

REPORT ON OIL ENGINE MACHINERY.

No. 64614

Received at London Office

13 NOV 1941

Date of writing Report 11. 11. 41 When handed in at Local Office 11. 11. 41 Port of Glasgow
 No. in Survey held at Glasgow Date, First Survey 12. 2. 40 Last Survey 1-11-1941
 Reg. Book. Number of Visits 115

on the Single Screw vessel **NOTTINGHAM** Tons Gross 8532 Net 5021
 Built at Glasgow By whom built Alex Stephen & Sons Ltd Yard No. 576 When built 1941
 Engines made at Glasgow By whom made Barclay Curle & Co Ltd Engine No. FW 129 When made 1941
 Donkey Boilers made at Ayde By whom made J. Adamson & Co Ltd Boiler No. 2567 When made 1940
 Brake Horse Power 6400 Owners The Federal Steam Navigation Co Ltd Port belonging to London
 Nom. Horse Power as per Rule 1294 Is Refrigerating Machinery fitted for cargo purposes yes Is Electric Light fitted yes
 Trade for which vessel is intended 26 3/8 91 1/16

OIL ENGINES, &c. Type of Engines Worcester opposed piston 2 or 4 stroke cycle? 2 Single or double acting single
 Maximum pressure in cylinders 640 lbs per sq in Diameter of cylinders 670 mm Length of stroke 2320 mm No. of cylinders 6 No. of cranks 18
 Mean Indicated Pressure 85 lbs per sq in SIDE RODS CENTRES
 Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 1300 mm Is there a bearing between each crank? YES
 Revolutions per minute 113 Flywheel dia. A 8' 2 3/8" Weight A 4 tons Means of ignition compression Kind of fuel used Diesel
 Crank Shaft, { Solid forged dia. of journals as per Rule as appd. Crank pin dia. 530 mm Crank Webs Mid. length breadth 750 mm Thickness parallel to axis 300 mm
 { Semi built dia. of journals as fitted 530 mm Mid. length thickness 300 mm Thickness around eye hole 221 mm
 { All built
 Flywheel Shaft, diameter as per Rule as appd. Intermediate Shafts, diameter as per Rule as fitted 16" Thrust Shaft, diameter at collars as per Rule as fitted 500 mm
 as fitted 460 mm as fitted 16" as fitted 500 mm
 Tube Shaft, diameter as per Rule as fitted 15" 18" Is the { tube screw } shaft fitted with a continuous liner? yes
 as fitted 15" 18" as fitted 15" 18" as fitted 15" 18"
 Bronze Liners, thickness in way of bushes as per Rule as appd. Thickness between bushes as per Rule as fitted 5/8" Is the after end of the liner made watertight in the propeller boss yes
 as fitted 32 as fitted 5/8" as fitted 5/8"
 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 shaft no If so, state type -
 Length of Bearing in Stern Bush next to and supporting propeller 5' 10"
 Propeller, dia. 16' 9" Pitch 15' 0" No. of blades 4 Material steel whether Moveable yes Total Developed Surface 92 sq. feet
 Method of reversing Engines direct air Is a governor or other arrangement fitted to prevent racing of the engine when declutched 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 yes If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine for main engine to guides only
 Cooling Water Pumps, No. Two (fresh water) 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. none Diameter - Stroke - Can one be overhauled while the other is at work -
 Pumps connected to the Main Bilge Line { No. and Size All centrifugal pumps - Bilge - 100 tons per hr. Gen service - 100 tons per hr. Ballast - 470 tons per hr
 { How driven all by electric motor
 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 -
 Ballast Pumps, No. and size one centrifugal 470 tons Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 2 centrifugal each 65 tons
 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 @ 3" In Pump Room -
 In Holds, & N° 1 hold - 2 @ 3". N° 2 hold - 2 @ 3". N° 3 hold - 2 @ 2 1/2". N° 4 hold - 2 @ 3 1/2". N° 5 hold - 1 @ 3". Tunnel well - 1 @ 2 1/2"
 Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 3 @ 5"
 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 hold bilge and fresh water pipes How are they protected in pipe tunnel
 What pipes pass through the deep tanks only as above 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 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 deck
 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. 2 No. of stages 3 Diameters 12 3/4" - 5" Stroke 7" Driven by -
 Auxiliary Air Compressors, No. 2 No. of stages 3 Diameters 12 3/4" - 10 1/4" Stroke 7" Driven by electric motor
 Small Auxiliary Air Compressors, No. 2 No. of stages 3 Diameters 3" Stroke 7" Driven by -
 What provision is made for first Charging the Air Receivers small compressor with hand starting
 Scavenging Air Pumps, No. 1 Diameter 1852 mm Stroke 1480 mm Driven by main engine
 Auxiliary Engines crank shafts, diameter as per Rule as fitted see certificate hereinto No. - Position - Is a report sent herewith NO other reports issued
 Have the Auxiliary Engines been constructed under special survey yes

