

REPORT ON BOILERS.

No. 95892

FEB -9 1939

Received at London Office

27.5

27.22

Date of writing Report

19

When handed in at Local Office

8/21 1938

Port of

Newcastle on Tyne

No. in Survey held at

Reg. Book.

Date, First Survey

26 May 1937

Last Survey

2 Feb 1938

on the

J.S. ZARIAN

(Number of Visits)

Gross
Tons
Net

Master

Built at Harston Hill

By whom built Furness Shipbuilding Co. Ltd.

Yard No. 281

When built 1938

Engines made at

WallSEND

By whom made

North Eastern Marine Engineering Co. Ltd.

Engine No. 2896

When made 1938

Boilers made at

WallSEND

By whom made

North Eastern Marine Engineering Co. Ltd.

Boiler No. 2896

When made 1938

Nominal Horse Power

456

Owners

United West Africa Co.

Port belonging to

Freetown

MULTITUBULAR BOILERS - MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Steel Co of Scotland. Colvilles Ltd.

(Letter for Record)

S

Total Heating Surface of Boilers

5630 sq ft

Is forced draught fitted

Yes

Coal or Oil fired

Oil

No. and Description of Boilers

Two single ended multitubular

Working Pressure

220 lbs

Tested by hydraulic pressure to

380 lbs

Date of test

23-12-37

No. of Certificate

752

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

53 sq ft

No. and Description of safety valves to each boiler

Two spring loaded

Area of each set of valves per boiler

per Rule 15.17 sq ft

as fitted 19.24 sq ft

Pressure to which they are adjusted

225

Are they fitted with easing gear

Yes

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler

Yes

Smallest distance between boilers or uptakes and bunkers or woodwork

5'-10"

Is oil fuel carried in the double bottom under boilers

Yes

Smallest distance between shell of boiler and tank top plating

2'-0"

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boilers

15'-9 1/16"

Length

12'-4 1/2"

Shell plates: Material

Steel

Tensile strength

29-33 tons

Thickness

1 1/32"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end

L.D.R.

long. seams

T.R. bbl straps

Diameter of rivet holes in

circ. seams 1 9/16"

long. seams 1 9/16"

Pitch of rivets

10 1/16"

Percentage of strength of circ. end seams

plate 62.1

rivets 48.8

Percentage of strength of circ. intermediate seam

plate -

rivets -

Percentage of strength of longitudinal joint

plate 85.5

rivets 86.0

combined 88.2

Working pressure of shell by Rules

223 lbs

Thickness of butt straps

outer 3/16"

inner 1/16"

No. and Description of Furnaces in each Boiler

Three section

Material

Steel

Tensile strength

26-30 tons

Smallest outside diameter

47 1/16"

Length of plain part

top -

bottom -

Thickness of plates

crown 2 3/32"

bottom 2 3/32"

Description of longitudinal joint

weld

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

none

Working pressure of furnace by Rules

221 lbs

End plates in steam space: Material

Steel

Tensile strength

26-30 tons

Thickness

1 1/2"

Pitch of stays

23 x 20 1/16"

How are stays secured

Double nuts

Working pressure by Rules

220 lbs

Tube plates: Material

front Steel

back Steel

Tensile strength

26-30 tons

Thickness

7/8"

Mean pitch of stay tubes in nests

8'7"

Pitch across wide water spaces

14 1/2"

Working pressure

front 227 lbs

back 364 lbs

Girders to combustion chamber tops: Material

Steel

Tensile strength

29-33 tons

Depth and thickness of girder

at centre

11 1/2" x 2 @ 1"

Length as per Rule

46 1/2"

Distance apart

8 1/2"

No. and pitch of stays

in each

3 @ 10 3/4"

Working pressure by Rules

230 lbs

Combustion chamber plates: Material

Steel

Tensile strength

26-30 tons

Thickness: Sides

25/32"

Back

3/4"

Top

25/32"

Bottom

7/8"

Pitch of stays to ditto: Sides

10 3/4" x 8 7/8"

Back

10 1/2" x 7 3/4"

Top

10 3/4" x 8 1/2"

