

## REPORT ON BOILERS.

No. 68260.

6 APR 1944

Received at London Office

Date of writing Report

19

When handed in at Local Office

1. 4. 1944

Port of

Glasgow

No. in  
Reg. Book.

Survey held at

Glasgow and Grangemouth

Date, First Survey

28. 7. 43

Last Survey

10. 3.

1944

(Number of Visits

31)

Gross

2340

Tons

Net 1281

on the

S.S. "EMPIRE PYM"

Built at

Grangemouth

By whom built

Grangemouth Dockyard Co. Ltd

Yard No.

448

When built

1944

Engines made at

Glasgow

By whom made

David Rowan &amp; Co. Ltd

Engine No.

1126

When made

1944

Boilers made at

- do -

By whom made

- do -

Boiler No.

1140

When made

1944

Nominal Horse Power

242

Owners

Ministry of War Transport

Port belonging to

Grangemouth

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

Manufacturers of Steel

The Steel Company of Scotland, Ltd.

(Letter for Record

(3)

Total Heating Surface of Boilers

3360 sq ft

Is forced draught fitted

Yes

Coal or Oil fired

Oil

No. and Description of Boilers

One single ended boiler

Working Pressure

220 LBS/sq in

Tested by hydraulic pressure to

380 LBS/sq in

Date of test

10/12/43

No. of Certificate

21595

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

No. and Description of safety valves to each boiler

2 1/2" Improved high lift double.

Area of each set of valves per boiler

(per Rule

8.95 sq ft

as fitted

9.8 sq ft

Pressure to which they are adjusted

220 LBS/sq in

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

2'-5"

Is oil fuel carried in the double bottom under boilers

No

Smallest distance between shell of boiler and tank top plating

Open floors

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boilers

16'-0"

Length

12'-0"

Shell plates: Material

S.

Tensile strength

29/33 Tons.

Thickness

1 1/2"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end

D.R.

long. seams

T.R.D.B.S.

Diameter of rivet holes in

circ. seams

BACK 1 1/2" FRONT 1 1/2"

Pitch of rivets

BACK 4-16" FRONT 3-64"

Percentage of strength of circ. end seams

plate

BACK 62.4 FRONT 60.5

rivets

BACK 47.8 FRONT 46.3

Percentage of strength of circ. intermediate seam

plate

rivets

Percentage of strength of longitudinal joint

plate

85.5

rivets

85.8

combined

88.2

Thickness of butt straps

outer

1 1/2"

inner

1 3/4"

No. and Description of Furnaces in each Boiler

3 Dighton Furnaces.

Material

S.

Tensile strength

26/30 Tons

Smallest outside diameter

3'-10 13/32"

Length of plain part

top

bottom

Thickness of plates

crown

45"

bottom

64"

Description of longitudinal joint

Welded.

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

Yes

End plates in steam space: Material

S.

Tensile strength

26/30 Tons

Thickness

1 7/8"

Pitch of stays

20" x 2'-0 1/2"

How are stays secured

D.N.

Tube plates: Material

front

S.

back

Tensile strength

26-30 Tons

Thickness

7/8"

25/32"

Mean pitch of stay tubes in nests

9 1/4"

Pitch across wide water spaces

13 1/2"

Girders to combustion chamber tops: Material

S.

Tensile strength

28/32 Tons

Depth and thickness of girder

at centre

2 @ 9 3/4" x 7"

Length as per Rule

2'-10 9/16"

Distance apart

9 3/4"

No. and pitch of stays

in each

3 @ 8 1/4"

Combustion chamber plates: Material

S.

Tensile strength

26/30 Tons

Thickness: Sides

23/32"

Back

21/32"

Top

23/32"

Bottom

27/32"

Pitch of stays to ditto: Sides

9 3/4" x 8 1/4"

Back

8 1/2" x 8"

Top

8 1/4" x 9 3/4"

Are stays fitted with nuts or riveted over

Nuts.

Front plate at bottom: Material

S.

Tensile strength

26/30 Tons

Thickness

7/8"

Lower back plate: Material

S.

Tensile strength

26/30 Tons

Thickness

13/16"

Pitch of stays at wide water space

13 7/16"

Are stays fitted with nuts or riveted over

Nuts.

Main stays: Material

S.

Tensile strength

28/32 Tons

Diameter

At body of stay,

3 1/2" &amp; 3 1/4"

Over threads

No. of threads per inch

6

Screw stays: Material

S.

Tensile strength

26/30 Tons

Diameter

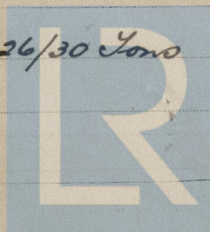
At turned off part,

1 5/8" &amp; 1 3/4"

Over threads

No. of threads per inch

9



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Are the stays drilled at the outer ends no ✓ Margin stays: Diameter { At turned off part. ✓  
or Over threads 1 3/8" x 2 1/4" ✓

No. of threads per inch 9 ✓

Tubes: Material S. ✓ External diameter { Plain 2 1/2" ✓  
Stay 2 1/2" ✓ Thickness { 9 W.C. ✓  
5/16", 3/8", 7/16" ✓ No. of threads per inch 9 ✓

Pitch of tubes 3 5/8" x 3 3/4" ✓ Manhole compensation: Size of opening in  
end plate 1/6" 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 ✓ Thickness of crown ✓ No. and diameter of  
stays ✓ Inner radius of crown ✓

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 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 ✓

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,  
For David Rowan & Co. Ltd. Manufacturer.  
Archd. H. Grierson

Dates of Survey { During progress of work in shops - - 1943 July, 28-30 & Aug 31 Sep 9, 10, 31 Oct 8-9  
while building { During erection on board vessel - - 11, 15, 28 Nov 1, 2, 4, 9, 10, 12, 15, 18, 23 Dec 7, 8, 10, 16  
Total No. of visits 31

Are the approved plans of boiler and superheater forwarded herewith yes  
(If not state date of approval.)

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 Society's Rules and approved plans. The materials and workmanship are good. It has been satisfactorily installed in the vessel and the safety valves have been adjusted to the working pressure. The Specification requirements have been carried out satisfactorily. ✓

Survey Fee ... .. £ See Machy Rept. When applied for, 19  
Travelling Expenses (if any) £ : : When received, 19

Jas. Stevenson & M. Dale  
Engineer Surveyors to Lloyd's Register of Shipping.

Committee's Minute GLASGOW - 4 APR 1944

Assigned



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