

Copy for New York office.

Rpt. 4.

Please Attach to Baltimore Report No 2055
REPORT ON MACHINERY. No. 1651.

Date of writing Report 31st Jan. 1917. When handed in at Local Office

Received at London Office 1 MAY 1917

No. in Survey held at Stockholm
Reg. Book.

Port of Stockholm
Date, First Survey 3rd June 1916 Last Survey 27th Oct. 1916.
(Number of Visits 19)

Supp. on the Twin Screw Motor Vessel "Holden Evans"

Master W. Habel Built at Baltimore By whom built Baltimore Dry Dock & Shipbuilding Co.,
Tons { Gross 3253
Net 2025
When built 1916

Engines made at Stockholm By whom made Messrs. J. & C. G. Rydberg & Co. Ltd.
Boilers made at Red Bank Md. By whom made (Cyl. nos. 1523/1571 - Chromania order no. 1058)
The Roberts Boiler Co. when made 1917

Registered Horse Power 500 Owners Aktieskeppet Motor Tank (Chr. Hannevig Ager.) Port belonging to Wilmington Del.

Nom. Horse Power as per Section 28 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

Engines, &c.—Description of Engines Cylinder two stroke cycle, reversible No. of Cylinders 4 No. of Cranks 4

Dia. of Cylinders 520 mm. Length of Stroke 750 mm. Revs. per minute 160 Dia. of Screw shaft as per rule Material of screw shaft

Is the screw shaft fitted with a continuous liner the whole length of the stern tube Is the after end of the liner made water tight

Is the propeller boss 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 Length of stern bush

Dia. of Tunnel shaft as per rule Dia. of Crank shaft journals as per rule 235 mm. Dia. of Crank pin 240 mm. Size of Crank webs 330 x 134 mm. Dia. of thrust shaft under

collars 230 mm. Dia. of screw Pitch of Screw No. of Blades State whether moveable Total surface

No. of Feed pumps 2 Diameter of ditto 130 mm. Stroke 66 mm. Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 160 mm. Stroke 66 mm. Can one be overhauled while the other is at work Yes

No. of Donkey Engines Sizes of Pumps No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room In Holds, &c.

No. of Bilge Injections sizes Connected to condenser, or to circulating pump Is a separate Donkey Suction fitted in Engine room & size

Are all the bilge suction pipes fitted with roses Are the roses in Engine room always accessible Are the sluices on Engine room bulkheads always accessible

Are all connections with the sea direct on the skin of the ship Are they Valves or Cocks

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Are the Discharge Pipes above or below the deep water line

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Are the Blow Off Cocks fitted with a spigot and brass covering plate

What pipes are carried through the bunkers 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

Notes of examination of completion of fitting of Sea Connections of Stern Tube Screw shaft and Propeller

Is the Screw Shaft Tunnel watertight Is it fitted with a watertight door worked from

Boilers, &c.—(Letter for record) Manufacturers of Steel

Total Heating Surface of Boilers Is Forced Draft fitted No. and Description of Boilers

Working Pressure Tested by hydraulic pressure to Date of test No. of Certificate

Is each boiler be worked separately Area of fire grate in each boiler No. and Description of Safety Valves to

each boiler Area of each valve Pressure to which they are adjusted Are they fitted with easing gear

Smallest distance between boilers or uptakes and bunkers or woodwork Mean dia. of boilers Length Material of shell plates

Thickness Range of tensile strength Are the shell plates welded or flanged Descrip. of riveting: cir. seams

Seams Diameter of rivet holes in long. seams Pitch of rivets Lap of plates or width of butt straps

Percentages of strength of longitudinal joint rivets Working pressure of shell by rules Size of manhole in shell

of compensating ring No. and Description of Furnaces in each boiler Material Outside diameter

Thickness of plates crown bottom Description of longitudinal joint No. of strengthening rings

Working pressure of furnace by the rules Combustion chamber plates: Material Thickness: Sides Back Top Bottom

No. of stays to ditto: Sides Back Top If stays are fitted with nuts or riveted heads Working pressure by rules

Material of stays Diameter at smallest part Area supported by each stay Working pressure by rules End plates in steam space:

Material Thickness Pitch of stays How are stays secured Working pressure by rules Material of stays

Diameter at smallest part Area supported by each stay Working pressure by rules Material of Front plates at bottom

