

## REPORT ON BOILERS.

No. 79027.

27 MAR 1925

Received at London Office

Date of writing Report

192

When handed in at Local Office

26/3/1925

Port of

Newcastle-on-Tyne

No. in Survey held at  
Reg. Book.

Newcastle-on-Tyne

Date, First Survey

11 Aug 1924

Last Survey

25 March 1925

on the

Steel 30.

WEST WALES

(Number of Visits)

Tons

Gross 4340

Net 2665

Master

Built at Newcastle

By whom built W. D. &amp; S. M. &amp; Co.

Yard No. 224

When built 1925

Engines made at

Newcastle

By whom made North Eastern Marine Eng. Co. Ltd.

Engine No. 2590

When made 1925

Boilers made at

Newcastle

By whom made North Eastern Marine Eng. Co. Ltd.

Boiler No. 2590

When made 1925

Nominal Horse Power

490

Owners

Litts &amp; Co.

Port belonging to

Cardiff

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

Manufacturers of Steel

David Colville &amp; Co. Ltd.

(Letter for Record

3)

Total Heating Surface of Boilers

8460

Is forced draught fitted

No.

Coal or Oil fired

Coal

No. and Description of Boilers

3 Single-ended Cylindrical

Working Pressure

180 lb

Tested by hydraulic pressure to

320 lb

Date of test

2.12.24

No. of Certificate

9879

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

76

No. and Description of safety valves to each boiler

Two Spring-loaded

Area of each set of valves per boiler

per Rule

18.07

as fitted

19.24

Pressure to which they are adjusted

185 lb

Are they fitted with easing gear

Yes

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

No.

N.R.V. fitted

Smallest distance between boilers or uptakes and bunkers or woodwork

37"

Is oil fuel carried in the double bottom under boilers

No

Smallest distance between shell of boiler and tank top plating

29"

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boilers

190 5/16"

Length

11' 10 1/2"

Shell plates: Material

Steel

Tensile strength

28 1/2 - 32 1/2

Thickness

1 3/32"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end

Double

Long. seams

Tie Rods D.S.

Diameter of rivet holes in

circ. seams

1 5/16"

Pitch of rivets

3 3/4"

Percentage of strength of circ. end seams

plate

rivets

Percentage of strength of circ. intermediate seam

plate

rivets

650

45.6

Percentage of strength of longitudinal joint

plate

rivets

85.74

Working pressure of shell by Rules

182 lb

Thickness of butt straps

outer

31/32"

inner

1 3/32"

No. and Description of Furnaces in each Boiler

4 Deighton

Material

Steel

Tensile strength

26-30 tons

Smallest outside diameter

39 3/4"

Length of plain part

top

bottom

Thickness of plates

crown

bottom

1 1/2"

Description of longitudinal joint

Weld

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

Working pressure of furnace by Rules

181 lb

End plates in steam space: Material

Steel

Tensile strength

26-30 tons

Thickness

1 1/2"

Pitch of stays 24" x 27"

How are stays secured

Double nuts &amp; (3 1/2 dia.) washers

Working pressure by Rules

181 lb

Tube plates: Material

front

back

Steel

Tensile strength

26-30 tons

Thickness

3 1/32"

3/4"

Lean pitch of stay tubes in nests

8 7/8"

Pitch across wide water spaces

14 1/2"

Working pressure

front

197 lb

back

212 lb

Girders to combustion chamber tops: Material

Steel

Tensile strength

28-32 tons

Depth and thickness of girder

Centre

9"-1 1/2"

Length as per Rule

34 1/2"

Distance apart

9 1/4"

No. and pitch of stays

Each

Two - 10 1/4"

Working pressure by Rules

186 lb

Combustion chamber plates: Material

Steel

Tensile strength

26-30 tons

Thickness: Sides

23/32"

Back

23/32"

Top

23/32"

Bottom

15/16"

Pitch of stays to ditto: Sides

10 1/2" x 9 1/2"

Back

10 1/2" x 9 1/2"

Top

10 1/4" x 9 1/4"

Are stays fitted with nuts or riveted over

Nuts

Working pressure by Rules

181 lb

Front plate at bottom: Material

Steel

Tensile strength

26-30 tons

Thickness

31/32"

Lower back plate: Material

Steel

Tensile strength

26-30 tons

Thickness

7/8"

Pitch of stays at wide water space

14 1/2"

Are stays fitted with nuts or riveted over

Nuts

Working Pressure

187 lb

Main stays: Material

Steel

Tensile strength

28-32 tons

Diameter

At body of stay,

or

Over threads

3 3/4"

No. of threads per inch

Six

Area supported by each stay

648 sq

Working pressure by Rules

192 lb

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

Nine

Area supported by each stay

99.75 sq

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W1139-0125



Working pressure by Rules 181 lbs Are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part, or Over threads 1 7/8"  
No. of threads per inch nine Area supported by each stay 97.375 sq" Working pressure by Rules 219 lbs  
Tubes: Material Iron External diameter { Plain 3 1/4" Thickness { 8 L.S.G. No. of threads per inch nine  
Pitch of tubes 4 1/2" x 4 3/8" Working pressure by Rules plain 230 lbs stay 205 lbs Manhole compensation: Size of opening in  
End plate 16" x 12" Section of compensating ring none No. of rivets and diameter of rivet holes ✓  
Outer row rivet pitch at ends ✓ Depth of flange if manhole flanged 4 1/2" Steam Dome: Material none  
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 North Eastern ✓ Manufacturers of { Tubes The Metal Steel Tube Co. Ltd.  
Steel castings none  
Number of elements 174 Material of tubes S. S. Steel Internal diameter and thickness of tubes 1 7/8" x 2 1/2" thick  
Material of headers S. S. Steel ✓ Tensile strength 26/30 Tons Thickness 7/8" min. Can the superheater be shut off and  
the boiler be worked separately Yes 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 3.14 sq" Are the safety valves fitted with easing gear Yes Working pressure as per  
Rules 180 lbs Pressure to which the safety valves are adjusted 190 lbs. ✓ Hydraulic test pressure:  
tubes 1500 lbs. Headers 540 lbs and after assembly in place 450 lbs. Are drain cocks or valves fitted  
to free the superheater from water where necessary Yes. ✓  
Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with Yes.

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

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

See Survey Report

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

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

These boilers were constructed under special Survey. The materials & workmanship are sound & good. They were built to the approved plans, tested by hydraulic pressure and efficiently installed. The superheater headers and the installation were tested by hydraulic pressure. The boilers & superheaters were examined under steam when their safety valves were adjusted. In my opinion the vessel is now eligible for notation in L.M.C. 3.75 in the Society's Register Book.

The Donkey Boiler, see Ind. Rpt. No. 11205 has been efficiently installed in the Tween Decks. It is fitted with a N.R. Stop valve and two Spring-loaded Safety valves. The safety valves were adjusted under steam to 120 lbs. on the 5th March 1925 and the washers measure  $F \times A \frac{13}{32}$ "

Survey Fee ... £  
Travelling Expenses (if any) £

When applied for, 192  
When received, 192

R. Lee Amers.

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUES. 31 MAR 1925

Assigned

See other rpt  
Same No.



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Foundation