

# REPORT ON BOILERS.

Received at London Office 17 JAN 1928

Date of writing Report

192

When handed in at Local Office

14 JAN. 1928

Port of Sunderland

No. in Reg. Book.

42028 on the

Sunderland

Date, First Survey

Last Survey

7<sup>th</sup> Jan 1928

S. S. "NEWTON ABBOT"

(Number of Visits)

Gross

2689

Tons

Net

1614

Master

Built at

Sunderland

By whom built

J. Brown & Sons, Ltd

Yard No.

179

When built

1928

Engines made at

Sunderland

By whom made

North Eastern Marine Eng. Co. Ltd

Engine No.

2644

When made

1928

Boilers made at

Sunderland

By whom made

North Eastern Marine Eng. Co. Ltd

Boiler No.

2644

When made

1928

Nominal Horse Power

260

Owners

A. & C. Wilton.

Port belonging to

London

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

Manufacturers of Steel

David Colville and Sons Ltd

(Letter for Record. (S) ✓)

Total Heating Surface of Boilers

4436 sq ft

Is forced draught fitted

No ✓

Coal or Oil fired

Coal ✓

No. and Description of Boilers

Two - Marine type - Single ended - Corrugated furnaces. Working Pressure 180 lbs sq

Tested by hydraulic pressure to

320 lbs sq

Date of test

13-9-27

No. of Certificate

3956

Can each boiler be worked separately

Yes ✓

Area of Firegrate in each Boiler

58 sq ft

No. and Description of safety valves to each boiler

Two - Direct Spring loaded.

Area of each set of valves per boiler

per Rule 12.74 sq

as fitted 14.14 sq

Pressure to which they are adjusted

185 lbs sq

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

4' 6" woodwork

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

Yes ✓

Largest internal dia. of boilers

15' 3 1/2"

Length

10' 6" (FULL)

Shell plates: Material

Steel ✓

Tensile strength 28 to 32 tons sq

Thickness

1 1/4" ✓

Are the shell plates welded or flanged

No ✓

Description of riveting: circ. seams

end D. R. Lap ✓

long. seams

A. R. D. B. S. ✓

Diameter of rivet holes in

circ. seams 1 3/32"

long. seams 1 9/32"

Pitch of rivets

3 3/4" ✓

9 1/8" ✓

Percentage of strength of circ. end seams

plate 65.8

rivets 45.2

Percentage of strength of circ. intermediate seam

plate ✓

rivets ✓

Percentage of strength of longitudinal joint

plate 85.95

rivets 87.3

combined 89.4

Working pressure of shell by Rules

180.1 lbs sq

Thickness of butt straps

outer 1" ✓

inner 1 1/8" ✓

No. and Description of Furnaces in each Boiler

3 - Corrugated Deighton type.

Material

Steel ✓

Tensile strength

26 to 30 tons sq ✓

Smallest outside diameter

3' 8 3/8" ✓

Length of plain part

top ✓

bottom ✓

Thickness of plates

crown 9/16" ✓

bottom 9/16" ✓

Description of longitudinal joint

Welded ✓

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

Working pressure of furnace by Rules

183.8 lbs sq

End plates in steam space: Material

Steel ✓

Tensile strength

26 to 30 tons sq ✓

Thickness

1 9/32" ✓

Pitch of stays 22 1/2" x 21"

How are stays secured

Double Nuts & Washers outside. ✓

Working pressure by Rules

181.5 lbs sq

Tube plates: Material

front } Steel ✓

back } Steel ✓

Tensile strength

26 to 30 tons sq ✓

Thickness

3/4" ✓

7/8" ✓

Mean pitch of stay tubes in nests

10.5"

Pitch across wide water spaces

14.5" ✓

Working pressure

front 206 lbs sq (W.W. Space) ✓  
back 181.5 lbs sq ✓

Girders to combustion chamber tops: Material

Steel ✓

Tensile strength

28 to 32 tons sq ✓

Depth and thickness of girder

at centre

8 1/4" x 1 3/4" ✓

Length as per Rule

30.5" ✓

Distance apart

12" ✓

No. and pitch of stays

in each

2 x 9 1/2" ✓

Working pressure by Rules

183 lbs sq

Combustion chamber plates: Material

Steel ✓

Tensile strength

26 to 30 tons sq

Thickness: Sides

25/32" ✓

Back

25/32" ✓

Top

25/32" ✓

Bottom

15/16" ✓

Pitch of stays to ditto: Sides

12" x 9 1/2" ✓

Back

10 1/4" x 9" ✓

Top

12" x 9 1/2" ✓

Are stays fitted with nuts or riveted over

Fitted with nuts. ✓

Working pressure by Rules

Sides 184 lbs sq ✓  
Tops 184 lbs sq ✓  
Wings 182 lbs sq ✓  
Back 237 lbs sq ✓

Front plate at bottom: Material

Steel ✓

Tensile strength

26 to 30 tons sq ✓

Thickness

7/8" ✓

Lower back plate: Material

Steel ✓

Tensile strength

26 to 30 tons sq ✓

Thickness

7/8" ✓

Pitch of stays at wide water space

14 3/4" x 10 1/4" ✓

Are stays fitted with nuts or riveted over

Fitted with nuts ✓

Working Pressure

194 lbs sq

Main stays: Material

Steel ✓

Tensile strength

28 to 32 tons sq ✓

Diameter

At body of stay, or Over threads

3 1/8" ✓

No. of threads per inch

6 ✓

Area supported by each stay

472.5 sq

Working pressure by Rules

181 lbs sq

Screw stays: Material

Steel ✓

Tensile strength

26 to 30 tons sq ✓

Diameter

At turned off part, or Over threads

1 7/8" ✓

No. of threads per inch

9 ✓

Area supported by each stay

Sides & Tops 114 sq ✓  
Wing Bushes 117.75 sq ✓  
Butt Bushes 92.25 sq ✓

Working pressure by Rules <sup>Sides & tops 187 lbs sq</sup> ~~181 lbs sq~~ Are the stays drilled at the outer ends *No* ✓ Margin stays: Diameter { At turned off part, *2"* ✓ or Over threads }  
 No. of threads per inch *9* Area supported by each stay *134.5 sq* Working pressure by Rules *183.5 lbs sq*  
 Tubes: Material *Wrought Iron* ✓ External diameter { Plain *3 1/4"* ✓ Stay *3 1/4"* ✓ Thickness { *S.W.G.* ✓ *5/16" & 1/4"* ✓ No. of threads per inch *9* ✓  
 Pitch of tubes *4 9/16" x 4 9/16"* ✓ Working pressure by Rules *Plain 230 lbs sq* ✓ *Stay 195 & 193 lbs sq* ✓ 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"* ✓ 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 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 *yes*

The foregoing is a correct description,  
 FOR THE NORTH EASTERN MARINE ENGINEERING CO. LTD. Manufacturer.

*John Neill*

Dates of Survey { During progress of work in shops - - } *Please see Machy. Rpt.* Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) *Manager*  
 { During erection on board vessel - - - } Total No. of visits

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

*The materials and workmanship are good.*  
*The Boilers have been constructed under Special Survey, and satisfactorily fitted in the vessel.*  
*For notation see Machinery Report.*

Survey Fee ... .. £ *Please see Machinery Report.* When applied for, 192  
 Travelling Expenses (if any) £ When received, 192

*A. A. Griffith.*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **FRI. 20 JAN 1928**  
 Assigned *See Machy Rpt. attached*

