Rpt. 4b

REPORT ON OIL ENGINE MACHINERY.

No. 14181

Received at London Office 6 AUG 1930

Date of writing Report 4. 8. 1930. When handed in at Local Office 4. 8. 1930. Port of MIDDLESBROUGH.

No. in Reg. Book. Survey held at COPENHAGEN & MIDDLESBROUGH. Date, First Survey 9th Dec/29 Last Survey 3. 8. 1930. Number of Visits 28

84543. on the ~~Single~~ Twin ~~Triple~~ ~~Quadruple~~ Screw vessel "SIR JAMES CLARK ROSS" Tons Gross 14361 Net 8127.

Built at HAVERTON HILL ON TEES. By whom built FURNESS. S. B. Co. LTD. Yard No. 158 When built 1930

Engines made at COPENHAGEN By whom made BURMEISTER & WAIN. Engine No. 1833 1834 When made 1930.

Donkey Boilers made at STOCKTON By whom made BLAIR & Co. (1926) LTD. Boiler No. C. 687. When made 1930

Brake Horse Power 3800 Owners HVALFANGERSKTIESELSKAPET ROSSHAVET. Port belonging to SANDEFJORD.

Nom. Horse Power as per Rule 709. Is Refrigerating Machinery fitted for cargo purposes no. Is Electric Light fitted Yes.

Trade for which vessel is intended WHALE OIL FACTORY.

OIL ENGINES, &c.—Type of Engines B & W. Solid injection Diesel 2 or 4 stroke cycle 4 Single or double acting Single

Maximum pressure in cylinders 39 kg. cm² Diameter of cylinders 630 m/m Length of stroke 1300 m/m. No. of cylinders 6×2. No. of cranks 6×2.

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 892 m/m. Is there a bearing between each crank Yes

Revolutions per minute 125 Flywheel dia. 1902 m/m. Weight 1120 kg. Means of ignition compression Kind of fuel used Crude oil

Crank Shaft, dia. of journals as per Rule appd. 404 m/m. as fitted 404 m/m. Crank pin dia. 404 m/m Crank Webs Mid. length breadth 660 m/m. Mid. length thickness 246 m/m. shrunk Thickness parallel to axis 266 m/m. Thickness around eyehole 185 m/m.

Flywheel Shaft, diameter as per Rule ✓ as fitted ✓ **Intermediate Shafts,** diameter as per Rule 11·1" as fitted 12¾" & 14¼" **Thrust Shaft,** diameter at collars as per Rule 11·65" as fitted 15"

Tube Shaft, diameter as per Rule ✓ as fitted ✓ **Screw Shaft,** diameter as per Rule 12·22" as fitted 15½" Is the ~~tube~~ screw shaft fitted with a continuous liner Yes.

Bronze Liners, thickness in way of bushes as per Rule ·77" as fitted ⅞" & 15/16" Thickness between bushes as per rule ·6" as fitted 11/16" 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 ✓

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 ✓ Is an approved **Oil Gland** or other appliance fitted at the after end of the tube shaft no. Length of Bearing in **Stern Bush** next to and supporting propeller 7'-9"

Propeller, dia. 13'-6" Pitch 10'-6" No. of blades 3. Material NICKEL STEEL. whether Moveable no. Total Developed Surface 43. sq. feet

Method of reversing Engines DIRECT. Is a governor or other arrangement fitted to prevent racing of the engine ~~when declutched~~ Yes Means of lubrication Forced. Thickness of cylinder liners 46 m/m. 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 ✓

Cooling Water Pumps, No. 2 Centrifugal ✓ 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. 1 each engine Diameter 127 m/m Stroke 230 m/m. Can one be overhauled while the other is at work Yes. ✓

Pumps connected to the **Main Bilge Line** No. and Size 1 - 9"×10"×10" Duplex; 1 - 150 tons per hour Rotary; 1 - twin 6½"×6" LAMONT How driven STEAM. ; ELECTRIC MOTOR GEARED FROM ELEC. MOTOR.

Ballast Pumps, No. and size 1 - 9"×10"×10" Duplex Steam 1 - 150 Ton Rotary **Lubricating Oil Pumps,** including Spare Pump, No. and size 2 - 90 tons per hour.

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 5 - 3½"; 2 - 2½" in cofferdams; 2 - 2" to Boiler Flat ✓

In Holds, &c. 1 - 2½" in For'd cofferdam; 2 - 2½" Fore hold; 1 - 2½" For'd Pump room. ✓

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 2 - 5" ? 2 - 6"

Are all the Bilge Suction pipes in Holds ~~and Tunnel Well~~ fitted with strum-boxes In drain tanks 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 both

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 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 ✓

What pipes pass through the deep tanks none 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. none No. of stages ✓ Diameters ✓ Stroke ✓ Driven by ✓

Auxiliary Air Compressors, No. 2. No. of stages 2. Diameters 320 m/m / 280 m/m Stroke 170 m/m. Driven by 3 Cyls. 45 C.S.A. Diesel Engine of 150 B.H.P. each.

