

REPORT ON MACHINERY.

No. 8914

Received at London Office

WED MAY 19 1923

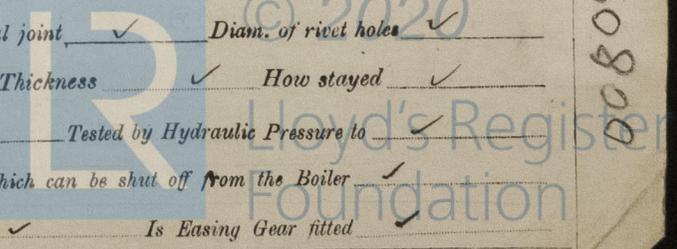
Date of writing Report April 1923 When handed in at Local Office May 9th 1923 Port of Belfast
 No. in Survey held at Belfast Date, First Survey 1920 Jan 20 Last Survey May 6th 1923
 Reg. Book. on the New Steel S.S. Toru Head (Number of Visits 68) Gross 5221 Tons
 Net 3161
 Master Belfast Built at Belfast By whom built Workman Clark & Co Ltd When built 1923
 Engines made at Belfast By whom made Workman Clark & Co Ltd 393 when made 1923
 Boilers made at Belfast By whom made Workman Clark & Co Ltd when made 1923
 Registered Horse Power 531 Owners Ulster S.S. Coy Ltd. Port belonging to Belfast
 Nom. Horse Power as per Section 28 531 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Single screw triple expansion No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 26 1/2 x 24 x 24 Length of Stroke 48 Revs. per minute 40 Dia. of Screw shaft as per rule 15.04 Material of screw shaft Steel
 as fitted 16
 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 water tight
 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 ✓ Length of stern bush 5'-4"
 Dia. of Tunnel shaft as per rule 13.2 Dia. of Crank shaft journals as per rule 14.38 Dia. of Crank pin 14 1/4 Size of Crank webs 9 3/4 x 26 1/2 Dia. of thrust shaft under
 collars 14 1/4 Dia. of screw 18'-0" Pitch of Screw 18'-0" No. of Blades 4 State whether moveable yes Total surface 100 sq
 No. of Feed pumps 2 Diameter of ditto 4 1/4 Stroke 2 1/2 Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2 Diameter of ditto 4 1/4 Stroke 2 1/2 Can one be overhauled while the other is at work yes
 No. of Donkey Engines 2 Sizes of Pumps 10 1/2 x 8 x 2 1/2 No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 4 @ 3 1/2" & 1 @ 3 1/2" Tunnel Well In Holds, &c. 2 @ 3 1/2" dia in each
 No. of Bilge Injections 1 sizes 9" Connected to condenser, or to circulating pump CP Is a separate Donkey Suction fitted in Engine room & size yes 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 ✓
 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 Both
 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 Hold bilge suction How are they protected Wood casings
 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 yes Is it fitted with a watertight door yes worked from top platform

BOILERS, &c.—(Letter for record 5) Manufacturers of Steel James & Sons, W Beardmore & Co & Steel Coy of Scotland
 Total Heating Surface of Boilers 4548 Is Forced Draft fitted yes No. and Description of Boilers Three single ended
 Working Pressure 200 lbs Tested by hydraulic pressure to 350 lbs Date of test 19-1-23 No. of Certificate 821
 Can each boiler be worked separately yes Area of fire grate in each boiler 59 1/2 sq No. and Description of Safety Valves to
 each boiler two direct spring Area of each valve 9.62 sq 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 18" dia. of boilers 14-9" Length 12-6" Material of shell plates Steel
 Thickness 1 1/2" Range of tensile strength 28 to 32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams D.R.
 long. seams T.R.D.D.S. Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 9 1/2" Lap of plates or width of butt straps 19 1/2"
 Per centages of strength of longitudinal joint 86.4 Working pressure of shell by rules 201 lbs Size of manhole in shell 16" x 12"
 Size of compensating ring 2 1/2 x 2 1/2 x 1 1/2 No. and Description of Furnaces in each boiler 3 Cor Material Steel Outside diameter 44 1/2"
 Length of plain part 41" Thickness of plates 41" Description of longitudinal joint Weld No. of strengthening rings 13
 Working pressure of furnace by the rules 210 Combustion chamber plates: Material Steel Thickness: Sides 1 1/2" Back 1 1/2" Top 1 1/2" Bottom 1 1/2"
 Pitch of stays to ditto: Sides 8 1/2 x 8 Back 8 1/2 x 8 Top 8 1/2 x 8 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 218 lbs
 Material of stays Steel Area at smallest part 1.46 sq Area supported by each stay 68 sq Working pressure by rules 231 lbs End plates in steam space:
 Material Steel Thickness 1 1/4" Pitch of stays 21 x 14" How are stays secured D.N. Weld Working pressure by rules 201 lbs Material of stays Steel
 Area at smallest part 6.09 sq Area supported by each stay 354 sq Working pressure by rules 200 lbs Material of Front plates at bottom Steel
 Thickness 1" Material of Lower back plate Steel Thickness 3/8" Greatest pitch of stays 15 x 8 1/2" Working pressure of plate by rules 230 lbs
 Diameter of tubes 2 1/2" Pitch of tubes 3 3/4 x 3 7/8 Material of tube plates Steel Thickness: Front 1" Back 1 1/2" Mean pitch of stays 9 1/4"
 Pitch across wide water spaces 13 1/2" Working pressures by rules 212 lbs Girders to Chamber tops: Material Steel Depth and
 thickness of girder at centre 2 @ 9 1/2 x 3 1/4" Length as per rule 34 1/2" Distance apart 8 1/2 x 8" Number and pitch of stays in each 3 @ 8"
 Working pressure by rules 206 lbs Steam dome: description of joint to shell none % 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 none 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 ✓

