

REPORT ON BOILERS.

Sld. No. 32275

Lab. No. 16144

OCT 28 1937.

Received at London Office

Date of writing Report

192

When handed in at Local Office

23-10-1937

Port of

Middlesbrough

No. in Survey held at

Reg. Book.

Stockton

Date, First Survey

2nd Sept

Last Survey

15 Oct 1937

(Number of Visits

4)

Gross 1893

Tons Net 838

Master

Built at

Sunderland

By whom built

Wm. Duffell & Sons Ltd.

Yard No.

634

When built

1938

Engines made at

Sunderland.

By whom made

W. Duffell & Sons Ltd.

Engine No.

634

When made

1938.

Boilers made at

Stockton

By whom made

Stockton C.E. & Riley Boilers Ltd.

Boiler No.

6270

When made

1937

Nominal Horse Power

434.

Owners

Macdonald & Co. Ltd.

Port belonging to

London.

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Steel Company of Scotland

(Letter for Record

S

Total Heating Surface of Boilers

1582.

Is forced draught fitted

Yes.

Coal or Oil fired

oil exhaust gas

No. and Description of Boilers

15B

Working Pressure

120

Tested by hydraulic pressure to

230.

Date of test

15-10-37

No. of Certificate

6920.

Can each boiler be worked separately

Yes.

Area of Firegrate in each Boiler

4.4 sq. ft.

No. and Description of safety valves to each boiler

Two direct Spring (Lockburn Imp. High Lift)

Area of each set of valves per boiler

as fitted

4.94 sq. ft.

Pressure to which they are adjusted

120

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

1'-6"

Is oil fuel carried in the double bottom under boiler

No.

Smallest distance between shell of boiler and tank top plating

1'-6"

Is the bottom of the boiler insulated

Yes.

Largest internal dia. of boilers

10'-6"

Length

10'-6"

Shell plates: Material

Steel

Tensile strength

29/33

Thickness

7/8

Are the shell plates welded or flanged

No.

Description of riveting: circ. seams

end

DR.

long. seams

T.R. D.B.S.

Diameter of rivet holes in

circ. seams

17/16

Pitch of rivets

3 x 6

Percentage of strength of circ. end seams

plate

68.75

rivets

43.8.

Percentage of strength of circ. intermediate seam

plate

84

rivets

combined

97.5

Percentage of strength of longitudinal joint

plate

84

rivets

97.5

Working pressure of shell by Rules

126.

Thickness of butt straps

outer

7/8

inner

7/8

No. and Description of Furnaces in each Boiler

1 cf.

Material

S

Tensile strength

26/30.

Smallest outside diameter

2'-10 1/2"

Length of plain part

top

bottom

—

Thickness of plates

crown

7/8

bottom

7/8

Description of longitudinal joint

weld.

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

—

Working pressure of furnace by Rules

154.

End plates in steam space: Material

Steel

Tensile strength

26 30

Thickness

7/8.

Pitch of stays 18" x 18" mesh

How are stays secured

DN & W.

Working pressure by Rules

144.

Tube plates: Material

front

Steel

back

Steel

Tensile strength

26/30

Thickness

7/8

12/16

Mean pitch of stay tubes in nests

10 1/4

Pitch across wide water spaces

14 x 7 1/4

Working pressure

front

210

back

225.

Girders to combustion chamber tops: Material

Steel

Tensile strength

28/32.

Depth and thickness of girder

at centre

6 1/2 x 7/8 double

Length as per Rule

2'-4 7/32.

Distance apart

8 3/4

No. and pitch of stays

in each

2 x 9

Working pressure by Rules

127.

Combustion chamber plates: Material

Steel

Tensile strength

26/30

Thickness: Sides

7/32

Back

7/32

Top

7/32

Bottom

7/32.

Pitch of stays to ditto: Sides

8 1/4 x 9 1/2.

Back

10 x 9.

Top

8 3/4 x 9.

Are stays fitted with nuts or riveted over

nuts.

Working pressure by Rules

134.

Front plate at bottom: Material

S

Tensile strength

26/30.

Thickness

7/8

Lower back plate: Material

S

Tensile strength

26/20

Thickness

7/8

Pitch of stays at wide water space

14 x 10

Are stays fitted with nuts or riveted over

nuts.

Working Pressure

210.

Main stays: Material

Steel

Tensile strength

28/32.

Diameter

At body of stay,

2 7/2

Over threads

No. of threads per inch

6

Area supported by each stay

356 sq. in.

Working pressure by Rules

124

Screw stays: Material

Steel

Tensile strength

26/30

Diameter

At turned off part,

1 1/2.

Over threads

No. of threads per inch

9

Area supported by each stay

88.2.

Working pressure by Rules **142**. Are the stays drilled at the outer ends **no** Margin stays: Diameter { At turned off part, **1 7/8** or Over threads **1 7/8** Working pressure by Rules **140**

No. of threads per inch **9** Area supported by each stay **108**

Tubes: Material **lap Weld Iron** External diameter { Plain **2 1/2** Stay **2 1/2** Thickness **10** No. of threads per inch **9**

Pitch of tubes **3 3/4 x 3 7/8** Working pressure by Rules **P 175 S 189**

shell plate **20 x 16** Section of compensating ring **7 x 7/8** Manhole compensation: Size of opening in

Outer row rivet pitch at ends **6"** Depth of flange if manhole flanged No. of rivets and diameter of rivet holes **36 1 7/16**

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

Number of elements Material of tubes Manufacturers of { Tubes Steel castings

Material of headers Tensile strength Internal diameter and thickness of tubes

the boiler be worked separately Thickness Can the superheater be shut off and

Area of each safety valve Is a safety valve fitted to every part of the superheater which can be shut off from the boiler

Rules Are the safety valves fitted with easing gear Working pressure as per

tubes Pressure to which the safety valves are adjusted Hydraulic test pressure: , 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 **yes.**

For and on behalf of
The foregoing is a correct description,
Station Chemical Engineers & Riley Boilers Ltd
G. W. Riley
Manufacturer.

Dates of Survey { During progress of work in shops - - - 1917 Sep 2 28 Oct 13 15
while building { During erection on board vessel - - -
Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) **1.2.37.**
Total No. of visits **4**

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)

The material & workmanship are good.
The boiler has been made under Special Survey in accordance with the approved plan & requirements of the rules.
It was tested to 230 lbs. hydraulic pressure & found sound & tight & has been forwarded to Sunderland to be fitted on board.

This boiler has been securely fixed on board the vessel, examined under steam & safety valves adjusted in accordance with rule requirements

In recommendation please see ency. Rpt.

P. H. Law.

Survey Fee **10 : 10 : 0** When applied for, **25 10 1927**
Travelling Expenses (if any) £ : : When received, **28 DEC. 1937**

R. Colloff
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **TUE 18 JAN 1938**
Assigned *See Sld. J.E. 32275*