

## REPORT ON BOILERS.

No. 11671

FRI. AUG. 17 1923

Received at London Office

Date of writing Report

192

When handed in at Local Office

16.8.23 192

Port of

Middlesbrough

No. in  
Reg. Book.

Survey held at

Stockton-on-Tees

Date, First Survey

25 June 1923

Last Survey

30 August 1923

on the

(Number of Visits

7)

Gross

Tons

Net

Master

Built at South Shields

By whom built

Chas. Renoldson &amp; Co. Ltd. Yard No. 198

When built

Engines made at

By whom made

Engine No.

When made

Boilers made at

Stockton-on-Tees

By whom made

Messrs. Riley Bros. Ltd.

Boiler No. 5474

When made 1923

Nominal Horse Power

Owners

Messrs. Chas. Renoldson &amp; Co. Ltd. Port belonging to South Shields

## MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Messrs. J. Spencer &amp; Sons Ltd.

(Letter for Record S.V.)

Total Heating Surface of Boilers

979  $\phi$  ✓

Is forced draught fitted

Coal or Oil fired

No. and Description of Boilers

One single ended.

Working Pressure

180 ✓

Tested by hydraulic pressure to

320 ✓

Date of test

3/8/23

No. of Certificate

6330 Can each boiler be worked separately

Area of Firegrate in each Boiler

34.4  $\phi$  ✓

No. and Description of safety valves to each boiler

Area of each set of valves per boiler

{ per Rule  
as fitted

Pressure to which they are adjusted

Are they fitted with easing gear

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

Is oil fuel carried in the double bottom under boilers

Smallest distance between shell of boiler and tank top plating

Is the bottom of the boiler insulated

Largest internal dia. of boilers

10'-6" ✓

Length

10'-3" ✓

Shell plates: Material

Steel ✓

Tensile strength

28/32 ✓

Thickness

7/8" ✓

Are the shell plates welded or flanged

no ✓

Description of riveting: circ. seams

{ end Double Riv. Lap.  
inter. ✓

long. seams

2 B.-3 Riv. (5 Rivets)

Diameter of rivet holes in

{ circ. seams  
long. seams

1 1/16" ✓

Pitch of rivets

3 1/4" ✓

Percentage of strength of circ. end seams

{ plate 67.38  
rivets 51.1

Percentage of strength of circ. intermediate seam

{ plate ✓  
rivets ✓

Percentage of strength of longitudinal joint

{ plate 86.37  
rivets 88.7  
combined 90.4

Working pressure of shell by Rules

181

Thickness of butt straps

{ outer 21/32 ✓  
inner 25/32 ✓

No. and Description of Furnaces in each Boiler

2 Morrison ✓

Material

Steel ✓

Tensile strength

26/30 ✓

Smallest outside diameter

37 3/4" ✓

Length of plain part

{ top ✓  
bottom ✓

Thickness of plates

{ crown 1/2" ✓  
bottom 1/2" ✓

Description of longitudinal joint

Weld ✓

Dimensions of stiffening rings on furnace or c.c. bottom

✓

Working pressure of furnace by Rules

180

End plates in steam space: Material

Steel ✓

Tensile strength

26/30 ✓

Thickness

27/32" ✓

Pitch of stays 14 1/2" x 13 1/2" ✓

How are stays secured

Nuts &amp; Washers 8 1/2" x 5/8" ✓

Working pressure by Rules

184

Tube plates: Material

{ front Steel ✓  
back Steel ✓

Tensile strength

{ 26/30 ✓  
26/30 ✓

Thickness

{ 27/32" ✓  
3/4" ✓

Mean pitch of stay tubes in nests

10.34" ✓

Pitch across wide water spaces

14" x 8 1/2" ✓

Working pressure

{ front 182  
back 194

Girders to combustion chamber tops: Material

Steel ✓

Tensile strength

28/32 ✓

Depth and thickness of girder

at centre

7 3/4" x 1 1/2" ✓

Length as per Rule

28 ✓

Distance apart

7 1/4" ✓

No. and pitch of stays

in each

2 @ 8 1/2" ✓

Working pressure by Rules

270

Combustion chamber plates: Material

Steel ✓

Tensile strength

26/30 ✓

Thickness: Sides

5/8" ✓

Back

2 1/32" ✓

Top

5/8" ✓

Bottom

1" ✓

Pitch of stays to ditto: Sides

8" x 8 1/2" ✓

Back

9" x 8 1/2" ✓

Top

7 1/4" x 8 1/2" ✓

Are stays fitted with nuts or riveted over

Nuts ✓

Working pressure by Rules

196

Front plate at bottom: Material

Steel ✓

Tensile strength

26/30 ✓

