

# REPORT ON OIL ENGINE MACHINERY.

No. 8324  
26 MAY 1931

Received at London Office

Date of writing Report 19th May 1931 When handed in at Local Office 1st May 1931 Port of Gothenburg

No. in Survey held at Gothenburg Date, First Survey 27th Sept, 1930 Last Survey 18th May 1931  
Number of Visits 68

Reg. Book. (Supplement) 89702 on the Single Twin Triple Quadruple Screw vessel "BARFONN" Tons { Gross 9739 Net 6035

Built at Gothenburg By whom built A.B. GÖTAVERKEN Yard No. 443 When built 1931-5

Engines made at Gothenburg By whom made A.B. GÖTAVERKEN Engine No. 1947 948 When made 1931

Monkey Boilers made at Stockton By whom made RILEY BROS (BOILER MAKERS) LTD Boiler No. 16318 6819 When made 1931

Owners SKIBSANTIESELSK. DALFONN Port belonging to STAVANGER

Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

Trade for which vessel is intended General barbed 2 1/8

TYPE OF ENGINES, &c. — Type of Engines Two Diesel Oil Engines 2 or 4 stroke cycle 4 Single or double acting single

Maximum pressure in cylinders 35 kg/cm<sup>2</sup> Diameter of cylinders 550 mm Length of stroke 1000 mm No. of cylinders 16 No. of cranks 16

Distance between 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 Crank pin dia. 136.9 mm Weight 880 kg Means of ignition Diesel system Kind of fuel used Diesel oil

Crank Shaft, dia. of journals 347 mm as per Rule 350 mm as fitted Crank pin dia. 350 mm Crank Webs Mid. length breadth 620 mm Thickness parallel to axis 197-213 mm

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

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

Bronze Liners, thickness in way of bushes 16.4 mm as per Rule 17.0 mm as fitted Thickness between bushes 16.3 mm as per Rule 16 mm as fitted 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 Yes

When 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

When two liners are fitted, is the shaft lapped or protected between the liners Yes Is an approved Oil Gland or other appliance fitted at the after end of the tube Yes

Length of Bearing in Stern Bush next to and supporting propeller 1345 mm

Propeller, dia. 18'-0 1/2" Pitch 8'-9" No. of blades 4 Material Bronze whether Moveable No Total Developed Surface 9.50 = 100 sq. feet

Method of reversing Engines Direct reversible by means of compound air As a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Means of lubrication Forced

Thickness of cylinder liners Top 38 mm Bottom 27.5 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 Lead to a funnel

Cooling Water Pumps, No. Two 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 20 tons each, 1 petrol pump 20 tons, 1 Ballast pump in Mach. space, 100 tons How driven Electric Electric

Ballast Pumps, No. and size One 100 tons rotary pump in mach. space, 1 Lubricating Oil Pumps, including Spare Pump, No. and size Two 70 tons rotary pumps

Are there 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" to 2 1/2" floor coffers in way of mach. space In Pump Room None

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size One 3 1/2" to bilge pumps & 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

protected 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

How are they protected Yes

What pipes pass through the bunkers No bunkers Have they been tested as per Rule Yes

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 Yes worked from Yes

On a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork Yes

Main Air Compressors, No. 2 No. of stages 3 Diameters 120, 540 & 600 mm Stroke 440 mm Driven by Main engines

Auxiliary Air Compressors, No. 3 No. of stages 3 Diameters 78, 285 & 318 mm Stroke 170 mm Driven by Steam engines

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 None Stroke None Driven by 450 & 500

Auxiliary Engines crank shafts, diameter 170 mm as per Rule 170 mm as fitted No. — 3 auxil. Diesel engines, 2 of 310-350 Position — On a platform aft in mach. space

AIR RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule Yes Is a drain fitted at the lowest part of each receiver Yes

Can the internal surfaces of the receivers be examined and cleaned Yes Cubic capacity of each 3 of 350 ctns. Internal diameter 450 mm thickness 25.5 mm

High Pressure Air Receivers, No. 8 Seamless, lap welded or riveted longitudinal joint Seamless Material M. Steel Range of tensile strength 37.7-39.3 kg/cm<sup>2</sup> Working pressure 20.265

Starting Air Receivers, No. 2 Total cubic capacity 9 x 15.5 = 31 cub. met. Internal diameter 1870 & 1850 mm thickness 25 & 25.5 mm

Seamless, lap welded or riveted longitudinal joint Riveted Material M. Steel Range of tensile strength As per Rule Working pressure 25.0