Thickness Material of Lower back plate Thickness Greatest pitch of stays Working pressure of plate by rules

Diameter of tubes Pitch of tubes Material of tube plates Thickness: Front Back Mean pitch of stays

across wide water spaces Working pressures by rules Girders to Chamber tops: Material Depth and

Thickness of girder at centre Length as per rule Distance apart Number and pitch of stays in each

Working pressure by rules Superheater or Steam chest; how connected to boiler Can the superheater be shut off and the boiler worked

Material Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet

Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness

Reinforced with rings Distance between rings Working pressure by rules End plates: Thickness How stayed

Working pressure of end plates Area of safety valves to superheater Are they fitted with easing gear

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 -- 5.5.6.20.22.30/6; 5.14.29/7; 2.4.7.15.26/8; 5.19.2/9; 14.27/10.1916.
During erection on board vessel ---
Total No. of visits 19

Is the approved plan of main boiler forwarded herewith

Dates of Examination of principal parts—Cylinders 14.27/10.1916 (Silencers not yet fitted) Covers 14.27/10.1916 Pistons 14.27/10.1916 Rods 2/9; 14.27/10.1916
Connecting rods 14.27/10.1916 Crank shaft 2/9; 14.27/10.1916 Thrust shaft 2/9; 14.27/10.1916 Tunnel shafts 2/9; 14.27/10.1916 Screw shaft 2/9; 14.27/10.1916 Propeller 2/9; 14.27/10.1916
Stern tube Steam pipes tested Engine and boiler seatings Engines holding down bolts
Completion of pumping arrangements Boilers fixed Injection air receiver Engines tried in shop under steam 14/10.1916.
Starting air receiver Thickness of adjusting washers 5.6/18/10.1916.
Main boiler safety valves adjusted 5.6/18/10.1916.
Material of Crank shaft S.M. Steel Identification Mark on Do. Lloyd's No. 2427
Material of Thrust shaft S.M. Steel Identification Mark on Do. Lloyd's No. 2427
Material of Tunnel shafts Identification Marks on Do. Lloyd's No. 2427
Material of Screw shafts Identification Marks on Do. Lloyd's No. 2427
Material of Pipes Solid drawn copper Test pressure 60 atm; 50 lbs. per sq. inch.
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 Gen. Report no. 1650.

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 Do. Lloyd's No. 2427

The above engine has been installed in this vessel at Baltimore as the Port Main engine. Engine properly secured & tried at full speed & found to work satisfactorily.

Please note. This report received after first entry report had been despatched

H.A. Stewart

The amount of Entry Fee ... £ : : When applied for,
Special for survey in ship 17 : 12 : 10 19 Feb. 1917
Donkey Boiler Fee ... £ : : When received,
Travelling Expenses (if any) £ : : 19.

Committee's Minute New York 22nd March 1917

Assigned See Balto. Rpt No 2055

of Stockholm

Continuation of Report No. 1651 dated 31st January 1917 on the

CYLINDER 500 B. H. P. motor, Cyl. Nos 11568/71. Now fitted as Port Main Engine on twin screw vessel "Holden Evans" Baltimore Report No 2055.

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 letter E. 17.9.15; 21.10.15; 10.2.16.).

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 32 mm. and of waterjackets 18 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. 7.10.16. 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 2575 mm.; outside diam. 600 mm., platethickness 9 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. 2081 Skm. 8.10.16. A

The injection air receiver, of low tensile plate S. M. S. tube, is manufactured at the Avesta Steel Works, who have also manufactured and rolled the steel. Length of receiver 1400 mm.; outside diam. 230 mm., platethickness 7 mm. Plan submitted and approved (See Secretary's letter E. 15.3.16.). 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. 2082 Skm. 8.10.16. A

The motor has been tried in shop under full power in my presence and found to give an effect at normal load and 160 revolutions of 500 B. H. P. It has also been tried with a continuous overload at 550 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, and the silencers have been examined and tested.

A. G. SAKSON
Engineer Surveyor to Lloyd's Register of Shipping.

Note: On the 15th Febr. 1917, the silencers, with waterjackets, of this engine were tested with hydraulic pressure to 50 lbs. per square inch and found tight.

A. G. SAKSON

A. G. SAKSON
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping
Assisted by Mr. V. Scheel