

Rpt. 4b.

REPORT ON OIL ENGINE MACHINERY.

No. 6212

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Date of writing Report 2nd Oct 1925 When handed in at Local Office 2nd Oct 1925 Port of GOTHENBURG
 No. in Survey held at GOTHENBURG Date, First Survey 5th December, 1924 Last Survey 5th October 1925
 Reg. Book. 17935 on the Single Twin Triple Screw vessels "DELHI" Number of Visits 23
 Master ✓ Built at GOTHENBURG By whom built AKTIEB. LINDHOLMEN-ATAA Yard No. 923 When built 1925
 Engines made at STOCKHOLM By whom made AKTIEB. ATLAS-DIESEL Engine No. 50047 When made 1925
 Donkey Boilers made at LONGHUROUGH By whom made WALTER H. COLTMAN & CO. LD Boiler No. 4743 When made 1925
 Brake Horse Power ✓ Owners AKTIEB. SVENSKA OSTATIASKA KOHP Port belonging to GOTHENBURG
 Nom. Horse Power as per Rule 716 Is Refrigerating Machinery fitted for cargo purposes NO Is Electric Light fitted YES

OIL ENGINES, &c.—Type of Engines Two Polar Diesel oil Engines 2 or 4 stroke cycle 4 Single or double acting single
 Maximum pressure in cylinders 35.0 kg/cm² No. of cylinders 2x6=12 No. of cranks 2x6=12 Diameter of cylinders 630mm [24 13/16"]
 Length of stroke 1000mm [39 3/8"] Revolutions per minute 125 Means of ignition Diesel system Kind of fuel used ✓
 Is there a bearing between each crank ✓ Span of bearings (Page 92, Section 2, par. 7 of Rules) ✓
 Distance between centres of main bearings ✓ Is a flywheel fitted ✓ Diameter of crank shaft journals as per Rule
 Diameter of crank pins as per Rule Breadth of crank webs as per Rule Thickness of ditto as per Rule
 Diameter of flywheel shaft as per Rule Diameter of tunnel shaft as per Rule Diameter of thrust shaft as per Rule
 Diameter of screw shaft as per Rule Is the screw shaft fitted with a continuous liner the whole length of the stern tube Yes
 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 joints burned ✓
 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 ✓ If without liners, is the shaft arranged to run in oil ✓
 Type of outer gland fitted to stern tube ✓ Length of stern bush 1310mm Diameter of propeller 3580mm
 Pitch of propeller 3330mm No. of blades 4 state whether moveable NO Total surface 2x41=82 square feet
 Method of reversing Non-reversing Is a governor or other arrangement fitted to prevent racing of the engine when declutched ✓ Thickness of cylinder liners ✓
 Are the cylinders fitted with safety valves Yes Means of lubrication gear wheel pumps 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 The exhaust is led to a funnel
 No. of cooling water pumps 2 Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes No. of bilge pumps fitted to the main engines 2 Diameter of ditto Stroke
 Can one be overhauled while the other is at work Yes No. of auxiliary pumps connected to the main bilge lines 2 How driven Electric
 Sizes of pumps 30 tons, double acting plunger pumps No. and sizes of suction connected to both main bilge pumps and auxiliary bilge pumps:—In engine room Two 3" One 3" in tunnel
 and in holds, etc. Two 3" in 1st 3" in 2nd 3" in 3rd 3" in 4th 3" in 5th No. of ballast pumps 1 How driven Electric Sizes of pumps 150 tons rotary pump
 Is the ballast pump fitted with a direct suction from the engine room bilges Yes State size 6" Is a separate auxiliary pump suction fitted in Engine Room and size Yes, two 3 1/2" Are all the bilge suction pipes fitted with roses Yes Are the roses in Engine Room always accessible Yes
 Are the sluices on Engine Room bulkheads always accessible None fitted Are all connections with the sea direct on the skin of the ship Yes
 Are they valves or cocks Both Are they fired sufficiently high on the ship's side to be seen without lifting the floor plates NO by lifting of main plates ✓
 Are the discharge pipes 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 all pipes, cocks, valves and pumps in connection with the machinery accessible at all times Yes Are the bilge suction pipes, cocks and valves arranged so as to prevent any communication between the sea and the bilges Yes Is the screw shaft tunnel watertight Yes Is it fitted with a watertight door Yes
 If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork ✓

No. of main air compressors None No. of stages None Diameters None Stroke None Driven by None
 No. of auxiliary air compressors None No. of stages None Diameters None Stroke None Driven by None
 No. of small auxiliary air compressors None No. of stages None Diameters None Stroke None Driven by None
 No. of scavenging air pumps None Diameter None Stroke None Driven by None
 Diameter of auxiliary Diesel Engine crank shafts as per Rule 163.4mm as fitted 165mm Are the air compressors and their coolers made so as to be easy of access Yes
 IR RECEIVERS:—No. of high pressure air receivers 8 (in all) Internal diameter None Cubic capacity of each None
 material Seamless, lap welded or riveted longitudinal joint Range of tensile strength None
 thickness working pressure by Rules No. of starting air receivers 2 Internal diameter None
 Total cubic capacity Material Seamless, lap welded or riveted longitudinal joint None
 Range of tensile strength thickness Working pressure by rules None Is each receiver, which can be isolated, fitted with a safety valve as per Rule Can the internal surfaces of the receivers be examined What means are provided for cleaning their inner surfaces Is there a drain arrangement fitted at the lowest part of each receiver

of Visits 83.

