

REPORT ON MACHINERY.

No. 1716
MON. OCT. 15 1917.

Received at London Office

Date of writing Report 24 Sept 1917 When handed in at Local Office 1917 Port of Stockholm
 Date, First Survey 5th July 1916 Last Survey 13th Sept 1917
 Survey held at Stockholm (Number of Vents 21)
 on the motor vessel no. 1 Tons } Gross
 } Net
 Built at Fevig Areal, Norway By whom built A. S. Radolfs Verft When built 1917
 Engines made at Stockholm By whom made Messrs J. & C. G. Bolinders Co. Ltd. when made 1917
 (Cyl. nos. 12526/29, Christiania order no. 1354)
 By whom made _____ when made _____
 Owners M/S. Motorart Port belonging to Christiania
 Is Refrigerating Machinery fitted for cargo purposes _____ Is Electric Light fitted _____

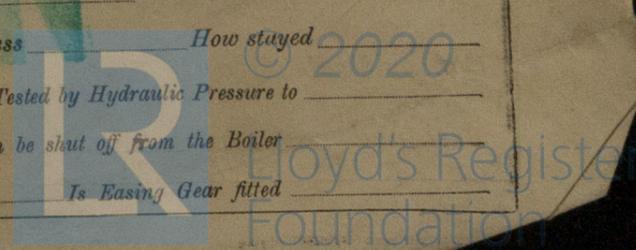
ENGINES, &c.—Description of Engines Bolinder two stroke cycle reversible with air injection. No. of Cylinders 4 No. of Cranks 4
 Length of Stroke 410 mm. Revs. per minute 250 Dia. of Screw shaft _____ as per rule _____ Material of screw shaft _____
 Is the after end of the liner made water tight _____
 If the liner is in more than one length are the joints burned _____ If the liner does not fit tightly at the part _____
 Is the space charged with a plastic material insoluble in water and non-corrosive _____ If two _____
 Length of stern bush _____
 Dia. of Crank shaft journals _____ as per rule 156 mm. Dia. of Crank pin 160 mm. Size of Crank webs 220 mm. Dia. of thrust shaft under _____
 as fitted 160 mm.
 Dia. of screw _____ Pitch of Screw _____ No. of Blades _____ State whether moceable _____ Total surface _____
 Diameter of ditto 85 mm. Stroke 28 mm. Can one be overhauled while the other is at work _____
 Diameter of ditto 110 mm. Stroke 130 mm. Can one be overhauled while the other is at work _____
 No. and size of Suctions connected to both Bilge and Donkey pumps _____
 In Holds, &c. _____

Connected to condenser, or to circulating pump _____ Is a separate Donkey Suction fitted in Engine room & size _____
 Are the roses in Engine room always accessible _____ Are the sluices on Engine room bulkheads always accessible _____
 Are they Valves or Cocks _____
 Are the Discharge Pipes above or below the deep water line _____
 Are the Blow Off Cocks fitted with a spigot and brass covering plate _____
 How are they protected _____
 Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times _____
 Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges _____
 Is it fitted with a watertight door _____ worked from _____

BOILERS, &c.—(Letter for record _____) Manufacturers of Steel _____
 Is Forced Draft fitted _____ No. and Description of Boilers _____
 Tested by hydraulic pressure to _____ Date of test _____ No. of Certificate _____
 Area of fire grate in each boiler _____ No. and Description of Safety Valves to _____
 Are they fitted with easing gear _____
 Mean dia. of boilers _____ Length _____ Material of shell plates _____
 Are the shell plates welded or flanged _____ Descrip. of riveting: cir. seams _____
 Working pressure of shell by rules _____ Size of manhole in shell _____
 No. and Description of Furnaces in each boiler _____ Material _____ Outside diameter _____
 Description of longitudinal joint _____ No. of strengthening rings _____
 Thickness: Sides _____ Back _____ Top _____ Bottom _____
 Working pressure by rules _____
 If stays are fitted with nuts or riveted heads _____ Working pressure by rules _____
 End plates in steam space: _____
 Working pressure by rules _____ Material of stays _____
 Working pressure of plate by rules _____
 Mean pitch of stays _____
 Working pressures by rules _____ Girders to Chamber tops: Material _____ Depth and _____
 Number and pitch of stays in each _____
 % of strength of joint _____
 Description of longitudinal joint _____ Diam. of rivet holes _____
 How stayed _____
 Tested by Hydraulic Pressure to _____

SUPERHEATER. Type _____ Date of Approval of Plan _____
 Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler _____
 Pressure to which each is adjusted _____ Is Easing Gear fitted _____

W425-0110 (112)



IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building: During progress of work in shops -- 5.24.17, 14.15.25.8, 21.28.9, 1916, 22.29.11, 28.1.19, 14.15, 4.14.16, 12.16.17, 29.7.18, 4.7.13/9, 1917
 During erection on board vessel ---
 Total No. of visits 2/1

Is the approved plan of main boiler forwarded herewith

Dates of Examination of principal parts—Cylinders 29.8.1917 Slides 29.8.1917 Covers 29.8.1917 Pistons 29.8.1917 Rods 29.8.1917
 Connecting rods 14.6.17 Crank shaft 7.13.1917 Thrust shaft 7.13.1917 Tunnel shafts Screw shaft Propeller

