

# REPORT ON BOILERS.

No. 95876

Received at London Office

FEB -2 1938

Date of writing Report

19

When handed in at Local Office

1/21 1938

Port of Newcastle on Tyne

No. in Survey held at

Wallsend

Date, First Survey

16 June

Last Survey

27 Jan 1938

Reg. Book.

on the

S.S. "BRATED"

(Number of Visits)

Gross

Tons

Net

6.05

Master

J.M.

Built at Burntisland

By whom built Burntisland S.B. Co. Ltd.

Yard No. 217

When built 1938

Engines made at

Wallsend

By whom made North Eastern Marine Eng Co. Ltd.

Engine No. 2884

When made 1938

Boilers made at

Wallsend

By whom made North Eastern Marine Eng Co. Ltd.

Boiler No. 2884

When made 1938

Nominal Horse Power

115

Owners

Hudson S. S. Co. Ltd.

Port belonging to

London

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

Manufacturers of Steel

Steel Company of Scotland

(Letter for Record)

Total Heating Surface of Boilers

2067 sq ft

Is forced draught fitted

No

Coal or Oil fired

Coal

No. and Description of Boilers

One single ended multitubular

Working Pressure

220 lbs

Tested by hydraulic pressure to

380 lbs

Date of test 9-12-37

No. of Certificate 751

Can each boiler be worked separately

No

Area of Firegrate in each Boiler

60.5 sq ft

No. and Description of safety valves to each boiler

Two spring loaded

Area of each set of valves per boiler

11.15 sq in

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

7'-6"

Is oil fuel carried in the double bottom under boilers

No

Smallest distance between shell of boiler and tank top plating

Open floor 21"

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boilers

15'-0 1/8"

Length 10'-6"

Shell plates: Material

Steel

Tensile strength

29-33 tons

Thickness

1 7/16"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end

inter.

L.D.R.

Long. seams

T.R. oblique straps

Diameter of rivet holes in

circ. seams 1 15/32"

long. seams 1 15/32"

Pitch of rivets

4 1/2"

10 3/16"

Percentage of strength of circ. end seams

plate 65.4

rivets 44.0

Percentage of strength of circ. intermediate seam

plate -

rivets -

Percentage of strength of longitudinal joint

plate 85.8

rivets 88.2

Working pressure of shell by Rules

220.4 lbs

Thickness of butt straps

outer 1 3/32"

inner 1 7/32"

No. and Description of Furnaces in each Boiler

Three Brighton

Material

Steel

Tensile strength

26-30 tons

Smallest outside diameter

44 5/8"

Length of plain part

top -

bottom -

Thickness of plates

crown 11/16"

bottom 11/16"

Description of longitudinal joint

weld

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

Working pressure of furnace by Rules

226 lbs

End plates in steam space: Material

Steel

Tensile strength

26-30 tons

Thickness

1 3/8"

Pitch of stays 20" x 19 1/2"

How are stays secured

double nuts

Working pressure by Rules

227 lbs

Tube plates: Material

front Steel

back Steel

Tensile strength

26-30 tons

Thickness

1 3/16"

Mean pitch of stay tubes in nests

8 7/8"

Pitch across wide water spaces

14 1/2"

Working pressure

front 226 lbs

back 300 lbs

Girders to combustion chamber tops: Material

Steel

Tensile strength

29-33 tons

Depth and thickness of girder

at centre

8 1/2" x 2 @ 13/16"

Length as per Rule

30"

Distance apart

10"

No. and pitch of stays

in each

2 @ 8 7/8"

Working pressure by Rules

228 lbs

Combustion chamber plates: Material

Steel

Tensile strength

26-30 tons

Thickness: Sides

3/4"

Back

25/32"

Top

3/4"

Bottom

3/4"

Pitch of stays to ditto: Sides

10" x 8 7/8"

Back

10" x 9"

Top

10" x 8 7/8"

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

1"

Lower back plate: Material

Steel

Tensile strength

26-30 tons

Thickness

1"

Pitch of stays at wide water space

14 1/2"

Are stays fitted with nuts or riveted over

nuts

Working Pressure

266 lbs

Main stays: Material

Steel

Tensile strength

28-32 tons

Diameter

At body of stay, 3 1/4"

Over threads -

No. of threads per inch

6

Area supported by each stay

390 sq in

Working pressure by Rules

237 lbs

Screw stays: Material

Steel

Tensile strength

26-30 tons

Diameter

At turned off part, 1 7/8"

Over threads -

No. of threads per inch

9

Area supported by each stay

90 sq in

Working pressure by Rules 238 lbs Are the stays drilled at the outer ends No Margin stays: Diameter <sup>At turned off part.</sup> 2 1/8" <sup>or</sup> 2 1/8" <sup>Over threads</sup>

No. of threads per inch 9 Area supported by each stay 117.5 Working pressure by Rules 242 lbs

Tubes: Material S.S. Steel External diameter <sup>Plain</sup> 3 1/4" <sup>Stay</sup> 3 1/4" Thickness <sup>8 9</sup> 5/16" + 3/8" No. of threads per inch 9

Pitch of tubes 8 3/4" + 11 3/4" Working pressure by Rules 253 lbs 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 <sup>Plate</sup> - <sup>Rivets</sup> -

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 <sup>Tubes</sup> - <sup>Steel forgings</sup> - <sup>Steel castings</sup> -

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 -

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 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,  
 THE NORTH EASTERN MARINE ENGINEERING CO., LTD. Manufacturer.  
John Neill

Dates of Survey <sup>During progress of work in shops - -</sup> See Machinery Report Are the approved plans of boiler and superheater forwarded herewith Yes <sup>(If not state date of approval.)</sup>

<sup>while building</sup> <sup>During erection on board vessel - - -</sup> See Machinery Report Total No. of visits -

Is this Boiler a duplicate of a previous case No  If so, state Vessel's name and Report No. -

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This boiler has been built under Special Survey, in accordance with the approved plan and the Rules: the materials and workmanship are good, on completion it was tested by hydraulic pressure to 380 lbs per square in and found tight and satisfactory. It has been fitted on board in an efficient manner, tried under working conditions and found satisfactory.

Survey Fee ... £ <sup>Charged on</sup> Machinery Report When applied for, 19

Travelling Expenses (if any) £ <sup>Charged on</sup> Machinery Report When received, 19

J. S. Sella  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI 4 FEB 1938

Assigned See Dec 19487



Generator Test Certificate

Rpt. 1  
 Date of  
 No. i  
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