

REPORT ON MACHINERY.

Newcastle report 62256

No. 25461

TUE. NOV. 12, 1912

MON. NOV. 12, 1912

Date of writing Report 19 When handed in at Local Office 19. 10. 12 Port of Sunderland
 No. in Survey held at Reg. Book. on the Steel S.S. "Hulgens"
 Date, First Survey 16 July Last Survey Oct 28 1912
 (Number of Visits 3 + 4)
 Master Built at Newcastle By whom built Wood & Stannard & Co. Ltd. Tons Gross 1912
 Engines made at Sunderland By whom made J. Dickinson & Sons Ltd. (450) when made 1912
 Boilers made at Sunderland By whom made J. Dickinson & Sons Ltd. when made 1912
 Registered Horse Power Owners Geo. Light & Co. Port belonging to London
 Nom. Horse Power as per Section 28 242 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders Three No. of Cranks Three
 Dia. of Cylinders 22" x 36" x 60" Length of Stroke 42" Revs. per minute 70 Dia. of Screw shaft as per rule 12.1" Material of screw shaft Steel
 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 4'-3"
 Dia. of Tunnel shaft as per rule 11.15" Dia. of Crank shaft journals as per rule 11.4" Dia. of Crank pin 11 3/4" Size of Crank webs Patent Dia. of thrust shaft under collars 11 3/4" Dia. of screw 15'-9" Pitch of Screw 14'-9" No. of Blades 4 State whether moveable no Total surface 40 ft²
 No. of Feed pumps Two Diameter of ditto 3 1/4" Stroke 21" Can one be overhauled while the other is at work yes
 No. of Bilge pumps Two Diameter of ditto 4" Stroke 21" Can one be overhauled while the other is at work yes
 No. of Donkey Engines Three Sizes of Pumps Two Ballast 10" x 10"; 4" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room One @ 3" dia One @ 3" dia (One @ 3" dia main pumps only) In Holds, &c. Two 3 1/2" Wing Suction in each hold well
 No. of Bilge Injections One size 4" Connected to condenser, or to circulating pump C.P. Is a separate Donkey Suction fitted in Engine room & size yes 4" dia
 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 have
 Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks 22th
 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 have How are they protected
 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
 Dates of examination of completion of fitting of Sea Connections 23/9/12 of Stern Tube 9-10-12 Screw shaft and Propeller 9-10-12
 Is the Screw Shaft Tunnel watertight have Is it fitted with a watertight door worked from

BOILERS, &c.—(Letter for record S. Manufacturers of Steel Spencer & Sons Ltd.
 Total Heating Surface of Boilers 4448 ft² Is Forced Draft fitted no No. and Description of Boilers Two single ended
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 7-10-12 No. of Certificate 3053
 Can each boiler be worked separately yes Area of fire grate in each boiler 62.5 ft² No. and Description of Safety Valves to each boiler Two spring loaded Area of each valve 4.06 ft² Pressure to which they are adjusted 185 lbs Are they fitted with easing gear yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 4'-6" Mean dia. of boilers 15'-6" Length 10'-6" Material of shell plates Steel
 Thickness 1 1/4" Range of tensile strength 28 to 32 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams D.R.
 long. seams T.R.D.B.S. Diameter of rivet holes in long. seams 1 3/8" Pitch of rivets 9/8" Lap of plates or width of butt straps 19 1/8"
 Per centages of strength of longitudinal joint rivets 94.3 plate 85 Working pressure of shell by rules 182 lbs Size of manhole in shell 16" x 12"
 Size of compensating ring dished No. and Description of Furnaces in each boiler Three Cor. Material Steel Outside diameter 48"
 Length of plain part top 9'6" bottom 9'6" Thickness of plates crown 1 1/2" bottom 1 1/2" Description of longitudinal joint welded No. of strengthening rings 4
 Working pressure of furnace by the rules 183 lbs 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 9" x 10" Back 9" x 10" Top 9" x 9" If stays are fitted with nuts or riveted heads Working pressure by rules 180 lbs
 Material of stays Steel Diameter at smallest part 2.03" Area supported by each stay 90" Working pressure by rules 203 lbs End plates in steam space:
 Material Steel Thickness 1 3/8" Pitch of stays 22 1/2" x 18 1/2" How are stays secured D.N. Work Working pressure by rules 180 lbs Material of stays Steel
 Diameter at smallest part 1.85" Area supported by each stay 42.5" Working pressure by rules 192 lbs Material of Front plates at bottom Steel
 Thickness 1 1/2" Material of Lower back plate Steel Thickness 1 1/2" Greatest pitch of stays 9" x 15 1/2" Working pressure of plate by rules 188 lbs
 Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates Steel Thickness: Front 1 1/2" Back 1 1/2" Mean pitch of stays 11 1/4"
 Pitch across wide water spaces 14 1/4" Working pressures by rules 212 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 20" x 6 1/2" Length as per rule 2' 5 1/2" Distance apart 9" Number and pitch of stays in each 2 @ 9"
 Working pressure by rules 185 lbs Superheater or Steam chest; how connected to boiler have Can the superheater be shut off and the boiler worked separately
 Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet holes Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness
 If stiffened 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

