

REPORT ON BOILERS.

No. 22795.

Received at London Office

29 FEB 1945

Date of writing Report 16th SEPT 1944 When handed in at Local Office 22nd SEPT 1944 Port of Glasgow

No. in Survey held at Glasgow Date, First Survey 5th AUGUST 1943 Last Survey 20th SEPTEMBER 1944

g. Book. "EMPIRE BALFOUR" (Number of Visits 7201) Tons { Gross 4946 Net 4946 }

built at Port Glasgow By whom built Lithgows Ltd. Yard No. 998 When built 1944
engines made at Glasgow By whom made Harland & Wolff. Ltd. Engine No. 8370 When made 1944
boilers made at Glasgow & Greenock By whom made John Brown & Co. Ltd. - 2 Main Boiler No. 496 When made 1944
nominal Horse Power 560 Owners Ministry of War Transport Port belonging to Glasgow

MULTITUBULAR BOILERS \$ MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Columbels Ltd. (Letter for Record S.)
Total Heating Surface of Boilers 2448 Is forced draught fitted Yes. Coal or Oil fired Coal
No. and Description of Boilers One Cylindrical Multitubular Working Pressure 220 lbs.
Tested by hydraulic pressure to 380 lbs. Date of test 2/10/44 No. of Certificate 2377 Can each boiler be worked separately Yes
Area of Firegrate in each Boiler 56.3 No. and Description of safety valves to each boiler 2. Spring loaded high. Lift
Area of each set of valves per boiler { per Rule 7.80 as fitted 9.80 } Pressure to which they are adjusted 220 lbs. Are they fitted with easing gear Yes
In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler No.
Smallest distance between boilers or uptakes and bunkers or woodwork 4'-0" Is oil fuel carried in the double bottom under boilers No.
Smallest distance between shell of boiler and tank top plating 2'-3" Is the bottom of the boiler insulated Yes
Largest internal dia. of boilers 15'-0 1/16" Length 11'-6" Shell plates: Material S. Tensile strength 29/33 tons
Thickness 1 15/32" Are the shell plates welded or flanged No. Description of riveting: circ. seams { end O.R. inter. 4'-0 7/8" }
Long. seams T.R.O.B.S. Diameter of rivet holes in { circ. seams 1 1/2" long. seams 1 1/2" } Pitch of rivets { 10 7/16" }
Percentage of strength of circ. end seams { plate 63. rivets 46.9 } Percentage of strength of circ. intermediate seam { plate 85.6 rivets 85.6 }
Percentage of strength of longitudinal joint { plate 85.6 rivets 88.3 }
Thickness of butt straps { outer 1 1/8" inner 1 1/4" } No. and Description of Furnaces in each Boiler 3. Corrugated Right Hand Section.
Material S. Tensile strength 26/30 tons Smallest outside diameter 3'-9 3/8"
Length of plain part { top 11' bottom 11' } Thickness of plates { crown 1 1/16" bottom 1 1/16" } Description of longitudinal joint Weld.
Dimensions of stiffening rings on furnace or c.c. bottom No.
End plates in steam space: Material S. Tensile strength 26/30 tons Thickness 1 1/32" Pitch of stays 19 1/2" x 19 1/2"
How are stays secured Renale nuts and washers.
Tube plates: Material { front S. back S. } Tensile strength { 26/30 tons } Thickness { 27/32" }
Mean pitch of stay tubes in nests 10 1/2" Pitch across wide water spaces 14"
Girders to combustion chamber tops: Material S. Tensile strength 29/33 tons Depth and thickness of girder
at centre 10 1/4" x 1 5/8" Length as per Rule 2'-9 13/32" Distance apart 10 1/2" No. and pitch of stays
in each 3 - 8 1/2" Combustion chamber plates: Material S. Tensile strength 26/30 tons
Tensile strength 26/30 tons Thickness: Sides 27/32" Back 3/4" Top 27/32" Bottom 7/8"
Pitch of stays to ditto: Sides 8 1/2" x 10 1/2" Back 9 7/8" x 9" Top 8 1/2" x 10 1/2" Are stays fitted with nuts or riveted over Nuts
Front plate at bottom: Material S. Tensile strength 26/30 tons
Thickness 1" Lower back plate: Material S. Tensile strength 26/30 tons Thickness 15/16"
Pitch of stays at wide water space 14 1/4" x 9" Are stays fitted with nuts or riveted over Nuts
Main stays: Material S. Tensile strength 28/32 tons
Diameter { At body of stay, or 3 3/8" Over threads 3 3/8" } No. of threads per inch 6
Screw stays: Material S. Tensile strength 26/30 tons
Diameter { At turned off part, or 1 7/8" Over threads 1 7/8" } 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

2"

No. of threads per inch

9.

Tubes: Material W.I.

External diameter

Plain

3"

Thickness

8 W.G.

No. of threads per inch

9.

Pitch of tubes 4 1/2" x 4 1/2"

Manhole compensation: Size of opening

shell plate In end plate

Section of compensating ring

No. of rivets and diameter of rivet holes

Outer row rivet pitch at ends

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 { Plate Rivets

Internal diameter

Thickness of crown

No. and diameter

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

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

Yes.

The foregoing is a correct description, For Rankin & Blackmore Ltd. Works Manager.

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

SEE MACHINERY REPORT

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

Total No. of visits

Is this Boiler a duplicate of a previous case

Yes.

If so, state Vessel's name and Report No. EMPIRE TALISMAN. GR. RT. 22733

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

This boiler has been built under Special Survey in accordance with the Rules and the approved plans. The materials and workmanship are good. The Ministry Specification has been supervised. For recommendation please see machinery report.

Survey Fee ... £ 16 : 3 :

When applied for, 19

Travelling Expenses (if any) £ 4 : 1 :

When received, 19

M. Caldwell

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

GLASGOW 27 SEP 1944

Assigned



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