IS A DONKEY BOILER FITTED? *Yes*

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

HYDRAULIC TESTS:—

DESCRIPTION.	DATE OF TEST.	WORKING PRESSURE.	TEST PRESSURE.	STAMPED.	REMARKS.
ENGINE CYLINDERS					
" " COVERS					
" " JACKETS.....					
" " PISTON WATER PASSAGES.....					
MAIN COMPRESSORS—1st STAGE.....					
" " 2nd "					
" " 3rd "					
AIR RECEIVERS—STARTING					
" " INJECTION					
AIR PIPES					
FUEL PIPES					
FUEL PUMPS					
SILENCER					
" " WATER JACKET	<i>19/6/24</i>	<i>✓</i>	<i>As per Rule</i>	<i>R</i>	
SEPARATE FUEL TANKS					

PLANS. Are approved plans forwarded herewith for shafting *19/6/24* Receivers *✓* Separate Tanks *✓* *Arrangement as app. for 1/5 Regia. 10/6/24.*

SPARE GEAR as per list approved on the 20th October, 1924, placed on board and in addition 1/2 set of auxil. bilge pump valves, 1 set of coupling bolts for the tunnel shafting, 1 propeller shaft, 2 propellers, 2 safety valve springs for the donkey boiler, 1 check valve with chest for the donkey boiler, 1 set of donkey boiler feed pump valves.

The foregoing is a correct description,
FOR INSTALLATION ONLY.

SIGNS AKTIEBOLAGET LINDHOLMEN-KOTALA
AVD.: LINDHOLMENS VERSTAD

Dates of Survey while building
During progress of work in shops - - *1924: Dec. 5, 8, March 5, May 7, June 19.*
During erection on board vessel - - *1925: March 12, April 12, 19, June 10, 11, 16, 20 Aug. 26, Sept. 8, 11, 17, 15, 24, 29, 30, Oct. 1, 5.*
Total No. of visits *93*

Dates of Examination of principal parts—Cylinders Covers Pistons Rods Connecting rods
Crank shaft Thrust shaft Tunnel shafts *5/3/25* Screw shaft *7/5/25* Propeller *7/5/25* Stern tube *7/5/25* Engine seatings *12/4/25*
Engines holding down bolts *5/24, 12/3/25* Completion of pumping arrangements *8/9/25* Engines tried under working conditions *1/10/25*
Completion of fitting sea connections *11/6/25* Stern tube *11/6/25* Screw shaft and propeller *31/8/25*
Material of crank shaft Identification Mark on Do. Material of thrust shaft Identification Mark on Do. *LLOYD'S 12022, 1301 GA 7.5.25*
Material of tunnel shafts *I.M. Steel* Identification Marks on Do. *see below* Material of screw shafts *I.M. Steel* Identification Marks on Do.

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. Identification marks: *spare prop. shaft.*
Harb. tunnel shafts. *LLOYD'S* *Nº 843, 842, 841, 816, 814* *Nº 12092, 12025, 12024, 12021, 918* *Nº 870*
GA. 5.3.25 *GA. 5.3.25* *GA. 7.5.25*

The main & auxiliary engines of this vessel which have been built under Special Survey of the Society's surveyor at Stockholm as per *Shm. reports* *Nº 2602, 2603, 2604, 2605, 2606* have been installed under our inspection and all the *To be continued.*

The machinery of this vessel is worthy in our opinion to be classed in the Register Book of this Society with the notation of *+LHC 10.25* being in a good and safe working condition. Working pressure of donkey boiler *85 lbs/p.*

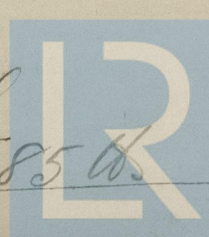
The amount of Entry Fee ... *£ 109:20* : When applied for, 19
Special ... *£ 403:31* :
Donkey Boiler Fee ... *£* :
Travelling Expenses (if any) *£* : *12/10/25*

V. Nilow *L. Brander*
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute
Assigned

+ Lmb. 10.25
Oil Engines *D.B. - 85 lbs/p.*

THES. 13 OCT 1925



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Foundation

Machinery of the Motorship "DELHI" N^o 17935 in the Register Book.

requirements of the Rules have been complied with.

The main engines have been tested under full working power on a twelve hours trial trip and proved to work satisfactorily both ahead and astern. The auxiliary engines have also been tested under full working power and found in good condition.

The auxiliary machinery consists of:

Three two cylinders, 4-stroke cycle, single acting Diesel oil engines, as per shw. reports N^os 2604, 2605, 2606 each working a dynamo of 66 kw. 220 volts and 300 amperes which have to supply the electric current motive power to the following electric motors:

Two 7.5 HP shunt wound motors working the bilge pumps,

One 20 " " " motor " " bilge & ballast pump.

Two 18 " " " motors " " cooling water pumps,

One 15 " " " motor " " oil pump to the daily fuel tanks,

One 8 " " " " " " sanitary pump.

Two 10 " " " motors " " lubricating oil pumps,

Two 7.5 " series " " " " main engine turning gears,

One 12 " shunt " motor " " } refrigerating machinery (stores)

One 3.5 " " " " " " }

One 9 " " " " " " drilling machine & turning lathe.

Two 35 " compound " motors " " windlass,

Twelve 25 " series " " " " winches,

Two 20 " shunt " " " " steering engine.

Also electric current for the lighting purpose with the voltage reduced to 110 volts after having passed the transformer.

Two 30 tons plunger pumps for bilge discharging.

One 150 " rotary ballast & bilge pump.

Two 180 " centrifugal cooling water pumps.

Two 2x18 " rotary lubricating oil pumps.

One 50 " " oil pump to daily fuel tanks.

One 30 " centrifugal pump for sanitary purpose.

One 75x40x75% donkey boiler feed pump.

This vessel is also fitted with wireless telegraphy of the Telefunken system.