Rpt. 4b.

REPORT ON OIL ENGINE MACHINERY.

No. 19324.

Received at London Office 3 JUN 1931

Date of writing Report 28.3.31 When handed in at Local Office 28th May. 1931. Port of Greenock

No. in Reg. Book. Survey held at Greenock Date, First Survey 15th July. 1930. Last Survey 24th May. 1931.

Number of Visits 91.

on the Single / ~~Twin~~ / ~~Triple~~ / ~~Quadruple~~ Screw vessel S/S "British Energy" Tons Gross 4208.54. Net 4194.10.

Built at Greenock By whom built Greenock Dockyard Co Ltd. Yard No. 432 When built 1931

Engines made at Greenock By whom made John G Kincaid & Co Ltd Engine No. 1167 When made 1931

~~Donkey~~ Boilers made at Greenock By whom made John G Kincaid & Co Ltd Boiler No. 1167 When made 1931

Brake Horse Power 9700 Owners British Tanker Co Ltd. Port belonging to London

Nom. Horse Power as per Rule 653 ✓ Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

Trade for which vessel is intended Foreign 298 5976.

OIL ENGINES, &c.—Type of Engines Burmeister & Wain ~~2~~ or 4 stroke cycle 4 Single ~~or double~~ acting Single

Maximum pressure in cylinders 500 Diameter of cylinders 440 m/m Length of stroke 1500 m/m No. of cylinders 8 No. of cranks 8

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 1004 m/m. Is there a bearing between each crank Yes

Revolutions per minute 98 Turning ~~Fly~~ wheel dia. 2489 m/m Weight 2414 Kgs Means of ignition Compression Kind of fuel used Diesel

Crank Shaft, dia. of journals as per Rule 475 m/m / as fitted 495 m/m ✓ Crank pin dia. 495 m/m Crank Webs Mid. length breadth ✓ Mid. length thickness ✓ shrunk Thickness parallel to axis 310 m/m ✓ Thickness around eyehole 209 m/m ✓

Turning ~~Fly~~ wheel Shaft, diameter as per Rule 13.33 / as fitted 19 1/2" ✓ **Intermediate Shafts,** diameter as per Rule 12.7 / as fitted 19 1/2" ✓ **Thrust Shaft,** diameter at collars as per Rule 13.3 / as fitted 19 1/2" ✓

Tube Shaft, diameter as per Rule ✓ / as fitted ✓ **Screw Shaft,** diameter as per Rule 14.1 / as fitted 19 1/2" ✓ Is the ~~tube~~ / screw shaft fitted with a continuous liner Yes

Bronze Liners, thickness in way of bushes as per Rule .43 / as fitted 7/8" ✓ Thickness between bushes as per rule .535 / as fitted .7/8" 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 —

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 6'. 0 1/4" ✓

Propeller, dia. 16.9' Pitch 12.6' No. of blades 4 Material Bronze whether Moveable No Total Developed Surface 88 sq. feet

Method of reversing Engines 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 32/53 m/m Are the cylinders fitted with safety valves Yes ✓ Are the exhaust pipes and silencers water cooled or lagged with non-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 —

Cooling Water Pumps, No. Two ✓ 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. — Diameter — Stroke — Can one be overhauled while the other is at work —

Pumps connected to the **Main Bilge Line** { No. and Size Two (one 5" Centres) (one 9"×10"×10") / How driven Steam ~~or~~ Motor ✓

Ballast Pumps, No. and size one 9"×10"×10" ✓ **Lubricating Oil Pumps,** including Spare Pump, No. and size Two H8.42 tons per hour

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 2 2" 3-3" ✓ Fore Pump Room 1. 2 1/2 MAIN In Pump Room 2. 4" ✓

In Hold, &c. 2. 2 1/2" ✓ Main Centre 2. 4" in each. ✓

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size Two 5" ✓ ~~slug~~

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 above

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 } 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 None 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. one No. of stages 3 Diameters 450-675-150 m/m Stroke 610 m/m Driven by Main Engines ✓

Auxiliary Air Compressors, No. Two No. of stages 3 Diameters 10.875"-9.75"-2.625" Stroke 9.75" Driven by Diesel Engine ✓

Small Auxiliary Air Compressors, No. one No. of stages 50 C.F. per minute Diameters — Stroke — Driven by Steam

