

REPORT ON MACHINERY.

Date of writing Report 19 When handed in at Local Office 10/3 to 20 Port of Hull Received at London Office FRI. MAR. 12. 1920
 No. in Survey held at Reg. Book. Hull. Date, First Survey Dec 31/18 Last Survey Feb. 25. 1920
 on the S. T. ROBERT MURRAY. (Number of Visits 30)
 Master Built at Selby By whom built Lockhart & Sons Ltd Tons Gross 324 Net 148
 Engines made at Hull By whom made Has & Holmes & Co Ltd (1919) when made 1919
 Boilers made at Hull By whom made do 1919 when made 1919
 Registered Horse Power Owners British Admiralty Port belonging to Hull.
 Nom. Horse Power as per Section 28 87 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No

ENGINES, &c.—Description of Engines Triple expansion No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 13-23-37 Length of Stroke 26 Revs. per minute 115 Dia. of Screw shaft as per rule 8.29 Material of screw shaft Steel
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube No Is the after end of the liner made water tight in 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 No liners Vickers type Length of stern bush 36
 Dia. of Tunnel shaft as per rule 7.04 Dia. of Crank shaft journals as per rule 7.39 Dia. of Crank pin 7 1/2 Size of Crank webs 4 1/2 x 11 Dia. of thrust shaft under collars 7 1/2 Dia. of screw 9-7 1/2 Pitch of Screw 11-0 No. of Blades 4 State whether moveable No Total surface 33 sq ft
 No. of Feed pumps one Diameter of ditto 2 5/8 Stroke 14 3/4 Can one be overhauled while the other is at work
 No. of Bilge pumps one Diameter of ditto 2 5/8 Stroke 14 3/4 Can one be overhauled while the other is at work
 No. of Donkey Engines one & ejector Sizes of Pumps 6 x 4 1/2 x 6 No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room two 2" dia In Holds, &c. one 2" dia in each compartment
 also all suction also connected to ejector
 No. of Bilge Injections one sizes 3 1/2 Connected to condenser, or to circulating pump Clump a separate Donkey Suction fitted in Engine room & size 3 ejector
 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 Yes
 Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Both
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Yes 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 the Blow Off Cocks fitted with a spigot and brass covering plate Yes
 What pipes are carried through the bunkers Cold motion & wind steam How are they protected Strong casing
 Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings 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 Is it fitted with a watertight door worked from

BOILERS, &c.—(Letter for record S) Manufacturers of Steel Port Talbot & Spencer & Sons I.S.B.
 Total Heating Surface of Boilers 1440 sq ft Is Forced Draft fitted No No. and Description of Boilers one single ended water Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs Date of test 24/10/19 No. of Certificate 3401
 Can each boiler be worked separately Area of fire grate in each boiler 48 sq ft No. and Description of Safety Valves to each boiler two spring loaded Area of each valve 4.9 sq ft Pressure to which they are adjusted 205 lbs Are they fitted with easing gear Yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 8" dia. of boilers 165" Length 10-8" Material of shell plates Steel
 Thickness 1 5/8" Range of tensile strength 28 to 52 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Double long. seams TR. D.B.S. Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 8 5/8" Lap of plates or width of butt straps 18"
 Per centages of strength of longitudinal joint rivets 85.9% plate 85.5% Working pressure of shell by rules 202 lbs Size of manhole in shell 16 x 12
 Size of compensating ring 1 x 1 1/8" No. and Description of Furnaces in each boiler Three plain Material Steel Outside diameter 40"
 Length of plain part top 18 1/2" bottom 69" Thickness of plates crown 3 1/8" bottom 3 1/8" Description of longitudinal joint welded No. of strengthening rings
 Working pressure of furnace by the rules 206 lbs Combustion chamber plates: Material Steel Thickness: Sides 3/4" Back 23/32" Top 3/4" Bottom 3/4"
 Pitch of stays to ditto: Sides 10 x 8 Back 9 1/2 x 8 1/2 Top 11 x 8 If stays are fitted with nuts or riveted heads No Working pressure by rules 208 lbs
 Material of stays Steel Area at smallest part 2.07" Area supported by each stay 88" Working pressure by rules 211 lbs End plates in steam space:
 Material Steel Thickness 1 1/2" Pitch of stays 19 x 17 1/2 How are stays secured DWSN Working pressure by rules 210 lbs Material of stays Steel
 Area at smallest part 7.5" Area supported by each stay 335 lbs Working pressure by rules 233 lbs Material of Front plates at bottom Steel
 Thickness 5/8" Material of Lower back plate Steel Thickness 5/8" Greatest pitch of stays 13 1/2 x 9 1/2 Working pressure of plate by rules 216 lbs
 Diameter of tubes 3 1/2" Pitch of tubes 4 1/8" Material of tube plates Steel Thickness: Front 15/16" Back 7/8" Mean pitch of stays 10"
 Pitch across wide water spaces 14" Working pressures by rules 275 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 11 x 1 3/8 Length as per rule 36.218 Distance apart 11" Number and pitch of stays in each 328"
 Working pressure by rules 201 lbs Steam dome: description of joint to shell % of strength of joint
 Diameter Thickness of shell plates Material Description of longitudinal joint Diam. of rivet holes
 Pitch of rivets Working pressure of shell by rules Crown plates Thickness How stayed

