

ENGINES, &c. Type of Engines *Butterfield, 2 sets* 2 or 4 stroke cycle *4* Single or double acting *Single*
 Maximum pressure in cylinders *42 kg/cm²* Diameter of cylinders *440 mm* Length of stroke *1500 mm* No. of cylinders *16* No. of cranks *16*
 Position of bearings, adjacent to the Crank, measured from inner edge to inner edge *1020 mm* Is there a bearing between each crank *Yes*
 Revolutions per minute *102* Flywheel dia. *2489 mm* Weight *2.45 tons* Means of ignition *Compression* Kind of fuel used *Diesel*
 Crank Shaft, dia. of journals as per Rule *507 mm* as fitted *525 mm* Crank pin dia. *525 mm* Crank Webs Mid. length breadth *shrunken* Thickness parallel to axis *320 mm*
 Mid. length thickness *shrunken* Thickness around eye hole *232 1/2 mm*
 Propeller Shaft, diameter as per Rule *507 mm* as fitted *525 mm* Intermediate Shafts, diameter as per Rule *shrunken* Thrust Shaft, diameter at collars as per Rule *15.15"*
 as fitted *15 1/2"*
 Drive Shaft, diameter as per Rule *shrunken* as fitted *shrunken* Is the { tube { shaft fitted with a continuous liner { *shrunken*
 as fitted *shrunken* as fitted *shrunken*
 Bronze Liners, thickness in way of bushes as per Rule *shrunken* Thickness between bushes as per rule *shrunken* Is the after end of the liner made watertight in the *shrunken*

If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner
 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
 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
 If so, state type.
 Length of Bearing in **Stern Bush** next to and supporting propeller

propeller, dia. — Pitch — No. of blades — Material — whether Moveable — Total Developed Surface — sq. feet

Method of reversing Engines *air* Is a governor or other arrangement fitted to prevent racing of the engine *undoubtedly* *yes* Means of lubrication

forced Thickness of cylinder liners *53-32 1/4* Are the cylinders fitted with safety valves *yes* Are the exhaust pipes and flanges water cooled or lagged with

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.

Baling Water Pumps, No. ✓

Is the sea suction provided with an efficient strainer which can be cleared within the vessel ✓

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 —
How driven —

Ballast Pumps, No. and size — Lubricating Oil Pumps, including Spare Pump, No. and size —

e two independent means arranged for circulating water through the **Oil Cooler** ☒
 pps, No. and size:—In Machinery Spaces ☒ In Pump Room ☐
 Holds, &c. ☐
 dependent Power Pump Direct Suctions to the Engine Room Bilges, No. and size.

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes	Are the Bilge Suctions in the Machinery Spaces
from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges	
Are all Sea Connections fitted direct on the skin of the ship	Are they fitted with Valves or Cocks
Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates	Are the Overboard Discharges above or below the deep water line


<p>each fitted with a Discharge Valve always accessible on the plating of the vessel</p> <p>at pipes pass through the bunkers</p> <p>at pipes pass through the deep tanks</p> <p>all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times</p>	<p>Are the Blow Off Cocks fitted with a spigot and brass covering plate</p> <p>How are they protected</p> <p>Have they been tested as per Rule</p>
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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				
Is the Shaft Tunnel watertight	Is it fitted with a watertight door	worked from		
a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork				
in Air Compressors, No.	No. of stages	Diameters	Stroke	Driven by
Auxiliary Air Compressors, No.	No. of stages	Diameters	Stroke	Driven by

Primary Air Compressors, No.	No. of stages	Diameters	Stroke	Driven by
Small Auxiliary Air Compressors, No.	No. of stages	Diameters	Stroke	Driven by
Exhausting Air Pumps, No.		Diameter	Stroke	Driven by
Auxiliary Engines crank shafts, diameter	as per Rule as fitted			

RECEIVERS: —Is each receiver, which can be isolated, fitted with a safety valve as per Rule					
the internal surfaces of the receivers be examined and cleaned			Is a drain fitted at the lowest part of each receiver		
High Pressure Air Receiver, No.	Cubic capacity of each	Internal diameter	thickness		
			<i>by Rules</i>		
Seamless, lap welded or riveted longitudinal joint	Material	Range of tensile strength	-	Working pressure	<i>Actual</i>

<i>Working Air Receivers, No.</i>	<i>Total cubic capacity</i>	<i>Internal diameter</i>	<i>Thickness</i>
<i>Unless lap welded or riveted longitudinal joint</i>	<i>Material</i>	<i>Range of tensile strength</i>	<i>Working pressure</i>



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IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

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

PLANS. Are approved plans forwarded herewith for Shafting (Bicycle) for Receivers

Separate Tanks

Donkey Boilers

General Pumping Arrangements

Oil Fuel Burning Arrangements

SPARE GEAR.

Has the spare gear required by the Rules been supplied

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--	(1933) Nov. 8-14. (1934) Jan. 14-23-30. Feb. 4-21-26. Mar. 2-9-12-14-20-22-23-24-30. Apr. 10-11-13-16-19-23. May 10-15-16-18-21-23-24-25-31. June 5-6-7-12.
During erection on board vessel--	19-21-22-25-26-28. July 3-5-6-11-24-30. Aug. 14-24. Sept. 5-9-11-18-25. Oct. 5-9-11-15-19.
Total No. of visits	63.

Dates of Examination of principal parts—Cylinders 4-4-13/4/34 Covers 4-4-13/4/34 Pistons 21-6 34 Rods 5-7 34 Connecting rods 14-8

Crank shaft 25-9-34 Flywheel shaft Thrust shaft 11-4 34 Intermediate shafts Tube shaft

Screw shaft Propeller Stern tube Engine seatings Engines holding down bolts

Completion of fitting sea connections Completion of pumping arrangements Engines tried under working conditions

Crank shaft, Material S Identification Mark LR 2219 2253 2254 Flywheel shaft, Material Identification Mark

Thrust shaft, Material S Identification Mark LR 4805 WGM. Intermediate shafts, Material Identification Marks

Tube shaft, Material Identification Mark Screw shaft, Material Identification Mark

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

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 No If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c. These Engines have been built under Special Survey in accordance with the approved plans

The workmanship & material are of good quality. They have been tested on the Test Bed & found satisfactory & have now been shipped to Glasgow for fitting on board.

The Machinery when fitted on board & tested under working condition will be eligible in my opinion for the Record of

✠ LMC with date

Please return this report to Glasgow Vessel now fitting out

The amount of Entry Fee £ 6 : -

Special 4/5 106 : 2

Chargeable at Glasgow 1/5 26 : 11

Travelling Expenses (if any) £ : :

Committee's Minute GLASGOW 30 OCT 1934

Assigned Deferred.

When applied for, 24th Oct 1934

When received, 5/11/34

W. E. Gordon-Mitchell

Engineer Surveyor to Lloyd's Register of Shipping

See Sec. 11, Reg. 10, 544/12

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