

REPORT ON OIL ENGINE MACHINERY.

No. 31877

Rpt. 4b.

Received at London Office 31 JUL 1936

30 JULY 1936

Port of Sunderland

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

Date, First Survey 25th Mch. 36 Last Survey 8th Oct 1936

No. in Survey held at Reg. Book.

Number of Visits Sed. 39
Wre. 42

Gross Tons 8303
Net Tons 4939

on the Single Screw vessel **"BRITISH ENDURANCE"**

Built at Newcastle By whom built Swan Hunter, Higham, Richmond & Co. Ltd No. 1500 When built 1936

Engines made at Sunderland By whom made Wm. Beard & Sons Ltd Engine No. 190 When made 1936

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

Brake Horse Power 2850 Owners British Launder Co. Ltd Port belonging to _____

Nom. Horse Power as per Rule 684 Is Refrigerating Machinery fitted for cargo purposes _____ Is Electric Light fitted _____

Trade for which vessel is intended _____

OIL ENGINES, &c. Type of Engines Opposed piston airless injection 2 or 4 stroke cycle 2 Single or double acting Single

Maximum pressure in cylinders 540 lbs/sq. in. Diameter of cylinders 600 mm Length of stroke Upper 980 mm No. of cylinders 4 No. of cranks 4

Mean Indicated Pressure 84 lbs/sq. in. Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 940 mm Is there a bearing between each crank three throw.

Revolutions per minute 94 Flywheel dia. FOR? 2050 mm Weight 62 cwt. Means of ignition Compression Kind of fuel used _____

Crank Shaft, dia. of journals as per Rule 425 mm Crank pin dia. 450 mm Crank Webs Mid. length breadth 650 mm Thickness parallel to axis 255 mm

Flywheel Shaft, diameter as per Rule 425 mm Intermediate Shafts, diameter as per Rule 450 mm Thrust Shaft, diameter at collars as per Rule 450 mm

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

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

shaft _____ 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 Hand lever. Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes. Means of lubrication hand.

Thickens 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.

Cooling Water Pumps, No. _____ Is the sea suction provided with an efficient strainer which can be cleared within the vessel _____

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 _____ How driven _____

Is 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 One main eng. driven 100 mm x 610 mm

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 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 _____

led 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 compartment to another _____ Is the Shaft Tunnel watertight _____ Is it fitted with a watertight door _____ worked from _____

If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork _____

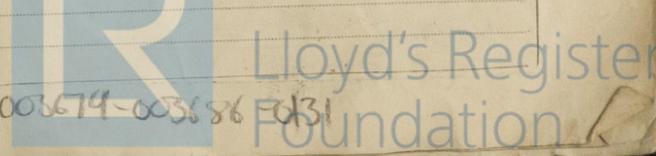
Main Air Compressors, No. _____ No. of stages _____ Diameters _____ Stroke _____ Driven by _____

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

Small Auxiliary Air Compressors, No. _____ No. of stages _____ Diameters _____ Stroke _____ Driven by Driven from main engine.

Scavenging Air Pumps, No. One Diameter 1960 mm Stroke 610 mm Driven by _____

Auxiliary Engines crank shafts, diameter as per Rule Position _____



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

Can 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. 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. Total cubic capacity Internal diameter thickness

Seamless, lap welded or riveted longitudinal joint Material Range of tensile strength Working pressure ^{by Rules} Actual

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 20/11/35 Receivers Separate Fuel Tanks

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 One cylinder liner & jacket Complete, one starting air piston return valve Complete, one cyl. relief valve Complete, 4 Scavenge Pump Suct. & del. valve half discs two fuel pump bodies Complete with suct. & del. valves, one intermediate crosshead with strut nuts, 1 bell crank lever & suction tappet for fuel pump, four fuel valves Complete, 1 roller chain for Camshaft drive.

The foregoing is a correct description,
WILLIAM DOXFORD & SONS, LIMITED.

W. Keller

Manufacturer.

Dates of Survey while building
 During progress of work in shops - 1936. Mar. 25, 26, 30, 31, Apr. 1, 2, 8, 23, 24, 27, 29, May 1, 7, 15, 18, 19, 20, 25, 26, June 5, 8, 9, 10
 During erection on board vessel - 12, 15, 16, 17, 18, 22, 23, 26, 29, July 1, 2, 3, 6, 7, 10 - Sld. 39
 Total No. of visits 26/3/36 30/3/36 10/6/36 10/6/36

Dates of Examination of principal parts—Cylinders 2/4/36 15/5/36 Covers ✓ Pistons 15/6/36 Rods 15/6/36 Connecting rods 10/6/36

Crank shaft 26/5/36 Flywheel shaft as crank Thrust shaft as crank 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 shaft, Material Ingot Steel Identification Mark No 190 G.O.C. 4018 27/4/36 Flywheel shaft, Material as crank Identification Mark as crank.
 Thrust shaft, Material as crank Identification Mark as crank. 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 Yes. If so, state name of vessel M/V "BRITISH FAME".

General Remarks (State quality of workmanship, opinions as to class, &c.) This machinery has been built under Special Survey in accordance with the Rules of the Society, & the Secretary's letter E 25/4/34.

The materials & workmanship are good.
The engine has been tried under full load conditions on the test bed with satisfactory results & has been despatched to Messrs Swan Hunter & Wigham Richardson Wallsend for installation on board the vessel, after which it will be eligible, in my opinion, to have notation of 80% M.C. (with date) oil Eng.
The engine has been satisfactorily installed in the ship and tried under working conditions

At with Newcastle on Tyne 9/10/36

The amount of Entry Fee .. £ 6 :
 4/5 Special £ 84 : 10 :
 heeled boiler? £ 12 : 12 :
 Donkey Boiler Fee
 Travelling Expenses (if any) £
 1/5 to be charged at once.)
Committee's Minute

When applied for, **29 JULY 1936**

When received, 1/8/1936

TUE. 18 OCT 1936

W. Fraser
 Engineer Surveyor to Lloyd's Register of Shipping.

Assigned see nwc. 94295

See correspondence

SUNDERLAND

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