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

If not, state whether, and when, one will be sent

IS A DONKEY BOILER FITTED? *No.*

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

SPARE GEAR. State the articles supplied:—

Two top end, 2 bottom end, 2 main bearing bolts & nuts, one set coupling bolts & nuts, one set air feed & bilge pump valves, 6 junk ring studs & nuts, one main & one donkey check valve, 2 valves for donkey pump, one safety valve spring, three condenser tubes, one set firebars, a quantity of bolts & nuts of various sizes.

The foregoing is a correct description,
FOR CHARLES D. HOLMES & Co. LTD.

J. Cooper

Manufacturer.

Dates { During progress of work in shops -- } 1918:— Dec 31 1919:— May 25, Jun 13, 24, July 24, Aug 1, 25, Sep 2, 5, 8, 12, 23, 25 Oct 1, 2, 6, 8
{ During erection on board vessel --- } 9, 16, 21, 23, 24, 29 Nov 13, Dec 2, 12, 1920:— Jan 30, Feb 21, 23, 25
building { Total No. of visits } 30

Is the approved plan of main boiler forwarded herewith *Yes*

Dates of Examination of principal parts—Cylinders *23/10/19* Slides *29/10/19* Covers *23/10/19* Pistons *23/10/19* Rods *1/10/19*
Connecting rods *23/10/19* Crank shaft *8/10/19* Thrust shaft *8/10/19* Tunnel shafts *13/6/19* Screw shaft *13/6/19* Propeller *13/6/19*
Stern tube *13/6/19* Steam pipes tested *23/2/20* Engine and boiler seatings *30/1/20* Engines holding down bolts *30/1/20*
Completion of pumping arrangements *25/2/20* Boilers fixed *21/2/20* Engines tried under steam *25/2/20*
Completion of fitting sea connections *24/6/19* Stern tube *24/6/19* Screw shaft and propeller *24/6/19*
Main boiler safety valves adjusted *21/2/20* Thickness of adjusting washers *A 5/8" F 7/8"*
Material of Crank shaft *Steel* Identification Mark on Do. *2389* Material of Thrust shaft *Steel* Identification Mark on Do. *2390*
Material of Tunnel shafts *Steel* Identification Marks on Do. *✓* Material of Screw shafts *Steel* Identification Marks on Do. *2347*
Material of Steam Pipes *Steel* Test pressure *400 lbs*
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 *Mermaid type.*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The engines & boiler of this vessel have been built under special survey & the materials & workmanship are good. On completion they were examined while running full power trials in the Dumbell & found satisfactory. The machinery throughout is now in good & efficient condition & eligible in our opinion to have the word L.M.C. - 2 - 20 marked in Red in the Society's Register Book.*

It is submitted that this vessel is eligible for L.M.C. 2.20

HWD *12/3/20* *JRK*

The amount of Entry Fee ... £ *2.0-0*
Special ... £ *26-2-0*
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ : :
When applied for, *11/3/1920*
When received, *19.3.20*

H. J. Luthers
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *TUE 16 MAR 1920*
Assigned *+ L.M.C. 2.20*

Certificate (if required) to be sent to Hull

The Surveyors are requested not to write on or below the space for Committee's Minute.

CERTIFICATE WRITTEN

