

REPORT ON MACHINERY.

No. 22462.
WED. MAR. 19. 1913

Received at London Office

of writing Report 13. 3. 1913 When handed in at Local Office 13. 3. 1913 Port of Glasgow.
 in Survey held at Glasgow.
 Book. S.S. "LINMERE"
 Master A. Cameron. Built at Port Glasgow By whom built Murdoch & Murray (N^o 253)
 Engines made at Glasgow By whom made Muir & Houston (N^o 650) when made 1913
 Makers made at - do - By whom made - do - when made 1913
 Registered Horse Power 211 Owners Watson S.S. Co. Ltd. (Herbert Watson & Co. agents) Port belonging to Manchester
 m. Horse Power as per Section 28 210.7 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes

GINES, &c.—Description of Engines Triple expansion, surf. condensing No. of Cylinders 3 No. of Cranks 3
 a. of Cylinders 19 1/2" 33" 54" Length of Stroke 36" Revs. per minute 82 Dia. of Screw shaft as per rule 11.23" Material of screw shaft Iron
 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
 the propeller boss Yes If the liner is in more than one length are the joints burned Yes 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 Yes If two
 liners are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 3' 10"
 Dia. of Tunnel shaft as per rule 9.83" Dia. of Crank shaft journals as per rule 10.32" Dia. of Crank pin 10 1/2" Size of Crank webs 6 1/2" Dia. of thrust shaft under
 flanges 10 1/2" Dia. of screw 14'-0" Pitch of Screw 14'-0" No. of Blades 4 State whether moveable No Total surface 60 ft²
 No. of Feed pumps 2 Diameter of ditto 2 3/4" Stroke 18" Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 2 Diameter of ditto 2 3/4" Stroke 18" Can one be overhauled while the other is at work Yes
 No. of Donkey Engines 3 Sizes of Pumps 7 x 4 1/2 x 8 Duplex Ballcock No. and size of Suctions connected to both Bilge and Donkey pumps
 Engine Room 6-2 1/2" (Port Fore & Aft, Star. Fore & Aft, Dry tank, Special) Aft Hold 2-2 1/2" P.S., 1-2 1/2" hold well, 1-2 1/2" tunnel
 Main hold 2-2 1/2" P.S. In hold 2-2 1/2" P.S.
 No. of Bilge Injections 1 sizes 5" Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size Yes- 2 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 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 Yes
 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
 That pipes are carried through the bunkers Yes 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
 Dates of examination of completion of fitting of Sea Connections See Greenock Report of Ship
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Indicator platform
BOILERS, &c.—(Letter for record S) Manufacturers of Steel W. Beardmore & Co. & The Lanarkshire Steel Co.

Total Heating Surface of Boilers 3534 ft² Is Forced Draft fitted No No. and Description of Boilers 2- S.E. Marine
 Working Pressure 180 lbs. Tested by hydraulic pressure to 360 lbs. Date of test 4.2.13 No. of Certificate 11965
 Can each boiler be worked separately Yes Area of fire grate in each boiler 53 1/2 ft² No. and Description of Safety Valves to
 each boiler 2- 2 1/8" spring loaded Area of each valve 5.41 in² Pressure to which they are adjusted 185 lbs. Are they fitted with easing gear Yes
 Smallest distance between boiler uptakes and bunkers or woodwork 2'-3" Ins Mean dia. of boilers 14'-0" Length 10'-9" Material of shell plates Steel
 Thickness 1 1/32" Range of tensile strength 28/32 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 1/8" Pitch of rivets 7 1/2" Lap of plates or width of butt straps 1'-5"
 Per centages of strength of longitudinal joint rivets 84.8 plate 85 Working pressure of shell by rules 183 lbs. Size of manhole in shell 16" x 12"
 Size of compensating ring 7 1/2" x 1 1/32" No. and Description of Furnaces in each boiler 3- Morrison Material Steel Outside diameter 3'-4"
 Length of plain part top bottom Thickness of plates crown bottom 14" 32 Description of longitudinal joint weld No. of strengthening rings nil
 Working pressure of furnace by the rules 199 lbs Combustion chamber plates: Material Steel Thickness: Sides 19" 32 Back 19" 32 Top 19" 32 Bottom 19" 32
 Pitch of stays to ditto: Sides 8" x 8" Back 8" x 8" Top 8" x 8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 190 lbs
 Material of stays Steel Area Diameter at smallest part 1.45 in² Area supported by each stay 64 in² Working pressure by rules 181 lbs End plates in steam space:
 Material Steel Thickness 1 1/32" Pitch of stays 24" x 19 1/2" How are stays secured D.N. Working pressure by rules 185 lbs Material of stays Steel
 Diameter at smallest part 8.48 in² Area supported by each stay 468 in² Working pressure by rules 188 lbs Material of Front plates at bottom Steel
 Thickness 3/4" Material of Lower back plate Steel Thickness 1/8" Greatest pitch of stays 14" x 10" Working pressure of plate by rules 180 lbs
 Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates Steel Thickness: Front 3/4" Back 13/16" Mean pitch of stays 9" x 9"
 Pitch across wide water spaces 1'-2" 5/8" Working pressures by rules 205 lbs Girders to Chamber tops: Material Steel Depth and
 thickness of girder at centre 8" x 1" (double) Length as per rule 2'-9 3/8" Distance apart 8" Number and pitch of stays in each 3-8"
 Working pressure by rules 201 lbs Superheater or Steam chest; how connected to boiler None Can the superheater be shut off and the boiler worked
 separately Yes Diameter Yes Length Yes Thickness of shell plates Yes Material Yes Description of longitudinal joint Yes Diam. of rivet
 holes Yes Pitch of rivets Yes Working pressure of shell by rules Yes Diameter of flue Yes Material of flue plates Yes Thickness Yes
 If stiffened with rings Yes Distance between rings Yes Working pressure by rules Yes End plates: Thickness Yes How stayed Yes
 Working pressure of end plates Yes Area of safety valves to superheater Yes Are they fitted with easing gear Yes

