

## REPORT ON BOILERS.

No. 5333

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Date of writing Report 19 When handed in at Local Office 19 Port of  
 No. in Survey held at *Middlesbrough* Date, First Survey *August 30<sup>th</sup>* Last Survey *9<sup>th</sup> Feb* 1908  
 Reg. Book. on the *Main Boiler No 3189, for <sup>1</sup>st *Ordent** (Number of Visits *17*) Gross Tons Net  
 Master Built at *Goole* By whom built *Goole S.B. Co. Ltd.* When built *1907*  
 Engines made at By whom made when made  
 Boilers made at *Middlesbrough* By whom made *Richardsons Westgarth & Co Ltd* when made *1907*  
 Registered Horse Power *70.* Owners Port belonging to

MULTITUBULAR BOILERS—MAIN, AUXILIARY OR DONKEY—Manufacturers of Steel *Clyde Bridge Steel Co Ltd*

(Letter for record *(7)*) Total Heating Surface of Boilers *1227 <sup>ft</sup> 5<sup>in</sup>* Is forced draft fitted *no* No. and Description of Boilers *One Cyl. Multi single ended* Working Pressure *180 lb* Tested by hydraulic pressure to *360 lb* Date of test *16.12.07*

No. of Certificate *4066* Can each boiler be worked separately *✓* Area of fire grate in each boiler *374 <sup>ft</sup> 5<sup>in</sup>* No. and Description of safety valves to each boiler *two direct Spring* Area of each valve *4.9 <sup>sq</sup> in* Pressure to which they are adjusted *185 lb*

Are they fitted with easing gear *yes* In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler *✓*

Smallest distance between boilers or uptakes and bunkers or woodwork *10<sup>in</sup>* Int'l dia. of boilers *12'-6"* Length *10'-6"*

Material of shell plates *Steel* Thickness *1 <sup>3</sup>/<sub>4</sub>"* Range of tensile strength *28/32* Are the shell plates welded or flanged *no*

Descrip. of riveting: cir. seams *D.R.S.* long. seams *J.R.D.B.S.* Diameter of rivet holes in long. seams *1 <sup>1</sup>/<sub>6</sub>"* Pitch of rivets *3 <sup>3</sup>/<sub>8</sub>" 2 rows*

Lap of plates or width of butt straps *16 <sup>1</sup>/<sub>4</sub>"* Per centages of strength of longitudinal joint rivets *88* Working pressure of shell by plate *85.2*

rules *184* Size of manhole in shell *12" x 16"* Size of compensating ring *8 <sup>1</sup>/<sub>2</sub>" x 1 <sup>3</sup>/<sub>4</sub>"* No. and Description of Furnaces in each boiler *2 plain*

Material *Steel* Outside diameter *3'-6 <sup>1</sup>/<sub>4</sub>"* Length of plain part top *6'-3"* Thickness of plates crown *49"* bottom *6'-3"* bottom *64"*

Description of longitudinal joint *welded* No. of strengthening rings *✓* Working pressure of furnace by the rules *183* Combustion chamber plates: Material *Steel* Thickness: Sides *1 <sup>1</sup>/<sub>6</sub>"* Back *1 <sup>1</sup>/<sub>6</sub>"* Top *1 <sup>1</sup>/<sub>6</sub>"* Bottom *1 <sup>1</sup>/<sub>6</sub>"* Pitch of stays to ditto: Sides *9 <sup>3</sup>/<sub>4</sub>" x 9"* Back *10 <sup>1</sup>/<sub>2</sub>" x 8"*

Top *9 <sup>3</sup>/<sub>4</sub>" x 9 <sup>3</sup>/<sub>4</sub>"* If stays are fitted with nuts or riveted heads *nuts* Working pressure by rules *181* Material of stays *Steel* Diameter at smallest part *2.096"* Area supported by each stay *8.4 <sup>sq</sup> in* Working pressure by rules *186* End plates in steam space: Material *Steel* Thickness *1 <sup>1</sup>/<sub>6</sub>"*

Pitch of stays *19" x 19"* How are stays secured *D.R.W.* Working pressure by rules *185* Material of stays *Steel* Diameter at smallest part *4.9"*

Area supported by each stay *272 <sup>sq</sup> in* Working pressure by rules *180* Material of Front plates at bottom *Steel* Thickness *1"* Material of Lower back plate *Steel* Thickness *1 <sup>1</sup>/<sub>6</sub>"* Greatest pitch of stays *16.5" x 8"* Working pressure of plate by rules *182* Diameter of tubes *3 <sup>1</sup>/<sub>2</sub>"*

Pitch of tubes *5" x 5"* Material of tube plates *Steel* Thickness: Front *1"* Back *3 <sup>3</sup>/<sub>4</sub>"* Mean pitch of stays *10"* Pitch across wide water spaces *14 <sup>1</sup>/<sub>2</sub>"* Working pressures by rules *182* Girders to Chamber tops: Material *Steel* Depth and thickness of girder at centre *9 <sup>1</sup>/<sub>2</sub>" x 1 <sup>3</sup>/<sub>4</sub>"* Length as per rule *2'-9"* Distance apart *9 <sup>1</sup>/<sub>2</sub>"* Number and pitch of Stays in each *2 9 <sup>3</sup>/<sub>4</sub>"*

Working pressure by rules *236* 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

The foregoing is a correct description,  
 RICHARDSONS, WESTGARTH & CO. LTD. Manufacturer.

Dates of Survey During progress of 1907-*Aug 30, Sep 1, 2, 24, Oct 9, 16, Nov 9, 14, 21, 27, Dec 4, 16* Is the approved plan of boiler forwarded herewith *yes*  
 while building During erection on board vessel *Nov 2 Feb 14 & 17, 1908* Total No. of visits *17.*

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) *This boiler has been built under Special Survey. The materials and workmanship are good. The boiler fitted up on board. Tested under steam and found satisfactory.*

Survey Fee ... £ 3 : 10 : When applied for, *8.1* 1908  
 Travelling Expenses (if any) £ : : When received, *10.1* 1908

*Leonard Shillcross*  
*R.D. Shilston*  
 Engineer Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute *FRI. 13 MAR 1908*

Assigned

*Send Hull*