

Rpt. 4b.

REPORT ON OIL ENGINE MACHINERY.

No. 57900

Received at London Office

5 FEB 1937

Date of writing Report 11-2-37 When handed in at Local Office 3.2.37 Port of Glasgow.

No. in Survey held at 6lydebank Date, First Survey 11th Nov 1935 Last Survey 10th Feb 1937.
Reg. Book. Number of Visits 167

on the Single Screw vessel "Sussex" Tons Gross 11063 Net 6516

Built at 6lydebank By whom built John Brown & Co. Ltd. Yard No. 546 When built 1937
Engines made at Do By whom made Do Engine No. 546 When made 1937
Donkey Boilers made at Do By whom made Do Boiler No. 546 When made 1937
Brake Horse Power 6625 each Eng Owners P. & O. S. N. Co. Ltd. Port belonging to London
Nom. Horse Power as per Rule 2528 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes
Trade for which vessel is intended New Zealand Meat Trade.

II. ENGINES, &c.—Type of Engines Doreford 28 7/16 88 9/16 2 or 4 stroke cycle 2 Single or double acting Single
Maximum pressure in cylinders 568 Diameter of cylinders 725 m/m Length of stroke 1125 m/m No. of cylinders 5 No. of cranks 5-3 throw
Mean Indicated Pressure Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 7'-3" Is there a bearing between each crank Yes
Revolutions per minute 145 Flywheel dia. Weight Means of ignition Comp. Kind of fuel used Heavy oil
Crank Shaft, dia. of journals 560 m/m Crank pin dia. 560 m/m Crank Webs Mid. length breadth 820 m/m Thickness parallel to axis 315 m/m
Flywheel Shaft, diameter 560 m/m Intermediate Shafts, diameter 15 3/4 Thrust Shaft, diameter at collars 560 m/m
Tube Shaft, diameter none Screw Shaft, diameter 18" Is the screw shaft fitted with a continuous liner Yes
Bronze Liners, thickness in way of bushes as per Rule 15/16 Thickness between bushes as per rule 2 1/32 Is the after end of the liner made watertight in the propeller boss Yes If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner One length
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 Light fit
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 8'-3"
Propeller, dia. 17'-0" Pitch 16'-0" No. of blades 4 Boss. C.S. Material Blades whether Moveable Yes Total Developed Surface 100 sq. feet
Method of reversing Engines sliding cam shaft Is a governor or other arrangement fitted to prevent racing of the engine when declutched Means of lubrication forced
Thickness of cylinder liners 25 m/m 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 not overboard
Cooling Water Pumps, No. 3 - "fresh" Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes for Pump?
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 2- Centric each 130 Cons per hr, 3- Centric each 100 Cons per hr How driven Motor 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 2- Centric each 100 Cons per hr. Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 3- Centric each 70 Cons per hr
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 Tunnel Well 1-3" Tunnels each 1-2 1/2", E.R. 3-3 1/2", 2-2 1/2" copper In Pump Room
In Holds, &c. N° 5, 3-3", N° 4, 3-3", N° 3, 2-3 1/2", N° 1, 2-3" Duct Keel 1-3" dams 2-3", 1-2 1/2"
Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 2-6"
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 Both
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 none How are they protected
What pipes pass through the deep tanks none 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 E.R. top of pump
If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork Steel vessel
Main Air Compressors, No. 2 No. of stages 3 Diameters 5 1/2" 9 1/4", 9 1/2" Stroke Driven by Motor
Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters 5 1/2" Stroke Driven by Steam
Small Auxiliary Air Compressors, No. No. of stages Diameters Stroke Driven by
Scavenging Air Pumps, No. 2 Diameter 1780 m/m Stroke 1430 m/m Driven by Main Engines

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

AIR RECEIVERS:—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*

High Pressure Air Receivers, No. *3* Cubic capacity of each *300* Internal diameter *5'-4"* thickness *1 13/32"*

Seamless for Air Receiver
Seamless, lap welded or riveted longitudinal joint *Yes* Material *Steel* Range of tensile strength *29-33* Working pressure by Rules Actual *600*

Starting Air Receivers, No. *See above* 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? *Yes 2 Clarkson* If so, is a report now forwarded? *Yes below*

Is the donkey boiler intended to be used for domestic purposes only *No*

PLANS. Are approved plans forwarded herewith for Shafting *14-11-35* Receivers *See below* Separate Fuel Tanks *See below*
(If not, state date of approval)

Donkey Boilers *See below* General Pumping Arrangements *See below* Pumping Arrangements in Machinery Space *Do*

Oil Fuel Burning Arrangements *See below*

SPARE GEAR.