Thickness

27/32" ✓

Lower back plate: Material

Steel ✓

Tensile strength

26/30 ✓

Thickness

27/32" ✓

Pitch of stays at wide water space

14" x 8 1/2" ✓

Are stays fitted with nuts or riveted over

Nuts ✓

Working Pressure

217

Main stays: Material

Steel ✓

Tensile strength

28/32 ✓

Diameter

{ At body of stay,  
or  
Over threads

2 3/8" ✓

No. of threads per inch

6 ✓

Area supported by each stay

196

Working pressure by Rules

200

Screw stays: Material

Steel ✓

Tensile strength

26/30 ✓

Diameter

{ At turned off part,  
or  
Over threads

1 5/8" ✓

No. of threads per inch

9 ✓

Area supported by each stay

76.5

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Working pressure by Rules 200 Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, ✓  
or 1 3/4"  
Over threads ✓

No. of threads per inch 9 Area supported by each stay 93.5 Working pressure by Rules 193

Tubes: Material Iron External diameter { Plain 3 1/4" Thickness { 9 WG No. of threads per inch 9  
Stay 3 1/4" 5/16" ✓

Pitch of tubes 4 1/16" x 4 1/4" Working pressure by Rules 180 & 218 Manhole compensation: Size of opening in  
shell plate 16" x 20" Section of compensating ring 7" x 1" McNeil No. of rivets and diameter of rivet holes 36 @ 1 1/16" ✓

Outer row rivet pitch at ends about 7 1/4" Depth of flange if manhole flanged ✓ Steam Dome: Material None

Tensile strength \_\_\_\_\_ Thickness of shell \_\_\_\_\_ Description of longitudinal joint \_\_\_\_\_

Diameter of rivet holes \_\_\_\_\_ Pitch of rivets \_\_\_\_\_ Percentage of strength of joint { Plate \_\_\_\_\_  
Rivets \_\_\_\_\_

Internal diameter \_\_\_\_\_ Working pressure by Rules \_\_\_\_\_ Thickness of crown \_\_\_\_\_ No. and diameter of  
stays \_\_\_\_\_ Inner radius of crown \_\_\_\_\_ Working pressure by Rules \_\_\_\_\_

How connected to shell \_\_\_\_\_ Size of doubling plate under dome \_\_\_\_\_ Diameter of rivet holes and pitch  
of rivets in outer row in dome connection to shell \_\_\_\_\_

Type of Superheater \_\_\_\_\_ Manufacturers of { Tubes \_\_\_\_\_  
Steel castings \_\_\_\_\_

Number of elements \_\_\_\_\_ Material of tubes \_\_\_\_\_ Internal diameter and thickness of tubes \_\_\_\_\_

Material of headers \_\_\_\_\_ Tensile strength \_\_\_\_\_ Thickness \_\_\_\_\_ Can the superheater be shut off and  
the boiler be worked separately \_\_\_\_\_ Is a safety valve fitted to every part of the superheater which can be shut off from the boiler \_\_\_\_\_

Area of each safety valve \_\_\_\_\_ Are the safety valves fitted with easing gear, \_\_\_\_\_ Working pressure as per  
Rules \_\_\_\_\_ Pressure to which the safety valves are adjusted \_\_\_\_\_ Hydraulic test pressure: \_\_\_\_\_

tubes \_\_\_\_\_, castings \_\_\_\_\_ and after assembly in place \_\_\_\_\_ Are drain cocks or valves fitted  
to free the superheater from water where necessary \_\_\_\_\_

Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with FOR

**RILEY BROS. (BOILERMAKERS) LIMITED.**  
The foregoing is a correct description,

J. H. Shields **SECRETARY** Manufacturer.

Dates of Survey { During progress of work in shops - - 1923 June 21 25 July 4 12 27 Are the approved plans of boiler and superheater forwarded herewith yes  
while building { During erection on board vessel - - - Aug 13. (If not state date of approval.)

Total No. of visits 7

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This boiler has been built under special survey: is of good material and workmanship and on completion was tested by hydraulic pressure with satisfactory results

Survey Fee ... £ 6 : 10 : 6 When applied for, Monthly etc.

Travelling Expenses (if any) £ : : When received, 192

Wm Morrison & P. D. Leng  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 26 OCT. 1923

Assigned \_\_\_\_\_



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Foundation