Scavenging Air Pumps, No. ✓ Diameter Stroke Driven by

Auxiliary Engines crank shafts, diameter as per Rule / as fitted } See Sheffield Rept. No. 428 attached

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. 2 Cubic capacity of each 200 Litres Internal diameter 14" ✓ thickness 1/2" ✓ by Rules 1000

Seamless, ~~lap welded or riveted~~ longitudinal joint Seamless Material S Range of tensile strength 29.33 Working pressure Actual 1000 ✓

Starting Air Receivers, No. 2 Total cubic capacity 1400 Internal diameter 6-8 1/8" ✓ thickness 1 1/16 - 1 3/32" by Rules 359

~~Seamless, lap welded or~~ riveted longitudinal joint TRIPLE S Material S Range of tensile strength 28.32 Working pressure Actual 356.

IS A ~~Donkey~~ Auxiliary BOILER FITTED? Yes — If so, is a report now forwarded? Yes

Is the donkey boiler intended to be used for domestic purposes only

PLANS. Are approved plans forwarded herewith for Shafting Yes Receivers Yes Separate Tanks Yes
(If not, state date of approval)
~~Donkey~~ Auxiliary Boilers Yes General Pumping Arrangements Yes Oil Fuel Burning Arrangements Yes

SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes

State the principal additional spare gear supplied Propeller, Propeller Shaft, Cylinder Liners + Cylinder Head.

The foregoing is a correct description,
For JOHN G. KINCAID & CO. LIMITED.
W. Cant Director. *Manufacturer.*

Dates of Survey while building — *During progress of work in shops*: (1930) July 15 29 Aug 1 13 19 Sept 10 11 19 29 Oct 9 10 15 22 23 28 30 Nov 4 9 12 13 14 19 20 21 24 Dec 1 3 5 8 16 14 19 22 24 26 29 30 31 (1931) Jan 4 12 14 15 16 19 21 26 27

During erection on board vessel: 30 Feb 2 3 5 9 11 12 16 14 19 23 24 Mar 5 10 11 12 18 19 23 25 26 30 31 Apl 1 3 8 9 10 14 15 16 20 22 24 28 29 May 1 4 5 16 22 26 24

Total No. of visits 91.

Dates of Examination of principal parts—*Cylinders* Liners 11. 2. 31 *Covers* 14. 12 30 *Pistons* 19. 2. 31 *Rods* 23. 2. 31 *Connecting rods* 26. 3. 31

Crank shaft 16. 1. 31 *Flywheel shaft* ✓ *Thrust shaft* 12. 3. 31 *Intermediate shafts* ✓ *Tube shaft* ✓

Screw shaft 19. 3. 21 *Propeller* 19. 3. 21 *Stern tube* 19. 3. 21 *Engine seatings* 25. 3. 31 *Engines holding down bolts* 22. 4. 31

Completion of fitting sea connections 25. 3. 31 *Completion of pumping arrangements* 24. 4. 31 *Engines tried under working conditions* 27. 5. 31

Crank shaft, Material S *Identification Mark* LR. N.64 WGM *Flywheel shaft, Material* ✓ *Identification Mark* ✓

Thrust shaft, Material S *Identification Mark* LR 1028 WGM *Intermediate shafts, Material* ✓ *Identification Marks* ✓

Tube shaft, Material ✓ *Identification Mark* ✓ *Screw shaft, Material* S *Identification Mark* LR 1027 WGM.

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? ✓ *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* S.S. British Prestige (Glasgow Report No. 1931)

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

These Engines & Boilers have been built under Special Survey in accordance with the Approved plans & the workmanship and material are of good quality. They are now correctly fitted on board tried under working conditions & found satisfactory The Machinery is eligible in my opinion for the record of ✠ LMC 5. 31 (Notation of Donkey Boiler 150 lbs.)

GREENOCK

Certificate (if required) to be sent to

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

The amount of Entry Fee ..	£ 6. : — :	When applied for,	
Special	£ 104 : 13 :	28th May 1931	
Donkey Boiler Fee ...	£ 30. : 6 :	When received,	
~~Travelling Expenses~~ Air Reservoirs (if any)	£ 8. : 8 :	29th May 1931	

Wm. Gordon Sinclair
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 2 - JUN 1931

Assigned + LMC 5.31

2 DB - 150 lb.