VERTICAL DONKEY BOILER— Manufacturers of Steel

No.	Description			
Made at	By whom made	When made	Where fixed	
Working pressure	tested by hydraulic pressure to	Date of test	No. of Certificates	Fire grate area
Valves	No. of Safety Valves	Area of each	Pressure to which they are adjusted	Date of adjustment
If fitted with easing gear	If steam from main boilers can enter the donkey boiler	Dia. of donkey boiler	Length	
Material of shell plates	Thickness	Range of plate strength	Descrip. of riveting long. seams	
Dia. of rivet holes	Whether punched or drilled	Pitch of rivets	Lap of plating	Per centage of strength of joint
Working pressure of shell by rules	Thickness of shell crown plates	Radius of do.	No. of stays to do.	Dia. of stays
Diameter of furnace Top	Bottom	Length of furnace	Thickness of furnace plates	Description of joint
Working pressure of furnace by rules	Thickness of furnace crown plates	Radius of do.	Stayed by	
Diameter of uptake	Thickness of uptake plates	Thickness of water tubes	Dates of survey	

SPARE GEAR. State the articles supplied:— Two off each bolts & nuts for top & bottom ends and main bearing, one set packing bolts, one set off each for Air circulating, feed & bilge pump valves. One main & one donkey feed check valve, 6 Piston studs & nuts, one Propeller, assorted bolts & nuts.

The foregoing is a correct description,

John Dickinson & Sons, Limited,

Manufacturer.

Dates of Survey while building
During progress of work in shops --
During erection on board vessel ---
Total No. of visits

Director 1912 Jul 6. 24. 31 Aug 9. 14 Sept 19. 14. 23 Oct 7. 9. 10. 11. 14

(13 +)

Is the approved plan of main boiler forwarded herewith

yes

" " " donkey " " "

Dates of Examination of principal parts—Cylinders 24.7.12 Slides 24.7.12 Covers 24.7.12 Pistons 31.7.12 Rods 31.7.12
Connecting rods 9.8.12 Crank shaft 13.8.12 Thrust shaft 13.8.12 Tunnel shafts — Screw shaft 23.9.12 Propeller 13.9.12
Stern tube 13.9.12 Steam pipes tested 10-10-12 Engine and boiler seatings 19.9.12 Engines holding down bolts 9-10-12
Completion of pumping arrangements 11-10-12 & 28/10/12 Boilers fixed 9-10-12 Engines tried under steam 14-10-12
Main boiler safety valves adjusted 14-10-12 Thickness of adjusting washers 1/16" 1/32" 1/16" 1/32" 1/16" 1/32"
Material of Crank shaft Steel Identification Mark on Do. 4929 P.A. Material of Thrust shaft Steel Identification Mark on Do. 4645 K.H.
Material of Tunnel shafts Iron Identification Marks on Do. ✓ Material of Screw shafts Steel Identification Marks on Do. 4623 K.H.
Material of Steam Pipes Solid drawn copper 4" x 6 lbs. Test pressure 400 lbs.

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

The machinery of this vessel has been built under special survey, the materials & workmanship are of good quality and the hydraulic tests of the boilers proved satisfactory. The whole of the machinery has been securely fitted on board and tried under steam and is in good & safe working condition & eligible in our opinion to be classed above record **L.M.C. 10-12** on completion of the survey.

To complete the survey the held bilge sections have to be fitted, this will be done at Newcastle. Remember the surveyors' instructions.

It is submitted that this vessel is eligible for THE RECORD + LMC 10.12.

J.W.D. 14/11/12 J.H.K. 14/11/12

The amount of Entry Fee .. £ 2 : 0 : 0
Special .. £ 33 : 12 : 0
Donkey Boiler Fee .. £ : :
Travelling Expenses (if any) £ : :
When applied for, 19.10.12
When received, 23.10.12

William Butcher & J. T. Finlayson
Engineer Surveyors to Lloyd's Register of British & Foreign Shipping.

Committee's Minute
Assigned
+ L.M.C. 10.12

FRI. NOV. 15. 1912



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MAINTENANCE CERTIFICATE WRITTEN.

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