Are stays fitted with nuts or riveted over

nuts

Working pressure by Rules

222 lbs

Front plate at bottom: Material

Steel

Tensile strength

26-30 tons

Thickness

15/16"

Lower back plate: Material

Steel

Tensile strength

26-30 tons

Thickness

1"

Pitch of stays at wide water space

17 1/2" x 8"

Are stays fitted with nuts or riveted over

nuts

Working Pressure

223 lbs

Main stays: Material

Steel

Tensile strength

28-32 tons

Diameter

At body of stay, 3 1/2"

Over threads -

No. of threads per inch

6

Area supported by each stay

478.6 sq in

Working pressure by Rules

226 lbs

Screw stays: Material

Steel

Tensile strength

26-30 tons

Diameter

At turned off part, 1 7/8"

Over threads 1 3/4"

No. of threads per inch

9

Area supported by each stay

95.4 sq in

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Working pressure by Rules 222 lbs. Are the stays drilled at the outer ends. *ho* Margin stays: Diameter { At turned off part, $2\frac{1}{8}$ " ✓
or Over threads. $2\frac{1}{8}$ " ✓
No. of threads per inch 9 ✓ Area supported by each stay 120 sq. in. ✓ Working pressure by Rules 237 lbs ✓
Tubes: Material *S. D. Steel* ✓ External diameter { Plain $2\frac{1}{2}$ " ✓ Thickness { $\frac{7}{16}$ " & $\frac{3}{8}$ " ✓ No. of threads per inch 9 ✓
Pitch of tubes $3\frac{3}{4} \times 3\frac{3}{4}$ " ✓ Working pressure by Rules 252 lbs ✓ Manhole compensation: Size of opening
END *shell* plate 16" x 12" ✓ Section of compensating ring — No. of rivets and diameter of rivet holes —
Outer row rivet pitch at ends. — Depth of flange if manhole flanged $4\frac{5}{16}$ " ✓ Steam Dome: Material —
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 (Engin
stays — Inner radius of crown — Working pressure by Rules —
How connected to shell — Size of doubling plate under dome Diameter of rivet holes and pit
of rivets in outer row in dome connection to shell —

Type of Superheater *Combustion Chamber* ✓ Manufacturers of { Tubes *Stewart & Lloyd* ✓
Steel forgings *Stewart & Lloyd* ✓
Steel castings *Hopkinson & Co.* ✓
Number of elements 32 ✓ Material of tubes *S. D. Steel* ✓ Internal diameter and thickness of tubes $1\frac{1}{2}$ " o.d. 7899
Material of headers *Steel* ✓ Tensile strength 26-30 tons ✓ Thickness 1" ✓ Can the superheater be shut off an
the boiler be worked separately *ho* ✓ Is a safety valve fitted to every part of the superheater which can be shut off from the boiler *Yes* ✓
Area of each safety valve 3.1416 sq. in. ✓ Are the safety valves fitted with easing gear *Yes* ✓ Working pressure as pe
Rules 220 lbs ✓ Pressure to which the safety valves are adjusted 225 lbs ✓ Hydraulic test pressure
tubes 1500 lbs ✓ forgings and castings 660 lbs ✓ and after assembly in place 440 lbs ✓ Are drain cocks
valves fitted to free the superheater from water where necessary *Yes* ✓

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with *Yes* ✓

The foregoing is a correct description,

John Neill Manufacture

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

Are the approved plans of boiler and superheater forwarded herewith *Yes* ✓
(If not state date of approval.)

Total No. of visits

Is this Boiler a duplicate of a previous case *Yes* ✓ If so, state Vessel's name and Report No. *"Anglo Indian" Rpt No 95849*

GENERAL REMARKS *Excepting diameter of stay* These boilers have been built under
Special Survey in accordance with the approved plan and the Rules, the workmanship
and material are good. On completion they were tested by hydraulic pressure to 380 lbs
per square inch and found tight and satisfactory. They have been fitted on board
in an efficient manner, tried under steam and found satisfactory. ✓

Survey Fee ... £ *Charged on* } When applied for, 10
Travelling Expenses (if any) £ *Mackay Rpt* } When received, 10

J. S. Llewellyn

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI 11 FEB 1938

Assigned

See Indb. 96, 16237



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