Stern tube Steam pipes tested Engine and boiler seatings Engines holding down bolts

Completion of pumping arrangements Boilers fixed Engines tried in shops 29.8.1917

Completion of fitting sea connections Stern tube Screw shaft and propeller

Starting air receiver Injection air receiver
 Main boiler safety valves adjusted 7/9 1917 Thickness of adjusting washers 7/9 1917

Material of Crank shaft S.M. Steel Identification Mark on Do. 2681 Lloyd's No. 7.9.17 Material of Thrust shaft S.M. Steel Identification Mark on Do. 2681 Lloyd's No. 7.9.17

Material of Tunnel shafts Identification Marks on Do. Material of Screw shafts Identification Marks on Do.

Material of Steam Pipes Solid drawn copper Test pressure 60 Atm.
 Is an installation fitted for burning oil fuel Is the flash point of the oil to be used over 150°F.

Have the requirements of Section 49 of the Rules been complied with

Is this machinery duplicate of a previous case Yes If so, state name of vessel (See Mem. report no. 445)

General Remarks (State quality of workmanship, opinions as to class, &c. (See appended sheet))

Material of compressor crank shaft S.M. Steel Identification mark on ditto Lloyd's No. 2681 Skm. 7.9.17

The amount of Entry Fee ... £	:	:	When applied for,
Special For survey in Lloyd's only as per special arrangement with the Registrar General	8	9:10	24 Sept. 1917
Donkey Boiler Fee ... £	:	:	When received,
Travelling Expenses (if any) £	:	:	19

Committee's Minute

Assigned

A. Bakson
 Engineer Surveyor to Lloyd's Register of Shipping.

Stockholm

Continuation of Report No. 1716 dated 24 September 1917 on the

CYLINDER 240 B. H. P. motor, Cyl. Nos 12526/29

The designs of the crank & thrust shafts and the connecting rods of this type and size of Bolinder Motor have been submitted and approved (See Secretary's letters E. 19.2.15, 2.10.15).

These shafts and connecting rods have been manufactured at the Sandviken and Björneborg Steel Works in accordance with the Rules. They have been inspected while being roughturned and finished and found good and sound. Their materials have been tested by the undersigned and found to fill Rule Requirements.

The cylinders, of cast iron, have been examined and found sound. Thickness of cylinderwalls stated to be 26 mm. and of waterjackets 14 mm. Cylinders tested with hydraulic pressure to 529 lbs per sq. inch or twice the working pressure of 18 Atm. and found tight. They have been tested on upper flange of each cylinder: Lloyd's Test 529 lbs. 7.9.17.A Their waterjackets have been tested to 50 lbs and found tight.

The compressor cylinders (2 stage) and their waterjackets have been tested: H. P. cyl. to 60 Atm., L. P. cyl. to 16 Atm., or twice the working pressures, and waterjackets to 50 lbs and all found tight.

The starting air receiver, of low tensile S. M. S. plates, lapwelded by the ordinary »water gas» method, is manufactured at the Avesta Steel Works, who have also manufactured and rolled the steel. Length of receiver 2000 mm.; outside diam. 450 mm., platethickness 8 mm. Plan submitted and approved (See Secretary's letter E. 8.3.16). The steel material has been tested by the undersigned and found good, and the receiver been tested with hydraulic pressure to 30 Atm. or twice the working pressure and found sound and tight. It has been stamped as follows:

Lloyd's Test 30 Atm.
 Working Pr. 15 Atm.
 No. 2/22 Skm. 7.9.17.A

The injection air receiver, of solid drawn S. M. S. tube, is manufactured at the Avesta Steel Works from tube, manufactured at the Storfors Works. Length of receiver 1265 mm., outside diam. 152 mm., platethickness 4.5 mm. Plan submitted and approved (See Secretary's letter E. 15.1.17). The material has been tested by the undersigned and found good, and the receiver tested by me with hydraulic pressure to 60 Atm. or twice the working pressure and found sound and tight. It has been stamped as follows:

Lloyd's Test 60 Atm.
 Working Pr. 30 Atm.
 No. 2/23 Skm. 7.9.17.A

The motor has been tried in shop under full power in my presence and found to give an effect at normal load and 250 revolutions of B. H. P. It has also been tried with a continuous overload at B. H. P. and found to work well.

The Society's Rules with regard to the details of construction, fitting of valves, lubrication, accessibility, etc., have been adhered to so far as concerns the motor itself. The remaining requirements will have to be attended to at the fitting of the motor in ship, if a classed vessel.

I am of opinion, that this motor is of superior material and workmanship, and as it has been designed and constructed under my special supervision, I have respectfully to submit, that it will be eligible to be classed *LMC, as soon as it has been fitted in classed vessel to the satisfaction of the Society's Surveyors.

A. Bakson
 Engineer Surveyor to Lloyd's Register of Shipping.

RETAIN

Certificates (if required) to be sent to the Registrar General or below the space for Committee's Minute.