

REPORT ON OIL ENGINE MACHINERY.

No. 21666.

77 DEC 1941

Received at London Office

Date of writing Report 1st DEC. 1941 When handed in at Local Office 5th DEC. 1941 Port of **GREENOCK**
 No. in Survey held at **GREENOCK** Date, First Survey 6th MAY 1940 Last Survey 25-11-41 19
 Reg. Book, 5-44. Number of Visits 81

26324 on the **Single** **Triple** **Quadruple** Screw vessel

EMPIRE PICT

Tons { Gross 8145
Net 4743

Built at **Glasgow** By whom built **Blythwood S.B. Co. Ltd** Yard No. 64 When built 1941
 Engines made at **Greenock** By whom made **John G. Kincaid & Co. Ltd** Engine No. 4134 When made 1941
 Donkey Boilers made at **Greenock** By whom made **John G. Kincaid & Co. Ltd** Boiler No. 4134 When made 1941
 Brake Horse Power 3300. Owners **Ministry of War Transport** Port belonging to **Glasgow**
 Nom. Horse Power as per Rule 490 Is Refrigerating Machinery fitted for cargo purposes **No** Is Electric Light fitted **yes**
 Trade for which vessel is intended **Ocean going**

IL ENGINES, &c. Type of Engines **Diesel** **airless injection** **Buchi Super** 2 or 4 stroke cycle **4** Single or double acting **Single**

Maximum pressure in cylinders 650 lbs. Diameter of cylinders 7407 Length of stroke 15007 No. of cylinders 6 No. of cranks 6
 Mean Indicated Pressure 8.725 kg/cm²

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 10287 Is there a bearing between each crank **yes**

Revolutions per minute 110 Flywheel dia. 24897 Weight 2.50 tons Means of ignition **Compression** Kind of fuel used **Diesel Oil**

Crank Shaft, { Solid forged as per Rule as fitted 5057 Crank pin dia. 5057 Crank Webs Mid. length breadth 8407 Mid. length thickness 3107 Thickness parallel to axis 3107 Thickness around eyehole 222.57
 { Semi built dia. of journals as fitted 5057
 { All built

Flywheel Shaft, diameter as per Rule as fitted Intermediate Shafts, diameter as per Rule 13.287 as fitted 17 Thrust Shaft, diameter at collars as per Rule 13.951 as fitted 17

Tube Shaft, diameter as per Rule as fitted Screw Shaft, diameter as per Rule 14.6 as fitted 17 Is the { tube screw } shaft fitted with a continuous liner **yes**

Bronze Liners, thickness in way of bushes as per Rule 745 as fitted 875 Thickness between bushes as per Rule 559 as fitted 65625 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 the tube

shaft **No** If so, state type **yes** Length of Bearing in Stern Bush next to and supporting propeller 5'8"

Propeller, dia. 15'9" Pitch 11'9" No. of blades 4 Material **Bronze** whether Moveable **No** Total Developed Surface 83 sq. feet

Method of reversing Engines **Compressed 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 537 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 **yes**

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. **None** Diameter **yes** Stroke **yes** Can one be overhauled while the other is at work **yes**

Pumps connected to the Main Bilge Line { No. and Size **One @ 100 tons/hr** **One @ 120 tons/hr**
 { 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 **yes** Ballast Pumps, No. and size **One @ 120 tons/hr** Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size **One @ 90 tons/hr Main eng.** **One @ 100 tons/hr steam**

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"** **Two @ 2 1/2"** **Cofferdam One @ 2 1/2"** In Pump Room **yes**

In Holds, &c. **Two @ 2 1/2"** **Cofferdam two @ 3"**

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size **Two @ 5"**

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 **yes**

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 **yes**

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 **yes**

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. **Two** No. of stages **Two** Diameters **4" 2 9/4"** Stroke **7 1/2"** Driven by **Steam**

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

Small Auxiliary Air Compressors, No. **yes** No. of stages Diameters Stroke Driven by

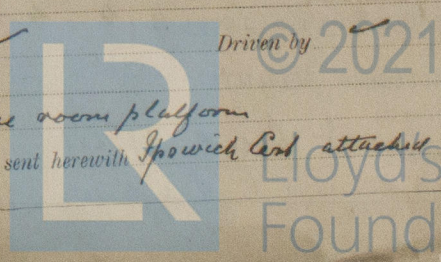
What provision is made for first Charging the Air Receivers **Steam compressor**

Scavenging Air Pumps, No. **yes** Diameter **yes** Stroke **yes** Driven by **yes**

