

## REPORT ON BOILERS.

No. 95892

Received at London Office

FEB -9 1938

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.

wallsend

Date, First Survey

26 May 1937

Last Survey

2 Feb 1938

on the

St. Zorian

(Number of Visits)

Gross

Tons

Net

Master

Built at Haverton Hill

By whom built Furness Shipbuilding Co. Ltd.

Yard No. 281

When built 1938

Engines made at

wallsend

By whom made

N.B. Marine Engineering Co. Ltd.

Engine No. 2896

When made 1938

Boilers made at

wallsend

By whom made

N.B. Marine Engineering Co. Ltd.

Boiler No. 2896

When made 1938

Nominal Horse Power

456

Owners

United West Africa Co. Ltd.

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

1400 ft<sup>2</sup>

Is forced draught fitted

No

Coal or Oil fired

Oil

No. and Description of Boilers

One single ended multitubular

Working Pressure

220 lbs

Tested by hydraulic pressure to

380 lbs

Date of test

23-12-37

No. of Certificate

753

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

36 ft<sup>2</sup>

No. and Description of safety valves to each boiler

Two spring loaded

Area of each set of valves per boiler

per Rule

7.3 ft<sup>2</sup>

as fitted

7.9 ft<sup>2</sup>

Pressure to which they are adjusted

225 lbs

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

10'-0"

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

12'-3 7/8"

Length

10'-6"

Shell plates: Material

Steel

Tensile strength

29-33 tons

Thickness

1 3/16"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end

inter.

long. seams

60 lbs Straps T.R.

Diameter of rivet holes in

circ. seams

1 1/4"

Pitch of rivets

3 5/8"

Percentage of strength of circ. end seams

plate

65.5

rivets

45.2

Percentage of strength of circ. intermediate seam

plate

-

rivets

Percentage of strength of longitudinal joint

plate

85.5

rivets

88.8

Working pressure of shell by Rules

220 lbs

Thickness of butt straps

outer

2 1/32"

inner

1 1/32"

No. and Description of Furnaces in each Boiler

Two Brighton

Material

Steel

Tensile strength

26-30 tons

Smallest outside diameter

41 9/16"

Length of plain part

top

-

Thickness of plates

crown

2 1/32"

bottom

Description of longitudinal joint

weld

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

none

Working pressure of furnace by Rules

230 lbs

End plates in steam space: Material

Steel

Tensile strength

26-30 tons

Thickness

1 1/32"

Pitch of stays

23 x 16"

How are stays secured

Double nuts

Working pressure by Rules

226 lbs

Tube plates: Material

front

Steel

back

Steel

Tensile strength

26-30 tons

Thickness

25/32"

Mean pitch of stay tubes in nests

9"

Pitch across wide water spaces

14 1/2"

Working pressure

front

222 lbs

back

245 lbs

Girders to combustion chamber tops: Material

Steel

Tensile strength

29-33 tons

Depth and thickness of girder

at centre

9" x 2 @ 13/16"

Length as per Rule

29"

Distance apart

11"

No. and pitch of stays

in each

2 @ 8 1/2"

Working pressure by Rules

247 lbs

Combustion chamber plates: Material

Steel

Tensile strength

26-30 tons

Thickness: Sides

25/32"

Back

3/4"

Top

25/32"

Bottom

25/32"

Pitch of stays to ditto: Sides

10 x 8 1/2"

Back

10 x 8 1/2"

Top

11 x 8 1/2"

Are stays fitted with nuts or riveted over

nuts

Working pressure by Rules

223 lbs

Front plate at bottom: Material

Steel

Tensile strength

26-30 tons

Thickness

3 1/32"

Lower back plate: Material

Steel

Tensile strength

26-30 tons

Thickness

15/16"

Pitch of stays at wide water space

15" x 10"

Are stays fitted with nuts or riveted over

nuts

Working Pressure

222 lbs

Main stays: Material

Steel

Tensile strength

28-32 tons

Diameter

At body of stay,

3 1/4"

No. of threads per inch

6

Area supported by each stay

368 ft<sup>2</sup>

Working pressure by Rules

252 lbs

Screw stays: Material

Steel

Tensile strength

26-30 tons

Diameter

At turned off part,

1 7/8"

No. of threads per inch

9

Area supported by each stay

93.5 ft<sup>2</sup>

Working pressure by Rules 238 lb ✓ Are the stays drilled at the outer ends No ✓ Margin stays: Diameter { At turned off part, 2 1/8" ✓ Or over threads 2 1/8" ✓  
No. of threads per inch 9 ✓ Area supported by each stay 117.5 sq. in. ✓ Working pressure by Rules 250 lb ✓  
Tubes: Material S.D. Steel ✓ External diameter { Plain 3 1/4" ✓ Stay 3 1/4" ✓ Thickness { 5/16" & 3/8" ✓ No. of threads per inch 9 ✓  
Pitch of tubes 11 3/4" x 9" ✓ Working pressure by Rules 253 lb ✓ Manhole compensation: Size of opening in  
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 1/8" ✓ 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 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 None ✓ Manufacturers of { Tubes - Steel forgings - 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 - forgings and castings - and after assembly in place - Are drain cocks on  
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 Yes ✓

The foregoing is a correct description,  
THE NORTH EASTERN MARINE ENGINEERS CO. LTD. Manufacturer  
John Neill

Dates of Survey { During progress of work in shops - - - See Mch. Rpt ✓  
while building { During erection on 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. Lafian Report No 95720

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This boiler has been built under special survey in accordance with the Rules and approved plan. The workmanship and materials are good, on completion it was tested by hydraulic pressure to 350 lbs per square inch and found tight and satisfactory. It has been fitted on board in an efficient manner, tried under steam and found satisfactory.

Survey Fee ... £ Chased on  
Travelling Expenses (if any) £ Machy Rpt } When applied for, 19  
When received, 19

J. Seller  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 11 FEB 1930  
Assigned See Mch. L.E. 16237