

REPORT ON OIL ENGINE MACHINERY.

No. 8165.
27 DEC 1930

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Date of writing Report 22nd Dec 1930 When handed in at Local Office 23rd Dec 1930 Port of Gothenburg.No. in Survey held at Gothenburg Date, First Survey 18th Jan 1930 Last Survey 17th Dec 1930
No. of Visits 57
No. in Survey held at Gothenburg Date, First Survey 18th Jan 1930 Last Survey 17th Dec 1930
No. of Visits 57By whom built A.B. Götaverken Yard No. 438 When built 1930
By whom made A.B. Götaverken Engine No. 1921 When made 1930
By whom made Riley Bros (Boilermakers) Ltd. Boiler No. 5949 When made 1930
Owners Norköpings Rederiaktiebolag Port belonging to Norköping
Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes
Trade for which vessel is intended GeneralType of Engines Two Diesel Oil Engines 2 or 4 stroke cycle 4 Single or double acting single
Maximum pressure in cylinders 35 kg/cm² Diameter of cylinders 550 mm Length of stroke 1000 mm No. of cylinders 14 No. of cranks 14
Mean of bearings, adjacent to the Crank, measured from inner edge to inner edge 730 mm Is there a bearing between each crank Yes
Revolutions per minute 155 Flywheel dia. None Weight Means of ignition Diesel system Kind of fuel used Diesel oil
Crank Shaft, dia. of journals as per Rule 350 mm Crank pin dia. 350 mm Crank Webs Mid. length breadth shrunk Thickness parallel to axis 197-213 mm
as fitted 350 mm Mid. length thickness shrunk Thickness around eye hole 171 mm
Flywheel Shaft, diameter as per Rule Intermediate Shafts, diameter as per Rule 255 mm Thrust Shaft, diameter at collars as per Rule 300 mm
as fitted None as fitted 255 mm as fitted 300 mm
Screw Shaft, diameter as per Rule 280 mm Is the tube screw shaft fitted with a continuous liner Yes
as fitted None as fitted 285 mm as fitted 12.3 mm Is the after end of the liner made watertight in theIf the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner Liner in one length.
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 No If so, state type Length of Bearing in Stern Bush next to and supporting propeller 1445 mm
Propeller, dia. 3504 mm Pitch 24 1/4 mm No. of blades 4 Material Bronze whether Moveable No Total Developed Surface 8.42 = 8.4 sq. feet
Method of reversing Engines Direct reversible by means of compound air B.H. system Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Means of lubrication
Exhaust Thickness of cylinder liners Top 38 mm 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 Led to a funnel.Cooling Water Pumps, No. 2 - 150 tons centrifugal pump 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. 2 Diameter 150 mm Stroke 135 mm Can one be overhauled while the other is at work Yes
Pumps connected to the Main Bilge Line No. and Size Two direct driven pumps 32 tons each, first duplex bilge pump, 1st duplex bilge pump, 1st duplex bilge pump, 1st duplex bilge pump
How driven By main engines Steam steam steam
Ballast Pumps, No. and size One 75 tons in machinery space One 60 " in pump room forward Lubricating Oil Pumps, including Spare Pump, No. and size Two 70 tons rotary pumps
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 Three 3 1/2" and two 2 1/2" [Two 2" from cofferdams in way of] In Pump Room None
In Holds, &c. None [Two 2 1/2" to hold connected to bilge ballast pump in forward pump room]Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size One 3 1/2" to bilge pump and one 5" to ballast pump
Are all the Bilge Suction pipes in Holds and Pump Room 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 bunkers How are they protected
What pipes pass through the deep tanks Steam heating coils, cargo lines Have they been tested as per Rule YesAre 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. 2 No. of stages 3 Diameters 134, 540, 600 mm Stroke 400 Driven by Main engines.
Auxiliary Air Compressors, No. 1 No. of stages 3 Diameters giving 220 cub. feet air per hour at a pressure of 850 lbs. Driven by steam engine
Small Auxiliary Air Compressors, No. None No. of stages Diameters Stroke Driven byScavenging Air Pumps, No. Diameter Stroke Driven by
Auxiliary Engines crank shafts, diameter as per Rule 135 mm No. — One Diesel and one steam engine [in other side]
as fitted 135 mm Position — Back space, starboard port side at aft end.
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
High Pressure Air Receivers, No. 4 Cubic capacity of each 2 of 145 liters Internal diameter 358 mm thickness 2 1/2 mm
Seamless, lap welded or riveted longitudinal joint Lap welded Material M. Steel Range of tensile strength 36.9-40.2 kg/cm² Working pressure Actual 65.2 kg/cm²Starting Air Receivers, No. 2 Total cubic capacity 2 x 135 = 27 m³ Internal diameters 1800-1850 mm thickness 25-25.5 mm
Seamless, lap welded or riveted longitudinal joint Riveted Material L.M. Steel Range of tensile strength 47.1-48.3 kg/cm² Working pressure Actual 25.0 kg/cm²

IS A DONKEY BOILER FITTED?

