

REPORT ON OIL ENGINE MACHINERY.

No. 1392

10 SEP 1935

Received at London Office

Date of writing Report

9th Sept. 1935

When headed in at Local Office

9th Sept. 1935

Port of

Mahmra

No. in Survey held at Reg. Book.

26209

Single
Twin
Triple
Quadruple

Screw vessel "HAVPRINS"

Date, First Survey

16th Oct. 1934

Last Survey

5th Sept. 1935

Number of Visits

17

It at Mahmra By whom built Kockmms M. V. Aktrel. Yard No. 183 When built 1935.
 Lines made at Mahmra By whom made Kockmms M. V. Aktrel. Engine No. 107 When made 1935.
 Key Boilers made at Mahmra By whom made Kockmms M. V. Aktrel. Boiler No. 927/928 When made 1935.
 Horse Power 3450 Owners Aktrel. Harprins Port belonging to Oslo
 Horse Power as per Rule 1166.8 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes
 Use for which vessel is intended 23/8 43/16

Tons { Gross 8066
 Net 4754

ENGINES, &c. Type of Engines MAN D6 In 6/110 Solid injection 2 or 4 stroke cycle 2 Single or double acting Double

Maximum pressure in cylinders 45 kg/cm² Diameter of cylinders 600 mm Length of stroke 1100 mm No. of cylinders 6 No. of cranks 6
 No. of bearings, adjacent to the Crank, measured from inner edge to inner edge 860 mm Is there a bearing between each crank Yes
 Revolutions per minute 96-100 Flywheel dia. 2093 mm Weight 6300 kg Means of ignition Diesel system Kind of fuel used Heavy oil
 Crank Shaft, dia. of journals as per Rule 397 mm Crank pin dia. 420 mm Crank Webs Mid. length breadth 700 mm Thickness parallel to axis 265 mm
 as fitted 420 mm Mid. length thickness 265 mm Thickness around eye-hole 200 mm
 Wheel Shaft, diameter as per Rule 397-362 Intermediate Shafts, diameter as per Rule 345 mm Thrust Shaft, diameter at collars as per Rule 362 mm
 as fitted 420-364 as fitted 345 mm as fitted 364 mm
 Propeller Shaft, diameter as per Rule 281 mm Is the shaft fitted with a continuous liner Yes
 as fitted 281 mm as fitted 390 mm
 Liners, thickness in way of bushes as per Rule 19.2 mm Thickness between bushes as per rule 14.4 mm Is the after end of the liner made watertight in the
 as fitted 20 mm as fitted 15 mm
 If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner Yes
 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 Yes 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 1750 mm
 Propeller, dia. 5096 mm Pitch 4132 mm No. of blades 4 Material Bronze whether Moveable No Total Developed Surface 92.57 sq. feet
 Method of reversing Engines MAN method Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Means of lubrication
 method Thickness of cylinder liners 41.5 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 funnel
 Cooling Water Pumps, No. 2 Each of 190 T/H 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. 3 Diameter 7 1/2" x 8" x 10" Stroke 10" Can one be overhauled while the other is at work Yes
 Pumps connected to the Main Bilge Line No. and Size 3. One 7 1/2" x 8" x 10" Imp. of 100 T/H 1 of 40 T/H 1 of 30 T/H 1.6" x 8" x 6" of 50 T/H 1.6" x 6" x 6" of 30 T/H
 How driven Steam driven Elec. driven Steam driven Steam driven
 Distast Pumps, No. and size 1. 7 1/2" x 8" x 10" Imp. of 100 T/H Lubricating Oil Pumps, including Spare Pump, No. and size 2. Each of 100 mi³/H
 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 3-4" 1-4" in the after cofferdam. 3-3 1/2" in the main pump room.
 Holds, &c. 2-3 1/2" in the dry cargo hold forward, 1-3 1/2" in the pump room forward. 1-3 1/2" in the fwd. cofferdam.
 Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1-5"
 Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum plates Yes Are the Bilge Suctions in the Machinery Spaces
 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 or by lifting special covers 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 Yes How are they protected Yes
 What pipes pass through the deep tanks After cofferdam suction pipe 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
 If 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. None No. of stages 2 Diameters 300-110 mm Stroke 220 mm Driven by Aux. engine
 Auxiliary Air Compressors, No. 2 No. of stages 2 Driven by Small generator
 Small Auxiliary Air Compressors, No. 1 No. of stages 2 Driven by steam engine
 Scavenging Air Pumps, No. 2 (Sanderm) Diameter 1380 mm Stroke 850 mm Driven by Main engine
 Auxiliary Engines crank shafts, diameter as per Rule 139 mm as fitted 155 mm marks: LLOYD'S 9239/40 260 dia 36 stroke P.K. 13-7-34

RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule

Can the internal surfaces of the receivers be examined Yes What means are provided for cleaning their inner surfaces Yes
 Is there a drain arrangement fitted at the lowest part of each receiver Yes
 Small Starting High Pressure Air Receivers, No. 1 Cubic capacity of each 200 litres Internal diameter 438 mm thickness 9.5 mm
 Seamless, lap welded or riveted longitudinal joint Seamless Material Steel Range of tensile strength 29.4 T/0" Working pressure by Rules 41 kg/cm²
 Starting Air Receivers, No. 1 Total cubic capacity 15 mi³ Internal diameter 1850 mm thickness 30 mm
 Seamless, lap welded or riveted longitudinal joint Riveted Material Steel Range of tensile strength 44.9-47.7 kg/mm² Working pressure by Rules 30.73 kg/cm²

004887-004892-0109 1/2

M/T 'HAVPRINS', No. 26239 in the Register Book.

Spare gear (cont.)-
Antibary oil engines- 1 cylinder cover, 1 set of studs and nuts for one cylinder cover. 4 complete exhaust valves and 2 extra valves, seats and spindles. 1 complete air inlet valve. 2 complete starting air valves. 1 safety valve. 3 complete fuel nozzles with pipes and 15 extra nozzles. 3 plungers, liners, valves and seats and 1 set of other working parts for fuel pumps. 1 cylinder cover, 2 pistons, 1 gudgeon pin and bush bearing. 6 sets of piston rings for one piston, 1 crank pin bearing with bolts and nuts. 1 main bearing with bolts and nuts. 1 set of springs and 2 sets of packings for one motor. 1 set of rollers for the valve gear, 1 set of spur wheels for the cam shaft drive. 1 wheel for the lubricating oil pump.

Air compressors (antibary)- 1 set of piston rings for the H.P. and L.P. pistons for one compressor. 1 set of suction and pressure valves for each stage for one compressor.

Pumps- 1 set of valves for each type of bilge pumps. 1/2 set of valves for oil fuel transfer and ballast pumps. 1 piston rod (steam and oil end). 1 set of piston rings and 1 set of valves for the cargo pumps.

General- A quantity of assorted nuts and bolts. Lengths of pipes for the fuel delivery to the main and auxiliary power cylinders and the air delivery from the auxiliary compressors to the receivers, with unions and flanges.

Donkey boiler- 2 safety valve springs. 2 stay and 6 ordinary tubes. 2 feed check valves. 1/2 set of feed pump valves. 1 set of oil burners and 1/2 extra nozzles for the oil fuel burning arrangement.

In addition to the pumps mentioned above the following are also installed, viz:-

- In the motor space-
 1 cooling water pump for aux. engine of 50 T/H. Electric driven.
 1 sanitary pump of 20 T/H. " "
 1 rotary oil transfer pump of 23 mi³/H. " "
 1 duplex " " " 20 mi³/H. Steam driven.
 1 rotary fresh water pump of 2 T/H. Electric driven.
 Two nuts of oil fuel pressure pumps for donkey boilers.
 Two feed pumps for donkey boilers 6" x 4" x 6" Duplex.

- In main pump room-
 2 cargo pumps 16" x 14" x 18" Duplex. Steam driven.
 1 fire-extinguishing pump.
In pump room forward-
 1 oil transfer pump 6" x 6" x 6" Duplex. Steam driven.