Auxiliary Engines crank shafts, diameter as per Rule as fitted **Spowich cert N° D4935** **Comp. N° 66000/1** Position **Engine room platform**

Have the Auxiliary Engines been constructed under special survey **Steam Eng N° 19012/3** Is a report sent herewith **Spowich Cert attached**

W1200-0073



AIR RECEIVERS:—Have they been made under survey *Yes* State No. of Report or Certificate
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. *None* Cubic capacity of each *✓* Internal diameter *✓* thickness *✓*
Seamless, lap welded or riveted longitudinal joint *✓* Material *✓* Range of tensile strength *✓* Working pressure by Rules *✓*
Starting Air Receivers, No. *One* Total cubic capacity *750 cu ft.* Internal diameter *6'-4"* thickness *1/32"*
Seamless, lap welded or riveted longitudinal joint *TP 283* Material *S* Range of tensile strength *29/33* Working pressure by Rules *363 lb*
Actual *356 lb*

IS A DONKEY BOILER FITTED? *Yes two* 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 *Yes* Receivers *Yes* Separate Fuel Tanks *Yes*
(If not, state date of approval)
Donkey Boilers *Yes* General Pumping Arrangements *24-10-39* Pumping Arrangements in Machinery Space *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

The foregoing is a correct description,
For JOHN G. KINCAID & CO. LIMITED.

Director.

Manufacturer.

Dates of Survey while building { During progress of work in shops - (1940) May 6-23, June 5-10-26, July 15-23, Aug 6-9-12-15-20-31, Sept 5-6-16-18-23-26, Oct 2-8-11-14-22-23-29, Nov 4-6-15-20-21, Dec 5-11-30, (1941) Jan 21- Feb 1-11-18-25-28-29, Mar 4-12-14-31, Apr 16- May 5-18-23, Aug 6-20-22-25-24, Sept 2-3-9-10-11-15-19-22-23-24-29, Oct 1-2-6-10-13-15-16-14-21-23-25-28-29, Nov 1-3-6-13-21-24-25
During erection on board vessel - - -
Total No. of visits *81*

Dates of Examination of principal parts—Cylinders *20 Aug-2 Sept '41* Covers *20 Aug-2 Sept '41* Pistons *20 Aug '41* Rods *16 Oct '41* Connecting rods *16 Oct '41*
Crank shaft *16 Oct '41* Flywheel shaft *✓* Thrust shaft *15 Sept '41* Intermediate shafts *15 Sept '41* Tube shaft *✓*
Screw shaft *27 Aug '41* Propeller *27 Aug '41* Stern tube *12 Feb '41* Engine seatings *15 Sept '41* Engines holding down bolts *1 Nov '41*
Completion of fitting sea connections *✓* Completion of pumping arrangements *25 Nov '41* Engines tried under working conditions *25 Nov '41*
Crank shaft, Material *S* Identification Mark *9172 CNH* Flywheel shaft, Material *✓* Identification Mark *✓*
Thrust shaft, Material *S* Identification Mark *9172 CNH* Intermediate shafts, Material *S* Identification Marks *9172 CNH*
Tube shaft, Material *✓* Identification Mark *✓* Screw shaft, Material *S* Identification Mark *9172 CNH*
Identification Marks on Air Receivers *N° 1690*
110405 TEST
556 lb
WP 356 lb
CNH. 14-3-41

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 *Oil tanker* 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 *EMPIRE JET* GPK 981 N° 21546

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

These engines have been built under special survey in accordance with the Rules and approved plans. The materials & workmanship are sound & good. This machinery has been efficiently installed on board and tested under full working conditions during a short sea trial with satisfactory results.

This machinery is eligible in my opinion to be classed in the Society's Register Book with Record + LMC 11-41 & Notation Screw Shaft CL. 208. 150 lb/ft

This being the last engine of this series, foregoing certificates for K131, 2, 3, 4, 8, 9, 40, 41, & 42, are enclosed.

The amount of Entry Fee .. £ 5 : 0 : When applied for,
Special ... £ 98 : 10 : 5th DECEMBER 1941
Donkey Boiler Fee ... £ 22 : 2 : When received,
AIR RECEIVER
Travelling Expenses (if any) £ 4 : 4 : 19

Committee's Minute GLASGOW 9 - DEC 1941

Assigned 1- June 11. 41 air eng
250 150 lb.

Charles J. Lumber
Engineer Surveyor to Lloyd's Register of Shipping.



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Foundation