

## REPORT ON OIL ENGINE MACHINERY.

No. 24194

Received at London Office

Date of writing Report 21/8/50 1950 When handed in at Local Office 25<sup>th</sup> August 1950 Port of GREENOCK  
No. in Survey held at GREENOCK Date, First Survey 10<sup>th</sup> August 1949 Last Survey 26<sup>th</sup> July 1950  
Reg. Book. Number of Visits 43  
Single on the Twin Triple Quadruple Screw vessel ERLING BORTHEN TANKER Tons Gross 9073.86 Net 5215.74  
Built at PORT GLASGOW By whom built W<sup>m</sup> HAMILTON & CO L<sup>o</sup> Yard No 482 When built 1950  
Engines made at GREENOCK By whom made JOHN G. KINCAID & CO L<sup>o</sup> Engine No K219 When made 1950  
Donkey Boilers made at do By whom made do Boiler No K219 When made 1950  
Brake Horse Power 4500 Owners HARRY BORTHEN & CO Port belonging to GSL  
M.N. Power as per Rule 880 NHP 652 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes  
Trade for which vessel is intended OPEN SEA SERVICE

IL ENGINES, &c. — Type of Engines B & W KINCAID DIESEL 2 or 4 stroke cycle 4 Single or double acting SINGLE  
Maximum pressure in cylinders 650 lb Diameter of cylinders 740 Length of stroke 59 1/2 No. of cylinders 8 No. of cranks 8  
Mean Indicated Pressure 8.54 kg/cm<sup>2</sup> Ahead Firing Order in Cylinders 1 4 7 3 8 5 2 6 Span of bearings, adjacent to the crank, measured from inner edge to inner edge 988 Is there a bearing between each crank Yes Revolutions per minute 115  
Flywheel dia 2489 Weight 2 1/2 Tons Moment of inertia of flywheel (in lb-in<sup>2</sup> or Kg.cm<sup>2</sup>) 2546 x 10<sup>6</sup> Means of ignition Compression Kind of fuel used Diesel  
Crankshaft, Solid forged dia. of journals as per Rule app<sup>r</sup> Crank pin dia. 525 Crank webs Mid. length breadth 980 Thickness parallel to axis 330  
All built dia. of journals as fitted 525 Crank webs Mid. length thickness 310 shrunk Thickness around eye hole 277.5  
Flywheel Shaft, diameter as per Rule app<sup>r</sup> Intermediate Shafts, diameter as fitted 20 Thrust Shaft, diameter at collars as fitted 510  
Tube Shaft, diameter as per Rule app<sup>r</sup> Screw Shaft, diameter as fitted 19 1/2 Is the tube shaft fitted with a continuous liner Yes

Brass Liners, thickness in way of bushes as per Rule 7/8 Thickness between bushes 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 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 One liner Is an approved Oil Gland or other appliance fitted at the after end of tube shaft No If so, state type Yes Length of bearing in Stern Bush next to and supporting propeller 5' 2"

Propeller, dia 16' 9" Pitch 12' 9" No. of blades 4 Material M.B. whether moveable No Total developed surface 88 sq. feet  
Moment of inertia of propeller (in lb-in<sup>2</sup> or Kg.cm<sup>2</sup>) 137.6 x 10<sup>6</sup> 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 indication Forced Thickness of cylinder liners 44 Are the cylinders fitted with safety valves 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 working 2 standby = 2 F.W. + 2 S.W. (19 inch M.E. + 19 inch Ind.) Cooling Water Pumps, No. 4 Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes

Large 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 One 100 gals One 170 gals/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 ✓

Ballast Pumps, No. and size One 170 gals/hr Power Driven Lubricating Oil Pumps, including spare pump, No. and size One M.E. 143 tons/hr One Steam 130 tons/hr

Are two independent means arranged for circulating water through the Oil Cooler Yes Suctions, connected to both main bilge pumps and auxiliary pumps, No. and size:—In machinery spaces 3 2 3 1/2" 2 2 1/2" 1 2 2 1/2" diam. 1 2 2 1/2" diam. In pump room Main 1 2 3 1/2" For 1 2 2 1/2"

Holds, &c. Independent Power Pump Direct Suctions to the engine room bilges, No. and size Two 2 6"

