafting *17/5/39, 25/5/39* Receivers *22/7/38, 12/12/38* Separate Fuel Tanks *2/3/39, 14/3/39*
 (If not, state date of approval)

Donkey Boilers *2/7/38* General Pumping Arrangements *22/12/38* Pumping Arrangements in Machinery Space *8/3/39*
 Oil Fuel Burning Arrangements *25/4/39*

SPARE GEAR.

Has the spare gear required by the Rules been supplied *Yes*
 State the principal additional spare gear supplied *See appended list.*

The foregoing is a correct description,
 For HARLAND AND WOLFF, LIMITED

A. J. Marshall
 SECRETARY

Manufacturer.

1938
 Dates of Survey while building
 During progress of work in shops-- July 6 Aug 23 Oct 4, 11, 13, 14, 17, 19, 22, 28 Nov 1, 4, 11, 15, 17, 18, 21, 22, 23, 24, 28, 30 Dec 1, 2, 7, 8, 9, 10, 12, 13
 16, 17, 19, 21, 23 1939 Jan 2, 5, 10, 11, 12, 13, 14, 16, 18, 19, 20, 21, 24, 26 Feb 1, 2, 8, 10, 13, 14, 15, 16, 17, 20, 22, 23
 During erection on board vessel-- Mar 1, 2, 3, 4, 7, 8, 10, 13, 14, 15, 20, 22, 23, 24, 27, 28, 30, 31 Apr 3, 4, 5, 12, 14, 15, 17, 18, 19, 20, 21, 22, 24, 25, 26, 29
 1, 2, 4, 5, 6, 10, 11, 12, 13, 15, 16, 17, 18, 19, 20, 23, 24, 25, 26, 27, 29, 30, 31 June 1, 2, 3, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 16, 17, 19, 20, 21, 22, 23
 Total No. of visits 26, 27, 28, 29, 30 July 3, 4, 5, 6, 20, 24, 28, 31 Aug 2, 4, 7, 9, 11, 16, 19, 22, 28 Sept 4, 6, 8, 11, 12, 13, 14, 15, 16, 19, 20, 21, 22, 23, 24, 25, 27, 30, 31 Nov 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31

Dates of Examination of principal parts—Cylinders *29.4.39, 30.6.39* Covers *2.3.39, 8.6.39* Pistons *30.3.39, 16.9.39* Rods *14.6.39, 19.5.39* Connecting rods *10.1.39*
 Crank shaft *21.4.39* Flywheel shaft *16.5.39* Thrust shaft *16.5.39* Intermediate shafts *23.12.38, 6.30.5.39* Tube shaft *10.1.39*
 Screw shafts *19.5.39* Propeller *9.6.39* Stern tubes *5.6.39* Engine seatings *5.6.39* Engines holding down bolts *29.8.39*
 Completion of fitting sea connections *5.6.39* Completion of pumping arrangements *1.11.39* Engines tried under working conditions *30.10.39*
 Crank shaft, Material *Steel* Identification Mark *LLOYD 282 21.4.39* Flywheel shaft, Material *Steel* Identification Mark *LLOYD 330*
 Thrust shaft, Material *Steel* Identification Mark *LLOYD 282 16.5.39* Intermediate shafts, Material *Steel* Identification Marks *LLOYD 330*
 Tube shaft, Material *Steel* Identification Mark *LLOYD 330* Spare *LLOYD 330*
 Identification Marks on Air Receivers *Main Starting Ai. No 189 Emergency Start No 188 Refrigerating A 14970*
Receivers (2) LLOYD TEST 585 lb S. Ai. Receiv. LLOYD TEST 584 lb S. Ai. Receiv. LLOYD TEST 575 lb 1/2" HP
HP 356 lb 15.2.39 350 lb 1/2" HP 31.3.39
CHH 28.3.39 CHH

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 *No* If so, have the requirements of the Rules been complied with *Yes*

If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with *Yes*

Is this machinery duplicate of a previous case *Yes* If so, state name of vessel *M/T 'WELLINGTON STAR'*

General Remarks (State quality of workmanship, opinions as to class, &c.)
The machinery of this vessel has been constructed under Special Survey.
The workmanship and materials are good.
The main engines & auxiliaries have been efficiently installed and tested under working conditions with satisfactory results.
In our opinion the machinery of this vessel is eligible for the notation of
F LMC 11,39 CL DB 80 lbs. OIL ENGINES

The amount of Entry Fee ..	£ 6 : -	When applied for,
Special ...	£ 161 : 11	6 10 11 19 39
Donkey Boiler Fee ...	£ 4 : 4	When received,
AIR RECEIVERS		
Travelling Expenses (if any)	£ 12 : 12	4/12/39
Travelling Expenses	£ 2 : 8	4
Committee's Minute		

R. Lee Armes
 Engineer Surveyor to Lloyd's Register of Shipping



The Surveyors are requested not to write on or below the space for Committee's Minute.

Assigned *to LMB 11.39*
D.B. - 80 lb oil