FORD PORT - Nottingham Car No. 2019
 AFT PORT - -
 STARBOARD - -
 W1201-0130
 Lloyd's Register Foundation

AIR RECEIVERS:—Have they been made under survey *yes* State No. of Report or Certificate *—*
 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 *—* by Rules *—* Actual *—*
Starting Air Receivers, No. *Two* Total cubic capacity *360 cu ft* Internal diameter *4-3/2* thickness *1 3/4*
 Seamless, lap welded or riveted longitudinal joint *Riveted* Material *steel* Range of tensile strength *29-33 tons* Working pressure *by Rules appd Actual 600 lbs*
IS A DONKEY BOILER FITTED? *yes* If so, is a report now forwarded? *yes* *Inch Rpt No. 10353*
 Is the donkey boiler intended to be used for domestic purposes only - *Donkey steam heating & main engine circulating water warming*
PLANS. Are approved plans forwarded herewith for Shafting *11-10-39* Receivers *yes* Separate Fuel Tanks *yes*
 (If not, state date of approval) *—*
 Donkey Boilers *no* General Pumping Arrangements *no* Pumping Arrangements in Machinery Space *yes*
 Oil Fuel Burning Arrangements *no*

SPARE GEAR.

Has the spare gear required by the Rules been supplied *yes - one spare propeller blade - as approved 12-4-40 (E).*
 State the principal additional spare gear supplied *see attached list.*



969

The foregoing is a correct description,

Alexander Macneil Manufacturer.

Dates of Survey while building
 During progress of work in shops - - 1940 Feb 12 May 7 June 19 July 7 Aug 1 Nov 19 20 25 Dec 2 6 9 12 17 20 30 (1941) Jan 6 10 22 24 31 Feb 13 20 Mar 3 10 Apr 10 May 6 26 June 6 20 23 July 7 11 15 Aug 6 9 19 20 22 27 29 Oct 1 7 = 42
 During erection on board vessel - - 1940 Apr 15 22 May 8 23 27 June 4 12 19 July 3 8 17 18 Aug 6 13 14 22 Sep 3 10 17 24 Oct 2 6 22 23 29 31 Nov 4 26 Dec 2 18 (1941) Jan 16 27 Feb 11 18 24 Mar 3 4 5 6 10 18 19 28 31 Apr 7 9 16 21 23 28 29 30 May 2 3 8 12
 Total No. of visits *115* 19 23 30 June 12 July 21 24 Aug 5 28 Sep 16 18 24 Oct 2 7 9 21 Nov 1 = 73

Dates of Examination of principal parts—Cylinders *23-6-41* Covers *—* Pistons *23-6-41* Rods *23-6-41* Connecting rods *23-6-41*
 Crank shaft *15-7-41* Flywheel shaft *15-7-41* Thrust shaft *15-7-41* Intermediate shafts *5-3-41* Tube shaft *—*
 Screw shaft *23-5-41* Propeller *23-4-41* Stern tube *12-6-41* Engine seatings *21-7-41* Engines holding down bolts *18-9-41*
 Completion of fitting sea connections *24-7-41* Completion of pumping arrangements *7-10-41* Engines tried under working conditions *1-11-41*
 Crank shaft, Material *J. steel* Identification Mark *9397 A.J.B.* Flywheel shaft, Material *same as crankshaft* Identification Mark *—*
 Thrust shaft, Material *same as crankshaft* Identification Mark *—* Intermediate shafts, Material *J. steel* Identification Marks *L.C.D. 5-3-41 LLOYDS*
 Tube shaft, Material *—* Identification Mark *—* Screw shaft, Material *J. steel* Identification Mark *Nº 3809 ERB L.C.D. 23-5-41*
 Identification Marks on Air Receivers
 PORT: LLOYD'S TEST 800 LBS W.P. 600 LBS L.C.D. 3-11-40
 STARBOARD: LLOYD'S TEST 800 LBS W.P. 600 LBS G.C. 3-11-40

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 *yes* If so, state name of vessel *"Gloucester" Col. Rpt. Nº 64110*

General Remarks (State quality of workmanship, opinions as to class, &c.)
The materials and workmanship are good.
The machinery has been constructed under special survey, satisfactorily fitted in the vessel, tried under working conditions and found good.
It is eligible in my opinion for classification and the records LMC 11, 41. C.L.

Rob
11/11/41

The amount of Entry Fee .. £ *6* : : When applied for,
 Special £ *132 : 7* : *11 NOV 1941*
 Donkey Boiler Fee £ *12 : 12* : : When received,
 Air Receivers
 Travelling Expenses (if any) £ *4 : 4* : : 19..

for A. J. Brown & self *S. L. Davis*
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **GLASGOW 11 NOV 1941**
 Assigned *11 Nov 11 41*



GLASGOW

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