

REPORT ON BOILERS.

No. 65647

Received at London Office

17 JUN 1942

Date of writing Report

9th June 1942

When handed in at Local Office

16.6.42

Port of

Glasgow

No. in Reg. Book.

Survey held at

Glasgow

Date, First Survey

2:3:42

Last Survey

28th May 1942

on the

"EMPIRE PIBROCH"

(Number of Visits

7)

Gross

Tons

Net

Master

Built at

Port Glasgow

By whom built

Messrs Lithgows' Ltd

Yard No. 980

When built 1942

Engines made at

Greenock

By whom made

Messrs Rankin & Blackmore

Engine No. 488

When made 1942

Boilers made at

Glasgow

By whom made

Messrs David Rowan & Co

Boiler No. 0468

When made 1942

Nominal Horse Power

Owners

Port belonging to

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Colvilles Ltd

Total Heating Surface of Boilers

2416 ft^2

Is forced draught fitted

Yes

(Letter for Record

S

Coal or Oil fired

Coal

No. and Description of Boilers

One Single Ended

Working Pressure

220 $\text{lbs}/\text{sq. in.}$

Tested by hydraulic pressure to

380 lbs

Date of test

8-5-42

No. of Certificate

21056

Can each boiler be worked separately

Area of Firegrate in each Boiler

55 ft^2

No. and Description of safety valves to each boiler

One 3" double, spring loaded

Area of each set of valves per boiler

per Rule

12.85 sq. ft.

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

15'-0 7/8"

Length

11'-6"

Shell plates: Material

S

Tensile strength

29/33 $\text{Tons}/\text{sq. in.}$

Thickness

1 7/16"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end

OR. Lap

long. seams

T.R.O.B.S.

Diameter of rivet holes in

circ. seams

1 3/8" F, 1 1/2" B

Pitch of rivets

3.435" F, 4.13" B

Percentage of strength of circ. end seams

plate

60.0 F, 63.68 B

rivets

47.8 F, 47.2 B

Percentage of strength of circ. intermediate seam

plate

Percentage of strength of longitudinal joint

plate

85.36

rivets

89.0

combined

88.5

Working pressure of shell by Rules

Thickness of butt straps

outer

1 3/32"

inner

1 7/32"

No. and Description of Furnaces in each Boiler

3 Dighton Section

Material

S

Tensile strength

26/30 $\text{Tons}/\text{sq. in.}$

Smallest outside diameter

3'-9 3/8"

Length of plain part

top

bottom

Thickness of plates

crown

1 1/16"

Description of longitudinal joint

Welded

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

Working pressure of furnace by Rules

End plates in steam space: Material

S

Tensile strength

26/30 $\text{Tons}/\text{sq. in.}$

Thickness

1 3/8"

Pitch of stays

20" x 19"

How are stays secured

Double nuts

Working pressure by Rules

15"

Tube plates: Material

front

S

Tensile strength

26/30 $\text{Tons}/\text{sq. in.}$

Thickness

15"

25"

Mean pitch of stay tubes in nests

9.7"

Pitch across wide water spaces

14"

Working pressure

front

back

Girders to combustion chamber tops: Material

S

Tensile strength

28/32 $\text{Tons}/\text{sq. in.}$

Depth and thickness of girder

at centre

Length as per Rule

2'-9 1/2"

Distance apart

8" W, 7 1/4" C

No. and pitch of stays

in each

3 @ 8 1/4"

Working pressure by Rules

Combustion chamber plates: Material

S

Tensile strength

26/30 $\text{Tons}/\text{sq. in.}$

Thickness: Sides

2 1/32"

Back

2 3/32"

Top

2 1/32"

Bottom

1 3/16"

Pitch of stays to ditto: Sides

8 1/4" x 8"

Back

8" x 10"

Top

8 1/4" x 8 1/4"

7 1/4" x 8 1/4"

Are stays fitted with nuts or riveted over

Nuts

Working pressure by Rules

Front plate at bottom: Material

S

Tensile strength

26/30 $\text{Tons}/\text{sq. in.}$

Thickness

15"

Lower back plate: Material

S

Tensile strength

26/30 $\text{Tons}/\text{sq. in.}$

Thickness

13"

Pitch of stays at wide water space

13 7/16"

Are stays fitted with nuts or riveted over

Nuts

Working Pressure

Main stays: Material

S

Tensile strength

28/32 $\text{Tons}/\text{sq. in.}$

Diameter

At body of stay, 4 @ 3 1/4", 6 @ 3"

No. of threads per inch

6

Area supported by each stay

Working pressure by Rules

Screw stays: Material

S

Tensile strength

26/30 $\text{Tons}/\text{sq. in.}$

Diameter

At turned off part, 1 5/8" & 1 3/4"

No. of threads per inch

9

Area supported by each stay

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Working pressure by Rules ☒ Are the stays drilled at the outer ends ☒ Margin stays: Diameter { At turned off part, 1 7/8", 2" & 2 1/4" Over threads }
No. of threads per inch 9 Area supported by each stay ☒ Working pressure by Rules ☒
Tubes: Material S External diameter { Plain 3" Stay 3" Thickness { 1/4", 5/16", 3/8" No. of threads per inch 9
Pitch of tubes 4 3/16" x 4 1/8" Working pressure by Rules ☒ Manhole compensation: Size of opening i
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 o
stays Inner radius of crown Working pressure by Rules
How connected to shell Size of doubling plate under dome Diameter of rivet holes and pite
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 casing 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 on
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.
Arch. W. Grierson Manufacture

Dates of Survey { During progress of work in shops - - 1942 Mar. 2, 16, 31 Apr. 15 May 1
while building { During erection on board vessel - - - 8. 11. 28
Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)
Total No. of visits 7

Is this Boiler a duplicate of a previous case 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 and in accordance with the Rules. The materials and workmanship are good. On completion it has been tested by hydraulic pressure with satisfactory results.

It has been despatched to Port Glasgow for installing on board ship.

This boiler was one of those originally intended for Rowan's Contract No 1097, under which all the material was ordered and delivered. As the remaining boilers have not yet been completed, the invoices are being withheld meantime.

Rob 16/6/42 The requirements of the M.O.S. specification have been satisfactorily carried out.

Survey Fee ... £ 16 : 2 : 0 When applied for, 16 JUN 1942
Travelling Expenses (if any) £ : : When received, 19

W. P. Giberson.
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 16 JUN 1942

Assigned Referred for completion



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