

REPORT ON OIL ENGINE MACHINERY.

No. 11428

SEP 12 1937

Received at London Office

Date of writing Report 7th Sept. 1937. When handed in at Local Office 10th Sept. 1937. Port of GOTHENBURG.

No. in Survey held at GOTENBURG Date, First Survey 18th Nov. 1936. Last Survey 28th Aug. 1937. Number of Visits 90

Reg. Book Supplement 32601 on the Single Twin Triple Quadruple Screw vessel M/S COLOMBIA. Tons Gross 5227 Net 2905

Built at GOTHENBURG. By whom built A.B. GÖTAVERKEN. Yard No. 510 When built 1937
Engines made at GOTHENBURG. By whom made A.B. GÖTAVERKEN. Engines No. 1228 When made 1937
Donkey Boiler made at LOUGHBOROUGH. By whom made WALTER W. COLTMAN & CO LTD. Boiler No. 6166 When made 1937
Brake Horse Power 2 x 2700 Owners REDERI A.B. NORDSTJERNAN. Port belonging to STOCKHOLM.
Nom. Horse Power as per Rule 945 Is Refrigerating Machinery fitted for cargo purposes YES Is Electric Light fitted YES
Trade for which vessel is intended SOUTH AMERICA

OIL ENGINES, &c.—Type of Engines Diesel Oil Engine 2 or 4 stroke cycle 4 Single or double acting Single

Maximum pressure in cylinders 45 kg/cm² Diameter of cylinders 630 mm (24 3/16") Length of stroke 513/16" No. of cylinders 16 No. of cranks 16
Mean Indicated Pressure 7.5 kg/cm²

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 880 mm Is there a bearing between each crank Yes
Revolutions per minute 125 Flywheel dia. None Weight ✓ Means of ignition Compression Kind of fuel used Diesel oil

Crank Shaft, dia. of journals approved 430 mm as fitted 430 mm with 150 mm central hole. Crank pin dia. 430 mm Crank Webs Mid. length breadth ✓ Thickness parallel to axis 246 mm
Mid. length thickness ✓ Thickness around eyehole 195 mm

Flywheel Shaft, diameter as per Rule ✓ as fitted ✓ Intermediate Shafts, diameter as per Rule 287 mm as fitted 310 mm Thrust Shaft, diameter at collars as per Rule 301 mm as fitted 345 mm

Tube Shaft, diameter as per Rule ✓ as fitted ✓ Screw Shaft, diameter as per Rule 345 mm as fitted 365 mm Is the tube screw shaft fitted with a continuous liner No

Bronze Liners, thickness in way of bushes as per Rule ✓ as fitted ✓ Thickness between bushes as per rule ✓ as fitted ✓ Is the after end of the liner made watertight in the propeller boss ✓
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 shaft yes If so, state type bederwalls oil gland. Length of Bearing in Stern Bush next to and supporting propeller 1825 mm

Propeller, dia. 4100 mm Pitch 4260 mm No. of blades 3 Material Stainless Steel whether Moveable No Total Developed Surface 2x5.5=11 met. sq. feet

Method of reversing Engines Direct with 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 46 mm top 36 mm bottom 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 led to a funnel.

Cooling Water Pumps, No. 2 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 Diameter 130 mm Stroke 230 mm Can one be overhauled while the other is at work ✓

Pumps connected to the Main Bilge Line { No. and Size 1 ballast 165 tons/h. 1 bilge-sanitary 40 tons/h. 1 plunger 18 tons/h. 1 frame pump 50 tons/h.
How driven electric motor electric motor 10d main engine electric motor.

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, 165 tons/hour. Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size Four, 60 tons/hour each

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 2x3"; 2x2 1/2"; 4x2 1/2" from cofferdams; One 3" from tunnel well In Pump Room ✓

In Holds, &c. Hold No 1 - 2x3"; Hold No 2 - 2x3"; Hold No 3 - 2x3"; Hold No 4 - 4x3"; Hold No 5 - 3x3" - 1x2" and 1x2 ft. cofferdam between frames. Nos 29-30

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1x6" fr. ballast pump; 1x3" fr. separate bilge pump; 1x3" fr. direct driven bilge pump; 1x3 1/2" fr. transfer pump. 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 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 No coal bunkers How are they protected ✓

What pipes pass through the deep tanks No deep tanks 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 Yes Is it fitted with a watertight door Yes worked from top platform

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. 2 No. of stages 2 Diameters 350 & 310 mm Stroke 160 mm Driven by Electric motors.

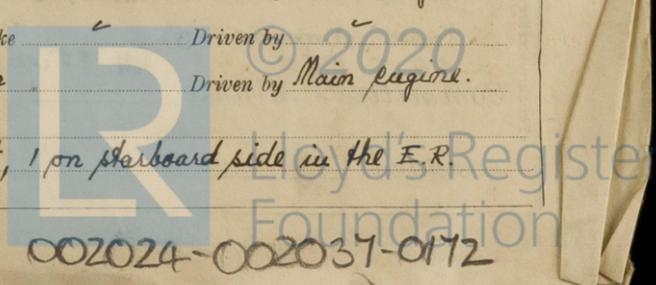
Small Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters 106 & 34 mm Stroke 80 mm Driven by Steam engine.

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

Supercharge Air Pumps, No. 2 Diameter 950 mm Stroke 800 mm Driven by Main engine.

Auxiliary Engines crank shafts, diameter approved 190 mm as fitted 190 mm No. 3 Position 2 on port, 1 on starboard side in the E.R.

