

REPORT ON OIL ENGINE MACHINERY.

No. 8090

11 OCT 1930

Date of writing Report 15 Oct. 1930 When handed in at Local Office 8th Oct. 1930 Port of Gothenburg

No. in. Survey held at Gothenburg Date, First Survey 12th March 1930 Last Survey 8th Oct. 1930
Reg. Book. 71434 Number of Visits 69

on the Single Twin Triple Quadruple Screw vessel "G. C. BRÖVIQ" Tons Gross 9718
Net 5860

Built at Gothenburg By whom built A.B. GÖTAVERTEN Yard No. 437 When built 1930

Engines made at Gothenburg By whom made A.B. GÖTAVERTEN Engine Nos. 1913 When made 1930

Donkey Boilers made at Stockton By whom made RILEY BROS. (BOILERMAKERS) Boiler Nos. 5946 When made 1930

Brake Horse Power ✓ Owners TH. BRÖVIQ Port belonging to FARSUND

Nom. Horse Power as per Rule 724 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

Trade for which vessel is intended General

IL ENGINES, &c.—Type of Engines Two Diesel Oil Engines [B&W type] 2 or 4 stroke cycle 4 Single or double acting single

Maximum pressure in cylinders 35 kg/cm² Diameter of cylinders 550 mm [21 5/8"] Length of stroke 1000 mm [39 3/8"] No. of cylinders 16 No. of cranks 16

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 724 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 347 mm Crank pin dia. 350 mm Crank Webs Mid. length breadth 620 mm Thickness parallel to axis 197-213 mm
as fitted 350 mm as per Rule 255 mm Mid. length thickness 255 mm Thickness around eye hole 159-171 mm

Flywheel Shaft, diameter as per Rule 300 mm Intermediate Shafts, diameter as fitted 255 mm Thrust Shaft, diameter at collars as fitted 300 mm
as fitted 300 mm

Tube Shaft, diameter as per Rule 288 mm Screw Shaft, diameter as fitted 288 mm Is the shaft fitted with a continuous liner Yes
as fitted 288 mm

Bronze Liners, thickness in way of bushes as per Rule 16.4 mm Thickness between bushes as per rule 12.3 mm Is the after end of the liner made watertight in the
as fitted 17 & 19 mm as fitted 16 mm

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 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 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 If so, state type ✓ Length of Bearing in Stern Bush next to and supporting propeller 1345 mm

Propeller, dia. 3658 mm Pitch 2489 mm No. of blades 4 Material Bronze whether Moveable No Total Developed Surface 2465.93 sq. feet

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

Forced Thickness of cylinder liners 30.7 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 See to a funnel

Cooling Water Pumps, No. 2 centrifugal pumps 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 22 tons each, 1 plunger bilge pump 20 tons, The after ballast pump

How driven By main engines Electric Electric Steam

Ballast Pumps, No. and size One 100 tons rotary in Mach. space Lubricating Oil Pumps, including Spare Pump, No. and size 2 of 70 tons (See 24/10/30)

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 main engines]

In Holds, &c. None [Two 2 1/2" in hold connected to the forward bilge & ballast pump]

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size One 3 1/2" to bilge pump & one 5" to ballast 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 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 No bunkers How are they protected ✓

What pipes pass through the deep tanks Main cargo lines & heating coils 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

compartment to another Yes Is the Shaft Tunnel watertight No tunnel 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 120, 540 & 600 mm Stroke 440 mm Driven by Main engines

Auxiliary Air Compressors, Nos. 1/2 No. of stages 2 Diameters 78, 285 & 318 mm Stroke 170 mm Driven by ✓

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

Scavenging Air Pumps, No. None Diameter ✓ Stroke ✓ Driven by ✓

Auxiliary Engines crank shafts, diameter as per Rule 170 mm See particulars overleaf
as fitted 170 mm

IR 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 The injection air receives by means of caustic soda & steam

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

High Pressure Air Receivers, No. 8 Cubic capacity of each 3 of 350 litres Internal diameters 450 mm thickness 25.5 mm