Assigned + dmc 935
 20th 14/11
 C.L. all Engines
 Aclunden
 Engineer Surveyor to Lloyd's Register of Shipping.

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

PLANS. Are approved plans forwarded herewith for Shafting 12/2 & 7/3-1934 Receivers 5/4 & 12/4-1934 Separate Tanks 29/10-1934
 (If not, state date of approval)
 Donkey Boilers 15/1-1934 General Pumping Arrangements 12/2 & 12/4-1934 Oil Fuel Burning Arrangements 29/10-1934

SPARE GEAR Main engines- 2 top and 3 bottom cylinder covers, 6 complete top and 12 bottom fuel nozzles and 1 set of extra nozzles for the whole motor, 3 lengths of fuel pipes with connections, 2 complete starting air valves, 2 safety valves, 2 indicator valves, 5 sets of plungers, liners, valves and seats for fuel pumps and 1 complete fuel pump, 6 sets of piston rod packings, 12 top and 12 bottom cylinder cover studs and nuts, 1 top and 1 bottom cylinder liner, 2 pistons, 1 piston rod, 4 sets of piston rings for one piston, 6 telescopic pipes with packings for piston cooling. 4 main bearing bolts and nuts and a pair of bearings. 2 crank pin bearing bolts and nuts and a bearing. 1 complete crosshead bearing (4 valves) with bolts. 1 set of coupling bolts for crank and intermediate shafts. 1 propeller shaft. 1 castiron propeller. 2 suction and 2 delivery valves and 1 set of piston rings for the scavenge pump. 1 set of springs for the whole motor. 1/2 set of pads for the thrust bearing. Packings etc.

The foregoing is a correct description, Yes ✓
KÖCKUMS MEKANISKA VERKSTADS
AKTIE-BOLAG
T. A. Holmström Manufacturer.

(Continued on sheet II)

Dates of Survey	14/10, 23/10, 31/10, 7/11, 14/11, 21/11, 28/11, 5/12, 12/12, 19/12, 26/12, 2/1, 9/1, 16/1, 23/1, 30/1, 6/2, 13/2, 20/2, 27/2, 6/3, 13/3, 20/3, 27/3, 3/4, 10/4, 17/4, 24/4, 1/5, 8/5, 15/5, 22/5, 29/5, 5/6, 12/6, 19/6, 26/6, 3/7, 10/7, 17/7, 24/7, 31/7, 7/8, 14/8, 21/8, 28/8, 4/9, 11/9, 18/9, 25/9, 2/10, 9/10, 16/10, 23/10, 30/10, 6/11, 13/11, 20/11, 27/11, 4/12, 11/12, 18/12, 25/12, 1/1, 8/1, 15/1, 22/1, 29/1, 5/2, 12/2, 19/2, 26/2, 3/3, 10/3, 17/3, 24/3, 31/3, 7/4, 14/4, 21/4, 28/4, 5/5, 12/5, 19/5, 26/5, 2/6, 9/6, 16/6, 23/6, 30/6, 7/7, 14/7, 21/7, 28/7, 4/8, 11/8, 18/8, 25/8, 1/9, 8/9, 15/9, 22/9, 29/9, 6/10, 13/10, 20/10, 27/10, 3/11, 10/11, 17/11, 24/11, 1/12, 8/12, 15/12, 22/12, 29/12, 5/1, 12/1, 19/1, 26/1, 2/2, 9/2, 16/2, 23/2, 30/2, 6/3, 13/3, 20/3, 27/3, 3/4, 10/4, 17/4, 24/4, 31/4, 7/5, 14/5, 21/5, 28/5, 4/6, 11/6, 18/6, 25/6, 2/7, 9/7, 16/7, 23/7, 30/7, 6/8, 13/8, 20/8, 27/8, 3/9, 10/9, 17/9, 24/9, 1/10, 8/10, 15/10, 22/10, 29/10, 5/11, 12/11, 19/11, 26/11, 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