1m. 3.35. T.



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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 and cleaned Yes Is a drain fitted at the lowest part of each receiver Yes

See starting High Pressure Air Receivers, No. 1 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. 2 Total cubic capacity 2 x 19.7 m³ = 39.4 m³ Internal diameter 1800-1850 mm thickness 2.5-2.5.5 mm

Seamless, lap welded or riveted longitudinal joint Riveted Material S.M. Steel Range of tensile strength 44.3-48.7 kg/mm² Working pressure by Rules 25.6 kg/cm² Actual 25 kg/cm²

IS A DONKEY BOILER FITTED? Yes If so, is a report now forwarded? Sent now.

Is the donkey boiler intended to be used for domestic purposes only No, also for the starting up compressor and for heating coils.

PLANS. Are approved plans forwarded herewith for Shafting 17.3.36. 18.9.36. Receivers 21.10.36. Separate Fuel Tanks 29.1.37

Donkey Boilers ✓ General Pumping Arrangements 18.11.36. Pumping Arrangements in Machinery Space 18.11.36.

Oil Fuel Burning Arrangements ✓

SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes ✓

State the principal additional spare gear supplied For the main engines: 1 cylinder liner, 1 cooling jacket, 8 fuel valve spindles, 8 atomizers, 1 suction valve spindle, 15 exhaust valves with 4 extra discs and spindles, 1 starting air valve, 3 sets of piston rings, 2 telescopic cooling pipes, 3 upper halves of crank pin brasses, 3 lower halves of cross head brasses, 1 set of main bearing brasses, 1 set of cross head and crane pin brasses for the supercharge air pump, 1 fuel oil pump complete and 8 sets of all working parts for ditto, 1 propeller shaft and 2 cast iron propellers.

The foregoing is a correct description,

AKTIEBOLAGET GOTAVÄRKEN
Ullst. Værk

Manufacturer.

Dates of Survey while building { During progress of work in shops -- } 1936 Nov. 18, 1937 March 24.31, April 8.17.20.20.23.29.30.30., May 3.4.5.7.10.11.12.13.14.14.15.18.18.20.21.24.25.27.29
{ During erection on board vessel -- } June 3.3.8.9.10.11.11.14.16.17.18.19.22., July 2.5.6.9.9.12.14.14.15.15.16.19.19.20.21.22.24.28.30.30., Aug. 9.14.20.
Total No. of visits 90

Dates of Examination of principal parts—Cylinders 14.5, 8.6, 1937 Covers 8.6.37. Pistons 10.5.37. Rods 10.5.37. Connecting rods 18.5, 9.7.37.

Crank shaft 24.3.37. Flywheel shaft ✓ Thrust shaft 10.7.37. Intermediate shafts 28.7.37. Tube shaft ✓

Screw shaft 18.6.37. Propeller 9.8.37. Stern tube 18.5.37. Engine seatings 26.4.37. Engines holding down bolts 6.7.37.

Completion of fitting sea connections 29.5.37. Completion of pumping arrangements 27.8.37. Engines tried under working conditions 10.6, 24.8, 28.8.37.

Crank shaft, Material S.M. Steel Identification Mark LLOYD'S No 1187/2 24.11.36 Flywheel shaft, Material ✓ Identification Mark LLOYD'S No 1187/5 24.11.36

Thrust shaft, Material S.M. Steel Identification Mark LLOYD'S No 1184/1246 27.10.37 Intermediate shafts, Material S.M. Steel Identification Marks LLOYD'S No 1187/1 24.11.36

Tube shaft, Material ✓ Identification Mark ✓ Screw shaft, Material S.M. Steel Identification Mark LLOYD'S No 1187/8 24.11.36

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 ✓

If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with Yes ✓

Is this machinery duplicate of a previous case Yes If so, state name of vessel "Argentina", "Brasil", "Nordstjernan", "Langway" (1936/6)

General Remarks (State quality of workmanship, opinions as to class, &c. The main and auxiliary engines of this vessel have been built under Special Survey and all the requirements of the Rules have been complied with. The shafting as per forging reports attached. The material of the air receivers as per test sheets attached. The test sheet of the electric generators is forwarded herewith. The workmanship is good and the material fulfil the requirements of the Rules. The dimensions are as specified and in accordance with the Rules and approved plans. The auxiliary machinery consist of three 3 cylinder 2 SCSA diesel oil engines as per Lm. Report No 4441 and one small generator aggregate of 30 kW for light when the vessel is in harbour. The diesel oil engine for same is manufactured by Messrs AB Gotaverken of this port. The machinery has been tested under full working power on a trial trip and found to work satisfactory. The machinery of this vessel is eligible in our opinion to be classed in the Register Book with notation of LMC 8.37. Working pressure of the donkey boilers 85 lbs/sq"

Certificate (if required) to be sent to Surveyors Office, Stockholm
(The Surveyors are requested not to write on or below the space for Committee's Minute.)

The amount of Entry Fee .. NTP 114:00 : When applied for, 10th Sept. 1937
Special ✓ ... NTP 2322:75 :
Starting air receiver Donkey Boiler Fee ... NTP 159:60 :
Travelling Expenses (if any) £ : 20.29.37
LATE FEE NTP 25:00
Committee's Minute

S. Smedin
Sten Jansson
Engineer Surveyor to Lloyd's Register of Shipping.

TUE 21 SEP 1937

Assigned + LMC 8.37 air Eng OG
DB 85 lb

