Rpt. 4b.

REPORT ON OIL ENGINE MACHINERY.

No. 75625

RECEIVED 24 JUL 1950 IN D.O.

Received at London Office

Date of writing Report 26/6/50 19 When handed in at Local Office 28.6.50 19 Port of Glasgow

No. in Reg. Book Survey held at Glasgow Date, First Survey 20. 5. 49 Last Survey 5th July 1950 Number of Visits 85

..... on the ~~Single~~ ~~Twin~~ ~~Triple~~ ~~Quadruple~~ Screw vessel M.V. "British Consul" Tons Gross 8655 Net

Built at Glasgow By whom built Harland & Wolff Ltd Yard No. 1399c When built 1950

Engines made at Glasgow By whom made Harland & Wolff Ltd Engine No. 1399c When made 1950

Donkey Boilers made at Belfast By whom made Harland & Wolff Ltd Boiler No. 1444/5 When made 1950

Brake Horse Power 3500 MAX 3200 SERVICE Owners British Tanker Co. Ltd Port belonging to London

M.N. Power as per Rule 696 NHP = 489 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

Trade for which vessel is intended Ocean Going.

OIL ENGINES, &c. —Type of Engines Heavy Oil Airless Injection 2 or 4 stroke cycle 4 Single or double acting Single

Maximum pressure in cylinders 650 lbs/in² Diameter of cylinders 440 m/m (29⅛") Length of stroke 1500 m/m (59 1/16") No. of cylinders 6 No. of cranks 6

Mean Indicated Pressure 128 lbs/in² Ahead Firing Order in Cylinders 1.5.3.6.2.4 Span of bearings, adjacent to the crank, measured from inner edge to inner edge 942 m/m Is there a bearing between each crank YES Revolutions per minute 119 MAX 115 SERVICE

Flywheel dia. 2489 m/m Weight 2590 Kgs Moment of inertia of flywheel (~~lbs. in²~~ or Kg.m.²) 2350 Means of ignition Compr'n Kind of fuel used Diesel Oil

Crank Shaft, ~~Solid forged~~ ~~Semi built~~ All built dia. of journals as per Rule APP'D as fitted 505 m/m with 115 m/m hole Crank pin dia. 505 m/m with 230 m/m hole Crank webs Mid. length breadth 840 m/m Mid. length thickness 310 m/m shrunk Thickness parallel to axis 310 m/m Thickness around eyehole 2225 m/m

Flywheel Shaft, diameter as per Rule ✓ as fitted ✓ **Intermediate Shafts,** diameter as per Rule APP'D as fitted 14" **Thrust Shaft,** diameter at collars as fitted 445 m/m as per Rule APP'D

Tube Shaft, diameter as per Rule ✓ as fitted ✓ **Screw Shaft,** diameter as per Rule APP'D as fitted 16" Is the ~~tube~~ screw shaft fitted with a continuous liner Yes

Bronze Liners, thickness in way of bushes as per Rule APP'D as fitted 26/32 Thickness between bushes as per Rule APP'D as fitted 21/32 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 ✓

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 tube shaft No If so, state type ✓ Length of bearing in **Stern Bush** next to and supporting propeller 60"

Propeller, dia. 15'-6" Pitch 12'-0" No. of blades 4 Material Mang. Bronze whether moveable No Total developed surface 45 sq. feet

Moment of inertia of propeller (including entrained water ~~lbs. in²~~ or Kg.m.²) 10020 Kgm² Kind of damper, if fitted NONE

Method of reversing Engines Direct Is a governor or other arrangement fitted to prevent racing of the engine ~~when declutched~~ Yes Means of lubrication Forced Thickness of cylinder liners Bot. 41 Top 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. 2 F.W. @ 140 T/HR 2 S.W.: 1 @ 150 T/HR: 1 @ 140 T/HR 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 2 Barrage Duplex 8×8½×8 | 1 Ballast Duplex 9×10×10 How driven Steam | Steam

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 1 @ 9"×10"×10 (140 T/HR) **Power Driven Lubricating Oil Pumps,** including spare pump, No. and size 1 M.Brg @ 100 T/HR 1 SBy @ 150 T/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 1 P×3½: 1 S×3½: 1 Aft×3½: 1×2" G/D (22-32 Frames space) In pump room ✓

In holds, &c. ✓

Independent Power Pump Direct Suctions to the engine room bilges, No. and size 2 @ 6": 1 @ 8"

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 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 NONE Is it fitted with a watertight door ✓ worked from ✓

In 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. NONE No. of stages — diameters — stroke — driven by —

Auxiliary Air Compressors, No. Two ✓ No. of stages Two diameters 280 - 245 m/m stroke 130 m/m driven by Steam

Small Auxiliary Air Compressors, No. NONE No. of stages ✓ diameters ✓ stroke ✓ driven by —

What provision is made for first charging the air receivers Two steam driven compressors as above

Scavenging Air Pumps, No. NONE (under piston supercharge) diameter stroke driven by ✓

Auxiliary Engines crank shafts, diameter as per Rule APP'D as fitted 180 m/m No. Two Diesel: 1 Steam (30 K.W) Position 1 Diesel For'd Stbd: 1 Steam Aft Stbd: 1 Diesel For'd Port

Have the auxiliary engines been constructed under special survey Yes Is a report sent herewith Yes

