

Received at London Office. **FRI. 23 III 1909**

BOILERS, &c.—(Letter for record *Or*) Manufacturers of Steel *John Spencer Sons & Co.*

Total Heating Surface of Boilers *11964 sq. ft.* Forced Draft fitted *No* No. and Description of Boilers *One S.E. Cyl. Muller*

Working Pressure *130 lbs* Tested by hydraulic pressure to *260 lbs* Date of test *23.6.09* No. of Certificate *4285*

Can each boiler be worked separately *✓* Area of fire grate in each boiler *32 1/4 sq. ft.* No. and Description of Safety Valves to each boiler *Two direct spring* Area of each valve *4.9"* Pressure to which they are adjusted *135 lbs* Are they fitted with easing gear *Yes*

Smallest distance between boilers or uptakes and bunkers or woodwork *2.6"* Mean dia. of boilers *11.6"* Length *10.0"* Material of shell plates *Steel*

Thickness *3/4"* Range of tensile strength *28 3/4 - 32* Are the shell plates welded or flanged *No* Descrip. of riveting: cir. seams *S.R. Lap*

long. seams *S.R. 3 Riv. to* Diameter of rivet holes in long. seams *15/16"* Pitch of rivets *5"* Lap of plates or width of butt straps *10 5/8"*

Per centages of strength of longitudinal joint rivets *82.1* plate *81.25* Working pressure of shell by rules *133 lbs* Size of manhole in shell *16 x 12"*

Size of compensating ring *34 1/2 x 29 x 3 1/4"* No. and Description of Furnaces in each boiler *Two plain* Material *Steel* Outside diameter *3.4"*

Length of plain part top *6.25"* bottom *6.1 1/4"* Thickness of plates crown *7.5"* bottom *7.8"* Description of longitudinal joint *Welded* No. of strengthening rings *Angle at bottom*

Working pressure of furnace by the rules *141* Combustion chamber plates: Material *Steel* Thickness: Sides *9/16"* Back *7/32"* Top *9/16"* Bottom *5/8"*

Pitch of stays to ditto: Sides *9 1/2 x 8 1/2"* Back *9 1/4 x 8"* Top *9 x 8 1/2"* If stays are fitted with nuts or riveted heads *Nuts* Working pressure by rules *131 lbs*

Material of stays *S. & S.* Diameter at smallest part *1.78"* Area supported by each stay *81"* Working pressure by rules *165* End plates in steam space:

Material *Steel* Thickness *13/16"* Pitch of stays *16 x 15"* How are stays secured *on + w.* Working pressure by rules *130 lbs* Material of stays *Steel*

Diameter at smallest part *3.34"* Area supported by each stay *232"* Working pressure by rules *150* Material of Front plates at bottom *Steel*

Thickness *7/8"* Material of Lower back plate *Steel* Thickness *3/4"* Greatest pitch of stays *17 1/2 x 8"* Working pressure of plate by rules *130*

Diameter of tubes *3 1/2"* Pitch of tubes *4 3/4 x 4 3/4"* Material of tube plates *Steel* Thickness: Front *7/8"* Back *3/4"* Mean pitch of stays *11 7/8"*

Pitch across wide water spaces *14 1/2"* Working pressures by rules *130 lbs* Girders to Chamber tops: Material *Steel* Depth and thickness of girder at centre *7 1/2 x 1 1/4"* Length as per rule *27.03"* Distance apart *9"* Number and pitch of stays in each *2 @ 8 1/2"*

