

## REPORT ON BOILERS.

16 DEC 1931

No. 51885

Received at London Office 28 OCT 1931

Date of writing Report

19

When handed in at Local Office

26

1931

Port of Glasgow.

No. in Survey held at

Glasgow

Date, First Survey

17<sup>th</sup> Sept 31

Last Survey

24<sup>th</sup> Oct

1931

on the

Boiler No. 4544 M.V. "ACTIVITY"

(Number of Visits

9

Tons

Gross

389

Net

174

3,38

Master

Built at

Greenock

By whom built

G. Brown &amp; Co. Ltd

Yard No.

182

When built

1931

Engines made at

Newbury

By whom made

Plenty, Still &amp; Co. Ltd

Engine No.

634

When made

1931

Boilers made at

Glasgow

By whom made

Messrs James Neilson &amp; Sons

Boiler No.

4544

When made

1931

Nominal Horse Power

Owners

H. J. Everard &amp; Sons Ltd

Port belonging to

London.

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

Manufacturers of Steel

The Steel Coy of Scotland

(Letter for Record

Total Heating Surface of Boilers

474 sq ft

Is forced draught fitted

No.

Coal or Oil fired

Yes.

No. and Description of Boilers

One single ended cylinder return tube

Working Pressure

180 lb.

Tested by hydraulic pressure to

320 lbs.

Date of test

24.10.31

No. of Certificate

19043

Can each boiler be worked separately

✓

Area of Firegrate in each Boiler

✓

No. and Description of safety valves to each boiler

Area of each set of valves per boiler

{per Rule

{as fitted

Pressure to which they are adjusted

Are they fitted with easing gear

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

Smallest distance between boilers or uptakes and bunkers or woodwork

Is oil fuel carried in the double bottom under boilers

Smallest distance between shell of boiler and tank top plating

Is the bottom of the boiler insulated

Largest internal dia. of boilers

94.625" ✓

Length

8'-0" ✓

Shell plates: Material

Steel

Tensile strength

28.32 tons ✓

Thickness

1 1/16" ✓

Are the shell plates welded or flanged

no ✓

Description of riveting: circ. seams

{end

{inter

D.R. Lap ✓

Long. seams

T.R. &amp; B.S. ✓

Diameter of rivet holes in

{circ. seams

{long. seams

15/16" ✓

Pitch of rivets

3.25" ✓

Percentage of strength of circ. end seams

{plate

{rivets

71 ✓

Percentage of strength of circ. intermediate seam

{plate

{rivets

✓

Percentage of strength of longitudinal joint

{plate

{rivets

85.3 ✓

105 ✓

Working pressure of shell by Rules

183.5 lb. ✓

Thickness of butt straps

{outer

{inner

17/32" ✓

No. and Description of Furnaces in each Boiler

1 Corrugated iron section

Material

Steel

Tensile strength

26.30 tons ✓

Smallest outside diameter

37.2" ✓

Length of plain part

{top

{bottom

Thickness of plates

{crown

{bottom

15/32" ✓

Description of longitudinal joint

Welded

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

✓

Working pressure of furnace by Rules

180 lb. ✓

End plates in steam space: Material

Steel

Tensile strength

26.30 tons ✓

Thickness

13/16" ✓

Pitch of stays

15" ✓

How are stays secured

Riveted washers &amp; nuts outside, nuts inside

Working pressure by Rules

181 lb. ✓

Tube plates: Material

{front

{back

Steel

Tensile strength

26.30 tons ✓

Thickness

13/16" ✓

Lean pitch of stay tubes in nests

9.81" ✓

9.5625

Pitch across wide water spaces

12" ✓

Working pressure

{front

{back

182 lb. ✓

208" ✓

Girders to combustion chamber tops: Material

Steel

Tensile strength

28.32 tons ✓

Depth and thickness of girder

Centre

5 1/2" 2 @ 9/16" ✓

Length as per Rule

21" ✓

Distance apart

7 1/2" ✓

No. and pitch of stays

Each

2 @ 7" ✓

Working pressure by Rules

190 lb. ✓

Combustion chamber plates: Material

Steel

Tensile strength

26.30 tons ✓

Thickness: Sides

19/32" ✓

Back

19/32" ✓

Top

17/32" ✓

Bottom

19/32" ✓

Pitch of stays to ditto: Sides

8 1/2" x 7 1/2" ✓

Back

8" x 8" ✓

Top

7 1/2" x 7" ✓

Are stays fitted with nuts ~~connected over~~

Yes

Working pressure by Rules

182 lb. ✓

Front plate at bottom: Material

Steel

Tensile strength

26.30 tons ✓

Thickness

13/16" ✓

Lower back plate: Material

Steel

Tensile strength

26.30 tons ✓

Thickness

13/16" ✓

Pitch of stays at wide water space

✓

Are stays fitted with nuts ~~connected over~~

Yes

Working Pressure

✓

Main stays: Material

Steel

Tensile strength

28.32 tons ✓

Diameter

{At body of stay,

{Over threads

2 3/8" x 2 1/4" ✓

No. of threads per inch

6 ✓

Area supported by each stay

210 sq inches ✓

Working pressure by Rules

187 lb. ✓

Screw stays: Material

Steel

Tensile strength

26.30 tons ✓

Diameter

{At turned off part,

{Over threads

1 3/8" x 1 1/2" ✓

No. of threads per inch

9 ✓

Area supported by each stay

T.R. 52.5 sq inches ✓

(fitted March '38)

24.3.38.



Working pressure by Rules 192 lbs Are the stays drilled at the outer ends no Margin stays: Diameter 1 1/2"  
No. of threads per inch 9 Area supported by each stay 70 sq inches Working pressure by Rules 180 lbs  
Tubes: Material Steel External diameter 3 1/4" Thickness 5/16" No. of threads per inch 9  
Pitch of tubes 4 1/4" x 4 1/4" Working pressure by Rules 180 lbs Manhole compensation: Size of opening in  
shell plate 16" x 12" Section of compensating ring 6 3/4" x 3/4" No. of rivets and diameter of rivet holes 40 @ 1 5/16"  
Outer row rivet pitch at ends 5 9/16" Depth of flange if manhole flanged ✓ Steam Dome: Material ✓  
Tensile strength Thickness of shell Description of longitudinal joint  
Diameter of rivet holes Pitch of rivets Percentage of strength of joint  
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  
Number of elements Material of tubes Internal diameter and thickness of tubes  
Material of headers Tensile strength Thickness Can the superheater be shut off  
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 yes  
Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with

The foregoing is a correct description,  
For JAMES NEILSON & SON, LTD. Manufacturer

Dates of Survey { During progress of work in shops - - - 1931 Sep. 17, 23, 25, 30 Oct. 3, 9, 15, 21  
while building { During erection on board vessel - - - 24  
Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval) yes  
Total No. of visits 9

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 survey in accordance with the Rules and approved plan. The materials and workmanship are good. The boiler is to the order Messrs. George Brown & Co. Greenock and intended for their No. 181 building to the Society's classification.

Survey Fee ... £ 4 : 4 : 0 When applied for, 26 OCT 1931  
Travelling Expenses (if any) £ ... When received, 27-10-31

G. E. Murdoch  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 27 OCT 1931  
Assigned TRANSMIT TO LONDON