1700-001800-960800



IS A DONKEY BOILER FITTED? No

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— Two each bolts & nuts for top & bottom ends & main bearings. One set coupling bolts. Set feed & ludge pump valves. Quantity of assorted bolts nuts & iron. One propeller shaft. 2 Propeller blades with studs. 1 set pin bottom pumps. 1 Pair Crank Pin bushes. 1 set main & aux. feed sp valves. 6 Cyl. Cover studs & nuts. 12 Junk ring bolts. 1 Boiler safety valve spring. One Cis sp propeller.

The foregoing is a correct description,
FOR WORKMAN, CLARK & CO., LIMITED.

Birmingham

Manufacturer.

Dates of Survey while building { During progress of work in shops -- 1920 Jan 20, 28 Feb 2, Mar 12, 18, 22, Apr 14, 20 May 4, 18, 25, June 1, 7, 9, 27, July 28, Aug 3, 25, Sep 4, 7, 9, 16, 22, Oct 4, 12, 18, 29, Nov 2, 19, Dec 10, 1921 Jan 6, 17, 26, Feb 9, 18, Mar 8, 10, 27, 1922 Nov 27, Dec 4, 1923 Jan 5, 19, 22, 26, 30, 31, Feb 6, 8, 12, 13, 16, 19, 23, 26, Mar 1, 2, 12, 13, 20, Apr 10, 12, 13, 18, 23, 25, 27, May 1, 9. During erection on board vessel --- Total No. of visits 68

Is the approved plan of main boiler forwarded herewith yes
also " " " " *Blg & Bal. in R* " "
" " " " *donkey* " "

Dates of Examination of principal parts—Cylinders 21-2-23 Slides 16-2-23 Covers 19-2-23 Pistons 16-2-23 Rods 12-2-23
Connecting rods 12-2-23 Crank shaft 5-1-23 Thrust shaft 6-2-23 Tunnel shafts 6-3-23. Screw shaft 6-2-23. Propeller 30-1-23
Stern tube 30-1-23 Steam pipes tested 12-4-23 Engine and boiler seatings 1-3-23 Engines holding down bolts 10-4-23
Completion of pumping arrangements 25-4-23 Boilers fixed 10-4-23 Engines tried under steam 1-5-23.
Completion of fitting sea connections 30-1-23. Stern tube 1-3-23 Screw shaft and propeller 1-3-23
Main boiler safety valves adjusted 18-4-23 Thickness of adjusting washers *Stand Bl 1/16, 1/32, Cut Bl 1/32, 1/64, Pist Bl 1/32, 1/64*
Material of Crank shaft *Steel* Identification Mark on Do. *4998 HPS* Material of Thrust shaft *Steel* Identification Mark on Do. *5899 WB*
Material of Tunnel shafts *Steel* Identification Marks on Do. *5786* Material of Screw shafts *Steel* Identification Marks on Do. *5194 sp WB*
Material of Steam Pipes *Waste Iron 1/4 & 3/8 thick* Test pressure *600 lbs sq*
Is an installation fitted for burning oil fuel No 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 No If so, state name of vessel

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

The Machinery of this vessel has been built under special survey. Materials & workmanship good. Hydraulic tests satisfactory. The whole of the machinery is satisfactorily installed & fixed in the vessel & has been tried under steam & is in good & safe working condition, eligible in my opinion to be classed shore records **LMC. 5-23**. Tail shaft C.L. in the Register Book.

It is submitted that this vessel is eligible for THE RECORD. + LMC 5. 23. FD. CL.

W.D. 10/5/23 *Am.*

The amount of Entry Fee ... £ 6 0 0 : When applied for,
Special ... £ 101 11 0 : 3. 5. 1923
Donkey Boiler Fee ... £ ✓ : : When received,
Travelling Expenses (if any) £ ✓ : : 8. 5. 1923

William Butcher
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. MAY. 11 1923

Assigned

+ Lmb 523

F.D. C.L.

DEFINITE WRITTEN



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Certificate (if required) to be sent to
The Surveyors are requested not to write on or below the space for Committee's Minute.