Has the spare gear required by the Rules been supplied *Yes*

State the principal additional spare gear supplied *One screw shaft, one propeller boss, 4 blades, four cylinder liners, etc.*

The foregoing is a correct description,

John Brown & Company, Limited.

Manufacturer.

Dates of Survey while building
During progress of work in shops--
During erection on board vessel--
Total No. of visits

1935 Nov. 11-14-20-21-26-27-28-29 Dec. 10-12-16-18-19-23-26 (1936) Jan. 6-14-20-23-24-28 Feb. 3-10-20-24 Mar. 3-10-13-16-17-19 Apr. 7-8-22-24-27-29 May. 1-4-5-7-8-11-12-13-19-22-25-26-28-29 June 1-2-4-12-15-16-17-19 July 1-3-6-8-9-10-13-15-29-31 Aug. 4-7-10-12-14-17-20-21-24-27-28-31 Sep. 2-7-8-9-11-14-15-16-18-21-22 Oct. 1-2-6-7-9-12-13-14-16-19-20-21-22-26-27-28-30 Nov. 2-3-5-6-9-10-11-13-16-18-20-23-24-26-30 Dec. 1-4-7-11-17-21-22-23-29 (1937) Jan. 6-8-11-12-15-18-19-20-21-25-26-27-28-29 Feb. 1-2-3-4-5-9-11

Dates of Examination of principal parts—Cylinders *24-4-26* Covers *✓* Pistons *4-5-26* Rods *7-5-26* Connecting rods *4-5-26*

Crank shaft *4-5-26* Flywheel shaft *✓* Thrust shaft *24-4-26* Intermediate shafts *24-4-26* Tube shaft *none*

Screw shaft *19-5-26* Propeller *16-6-26* Stern tube *30-9-26* Engine seatings *1-7-26* Engines holding down bolts *21-12-26*

Completion of fitting sea connections *16-11-36* Completion of pumping arrangements *✓* Engines tried under working conditions *✓*

Crank shaft, Material *S* Identification Mark *S. 62* Flywheel shaft, Material *✓* Identification Mark *✓*

Thrust shaft, Material *S* Identification Mark *P10599, S174* Intermediate shafts, Material *S* Identification Marks *220*

Tube shaft, Material *none* Identification Mark *✓* Screw shaft, Material *S* Identification Mark *220*

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 *✓*

If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with *Not required*

Is this machinery duplicate of a previous case *Yes* If so, state name of vessel *Essex all approved plans in that Report No. 57690*

General Remarks (State quality of workmanship, opinions as to class, &c.)

The machinery of this vessel has been built under special survey in accordance with the approved plans, and the Society's Rules and requirements, the materials and workmanship are good and it has been securely fitted on board and satisfactorily tried under working conditions and in my opinion is eligible for the record + L. M. C. 2-27. 2 H. B. 120 lbs

3/2/37

The amount of Entry Fee .. £ 6 : - :
Special .. £ 163 : 4 :
2 Donkey Boilers Fee .. £ 25 : - :
3 Air Receivers .. £ 16 : 16 :
Travelling Expenses (if any) £ 9 : 9 :
When applied for, *29-1-1937*
When received, *2-2-1937*

Committee's Minute *FRI 12 FEB 1937*

Assigned *+ Lmb 2-37*
25B 120K
oil Sp. C.

James Cairns.
Engineer Surveyor to Lloyd's Register of Shipping.

FRI 35 JUN 1937
JUL 6 JUL 1937



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Foundation