EWK 14/8/50

083106-00315-0172

AIR RECEIVERS:—Have they been made under survey Yes ✓ State No. of report or certificate X.228

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, welded or riveted longitudinal joint ✓ Material ✓ Range of tensile strength ✓ Working pressure by Rules ✓ Actual ✓

Starting Air Receivers, No. Two ✓ Total cubic capacity 800 cu ft Internal diameter 68 1/4" thickness 1 1/32"

Seamless, welded or riveted longitudinal joint welded Material steel Range of tensile strength 29/33 1/2 Working pressure by Rules A.P. Actual 35

IS A DONKEY BOILER FITTED Yes ✓ If so, is a report now forwarded

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

16.1.48 Crank Thrust = 7.50 for max B.H.P.

PLANS. Are approved plans forwarded herewith for shafting 20.3.48 Intermediate & Screw shafts Receivers APP.D Belfast Separate fuel tanks
(If not, state date of approval)

Donkey boilers APP. Belfast General pumping arrangements 15.3.49 Pumping arrangements in machinery space 29.4.49

Oil fuel burning arrangements 12.8.49

Have Torsional Vibration characteristics been approved Yes (For service speed of 115 R.P.M. Date of approval 20.3.48 ✓

SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes, and as per attached list

State the principal additional spare gear supplied Spare screwshaft and spare C.J. for spacer

Lloyd's S.6335 I.H. 14.4.49 N.C.J. 3.11.49

The foregoing is a correct description,

FOR HARLAND & WOLFF, LIMITED

Manufacturer.

Dates of Survey while building

During progress of work in shops - - 1949 May 20-25 Jun 1-6-17 Jul 28 Aug 2-4-12-31 Sep 1-5-8-12-19-28 Oct 12-13-17-19-20-24-27 Nov 3-9-14-16-22 Dec 15-21-28 1950 Jan 9-12-16-18-19-23-25-26-30 Feb 2-6-9-13-15-16-20-23-27 Mar 1-2

During erection on board vessel - - - 1950 Mar 6-8-9-13-15-17-20-22-23-29-30 Apl 3-5-6-19-24-26-27 May 3-4-8-10-11-15-17-18-22-25 Jun 8 Jul 5

Total No. of visits 85

Dates of examination of principal parts—Cylinders 24-10-49 & 7.12.49 Covers 24-10-49 & 7-12-49 Pistons 16-18/11/50 & 16.1.50 Rods 8.3.50 & 16.1.50 Connecting rods 6.3.5

Crank shaft 6.10.49 Flywheel shaft ✓ Thrust shaft 1.9.49 Intermediate shafts 3.11.49 Tube shaft ✓

Screw shaft 8.11.49 Propeller 27.6.49 Stern tube 21.12.49 Engine seatings 14/12/49 Engine holding down bolts 24.4

Completion of fitting sea connections 2/3/50 Completion of pumping arrangements 25/5/50 Engines tried under working conditions 8.6.5

Crank shaft, material S.M.S Identification mark Lloyd's 19406 & Test marks N.C.J. 6.10.49 Flywheel shaft, material ✓ Identification mark ✓

Thrust shaft, material S.M.S Identification mark Lloyd's S.2335. W.H. 12.11.48 N.C.J. 1.9.49 Intermediate shafts, material S.M.S Identification marks Lloyd's S.2840. W.H. 5.1.49; N.C.J. 3.11.49

Tube shaft, material ✓ Identification mark ✓ Screw shaft, material S.M.S Identification mark Lloyd's S.4222 W.H. 23.3.49 N.C.J. 3.11.49

Identification marks on air receivers No's 440/1: Lloyd's Test 2584 lbs/□": W.P. 356 lbs/□": R.O.B. 14.1.50

Welded receivers, state Makers' Name Harland & Wolff Ltd. Belfast

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 ✓

Description of fire extinguishing apparatus fitted Water, Sand, Steam & Foamite 2 x 10 Gallons: 10 x 2 Gallons

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 "Britain Commander" (H&W Yard No. 1398)

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

The machinery which has been constructed under Special Survey in accordance with the Rules and approved Plans, has been efficiently secured in position in this Vessel, tried under full power conditions satisfactorily.

The material workmanship are good.

Eligible in my opinion, to be Classed in the Register Book with Record ✠ L.M.C. 6.50, and notation T.S.C.L. and D.B. working pressure 150 lbs/□". "Oil Engines"

N.B. The maximum B.H.P is given by the makers as 3,500 @ 119 R.P.M.: Service B.H.P. is 3,200 @ 115 R.P.M., as specified by Owners

Remaining forging reports common to 1399C and Yard No's 1401 to follow, will be forwarded on completion of same

Approved Plans already forwarded to London with Hull Rpt Glas No 45168 for H&W Yard No 1398 "Britain Commander"

The amount of Entry Fee ... £ 214 : 4 - ✓

Special ... ... £ : : See Bez 44

Donkey Boiler Fee... ... £ : :

Travelling Expenses (if any) £ : :

When applied for 19

When received 19

21 JUL 1950

A. C. Cliff Surveyor

Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute GLASGOW 20 JUL 1950

Assigned + LMC. 7.50. Oil Engine 2 DB - 150 lb. WM

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

Certificate (if required) to be sent to