

REPORT ON OIL ENGINE MACHINERY.

No. 7398

Received at London Office 20 NOV 1928

Date of writing Report 16th Nov. 1928 When handed in at Local Office 16th Nov. 1928 Port of GOTHENBURGNo. in Survey held at GOTHENBURG Date, First Survey 8th March Last Survey 8th Nov. 1928Reg. Book. (SUPPLEMENT) 91305 on the ^{Single} ~~Twin~~ ^{Triple} ~~Quadruple~~ Screw vessel "NIKE" Tons Gross 9827 Net 5514

Built at GOTHENBURG By whom built A.B. GÖTAVERKEN Yard No. 413 When built 1928

Engines made at GOTHENBURG By whom made A.B. GÖTAVERKEN Engine No. 789 When made 1928

Donkey Boilers made at GOTHENBURG By whom made A.B. LINDHOLMEN-MOTALA Boiler No. 2410 When made 1928

Brake Horse Power Owners PEDER A.B. TRANSOL Port belonging to GOTHENBURG

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

OIL 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/cm² Diameter of cylinders 21 1/2" [550 mm] Length of stroke 39 1/2" [1000 mm] No. of cylinders 16 No. of cranks 16

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 794 mm Is there a bearing between each crank Yes

Revolutions per minute 154 Flywheel dia. None Weight Means of ignition Fuel System Kind of fuel used Diesel oil

Crank Shaft, dia. of journals as per Rule 347 mm as fitted 350 mm Crank pin dia. 350 mm Crank Webs Mid. length breadth 620 mm Mid. length thickness 813 mm Thickness parallel to axis 197-213 mm

Flywheel Shaft, diameter as per Rule as fitted None Intermediate Shafts, diameter as per Rule as fitted 255 mm Thrust Shaft, diameter at collars as per Rule as fitted 300 mm

Tube Shaft, diameter as per Rule as fitted None Screw Shaft, diameter as per Rule as fitted 288 mm Is the shaft fitted with a continuous liner Yes

Bronze Liners, thickness in way of bushes as per Rule 16.4 mm as fitted 17.19 mm Thickness between bushes as per Rule 12.3 mm as fitted 16 mm 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 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 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 2445.93 sq. m

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

used Thickness of cylinder liners 2.75 mm Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled or lagged with

non-conducting material Both If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine Is a funnel

cooling Water Pumps, No. 2 rotary, 175 tons each 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 175 mm Can one be overhauled while the other is at work Yes

Pumps connected to the Main Bilge Line No. and size 2 direct driven pumps 22 tons each, 1 plunger bilge pump 22 tons, 1 electric bilge pump 22 tons, 1 steam bilge pump 22 tons

Ballast Pumps, No. and size The forward 60 tons steam piston pump, the after 100 tons electric rotary pump Lubricating Oil Pumps, including Spare Pump, No. and size 2 rotary pumps, 70 tons 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 Three 3 1/2" and two 2 1/2" [Two 2 1/2" from cofferdams in way of same]

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" from bilge pump & one 6" from ballast pump

Are all the Bilge Suction pipes in Holds and Tanks fitted with strum-boxes Yes Are the Bilge Suctions in the Machinery Spaces

fitted 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 Have they been tested as per Rule Yes

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and ull 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 120, 540 & 600 mm Stroke 440 mm Driven by Main engine

Auxiliary Air Compressors, No. 1 No. of stages 3 Diameters 65, 350 & 400 mm Stroke 170 mm Driven by Electric motor

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 as fitted 200 mm (See sketch report attached)

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 Yes What means are provided for cleaning their inner surfaces The receivers are cleaned 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. 4 Cubic capacity of each 2 of 175 & 2 of 350 litres Internal diameters 358 & 450 mm thickness 21 & 25.5 mm

Seamless, lap welded or riveted longitudinal joint Lap welded Material S.M. Steel Range of tensile strength 37.7-38.7 kg/cm² Working pressure by Rules 72.5 kg/cm²

Starting Air Receivers, No. 2 Total cubic capacity 2 x 15.5 = 31 cubic metres 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 45.2-48.8 kg/cm² Working pressure by Rules 26.1 kg/cm²

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

PLANS. Are approved plans forwarded herewith for Shafting *22/4/27 & 12/5/27* Receivers *2/4/27* Separate Tanks *30/1/28*
Donkey Boilers *30/6/27* General Pumping Arrangements *25/10/27 & 27/11/27* Oil Fuel Burning Arrangements *✓*

