

## REPORT ON BOILERS.

No. 4869

Port of **MIDDLESBROUGH-ON-TEES.**

Received at London Office

TUES. FEB 19 1907

Date, first Survey **October 25** Last Survey 19No. in Survey held at **Stockton**

Reg. Book.

28 Reg. on the Main Boiler (No 3750) for S.S. "Hera River"

(Number of Visits)

Tons } Gross  
Net

Master

Built at

**Selby**By whom built **Cochrane & Sons**

When built

Engines made at

**Grimby**

By whom made

**Great Central Co. of Eng. & S.R. Co. Ltd** when made

Boilers made at

**Stockton**

By whom made

**Riley Bros Ltd** when made **1906**

Port belonging to

Registered Horse Power

Owners

MULTITUBULAR BOILERS—MAIN, AUXILIARY OR DONKEY

Manufacturers of Steel

**J. Spencer & Sons Ltd**(Letter for record (S)) Total Heating Surface of Boilers **995 ft<sup>2</sup>** Is forced draft fitted **No** No. and Description ofBoilers **One Cyl. Multitube single ended** Working Pressure **180 lb** Tested by hydraulic pressure to **360 lb** Date of test **12-12-06**No. of Certificate **3823** Can each boiler be worked separately ☒ Area of fire grate in each boiler **31 ft<sup>2</sup>** No. and Description ofsafety valves to each boiler **2 Spring loaded** Area of each valve **9.98 in<sup>2</sup>** Pressure to which they are adjusted **188 lb**Are they fitted with easing gear **Yes** In case of donkey boilers, state whether steam from main boilers can enter the donkey boilerSmallest distance between boilers or uptakes and bunkers or woodwork **8 in** Int'l Mean dia. of boilers **11'-0"** Length **9'-6"**Material of shell plates **Steel** Thickness **15/16** Range of tensile strength **28/32** Are the shell plates welded or flanged **No**Descrip. of riveting: cir. seams **DR Lap** long. seams **J.R. D.B.S.** Diameter of rivet holes in long. seams **1 1/16** Pitch of rivets **3 3/8 2 rows**Lap of plates or width of butt straps **16" x 15/16** Per centages of strength of longitudinal joint rivets **91.3** plate **86.29** Working pressure of shell byrules **185** Size of manhole in shell **16" x 21"** Size of compensating ring **9" x 1"** No. and Description of Furnaces in eachboiler **2 plain** Material **Steel** Outside diameter **3'-3"** Length of plain part **5'-9"** Thickness of plates **45"** crown } **64"** bottom }Description of longitudinal joint **welded** No. of strengthening rings ☒ Working pressure of furnace by the rules **175** Combustion chamberplates: Material **Steel** Thickness: Sides **5/8** Back **5/8** Top **5/8** Bottom **3/4** Pitch of stays to ditto: Sides **9x8** Back **9x8**Top **8x8 1/2** If stays are fitted with nuts or riveted heads **nuts** Working pressure by rules **187** Material of stays **Steel** Diameter atsmallest part **1 1/2** Area supported by each stay **72 in<sup>2</sup>** Working pressure by rules **196** End plates in steam space: Material **Steel** Thickness **31/32**Pitch of stays **15 1/2 x 17** How are stays secured **DR rivets** Working pressure by rules **200** Material of stays **Steel** Diameter at smallest part **2 3/4**Area supported by each stay **264 in<sup>2</sup>** Working pressure by rules **225** Material of Front plates at bottom **Steel** Thickness **31/32** Material ofLower back plate **Steel** Thickness **31/32** Greatest pitch of stays **16 x 8** Working pressure of plate by rules **203** Diameter of tubes **3 1/4**Pitch of tubes **4 3/8 x 4 1/2** Material of tube plates **Steel** Thickness: Front **31/32** Back **3/4** Mean pitch of stays **10** Pitch across widewater spaces **14** Working pressures by rules **184** Girders to Chamber tops: Material **Steel** Depth and thickness ofgirder at centre **8 1/4 x 1 1/2** Length as per rule **2-4** Distance apart **8 1/2** Number and pitch of Stays in each **Two 8**Working pressure by rules **212** 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

No.

Description

Manufacturers of steel

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

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

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building

During progress of work in shops - - -

During erection on board vessel - - -

Total No. of visits

1906: Oct 25. Nov 5. 13. 20. 22. 30. Dec. 1. 5. 8. 12.

Is the approved plan of main boiler forwarded herewith **Yes**

" donkey "

W1541 - 0212



**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 and efficient.  
After satisfactorily withstanding the hydraulic test, it  
has been despatched for fitting on board.*

Certificate (if required) to be sent to

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

The amount of Entry Fee... £ : : When applied for  
Special ... £ 3 : : 19  
Donkey Boiler Fee ... £ 4 : :  
Travelling Expenses (if any) £ : :  
5/3/14

*1/3 fee to be credited to mtd*  
*R.D. Shilston*  
Engineer Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute

FRI. FEB 22 1907

Assigned



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Foundation