

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 GOTHENBURG

Date, First Survey 18th Nov. 1936Last Survey 28th Aug. 1937

Reg. Book.

Number of Visits 90

32601 on the Twin Screw vessel

M/s COLOMBIA.

Tons Gross 5297
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 51 3/16"

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 as fitted 430 mm

Crank pin dia. 430 mm

Crank Webs Mid. length breadth

Mid. length thickness

Thickness parallel to axis 246 mm

Thickness around eyehole 195 mm

Flywheel Shaft, diameter as per Rule as fitted

Intermediate Shafts, diameter as per Rule as fitted 287 mm

Thrust Shaft, diameter at collars as per Rule as fitted 301 mm

Tube Shaft, diameter as per Rule as fitted

Screw Shaft, diameter as per Rule as fitted 345 mm

Is the 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 transfer pump 50 tons/h.

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 ft. ballast pump; 1x3 ft. separate bilge pump;

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Yes 1x3 ft. direct driven bilge pump; 1x3 1/2 ft. transfer pump.

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 as fitted 190 mm

No. 3

Position 2 on port, 1 on starboard side in the E.R.

002024-002037-0172

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 $2 \times 19.7 \text{ m}^3 = 39.4 \text{ m}^3$

Internal diameter 1800-1850 mm

thickness 25-25.5 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

Actual 25.6 kg/cm²
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

(If not, state date of approval)

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 crank 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
Umeå, Sweden

Manufacturer.

Dates of Survey while building

During progress of work in shops --
During erection on board vessel --
Total No. of visits

Dec. 11, Jan. 12, 1936 Nov. 18, 1937 March 24.31, April 8.17.20.20.23.29.30.30, May 3.4.5.7.10.11.12.12.13.14.14.15.18.18.20.21.24.25.27.29
June 3.3.8.8.9.10.11.11.14.16.17.18.19.22, July 2.5.6.9.10.12.14.14.15.15.16.19.19.20.21.22.24.28.30.30, Aug. 9.14.20.
1937 July 6.8.10.15.17.20.22, Aug. 9.12.14.16.17.18.18.19.24.25.26.27.28

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. 1184/1246
21.10.37

Flywheel shaft, Material

Identification Mark

LLOYD'S
No. 1184/1246
21.10.37

Thrust shaft, Material S.M. Steel

Identification Mark

LLOYD'S
No. 1184/1246
21.10.37

Intermediate shafts, Material S.M. Steel

Identification Marks

LLOYD'S
No. 1184/1246
21.10.37

Tube shaft, Material

Identification Mark

Screw shaft, Material S.M. Steel

Identification Mark

LLOYD'S
No. 1184/1246
21.10.37

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 Yes

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", "Nordmann", "Languay" (1936)

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 ∇ LMC 8.37. Working pressure of the donkey boilers 85 lbs/sq"

The amount of Entry Fee .. NT 114:00

Special .. NT 2322:75

Donkey Boiler Fee .. NT 159:60

Travelling Expenses (if any) £ ..

LATE FEE NT 25:00

Committee's Minute

When applied for,

10th Sept. 1937

When received,

20. 29. 37

TUE 21 SEP 1937

Assigned + LMC 8.37

Inc Eng

OG

DB 85 lb

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

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Foundation