Seamless, lap welded or riveted longitudinal joint Seamless Material M. Steel Range of tensile strength 33.3-34.0 tons/in² Working pressure by Rules 72.0 kg/cm²

Starting Air Receivers, No. 2 Total cubic capacity 2 x 15.5 = 31 cub. metres Internal diameter 1800 & 1850 mm thickness 25 & 25.5 mm

Seamless, lap welded or riveted longitudinal joint Riveted Material M. Steel Range of tensile strength 44.7-49.7 Working pressure by Rules 25.6 kg/cm²

Foundation

IS A DONKEY BOILER FITTED? *Yes, two boilers*

If so, is a report now forwarded? *Yes*

PLANS. Are approved plans forwarded herewith for Shafting

Receivers *7/6/29, 18/7/29, 15/1/30* Separate Tanks *30/1/28*

Donkey Boilers *3/9/29*

General Pumping Arrangements *25/6/29 - 30/7/29*

Oil Fuel Burning Arrangements *✓*

SPARE GEAR

For the main engines with compressors & pumps. 1 cylinder cover, 1 complete set of all valves, valve casings, springs etc for one cylinder cover and, in addition, 1 complete set of exhaust valves with 4 extra valves for same, 1 complete set of air valves with 1 extra valve for same, 1 complete set of fuel valves with 16 extra valves & seats for same, 1 cylinder liner, 1 set of starting air valve with 2 extra valves for same, 1 complete set of piston rings for one piston, telescopic cooling pipes for 2 pistons, 1 cooling jacket, 1 piston complete with piston rings and, in addition, 1 set of piston rings for one piston, 4 crank pin bolts & nuts, 45 halves of crank pin brasses, 4 main bearing bolts & nuts, 1 quidgeron pin, 4 halves of crank pin brasses for same, 4 crank pin bolts & nuts, 2 halves of crank pin brasses, 1 set of bolts & nuts for a crank shaft coupling, 1 set of bolts & nuts for an intermediate shaft coupling, 1 propeller shaft with nut, 2 cast iron propellers, 1 cam roller with pin of each side, 1 complete set of piston rings of each size used in the air compressor, 1 set of suction and delivery valves of each size used in the air compressor, 2 halves of quidgeron pin brasses for the compressor, 2 crank pin bolts & nuts, 2 halves of crank pin brasses for the compressor, 2 main bearing bolts & nuts, 2 halves of main bearings for the compressor, 1 set of all working parts for a fuel pump, 1 set of HP air cooling coil, 10 tubes for the LP compressor cooler, 10 tubes for the LP compressor cooler, 30 tubes for the lubricating oil cooler, 8 tubes for the starting air piping, 1 set of valves & seats for the bilge pump.

For the auxiliary engines with compressors & pumps. 1 complete set of all valves, valve casings, springs etc for one cylinder cover and, in addition, 3 complete sets of exhaust valves with 6 extra valves for same, 3 complete sets of air valves with 6 extra valves & seats for same, 1 set of studs & nuts for one cylinder cover, 1 quidgeron pin, 1 bush for same, 2 crank pin bolts & nuts, 2 halves of crank pin brasses, 4 main bearing bolts & nuts, 4 halves of main bearings, 1 piston, 1 set of piston rings for one piston, 1 cam roller with pin of each side, 1 set of compressor piston rings of each size, 1 set of suction & delivery valves of each size used in the air compressor, 1 set of all working parts for a fuel pump, 1 set of valves for the cooling water pump, 1 HP compressor air cooling coil, 2 bursting covers for the cooling water jackets.

For the small steam driven compressor. 1 set of piston rings, 1 set of suction & delivery valves.

For the auxiliary pumps. 1 set of valves & seats for the ballast pump, 1 set of suction & delivery valves for the bilge & sanitary forward bilge & caudast and the cargo oil pumps and donkey boiler feed pumps.

Donkey boilers. 2 check valves, 2 safety valve springs, 5 ordinary & 5 stay tubes, spare parts for the oil burning arrangement.

