

REPORT ON OIL ENGINE MACHINERY.

No. 24042

Received at London Office

23 MAR 1950

Date of writing Report 13th MARCH 1950 When handed in at Local Office 17th MARCH 1950 Port of GREENOCK

No. in Survey held at GREENOCK Date, First Survey 25th JANUARY 1949 Last Survey 28th FEBRUARY 1950
Reg. Book. Number of Visits 75

Single on the Twin Triple Quadruple Screw vessel **BRITISH PATRIOT** Tons Gross 8661.19 Net 4975.19

Built at **PORT GLASGOW** By whom built **LITHGOWS L^{td}** Yard No. 1042 When built 1950

Engines made at **GREENOCK** By whom made **JOHN G. KINCAID & CO L^{td}** Engine No. K208 When made 1950

Monkey Boilers made at **do** By whom made **do** Boiler No. K208 When made 1950

Brake Horse Power 3200 Owners **BRITISH TANKER CO L^{td}** Port belonging to **LONDON**

I.N. Power as per Rule 625 Is Refrigerating Machinery fitted for cargo purposes **No** Is Electric Light fitted **Yes**

Trade for which vessel is intended **OPEN SEA SERVICE OIL TANKER**

MAIN ENGINES, &c.—Type of Engines **DIESEL (UNDER PISTON SOLE)** 2 or 4 stroke cycle 4 Single or double acting 5

Maximum pressure in cylinders 650 lb Diameter of cylinders 29 1/2" Length of stroke 59 1/16" No. of cylinders 6 No. of cranks 6

Mean Indicated Pressure 115 lb 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 988 7/8" Is there a bearing between each crank **Yes** Revolutions per minute 115

Flywheel dia. 2489 7/8" Weight 2.5 tons Moment of inertia of flywheel (lbs.in² or Kg.cm.²) 23.53x10⁶ Means of ignition **Compression** Kind of fuel used **Diesel**

Crankshaft: Solid forged dia. of journals as per Rule **App.** Crank pin dia. 505 7/8" Crank webs Mid. length breadth 980 7/8" Thickness parallel to axis 310 7/8" All built as fitted 505 7/8" Crank webs Mid. length thickness 310 7/8" shrunken Thickness around eye-hole 292.5 7/8"

Flywheel Shaft, diameter as per Rule **App.** Intermediate Shafts, diameter as per Rule **App.** Thrust Shaft, diameter at collars as fitted **App.**

Tube Shaft, diameter as per Rule **App.** Screw Shaft, diameter as per Rule **App.** Is the **tube screw** shaft fitted with a continuous liner **Yes**

Bronze Liners, thickness in way of bushes as per Rule 7/16" Thickness between bushes as per Rule 9/16" 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 **Yes**

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 **Yes** If two liners are fitted, is the shaft lapped or protected between the liners **Yes** Is an approved Oil Gland or other appliance fitted at the after end of tube shaft **No** If so, state type **None** Length of bearing in Stern Bush next to and supporting propeller 5.4"

Propeller, dia. 16'-0" Pitch 10'-9" No. of blades 4 Material **BRONZE** whether moveable **No** Total developed surface 88 sq. feet

Moment of inertia of propeller (lbs.in² or Kg.cm.²) 106.2 x 10⁶ 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 disengaged **Yes** Means of lubrication **Forced** Thickness of cylinder liners 4.75" Are the cylinders fitted with safety valves **Yes** Are the exhaust pipes and silencers water cooled **Yes**

Are the exhaust pipes and silencers water cooled 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 **2 Standby Steam**

Cooling Water Pumps, No. **2 ME driven** 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 **170 tons/hr** Stroke **100 tons/hr** Can one be overhauled while the other is at work **Yes**

Pumps connected to the Main Bilge Line (No. and size **One @ 170 tons/hr Two @ 100 tons/hr**) How driven **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 **None**

Ballast Pumps, No. and size **One @ 170 tons/hr** Power Driven Lubricating Oil Pumps, including spare pump, No. and size **One ME driven 100 tons/hr One Steam Driven 100 tons/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 **Three @ 3 1/2"** In pump room **Two @ 2 1/2"**

Are all the bilge suction pipes in holds and tunnel well fitted with strum-boxes **Yes** Are the bilge suction pipes 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 efficiently 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 **None**

What pipes pass through the deep tanks **None** Have they been tested as per Rule **Yes**

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 **Yes** worked from **None**

On a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork **None**

Main Air Compressors, No. **Two** No. of stages **Two** diameters **9 1/4" & 4"** stroke **7 1/2"** driven by **Steam**

Auxiliary Air Compressors, No. **Two** No. of stages **Two** diameters **9 1/4" & 4"** stroke **7 1/2"** driven by **Steam**

Small Auxiliary Air Compressors, No. **Two** No. of stages **Two** diameters **9 1/4" & 4"** stroke **7 1/2"** driven by **Steam**

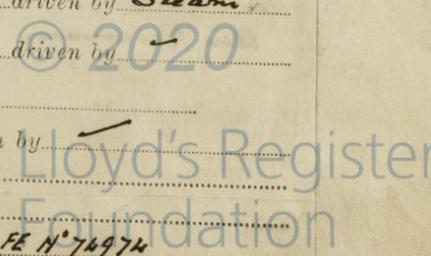
What provision is made for first charging the air receivers **Steam driven compressors as above**

Refrigerating Air Pumps, No. **Two** diameter **9 1/4"** stroke **7 1/2"** driven by **Steam**

Auxiliary Engines crank shafts, diameter as per Rule **App.** No. **Two** Position **ER Platforms**

