

REPORT ON OIL ENGINE MACHINERY.

No. 31628

18 MAY 1935

Received at London Office

Date of writing Report 19 When handed in at Local Office 15 May 1935 Port of SUNDERLAND

No. in Survey held at SUNDERLAND Date, First Survey 15 Jan 35 Last Survey 14 May 1935 Reg. Book. Number of Visits 47

on the ^{Single} ~~Triple~~ Screw vessel motor vessel "KIRRIEMOOR" Tons { Gross 4970 Net 3032

Built at Sunderland By whom built Wm Bayford & Sons Ltd Yard No. 614 When built 1935

Engines made at Sunderland By whom made Wm Bayford & Sons Ltd Engine No. 614 When made 1935

Donkey Boilers made at Stockton By whom made Stockton Chemical Engg & Riley Bros Ltd Boiler No. 6092

Brake Horse Power 1800 Owners Lord Runciman Shipping Co Ltd Port belonging to London

Nom. Horse Power as per Rule 388 Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes.

Trade for which vessel is intended 20 1/2 combined 8 1/8

IL ENGINES, &c. Type of Engines Opposed piston airless injection 2 or 4 stroke cycle 2 Single or double acting Single

Maximum pressure in cylinders 540 lbs/sq in Diameter of cylinders 520 mm Length of stroke Lower 1200 mm Upper 880 mm No. of cylinders 3 No. of cranks 3 (3 strokes)

Mean Indicated Pressure 88 lbs/sq in Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 820 mm Is there a bearing between each crank 3 throw

Revolutions per minute 115 Flywheel dia. 1950 mm Weight 49 cwt. Means of ignition Compression Kind of fuel used

Crank Shaft, dia. of journals as per Rule 356 mm as fitted 410 mm Crank pin dia. 410 mm Crank Webs Mid. length breadth 580 mm Thickness parallel to axis 230 mm

Flywheel Shaft, diameter as per Rule 356 mm as fitted 410 mm Intermediate Shafts, diameter as per Rule 305 mm as fitted 305 mm Thrust Shaft, diameter at collars as per Rule 410 mm as fitted 410 mm

Tube Shaft, diameter as per Rule as fitted Screw Shaft, diameter as per Rule 300 mm as fitted 314 mm Is the tube screw shaft fitted with a continuous liner Yes.

Bronze Liners, thickness in way of bushes as per Rule 16.4 mm as fitted 18.0 mm Thickness between bushes as per Rule 12.5 mm as fitted 14.5 mm 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 the tube

propeller, dia. 14'-0" Pitch 10'-6" No. of blades 4 Material Bronze whether Moveable no. Total Developed Surface 45 sq. feet

Method of reversing Engines Hand lever Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes. Means of lubrication

Hand Thickness of cylinder liners 20 mm Are the cylinders fitted with safety valves Yes. Are the exhaust pipes and silencers water cooled or lagged with

non-conducting material Yes. 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 1 main engine 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 Stroke Can one be overhauled while the other is at work

Pumps connected to the Main Bilge Line No. and Size 2 6" x 5 1/2" x 15" Simplex 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

Ballast Pumps, No. and size 1 Simplex 10 1/2" x 13" x 24" Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 1 main engine 80 mm x 520 mm 1 Simplex 6" x 5 1/2" x 15"

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 4 @ 3" in E.R. 1 @ 3" In well In Pump Room

Holds, &c. No 1 3 1/2" p.r.s. No 2 3 1/2" p.r.s. No 3 3" p.r.s. No 4 3 1/2" p.r.s. Dup tank 3 1/2" p.r.s.

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size one 8" one 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

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 Bilge & Service ducts below

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

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

Do all pipes pass through the bunkers none How are they protected

Do all pipes pass through the deep tanks Forward bilge Suctions 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

apartment to another Yes. Is the Shaft Tunnel watertight Yes. Is it fitted with a watertight door Yes. worked from

Is the wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork

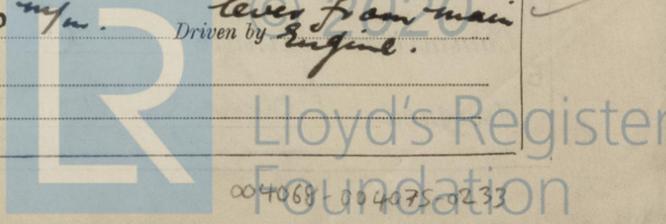
Air Compressors, No. Two No. of stages 3 Diameters 10 1/2" x 8 1/2" x 2 1/2" Stroke 6" Driven by Steam 11 1/2" x 6" stroke

Auxiliary Air Compressors, No. none No. of stages Diameters Stroke Driven by

All Auxiliary Air Compressors, No. none No. of stages Diameters Stroke Driven by

Revolving Air Pumps, No. one Diameter 1510 mm Stroke 520 mm Driven by Lever from main engine

Auxiliary Engines crank shafts, diameter as per Rule as fitted



AIR RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule. *Yes on discharge from Compressor*

Can the internal surfaces of the receivers be examined and cleaned. *Yes.* Is a drain fitted at the lowest part of each receiver. *Yes.*

High Pressure 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. Actual.