Small Auxiliary Air Compressors, No. 1 EMERGENCY AIR COMPRESSOR. No. 1 No. of stages 2 2. Diameters 100 m/m / 45 m/m Stroke 100 m/m. Driven by Hand

Scavenging Air Pumps, No. none Diameter ✓ 8½" / 3½" Stroke ✓ 6" Driven by ✓ Steam Engine.

Auxiliary Engines crank shafts, diameter as per Rule 161·8 m/m. as fitted 170 m/m. ✓

AIR RECEIVERS:—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 Yes. What means are provided for cleaning their inner surfaces Manhole.

Is there a drain arrangement fitted at the lowest part of each receiver Yes.

EMERGENCY STARTING.

~~High Pressure~~ **Air Receivers,** No. 1. Cubic capacity of each 250 litres Internal diameter 380 m/m. thickness 11 m/m. ✓

Seamless, lap welded or riveted longitudinal joint lap welded. Material S.M. Steel Range of tensile strength 37·7 Kg mm² Working pressure by Rules 31·7 kg cm².

Starting Air Receivers, No. 2. Total cubic capacity 1440 cu. ft. Internal diameter 6'-0" & 6'-1 15/16" thickness 1" & 31/32". ends 1 3/16"

Seamless, lap welded or riveted longitudinal joint T.R.D.B.S. Material Steel Range of tensile strength SHELL. 45·3/49·2 kg mm². ENDS. 43·5/44·1 " " Working pressure by Rules 25·1 kg cm².

IS A DONKEY BOILER FITTED? Yes - four S.Bs. If so, is a report now forwarded? Yes.

PLANS. Are approved plans forwarded herewith for Shafting Yes Receivers Yes Separate Tanks Yes.
(If not, state date of approval)

Donkey Boilers Yes General Pumping Arrangements Yes Oil Fuel Burning Arrangements Yes.

SPARE GEAR

See Separate List herewith.

The foregoing is a correct description,

John McGovern Manufacturer.

Dates of Survey while building — During progress of work in shops: 1929: Dec 9. 1930: Jan 27. Apl. 5. 7. 9. 24. 29.

During erection on board vessel: May 27. 29. June 11. 18. 19. 25. 26. July 3. 7. 8. 11. 17. 18. 20. 21. 22. 23. 29. Aug 1. 2. 3.

Total No. of visits 28

Dates of Examination of principal parts—Cylinders - Covers - Pistons - Rods - Connecting rods - see Copenhagen Repat

Crank shaft - Flywheel shaft - Thrust shaft - Intermediate shafts - Tube shaft ✓

Screw shaft - Propeller - Stern tube - Engine seatings 11-6-30. Engines holding down bolts 26.6.30.

Completion of fitting sea connections 24.4.30 Completion of pumping arrangements 2.8.30. Engines tried under working conditions 3.8.30.

Crank shaft, Material S.M. Steel Identification Mark Lloyds Nos 672-673 11.3.30. Flywheel shaft, Material ✓ Identification Mark ✓

Thrust shaft, Material S.M. Steel Identification Mark Lloyds Nos 737-738 26.4.30 Intermediate shafts, Material S.M. Steel Identification Marks Lloyds No. 714-715 14.4.3

Tube shaft, Material ✓ Identification Mark ✓ Screw shaft, Material S.M. Steel Identification Mark Lloyds No. 696-697. 31.3. Spares No. 752-753. 2.5.

Is the flash point of the oil to be used over 150° F. Yes.

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.)

This repat is in continuation of Copenhagen Rpt. No. 8242.

This machinery has been securely fitted aboard in accordance with the Rules and approved Plans and tested under working conditions with satisfactory results. In my opinion it is eligible for classification with record +L.M.C. 8.30.

It is submitted that this vessel is eligible for THE RECORD +L.M.C. 8.30 C-L.

Oil Engines 4 S.C.S.A. 12 Cy 24 13/16" — 51 3/16"
N.H.P. 709 4 D.B. 185 lb

AHR

6/8/30.

The amount of 1/3 Entry Fee ... £ 1-4-0 | When applied for, 5 Aug 1930
1/3 Special ... ... £ 22-2-0.
Donkey Boiler Fee ... £ ✓ :
Travelling Expenses (if any) £ ✓ : | When received, 3.9.1930

asm

P.I. Mac.

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE. 19 AUG 1930

CERTIFICATE WRITTEN

Assigned + Lmc 8.30 C.L. Oil Engs. 4 D.B. 185 lb

(The Surveyors are requested not to write on or below the space for Committee's Minute.)

Certificate (if required) to be sent to