General. A quantity of assorted bolts & nuts, a length of pipe of each size used for the fuel delivery and injection air pipes from the main & aux. power cylinders and delivery from main & aux. compressors with unions & flanges suitable for each.

The foregoing is a correct description.

W. J. McEwen Manufacturer.

Dates of Survey while building	{ During progress of work in shops-- During erection on board vessel-- Total No. of visits	1930: March 12, April 5, 17, 25, 28, May 2, 2, 3, 5, 5, 6, 9, 9, 10, 12, 13, 13, 14, 26, 28 June 4, 4, 6, 12, 17, July 1, 2, 3, 3, 4, 5, 9, 10, 11, 14, 14, 17, 24, 24, 29, 30, 30, Aug 6, 9, 11, 14, 25, 28, 29, Sept 5, Oct 6.
		1930: May 22, July 17, Aug. 8, 20, 21, 25, Sept 1, 2, 3, 4, 5, 6, 11, 12, 16, 17, Oct 3, 8
		69
Dates of Examination of principal parts—Cylinders 11/14/30 Covers 11/14/30 Pistons 28/4/30, 6/5/30 Rods ✓ Connecting rods 24/4/30		
Crank shaft 17/4/30	Flywheel shaft ✓	Thrust shaft 24/7/30 Intermediate shafts 14/8/30 Tube shaft ✓
Screw shaft 10/5/30	Propeller 20/8/30	Stern tube 17/7/30 Engine seatings 22/5/30 Engines holding down bolts 8/8/30
Completion of fitting sea connections 20/8/30	Completion of pumping arrangements 12/9/30	Engines tried under working conditions 17/9/30
Crank shaft, Material S.M. Steel	Identification Mark LLOYDS HK 2889, 2890 HK 2813, 2814 15.1.30 7.1.30	Flywheel shaft, Material ✓ Identification Mark LLOYDS N° 13981, 13982 GR. 14.8.30
Thrust shaft, Material S.M. Steel	Identification Mark LLOYDS N° 13983, 13984 EM. 24.7.30	Intermediate shafts, Material S.M. Steel Identification Marks LLOYDS GR. 14.8.30
Tube shaft, Material ✓	Identification Mark ✓	Screw shaft, Material S.M. Steel Identification Mark LLOYDS N° 620, 622, 621 EB. 10.5.30

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 *✓*

Is this machinery duplicate of a previous case *Yes* If so, state name of vessel *1/5 NIKE, GLARONA & VELMA.*

General Remarks (State quality of workmanship, opinions as to class, &c. *The Main & auxiliary engines of this vessel*

have been built under special survey and all the requirements of the Rules have been complied with.

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

The shafting as per forging reports attached. Material of starting air receivers as per test sheets attached.

The dimensions are as specified and in accordance with the Rules and approved plans.

The auxiliary machinery of this vessel consists of one 1-cylinder and two 2-cylinder, 4-stroke cycle,

single acting Diesel oil engines with cyl. diam 310 mm & stroke 350 mm manufactured by Messrs AB Löttersen

of this port. The 1-cyl. engine is working a dynamo of 33 kw. and the 2-cyl. engines a dynamo of 66 kw.

The main & auxiliary engines have been tested under full working power on a trial trip and found

to work satisfactorily. Please see also report on form RPT. 9. attached herewith.

The machinery of this vessel is eligible in our opinion to be classed in the Register

Book of this Society with notation of + LHC 10.30, subject to port propeller being renewed at Cornus

convenience. Working pressure of donkey boilers 180 lbs/sq

The amount of Entry Fee	... £ 109.20	When applied for,	85 Oct 1930
Special	... £ 2083.84	When received,	16.10.30
Donkey Boiler Fee	... £ 152.88		
Starting air receiver	... £		
Travelling Expenses (if any)	... £		
Committee's Minute			
Assigned			

TUE. 21 OCT 1930

+ L.M.C. 10.30 C.L.

Oil Eng. 200. 180 lb.



© 2021

Lloyd's Register Foundation