

REPORT ON MACHINERY.

Port of Sunderland

Received at London Office NOV 20 1906

No. in Survey held at Sunderland Date, first Survey 15th December 06 Last Survey 12th Nov^r 1906
Reg. Book. on the S.S. "Ennistbrook" (Number of Visits 17)

Master a. Wallace Built at Sunderland By whom built Messrs J. Blumer & Co Tons {Gross 2828.22
Net 1779.5 ft
When built 1906
Engines made at Sunderland By whom made Messrs J. Dickinson & Sons when made 1906
Boilers made at Sunderland By whom made Messrs J. Dickinson & Sons when made 1906
Registered Horse Power 269 Owners Brook Steamship Co. Ltd Port belonging to Glasgow
Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

ENGINES, &c.—Description of Engines Inverted triple expansion No. of Cylinders 3 No. of Cranks 3
Dia. of Cylinders 23", 38", 62" Length of Stroke 42" Revs. per minute 70 Dia. of Screw shaft 12.99" Material of screw shaft Iron
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 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 4.9"
Dia. of Tunnel shaft 11.01" as per rule 11.01" as fitted 11.2" Dia. of Crank shaft journals 11.56" as per rule 11.56" as fitted 11.56" Dia. of Crank pin 11.56" Size of Crank webs Patent Dia. of thrust shaft under collars 11.78" Dia. of screw 17.0" Pitch of Screw 16.0" No. of Blades 4 State whether moveable no Total surface 72 sq ft
No. of Feed pumps 2 Diameter of ditto 3 1/2" Stroke 21" Can one be overhauled while the other is at work Yes
No. of Bilge pumps 2 Diameter of ditto 4 1/2" Stroke 21" Can one be overhauled while the other is at work Yes
No. of Donkey Engines 2 Sizes of Pumps 6x4x6 1/4 7 1/2 x 9x10" No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 2 of 3" + 1 of 3 1/2" tunnel well In Holds, &c. 2 of 3" in each + 1 of 3"
No. of Bilge Injections 1 sizes 4" Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size Yes - 4"
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 nil How are they protected Yes
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 25.10.06 of Stern Tube 25.10.06 Screw shaft and Propeller 30.10.06
Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from top platform

BOILERS, &c.—(Letter for record S) Manufacturers of Steel J. Spencer & Sons
Total Heating Surface of Boilers 4132 sq ft Is Forced Draft fitted no No. and Description of Boilers 2, Single ended, cylindrical Mult-
Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs Date of test 27.10.06 No. of Certificate 2541
Can each boiler be worked separately Yes Area of fire grate in each boiler 55 1/4 sq ft No. and Description of Safety Valves to each boiler 2 spring Area of each valve 8.29 sq in Pressure to which they are adjusted 165 lbs Are they fitted with easing gear Yes
Smallest distance between boilers or uptakes and bunkers or woodwork 24" Mean dia. of boilers 14.9 1/2" Length 10.6' Material of shell plates steel
Thickness 1 3/32" Range of tensile strength 28/32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams d. r. lap long. seams t. r. d. b. s. Diameter of rivet holes in long. seams 1 3/16" Pitch of rivets 8 3/16" Lap of plates or width of butt straps 17 7/8"
Per centages of strength of longitudinal joint rivets 91 plate 85.5 Working pressure of shell by rules 162.3 lbs Size of manhole in shell 16x12"
Size of compensating ring 8 3/8" x 1 3/32" No. and Description of Furnaces in each boiler 3 Brown Impressed Material steel Outside diameter 42 3/4"
Length of plain part top 1" bottom 1" Thickness of plates top 1 1/2" bottom 1 1/2" Description of longitudinal joint weld No. of strengthening rings 1
Working pressure of furnace by the rules 162.8 lbs Combustion chamber plates: Material steel Thickness: Sides 1 1/16" Back 1 1/16" Top 1 1/16" Bottom 3/4"
Pitch of stays to ditto: Sides 10x10 1/2" Back 11 3/4 x 8 1/2" Top 9x10" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 160.1 lbs
Material of stays steel Diameter at smallest part 1.6x1.72 Area supported by each stay 95.46 sq in Working pressure by rules 180x163 End plates in steam space: Material steel Thickness 1 1/16" Pitch of stays 18 1/2 x 17 1/2" How are stays secured duxw Working pressure by rules 167 lbs Material of stays Iron
Diameter at smallest part 2.921 Area supported by each stay 298.3 Working pressure by rules 168 lbs Material of Front plates at bottom steel Thickness 3/4" Material of Lower back plate steel Thickness 2 1/2" Greatest pitch of stays 13 1/4 x 11 1/4" Working pressure of plate by rules 163 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 1/16 x 3/4" Back 3/4" Mean pitch of stays 9"
Pitch across wide water spaces 14 1/4" Working pressures by rules 200 lbs Girders to Chamber tops: Material steel Depth and thickness of girder at centre 6 7/8 x 2" Length as per rule 27 23/32" Distance apart 10" Number and pitch of stays in each 2-9"
Working pressure by rules 167 lbs Superheater or Steam chest; how connected to boiler Yes Can the superheater be shut off and the boiler worked separately Yes 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 Certificate	Fire grate area	Description of Safety
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		Stayed by		
Diameter of uptake	Thickness of uptake plates	Thickness of water tubes	Dates of survey		