IS A DONKEY BOILER FITTED? *Yes, two boilers* If so, is a report now forwarded? *Yes*

Is the donkey boiler intended to be used for domestic purposes only *No*

PLANS. Are approved plans forwarded herewith for Shafting No. *16/1/30, 20/3/30* Receivers *No* *16/1/30, 20/3/30* Separate Tanks   
Donkey Boilers *Yes* *26/4/30* General Pumping Arrangements *No* *20/3/30* 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: 14 sets of exhaust valves complete and 4 extra valves for same, 4 air inlet valves complete, 14 fuel valves complete and 8 extra valves & 16 seats for same, 1 cam roller with pin of each size for the valve gear, 1 cylinder liner, 1 cylinder cooling gear, 4 halves of crosshead brasses, 4 halves of crank pin brasses, 4 halves of main bearing brasses, 4 sets of piston rings for one piston, 1 propeller shaft with nut, 2 cast iron propellers. For the auxiliary engines: 3 sets of exhaust valves complete and 6 extra valves for same, 2 air inlet valves complete, 3 fuel valves complete and 3 extra valves & 6 seats for same, 2 starting air valves complete, 2 pistons, 5 sets of piston rings for one piston, 1 quidgeron pin with cross, 2 halves of crank pin brasses, 4 halves of main bearing brasses. For the Donkey boilers: 2 chuck valves, 2 safety valve springs, 15 ordinary & 5 stay tubes, spare parts for the fuel installation.*

The foregoing is a correct description,

AKTIEBOLAGET GOTAVERKEN  
*Nils A. Neelén*

Manufacturer.

Dates of Survey while building: During progress of work in shops - 1930: Sept 27, Oct 3, 25, 25, 29, 29, Nov 15, Dec 15, 16, 18, 23. 1931: Jan 2, 3, 9, 9, 12, 12, 13, 16, 17, 19, 19, 20, 21, 22, 22, 24, 24, 27, 28, 29, Feb 3, 3, 5, 6, 7, 9, 12, 19, 26, March 3, 9, 11, 13, 19, 23, 31, April 17, 28, 29.  
During erection on board vessel - 1931: Jan 26, 30, April 13, 16, 16, 20, 21, 22, 23, 28, 30, May 5, 7, 7, 9, 11, 12.  
Total No. of visits *68*

Dates of Examination of principal parts - Cylinders and Covers *2/31, 9, 11, 13, 23, 13, 19, 1/31* Rods  Connecting rods *23/12/30, 17/2/31*  
Crank shafts *15/12/30* Flywheel shaft  Thrust shafts *26/1/31, 31* Intermediate shafts *17/4/31* Tube shaft   
Screw shaft *23/4/31* Propeller *21/4/31* Stern tube *22/1/31* Engine seatings *30/1/31* Engines holding down bolts *13/4/31*  
Completion of fitting sea connections *21/4/31* Completion of pumping arrangements *11/5/31* Engines tried under working conditions *12/5/31*  
Crank shaft, Material *L.M. Steel* Identification Mark *FS. 702 & 710* Flywheel shaft, Material  Identification Mark *LLOYDS No. 725 & 726*  
Thrust shaft, Material *L.M. Steel* Identification Mark *FS. 629 & 630* Intermediate shafts, Material *L.M. Steel* Identification Marks *GA. 17.4.31*  
Tube shaft, Material  Identification Mark  Screw shaft, Material *L.M. Steel* Identification Mark *LLOYDS No. 2211, 2212 F.K. 17.11.30.*

Is the flash point of the oil to be used over 150° F. *No*  
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 *No*  
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.) *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. 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 three 2 cylinder, 4 stroke cycle, single acting oil engines with cylinder diam = 310 mm & stroke 350 mm, manufactured by Messrs. W. Gotaverken, port, each working 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. The machinery of this vessel is eligible in our opinion to be entered in the Register Book of this Society with notation of +LHC 5.31.*

[Working pressure of donkey boilers 180 lbs/sq in.]

The amount of Entry Fee *No 109:20* When applied for, *21st May 1931*  
Special *No 2033:84*  
Donkey Boiler Fee *£ 152:88* When received, *3. 6. 31*  
STARTING AIR RECEIVERS  
Travelling Expenses (if any) *£*

*A. Brander for self & E. Magnusson*  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **FRI. 29 MAY 1931**  
Assigned *+ L.M.C. 5.31 C.L.*

*Oil Eng. 2.25.180 lb*



Certificate (if required) to be sent to Surveyors Office, Gotaburg