Have the auxiliary engines been constructed under special survey **Yes** Is a report sent hereto **Yes** 960 FE H 74974

003147-003153-0083



AIR RECEIVERS:—Have they been made under survey. *Yes* ✓ State No. of report or certificate *C 3406*
 Is each receiver, which can be isolated, fitted with a safety valve as per Rule. *Relief valve on supply line* ✓
 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. *None* ✓ Cubic capacity of each. *✓* Internal diameter. *✓* thickness. *✓*
 Seamless, welded or riveted longitudinal joint. *✓* Material. *✓* Range of tensile strength. *✓* Working pressure. *Actual* *3 1/2" @ 176"*
 Starting Air Receivers, No. *Two* ✓ Total cubic capacity. *900 cu ft.* Internal diameter. *6-0/8" & 5-10/4"* thickness. *3/32" @ 176"*
 Seamless, welded or riveted longitudinal joint. *riveted* Material. *SM S* Range of tensile strength. *29/33 tons* Working pressure. *Actual* *356 to in*

IS A DONKEY BOILER FITTED *Yes* ✓ If so, is a report now forwarded. *Yes* ✓
 Is the donkey boiler intended to be used for domestic purposes only. *No*

PLANS. Are approved plans forwarded herewith for shafting. *20-8-48.* Receivers. *9-3-48* Separate fuel tanks. *✓*
 (If not, state date of approval)
 Donkey boilers. *26-2-48.* General pumping arrangements. *7-2-50* Pumping arrangements in machinery space. *1-9-49.*
 Oil fuel burning arrangements. *11-8-49.*

Have Torsional Vibration characteristics been approved. *Yes for 115 rpm* Date of approval. *20-8-48 Gls letter*
LON 17-9-48.

SPARE GEAR.

Has the spare gear required by the Rules been supplied. *Yes* ✓
 State the principal additional spare gear supplied. *Screw shaft 110405 17788 F16320 CNH 20/10/49*
C.I. propeller

SERVICE BHP 3300 @ 115 rpm
MAX BHP 3520 @ 119 rpm

The foregoing is a correct description
 FOR JOHN R. KIRK & CO., LTD.

Manufacturer.

Chief Draughtsman.

Dates of Survey while building
 During progress of work in shops - - (1949) JAN 25 MAR 16 17 18 21 31 JUNE 17 JULY 15 18 25 27 AUG 5 23 26 29 SEPT 8 21 OCT 3 5 6 10 11 12 19 20
 During erection on board vessel - - 26 27 NOV 2 3 11 15 17 18 21 24 25 30 DEC 1 5 8 12 13 15 16 22 23 27 29 (1950) JAN 5 6 9 10 11 13 16 19 20 23 24 25 26 27 31 FEB 10

Total No. of visits. *45.*
 Dates of examination of principal parts—Cylinders *18/7/49* Covers *18/7/49* Pistons *21-9-49* Rods *15-11-49* Connecting rods *15-11-49*
 Crank shaft *18-11-49* Flywheel shaft *✓* Thrust shaft *15-11-49* Intermediate shafts *26-10-49* Tube shaft *✓*
 Screw shaft *20-10-49* Propeller *20-10-49* Stern tube *15-7-49* Engine seatings *25-11-49* Engine holding down bolts *19-1-49*
 Completion of fitting sea connections *27-10-49* Completion of pumping arrangements *28-2-50* Engines tried under working conditions *28/2/50*
 Crank shaft, material *S* Identification mark *17788 CNH 15/11/49* Flywheel shaft, material *✓* Identification mark *✓*
 Thrust shaft, material *S* Identification mark *17788 CNH 15/11/49* Intermediate shafts, material *S* Identification marks *17788 CNH*
 Tube shaft, material *✓* Identification mark *✓* Screw shaft, material *S* Identification mark *17788 CNH 20/10/49*
 Identification marks on air receivers. *110405 TEST N°3*
584 4 1/2"
356 1 1/2" WA
CNH 15/11/49 *19/ C 3406.*
19/ C 3406 A.

Welded receivers, state Makers' Name. *CNH 15/11/49*
 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. *Steam under boilers, OF unit & transfer pump, 10-2 gal portable & 1-10 gal with h*
 Is the vessel (not being an oil tanker) fitted for carrying oil as cargo. *Oil Tanker* ✓ If so, have the requirements of the Rules been complied with. *Yes* ✓
 If the notation for ice strengthening is desired, state whether the requirements in this respect have been complied with. *No* ✓
 Is this machinery duplicate of a previous case. *Yes* If so, state name of vessel. *British Providence Gt R F N 338*

General Remarks (State quality of workmanship, opinions as to class, &c.)
This machinery has been constructed under Special survey in accordance with the Rules & approved plans. The materials & workmanship are sound & good. The engine & boiler have been efficiently installed in the vessel and tested on a sea trial under full working conditions with satisfactory results.
The installation is eligible in my opinion to be classed in the Society's Register book with record + LMC 2-50 & Notations Screw shaft C.L. 2 DB 150 lbs @ 150 fitted for oil fuel FP above 150°F.

Certificates & Logging reports concerning this engine and K 209/11/13 to follow will be forwarded on completion of the Contract.

The amount of Entry Fee ... £ 200 : 0
 Special ... £ : :
 Donkey Boiler Fee... £ 59 : 10
 Air Receiver
 Travelling Expenses (if any) £ 16 : 0
 When applied for *17th MARCH 1950.*
 When received *19*
 Check of Hunter
 Engineer Surveyor to Lloyd's Register of Shipping

(Committee's Minute) *GLASGOW 22 MAR 1950*
 Assigned *+ LMC 2.50*
Oil Eng. 2 DB - 150 lb.



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