Are the donkey boilers intended to be used for domestic purposes only? *No, the are to be used for aux. steam engine, steering engine, windlass, pump* If so, is a report now forwarded? *Yes.*

PLANS. Are approved plans forwarded herewith for Shafting *Yes* 24/8/29, 17/9/29, Receivers 24/8/29, 18/9/29 Separate Tanks 19/9/28 [4/5 4/5]
 Donkey Boilers *✓* General Pumping Arrangements *No* 2/2/29 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: 12 complete sets of exhaust valves, 12 complete sets of fuel valves, 4 halves of main bearings, 4 halves of crank pin bearings, 2 complete crosshead bearings, 1 chain for the cam shaft drive, additional spare parts for same, 1 propeller shaft, 1 cast iron propeller, 13 sets of piston rings for one piston.

For the main engine compressor: 2 sets of piston rings for one piston, 1 set of suction and delivery valves, 2 connecting rod bottom end bolts & nuts, 2 halves of crosshead, 2 crank pin bearings, 1 HP compressor air cooling coils, 24 tubes for the lubricating oil cooler, 10 tubes for each of the 1P and 1P compressor coolers.

Steam auxiliary engine: 3 sets of piston rings for the HP & LP pistons, 6 halves of main bearing brass, 2 halves of crosshead and crank pin brass.

Auxil steam engine driven compressor: 1 set of piston rings for the steam piston, 1 set of main bearings.

Donkey boiler: 2 safety valve springs, 2 check valves, 15 ordinary stay tubes, spare parts for the oil fuel installation.

The foregoing is a correct description,

E. S. S. S. S.

Manufacturer.

Dates of Survey while building
 During progress of work in shops-- 1930: Jan 18, April 4, 10, 15, May 12, 13, June 3, 4, 4, 6, 7, 13, 16, 19, July 3, 8, 10, 21, 23, 24, 28, Aug 5, 6, 14, 19, 26, 27, 29, 30, Oct 4, 10, 17, 23, Nov 7, 10, 14, 18, 27, 29
 During erection on board vessel-- 1930: Sept 1, Oct 22, 29, 30, Nov 12, 18, 27, Dec 1, 2, 3, 4, 5, 8, 10, 16, 16, 17
 Total No. of visits *57*

Dates of Examination of principal parts—Cylinders 24/8/29, 10/9/29, 24/8/29, 10/9/29, 8-10/30
 Crank shaft 4-10/30 Flywheel shaft *✓* Thrust shafts 7/4/30 Intermediate shafts 29/10/30 Connecting rods 15/4/30
 Screw shaft 18/1/30 Propeller 17/10/30 Stern tube 10/9/30 Engine seatings 1/9/30 Engines holding down bolts 22/10/30
 Completion of fitting sea connections 17/10/30 Completion of pumping arrangements 4/12/30 Engines tried under working conditions 10/12/30
 Crank shaft, Material *S.H. Steel* Identification Mark *EB 10.4.30* Flywheel shaft, Material *✓* Identification Mark *✓*
 Thrust shaft, Material *S.H. Steel* Identification Mark *7292, 7293* Intermediate shafts, Material *S.H. Steel* Identification Marks *7299, 7300*
 Tube shaft, Material *✓* Identification Mark *✓* Screw shaft, Material *S.H. Steel* Identification Marks *8592, 8591, 8593*

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 *✓*

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 *Yes* If so, state name of vessel *'s Lodna' FOSNA*

General Remarks (State quality of workmanship, opinions as to class, &c. *The main 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 copy of forging reports attached. Material of starting air receivers as per test sheets attached.

The workmanship is good and the material fulfils the requirements of the Rules & approved plans.

The auxiliary machinery consists of one 2 cyl, 2 stroke cycle, single acting Diesel oil engine manufactured by Messrs Hydqvist & Holm of Stockholm [see report attached], and one compound steam engine of cyl diam 11" x 15" and stroke 7", manufactured by Messrs W. H. Allen, Sons & Co. Ltd of Bedford, each working a dynamo of 50 Kw.

The steam engine driven auxil. compressor is delivered from Messrs Peter Brotherhood of Peterborough.

The main & auxiliary engines have been tested under full working conditions on a trial trip & found to work satisfactorily.

The Machinery of this vessel is eligible in our opinion to be classed in the Register of this Society with notation of + LMC 12.30. [Working pressure of donkey boilers are 180 lbs/sq in.]

The amount of Entry Fee *£ 109.20*

Special ... *£ 194.94*

Starting air receiver Donkey Boiler Fee *£ 158.88*

Lat fee Travelling Expenses (if any) *£ 25.00*

When applied for, 23rd Dec 1930

When received, 19-1-1931

E. S. S. S. S.

Engineer Surveyors to Lloyd's Register of Shipping.

Committee's Minute

FRI. 16 JAN 1931

Assigned

+ LMC 12.30 oil Eng. Ch. 2 SB-180

CERTIFICATE WRITTEN.



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