REPORT ON BOILERS 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 Certificate	Fire grate area	Description of Safe
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 tensile 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	Rivets Plates
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:— 2 top end bolts & nuts, 2 bottom end bolts & nuts, 2 main bearing bolts, 1 set coupling bolts, 1 set feed pump valves, 1 set bilge pump valves, 1 set feed check valves, 1 set donkey pump valves, 1 safety valve spring, 1 set escape valve springs, 2 propellers.

The foregoing is a correct description,

MOTR & HOUSTON, LIMITED.

Manufacturer.

Dates of Survey while building	During progress of work in shops - -	During erection on board vessel - - -	Total No. of visits
1912. Aug. 1-9-21-26-29. Sept. 2-5-10-13-23-25. Oct. 3-10-14-17-21-29. Nov. 4-15-18-21. Dec. 2-4-9-15-16-18-27. 1913. Jan. 10-14-16-30-32-27-30-31. Feb. 4-5-17-20-27-28. March 6-10-12.			47.

Is the approved plan of main boiler forwarded herewith Yes

" " " donkey " " " Yes

Dates of Examination of principal parts—Cylinders	14. 10. 12	Slides	29. 10. 12	Covers	21. 10. 12	Pistons	21. 10. 12	Rods	17. 10. 12
Connecting rods	17. 10. 12	Crank shaft	10. 1. 13.	Thrust shaft	10. 1. 13.	Tunnel shafts	14. 1. 13	Screw shaft	10. 1. 13
Stern tube	24. 12. 12	Steam pipes tested	28. 2. 13	Engine and boiler seatings	14. 2. 13.	Engines holding down bolts	24. 2. 13		
Completion of pumping arrangements	24. 2. 13	Boilers fixed	10. 3. 13	Engines tried under steam	12. 3. 13				
Main boiler safety valves adjusted	10. 3. 13.	Thickness of adjusting washers	Per 7/16 P. 3/8's. Stan 3/8" both						
Material of Crank shaft	Steel	Identification Mark on Do.	3185 W.D.H.	Material of Thrust shaft	Steel	Identification Mark on Do.	3042 1.13 P.T.B		
Material of Tunnel shafts	Iron	Identification Marks on Do.	3042 4.13 P.T.B.	Material of Screw shafts	Iron	Identification Marks on Do.	3042 1.13 P.T.B		
Material of Steam Pipes	Copper	Test pressure	360 lbs.						

General Remarks (State quality of workmanship, opinions as to class, &c. The material and workmanship are good. The machinery and boilers of this vessel have been built under special survey in accordance with the Rules and approved plans, securely fitted on board and tried with satisfactory results under steam and are in my opinion, eligible for classification and to have record + L.M.C. 3, 13

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 3. 13.

J.M. J.W. 20/3/13.

P.J. Brown

Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

The amount of Entry Fee	£ 2. 0. 0	When applied for,	
Special	£ 30. 11. 0	When received,	14/3/13
Donkey Boiler Fee	£		
Travelling Expenses (if any)	£		30/4/13
Committee's Minute	GLASGOW	18 MAR. 1913	
Assigned	+ L.M.C. 3. 13.		

MACHINERY CERTIFICATE WRITTEN.



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Glasgow

Certificate (if required) to be sent to

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

15/3/13