

REPORT ON BOILERS.

No. 86252

27 SEP 1930

Received at London Office

Date of Report

When handed in at Local Office

26/9/30

Port of

Newcastle-on-Tyne

No. in Survey held at
Reg. Book.

Newcastle-on-Tyne.

Date, First Survey

4 Feb/29

Last Survey

25 Sept. 1930

40881. on the

Steel. Sc. JO. TAYLOR.

(Number of Visits)

Gross

4640

Tons

Net 2784

Master

Built at

Wellington Quay.

By whom built

Sir W.G. Armstrong Whitworth & Co. Ltd.

Boiler No.

1055. When built

1930.

Engines made at

Scotwood

By whom made

Sir W.G. Armstrong Whitworth & Co. (Eng'rs) Ltd.

Engine No.

83. When made

1930.

Boilers made at

Scotwood

By whom made

Sir W.G. Armstrong Whitworth & Co. (Eng'rs) Ltd.

Boiler No.

83. When made

1930.

Nominal Horse Power

419.

Owners

Port belonging to

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

Manufacturers of Steel David Colvill & Sons Glasgow (Plate) J. Thompson Ltd Wolverhampton (Furnace) Letter for Record S.

Total Heating Surface of Boilers

6870 sq ft.

Is forced draught fitted

No.

Coal or Oil fired

Coal.

No. and Description of Boilers

3. S.E. Multitubular

Working Pressure

180 lb/sq in.

Tested by hydraulic pressure to

320

Date of test

27/11/29. 17.6.29
24/12/29. 24.8.29
16/12/29. 6.7.29

No. of Certificate

409. 360 P
409. 362 C
412. 367 S

Can each boiler be worked separately

Yes.

Area of Firegrate in each Boiler

64 sq ft.

No. and Description of safety valves to each boiler

2 spring loaded

Area of each set of valves per boiler

per Rule 14.7 sq in.
as fitted 16.58 sq in.

Pressure to which they are adjusted

180 lb/sq in.

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

2'-4"

Is oil fuel carried in the double bottom under boilers

No.

Smallest distance between shell of boiler and tank top plating

2'-0"

Is the bottom of the boiler insulated

No.

Largest internal dia. of boilers

15'-0 1/2"

Length

11'-0"

Shell plates: Material

Steel

Tensile strength

28-32 tons.

Thickness

1 1/4"

Are the shell plates welded or flanged

neither

Description of riveting: circ. seams

end

D.R. Lap.

long. seams T.R.D. Butt Straps

Diameter of rivet holes in

circ. seams 1 5/16"

long. seams 1 5/16"

Pitch of rivets

3-8 1/2"
9"

Percentage of strength of circ. end seams

plate 66.4%
rivets 45.9%

Percentage of strength of circ. intermediate seam

plate ✓
rivets ✓

Percentage of strength of longitudinal joint

plate 85.4%
rivets 92%
combined 89.6%

Working pressure of shell by Rules

181 lb/sq in.

Thickness of butt straps

outer 3 1/2"
inner 1 3/32"

No. and Description of Furnaces in each Boiler

3. Deighton Section.

Material

Steel

Tensile strength

26-30 tons

Smallest outside diameter

3'-8 3/4"

Length of plain part

top ✓
bottom

Thickness of plates

crown 9/16"
bottom

Description of longitudinal joint

weld

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

none.

Working pressure of furnace by Rules

182 lb/sq in.

End plates in steam space: Material

Steel

Tensile strength

26-30 tons

Thickness

1 1/4"

Pitch of stays

20" x 20 1/2"

How are stays secured

Nuts & washers inside & outside.

Working pressure by Rules

183 lb/sq in.

Tube plates: Material

front Steel
back Steel

Tensile strength

26-30 tons

Thickness

1 1/2"
1 3/16"

Mean pitch of stay tubes in nests

11"

Pitch across wide water spaces

14 1/4"

Working pressure

front 187 lb/sq in.
back 196 lb/sq in.