For the main engines with compressors & pumps:
SPARE GEAR *1 cylinder cover, 1 complete set of all valves, valve casings & springs etc for 1 cylinder and, in addition, 15 complete sets of exhaust valves with 4 extra valves & seats for same, 1 complete set of air inlet valve with 1 extra valve for same, 1 complete set of starting air valve & 7 complete sets of fuel valves with 8 extra valves & seats for 1 cylinder liner, 1 cylinder cooling jacket, 1 piston complete with piston rings & in addition 3 sets of piston rings for piston, telescopic cooling pipes for one piston, spare links for the chain driving cam shaft, 1 set of cylinder studs & nuts, 1 gudgeon pin, 4 halves of brasses for same, 4 crank pin bolts & nuts & 5 halves of brasses for the bearing, 4 main bearing bolts & nuts & 2 halves of main bearings, 1 set of bolts & nuts for a crank shaft 1 set of bolts & nuts for an intermediate shaft coupling, 1 propeller shaft with nut, 2 cast iron propellers, 1 roller with pin of each size, 1 complete set of springs for one engine & compressor, 1 set of piston rings of size used in the compressors, 1 set of suction & delivery valves for each size used in the compressors, 2 halves of gudgeon brasses for the compressors, 2 compressor crank pin bolts & nuts & 2 halves of crank pin brasses, 4 compressor main bearing bolts & nuts & 2 halves of main bearings, 1 set of all working part for a fuel pump, 1 set of HP air cooling coils, 1 set for the LP air cooler, 10 sets for LP air cooler, 8 bursting covers for the starting air piping, 2 sets for the compressor cooling jacket, 1 set of valves & seats for a bilge pump.*

For the manoeuvring air compressor:

1 set of piston rings of each size, 1 set of suction & delivery valves of each size, 1 bush for the HP gudgeon pin, 2 halves of brasses for the HP gudgeon pin, 2 crank pin bolts & nuts for the HP cylinder, 2 crank pin bolts & nuts for the LP cylinder & 2 halves of crank pin brasses for same, 1 HP air cooling coil.

For the small steam engine driven compressor: 1 set of piston rings, 1 set of suction & delivery valves of each size, 1 bush for the HP gudgeon pin, 2 halves of brasses for the HP gudgeon pin, 2 crank pin bolts & nuts for the HP cylinder, 2 crank pin bolts & nuts for the LP cylinder & 2 halves of crank pin brasses for same, 1 HP air cooling coil.

For the auxil. pumps: 2 wings for the 100 tons ballast pump, 1 set of suction & delivery valves for the bilge & sanitary pump, the bilge & ballast pumps in the pump room, 1 set of valves & seats for the donkey boiler feed pumps.

For the donkey boilers: 2 check valves, 2 safety valve springs, 12 ordinary & 8 stay tubes, 8 number of spare parts for the oil fuel arrangement.

General: 8 quantity of assorted bolts & nuts, 8 length of pipe of each size used for the fuel delivery and injection air pipes to the main & auxiliary cylinders & the air delivery from the main & aux. compressors to the vacuum with unions & flanges suitable for each.

The foregoing is a correct description,

Rees & Nicks

Manufacturer.

Dates of Examination of principal parts—Cylinders *30/6/28 7/13/28 3/24/28 30/6/28 7/13/28 27/10/28 8/24/28* Rods *✓* Connecting rods *8/5/28*
Crank shafts *16/5/28* Flywheel shaft *✓* Thrust shafts *7/8/28 13/9/28* Intermediate shafts *14/8/28* Tube shaft *✓*
Screw shaft *✓* Propellers *12/9/28* Stern tube *30/6/28* Engine seatings *24/5/28* Engines holding down bolts *19/7/28*
Completion of fitting sea connections *11/10/28* Completion of pumping arrangements *19/10/28* Engines tried under working conditions *4/11/28*
Crank shafts Material *L.M. Steel* Identification Mark *44045 270-71 27740-41 282210-37* Flywheel shaft, Material *✓* Identification Mark *✓*
Thrust shafts Material *L.M. Steel* Identification Mark *44045 270-71 27740-41 282210-37* Intermediate shafts, Material *L.M. Steel* Identification Marks *44045 270-71 27740-41 282210-37*
Tube shaft, Material *✓* Identification Mark *✓* Screw shaft, Material *L.M. Steel* Identification Mark *44045 270-71 27740-41 282210-37*

Is the flash point of the oil to be used over 150° F. *Yes*

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 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. Material of starting air vacuum as per test sheet attached.

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

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

Three 2-stroke cycle, single acting Diesel oil Engines, manufactured by Messrs. AB Atlas-Diesel of Stockholm &

Serial reports 22991, 22992 & 22993 has been fitted on board. Spare gear as per approved list of the 4th

1926 checked on board. These auxiliary engines are working electric dynamos of 66 kw. each.

An additional electric dynamo of 64 kw. driven by a compound steam engine of 9x15

diam and 8" stroke has been fitted. The main & auxiliary engines have been tested

under full working conditions on a 8 hours trial trip and found to work

satisfactorily.

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

Book of this Society with the notation of + LMC 11.28. Working pressure of Donkey Boilers 150 lb.

The amount of Entry Fee ... *Rs 109:20* When applied for, *16th Nov 1928*

Special ... *Rs 2023:84* When received, *28.12.1928*

Starting air vacuum fee ... *Rs 152:88*

Donkey Boiler Fee ... *Rs 152:88*

Travelling Expenses (if any) £ : :

Committee's Minute *TUE. 27 NOV 1928*

Assigned *+ LMC 11.28* Oil Engines

2 DB - 150 lb CL

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