Starting Air Receivers, No. *Two* Total cubic capacity *180 cuft.* Internal diameter *3'-6"* thickness *1"*

Seamless, lap welded or riveted longitudinal joint. *Riveted* Material *mild steel* Range of tensile strength *28/32.* Working pressure by Rules *600 lb.* Actual *600 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. Separate Tanks. *Yes.*

Donkey Boilers. *Yes.* General Pumping Arrangements. *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. *1 Cast iron propeller, 1 propeller shaft, 2 front fuel valves complete, 2 back fuel valves complete, 8 spray plugs, 1 air starting non return valve, 1 cylinder relief valve, 4 scavenge pump suction & delivery valves, 2 main piston heads complete with rings, studs & nuts, 4 main piston rings, 1 upper piston rod & skirt, 1 lower piston rod & skirt, 3 cylinder liners complete with jackets & shrink rings, 3 fuel pump rams & guides, 1 fuel pump body complete with suction & delivery valve chamber, bell crank & tappets, 1 roller chain & camshaft drive.*

The foregoing is a correct description,

W. J. Miller Manufacturer.

Dates of Survey while building. During progress of work in shops. *1935. Jan. 15, 16, 23, 24, 28, 30, 31. Feb. 1, 4, 5, 6, 7, 8, 12, 13, 14, 15, 18, 21, 25, 26, 27, 28. Mar. 4, 7, 8, 12, 13.*

During erection on board vessel. *19. 20. 22. 25. 28. 29. Apr. 4. 8. 10. 11. 16. 29. May. 1. 2. 3. 7. 8. 14.*

Total No. of visits. *47.*

Dates of Examination of principal parts—Cylinders. *16/1/35 26/2/35* Covers. *15/2/35 28/3/35 28/3/35* Pistons. *29/3/35* Rods. *29/3/35* Connecting rods. *14/2/35*

Crank shaft. *13/3/35 28/3/35* Flywheel shaft. Thrust shaft. *13/3/35* Intermediate shafts. *25/3/35* Tube shaft. *3/5/35*

Screw shaft. *22/3/35* Propeller. *19/3/35* Stern tube. *28/2/35 18/3/35* Engine seatings. *4/5/35* Tank top. Engines holding down bolts. *3/5/35*

Completion of fitting sea connections. *29/3/35* Completion of pumping arrangements. *4/5/35* Engines tried under working conditions. *14/5/35*

Crank shaft, Material *S.M. INGOT STEEL* Identification Mark *S.O. 3494 G.O.C.* Flywheel shaft, Material Identification Mark *No. 2468, 2464, 24*

Thrust shaft, Material *S.M. INGOT STEEL* Identification Mark *no crank* Intermediate shafts, Material *S.M. INGOT STEEL* Identification Marks *2456, 2457, 2465, 2458, 2469, 241, 25/8*

Tube shaft, Material Identification Mark Screw shaft, Material *S.M. INGOT STEEL* Identification Mark *No 2470 W.M.F. 22.8.31*

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. *No.* If so, have the requirements of the Rules been complied with. *not desired.*

If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with. *not desired.*

Is this machinery duplicate of a previous case. *Yes* If so, state name of vessel. *M/V "SUTHERLAND"*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The machinery of this vessel has been built under Special Survey in accordance with the Rules of the Society & the Secretary's letter E 25/4/34. The materials & workmanship are good. The machinery has been securely fitted on board the vessel & tried under full working conditions at sea, including requirements for starting, with satisfactory results.*

The two donkey boilers have also been securely fixed on board the vessel & fitted to burn oil fuel (F.P. above 150° F.) Section 20 of the Rules have been complied with, safety valves of boilers adjusted & accumulated test carried out satisfactorily.

The machinery is eligible in my opinion & have noted 45% L.M.C. 5.35 oil Eng. T.S. CL. 2 DB 120lb/sq"

The amount of Entry Fee .. £ 5 : - } When applied for, *15 MAY 1935*

Special £ 83 : 4 } When received, *7 MAY 1935*

Donkey Boiler Fee *Welded Const. 7.7.7.7.* £ 12 : 12 } *W. J. Miller*

Travelling Expenses (if any) £ : : } *W. J. Miller*

Committee's Minute *FRI 24 MAY 1935*

Assigned *+ L.M.C. 5.35 Oil Eng. 2 D.B. - 120 lb*