Girders to combustion chamber tops: Material

Steel

Tensile strength

28-32 tons

Depth and thickness of girder

at centre

8 1/2" x 1 1/2"

Length as per Rule

33.5"

Distance apart

9 1/4"

No. and pitch of stays

in each

2 @ 10 1/2"

Working pressure by Rules

180 lb/sq in.

Combustion chamber plates: Material

Steel

Tensile strength

26-30 tons

Thickness: Sides

2 3/32"

Back

2 1/32"

Top

2 3/32"

Bottom

1 7/8"

Pitch of stays to ditto: Sides

9" x 10 1/2"

Back

8 3/4" x 8 1/2"

Top

10 1/2" x 9 1/4"

Are stays fitted with nuts or riveted over

nutted.

Working pressure by Rules

185 lb/sq in.

Front plate at bottom: Material

Steel

Tensile strength

26-30 tons

Thickness

1 1/2"

Lower back plate: Material

Steel

Tensile strength

26-30 tons

Thickness

2 3/32"

Pitch of stays at wide water space

14 3/4" x 8 3/4"

Are stays fitted with nuts or riveted over

nutted

Working Pressure

212 lb/sq in.

Main stays: Material

Steel

Tensile strength

28-32 tons

Diameter

At body of stay, or Over threads

3 1/4"

No. of threads per inch

6.

Area supported by each stay

410 sq in.

Working pressure by Rules

195 lb/sq in.

Screw stays: Material

Steel

Tensile strength

26-30 tons

Diameter

At turned off part, or Over threads

1 3/4"

No. of threads per inch

9.

Area supported by each stay

97.125 sq in.

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Foundation

Working pressure by Rules *185 lb/sq. in.* Are the stays drilled at the outer ends *No.* Margin stays: Diameter *1 1/8"* At turned off part. *1 1/8"*
No. of threads per inch *9.* Area supported by each stay *103 sq. ins.* Working pressure by Rules *206 lb/sq. in.*
Tubes: Material *Iron.* External diameter *3 1/4"* Thickness *9 wgs.* No. of threads per inch *9.*
Pitch of tubes *4 1/2"* Working pressure by Rules *Stay 205 lb/sq. in. Plain 180 lb/sq. in.* Manhole compensation: Size of opening in
shell plate *20" x 16"* Section of compensating ring *33" x 37" x 1 1/4"* No. of rivets and diameter of rivet holes *40 @ 1 7/16"*
Outer row rivet pitch at ends *9"* Depth of flange if manhole flanged *3 3/8"* Steam Dome: Material *None.*
Tensile strength *2201* Thickness of shell *2 1/4"* Description of longitudinal joint
Diameter of rivet holes *11/16"* Pitch of rivets *2 1/2"* Percentage of strength of joint *82*
Internal diameter *28* Working pressure by Rules *205 lb/sq. in.* Thickness of crown *1 1/4"* No. and diameter of
stays *28* Inner radius of crown *11 1/2"* Working pressure by Rules *205 lb/sq. in.*
How connected to shell *1 1/4"* Size of doubling plate under dome *1 1/4"* Diameter of rivet holes and pitch
of rivets in outer row in dome connection to shell *1 1/4"*

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 22 inclusive for boilers been complied with

The foregoing is a correct description,

W. G. ARMSTRONG WHITWORTH & COMPANY (ENGINEERS) LIMITED Manufacturer.

Dates of Survey *During progress of work in shops - -*
while building *During erection on board vessel - -*

See reply report

Are the approved plans of boiler and superheater forwarded herewith *Yes.*
(If not state date of approval.)
Total No. of visits

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

These boilers have been built under special survey. The material & workmanship are sound and good. The boilers were hydraulically tested as per Rules & found satisfactory. The safety valves were adjusted under steam to the approved working pressure.

Survey Fee *See* When applied for, *192*
Travelling Expenses (if any) *See* When received, *192*

L. Pickett.
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 10 OCT 1930

Assigned

See J. E. Rpt.



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