Working pressure by rules *167 lbs* Superheater or Steam chest; how connected to boiler *None* 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. *None* Description
 Made at *Boiler* By whom made *Boiler* When made *Boiler* Where fixed *Boiler*
 Working pressure tested by hydraulic pressure to *Boiler* Date of test *Boiler* No. of Certificate *Boiler* Fire grate area *Boiler* Description of Safety *Boiler*
 Valves *Boiler* No. of Safety Valves *Boiler* Area of each *Boiler* Pressure to which they are adjusted *Boiler* Date of adjustment *Boiler*
 If fitted with easing gear *Boiler* If steam from main boilers can enter the donkey boiler *Boiler* Dia. of donkey boiler *Boiler* Length *Boiler*
 Material of shell plates *Boiler* Thickness *Boiler* Range of tensile strength *Boiler* Descrip. of riveting long. seams *Boiler*
 Dia. of rivet holes *Boiler* Whether punched or drilled *Boiler* Pitch of rivets *Boiler* Lap of plating *Boiler* Per centage of strength of joint *Boiler* Rivets *Boiler*
 Working pressure of shell by rules *Boiler* Thickness of shell crown plates *Boiler* Radius of do. *Boiler* No. of stays to do. *Boiler* Dia. of stays *Boiler*
 Diameter of furnace Top *Boiler* Bottom *Boiler* Length of furnace *Boiler* Thickness of furnace plates *Boiler* Description of joint *Boiler*
 Working pressure of furnace by rules *Boiler* Thickness of furnace crown plates *Boiler* Stayed by *Boiler*
 Diameter of uptake *Boiler* Thickness of uptake plates *Boiler* Thickness of water tubes *Boiler* Dates of survey *Boiler*

SPARE GEAR. State the articles supplied:— *Two top + two bottom-end connecting rod bolts + nuts. Two main bearing bolts + nuts. One set of coupling bolts + nuts. One set of feed + bilge pump valves. One set of L.P. piston springs. Assorted bolts + nuts etc.*

The foregoing is a correct description,

For RICHARDSONS, WESTGARTH & Co. Ltd.

Manufacturer.

Dates of Survey while building
 During progress of work in shops— *1909 Jan 27, Feb 8-26, Mar 6-16-19-25, Apr 14-15-21-28-29, May 4-13-18-27-28*
 During erection on board vessel— *June 3-7-10-14-18-21-23-29 July 2-12-13-14-15-16-20*
 Total No. of visits *32 + 11 = 43* Is the approved plan of main boiler forwarded herewith *Yes*

Dates of Examination of principal parts—Cylinders *13.5.09* Slides *14.6.09* Covers *14.6.09* Pistons *28.5.09* Rods *28.5.09*
 Connecting rods *28.5.09* Crank shaft *14.4.09* Thrust shaft *2.7.09* Tunnel shafts *None* Screw shaft *2.7.09* Propeller *2.7.09*
 Stern tube *2.7.09* Steam pipes tested *15.7.09* Engine and boiler seatings *18.6.09* Engines holding down bolts *14.7.09*
 Completion of pumping arrangements *29.4.09* Boilers fixed *14.7.09* Engines tried under steam *20.7.09*
 Main boiler safety valves adjusted *16.7.09* Thickness of adjusting washers *P 1/4" S 9/32"*
 Material of Crank shaft *Steel* Identification Mark on Do. *4781 C.T.H.* Material of Thrust shaft *Steel* Identification Mark on Do. *3036 P.A.*
 Material of Tunnel shafts *None* Identification Marks on Do. *✓* Material of Screw shafts *Iron* Identification Marks on Do. *6399 J.K.*
 Material of Steam Pipes *Solid drawn copper* Test pressure *260 lbs*

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

The Engines and Boiler of this vessel have been constructed under Special Survey, are of good material and workmanship, and have been fitted and secured on board in accordance with the Rules. They are now in good working condition and in our opinion eligible to have the notation of +LMC 7.09 in the Register Book.

This vessel has been fitted here, with an extra donkey pump 42" x 23/4" x 4" connected to all parts of vessel.

This vessel has now sailed for Goole for completion.

The pumping arrangement, now completed, tried and found good.

It is submitted that this vessel is eligible for THE RECORD. +LMC 7.09

ARR

440-12-8-09

12.8.09

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

The amount of Entry Fee. £ 1 : 0 :
 Special .. £ 9 : 6 :
 Donkey Boiler Fee .. £ : :
 Travelling Expenses (if any) £ : :
 When applied for, *22/7/09*
 When received, *26/7/09*

Committee's Minute

TUES. 17 AUG 1909

Assigned

MACHINERY CERTIFICATE
 WRITTEN.



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