SPARE GEAR. State the articles supplied:— Propeller, 1 Propeller shaft, 2 top end, 2 bottom end
 2 Main bearing & set of coupling bolts, 1 set feed and bilge pump Valves, 1 set HP
 piston pump, 2 Feed check Valves, bolts & nuts assorted & iron of sizes

The foregoing is a correct description,
 John Jackson & Sons, Limited,
W. Jackson Manufacturer.

Dates of Survey while building	During progress of work in shops - -	DIYERD 1905 Decr. 15 - 06 - May 22, July 24, Aug. 2, 9, 10, 13, 16, Sept. 5, 6, 10, 11, 12, 13, 14, 17, 18, 19, 20, 22, 24, 26, 27.
	During erection on board vessel - -	Oct. 1, 2, 4, 5, 6, 8, 10, 11, 12, 13, 15, 17, 18, 20, 22, 24, 25, 27, 30. Nov. 1, 2, 5, 9, 12.
	Total No. of visits	17

Is the approved plan of main boiler forwarded herewith **yes**
 " " " donkey " " " **yes**

Dates of Examination of principal parts—Cylinders 10.9.06 Slides 17.10.06 Covers 19.9.06 Pistons 19.9.06 Rods 2.10.06
 Connecting rods 4.9.06 Crank shaft 16.9.06 Thrust shaft 19.9.06 Tunnel shafts 2.10.06 Screw shaft 2.10.06 Propeller 19.9.06
 Stern tube 4.10.06 Steam pipes tested 2.11.06 Engine and boiler seatings 25.10.06 Engines holding down bolts 1.11.06
 Completion of pumping arrangements 5.11.06 Boilers fixed 1.11.06 Engines tried under steam 5.11.06
 Main boiler safety valves adjusted 5.11.06 Thickness of adjusting washers P.A. $\frac{5}{16}$, P.F. $\frac{1}{4}$; S.A. $\frac{5}{16}$, S.F. $\frac{5}{16}$
 Material of Crank shaft **Steel** Identification Mark on Do. 349B Material of Thrust shaft **Steel** Identification Mark on Do. 3597 M.K.
 Material of Tunnel shafts **Steel** Identification Marks on Do. 3575, 3576, M.K. 3598, 3599 Material of Screw shafts **Iron** Identification Marks on Do. 350B
 Material of Steam Pipes **Copper** Test pressure 400 lbs

General Remarks (State quality of workmanship, opinions as to class, &c. *The Machinery of this vessel has been constructed under special survey, the workmanship and materials used are both of good quality. The Engines have been tried under steam and worked satisfactorily.*)

I beg to recommend that this vessel is eligible in my opinion to have the record **L.M.C. 11.06** in the Register Book

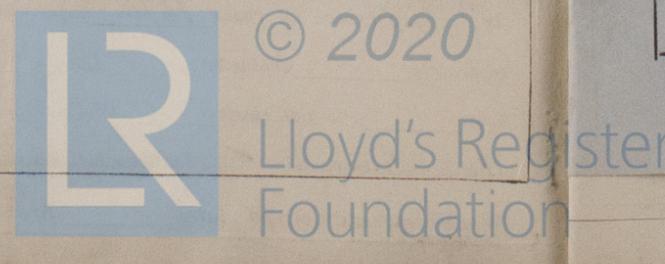
It is submitted that this vessel is eligible for THE RECORD **L.M.C. 11.06.**

The amount of Entry Fee.	£ 2 :	When applied for,	19.11.06
Special	£ 33 :	When received,	22.11.06
Donkey Boiler Fee	£ :		
Travelling Expenses (if any) £ :			

H.S. [Signature]
 20.11.06
K.W. Coomber.
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute
 Assigned
 FRI, NOV 23 1906
 + L.M.C. 11.06

MACHINERY CERTIFICATE WRITTEN.



Sunderland.

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

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