Are all the bilge suction pipes in holds and tunnel well fitted with strum-boxes Yes Are the bilge suction 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 ✓ 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. ✓ No. of stages ✓ diameters ✓ stroke ✓ driven by ✓  
Auxiliary Air Compressors, No. Two No. of stages Two diameters ✓ stroke ✓ driven by Steam

Small Auxiliary Air Compressors, No. ✓ No. of stages ✓ diameters ✓ stroke ✓ driven by ✓  
What provision is made for first charging the air receivers Steam compressors above

Scavenging Air Pumps, No. ✓ diameter ✓ stroke ✓ driven by ✓  
Auxiliary Engines crank shafts, diameter as per Rule No as fitted One Position E.R. Platform 7572 N° 75698  
Have the auxiliary engines been constructed under special survey Yes Is a report sent herewith Yes 195 Cert D 22604



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 ✓ Ref. valve on 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..... by Rules.....  
Starting Air Receivers, No. Two ✓ Total cubic capacity 900 cuft Internal diameter 6'-0 1/2" thickness 3 1/32"  
Seamless, welded or riveted longitudinal joint riveted Material SMS Range of tensile strength 29/33 tons Working pressure..... by Rules 357 No. 356 Reg. I

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 29/11/48 14/1/49 Receivers 9/10/48 Separate fuel tanks 26/8/48  
(If not, state date of approval)  
Donkey boilers 6/10/48 General pumping arrangements 15/4/48 Pumping arrangements in machinery space 23/4/49  
Oil fuel burning arrangements 10/3/49

Have Torsional Vibration characteristics been approved Yes ✓ for a service speed of 115 rpm Date of approval 19/11/48 also 17/6/49 for 115 rpm  
SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes ✓  
State the principal additional spare gear supplied..... SERVICE BHP 4500 @ 115 rpm  
Screw Shaft LLO4DS 18834 F17549 CNH 4/5/50 MAX BHP 4680 @ 115 rpm  
C1 Propeller

For JOHN G. KINCAID & CO. LTD.

The foregoing is a correct description,

Manufacturer.

Chief Draughtsman.

Dates of Survey while building  
During progress of work in shops - - -  
During erection on board vessel - - -  
Total No. of visits.....  
Dates of examination of principal parts—Cylinders..... Covers..... Pistons..... Rods..... Connecting rods.....  
Crank shaft..... Flywheel shaft..... Thrust shaft..... Intermediate shafts..... Tube shaft.....  
Screw shaft..... Propeller..... Stern tube..... Engine seatings..... Engine holding down bolts.....  
Completion of fitting sea connections..... Completion of pumping arrangements..... Engines tried under working conditions.....  
Crank shaft, material..... Identification mark..... Flywheel shaft, material..... Identification mark.....  
Thrust shaft, material..... Identification mark..... Intermediate shafts, material..... Identification marks.....  
Tube shaft, material..... Identification mark..... Screw shaft, material..... Identification mark.....  
Identification marks on air receivers.....  
Welded receivers, state Makers' Name.....  
Is the flash point of the oil to be used over 150°F.....  
Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with.....  
Description of fire extinguishing apparatus fitted.....  
Is the vessel (not being an oil tanker) fitted for carrying oil as cargo.....  
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.....  
General Remarks (State quality of workmanship, opinions as to class, &c.)

This machinery has been constructed under special survey in accordance with the Rules and approved plans. The materials & workmanship are sound & good. The engine & boilers have been efficiently installed in the vessel & 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 Register book with record + LMC 7-50 & Notation Screw shaft CL. 2 DBs 150 lb/ft<sup>2</sup> FD fitted for oil fuel FP above 150°F.

The amount of Entry Fee ... £ :

Special ... £ 251 :

Donkey Boiler Fee... £ 58 10 :

Travelling Expenses (if any) £ 16 0 :

Committee's Minute

Assigned

When applied for 26<sup>th</sup> AUGUST 1950.

When received 19

Charles J. Hunter

Engineer Surveyor to Lloyd's Register of Shipping

GLASGOW 30 AUG 1950

+ LMC 7.50 Oil Engine

2 DB - 150 lb.

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