

REPORT ON BOILERS.

Received at London Office

WED. APR. 9 1924

Date of writing Report 31-3-1924 When handed in at Local Office 7-4-1924 Port of Glasgow

No. in Reg. Book 15 Survey held at Glasgow Date, First Survey 31st May 1923 Last Survey 31st March 1924

on the B.S. "Gem" (Number of Visits 15) Gross Tons 640 Net Tons 289

Master Bowling Built at Glydebank By whom built Aitchison Blair Yard No. 145 When built 1915

Engines made at Glydebank By whom made Aitchison Blair Ltd Engine No. 145 When made 1915

Boilers made at Govan By whom made The Forth S. B. & S. C. Co. Ltd Boiler No. 1794 When made 1924

Nominal Horse Power 295 Owners William Roberts & Co Port belonging to Glasgow

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Steel Co. of Scotland (Letter for Record S.)

Total Heating Surface of Boilers 1830 sq. ft. Is forced draught fitted Yes Coal or Oil fired Coal

No. and Description of Boilers One. Multitubular Working Pressure 180

Tested by hydraulic pressure to 320 Date of test 31-3-24 No. of Certificate 16472 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler 57.75 sq. ft. No. and Description of safety valves to each boiler 2. Spring loaded.

Area of each set of valves per boiler per Rule 5.94 sq. ft. Pressure to which they are adjusted 180 Are they fitted with easing gear Yes

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 14'-0" Length 10'-6" Shell plates: Material S. Tensile strength 28-32

Thickness 1 5/32" Are the shell plates welded or flanged No Description of riveting: circ. seams end D.R.L.

long. seams T.R.D.B.S. Diameter of rivet holes in circ. seams 1 3/16" Pitch of rivets 3.625"

Percentage of strength of circ. end seams plate 66.0 rivets 43.8 Percentage of strength of circ. intermediate seam plate 86.0 rivets 87.0

Percentage of strength of longitudinal joint plate 86.0 rivets 87.0 combined 89.3 Working pressure of shell by Rules 183

Thickness of butt straps outer 1 5/16" inner 1 1/16" No. and Description of Furnaces in each Boiler 3. Dighton

Material S. Tensile strength 26-30 Smallest outside diameter 3'-6 7/8"

Length of plain part top bottom Thickness of plates crown 1 7/32" bottom 1 7/32" Description of longitudinal joint weld

Dimensions of stiffening rings on furnace or c.c. bottom Yes Working pressure of furnace by Rules 182

End plates in steam space: Material S. Tensile strength 26-30 Thickness 1 5/32" Pitch of stays 17" x 19"

How are stays secured Double nuts Working pressure by Rules 191

Tube plates: Material S. Tensile strength 26-30 Thickness 1 3/16"

Mean pitch of stay tubes in nests 13 1/8" x 9 1/4" Pitch across wide water spaces 13 1/4" Working pressure front 192 back 199

Girders to combustion chamber tops: Material Steel Tensile strength 28-32 Depth and thickness of girder at centre 7 3/4" x 1 1/2" Length as per Rule 30 27/32" Distance apart 8 5/8" No. and pitch of stays in each 2-9 3/8" Working pressure by Rules 187 Combustion chamber plates: Material S.

Tensile strength 26-30 Thickness: Sides 2 1/32" Back 2 1/32" Top 2 1/32" Bottom 2 1/32"

Pitch of stays to ditto: Sides 9 3/8" x 8 1/2" Back 8 3/4" x 8 1/2" Top 9 3/8" x 8 5/8" Are stays fitted with nuts or riveted over nuts

Working pressure by Rules 185 Front plate at bottom: Material S. Tensile strength 26-30

Thickness 1 3/16" Lower back plate: Material S. Tensile strength 26-30 Thickness 1 3/16"

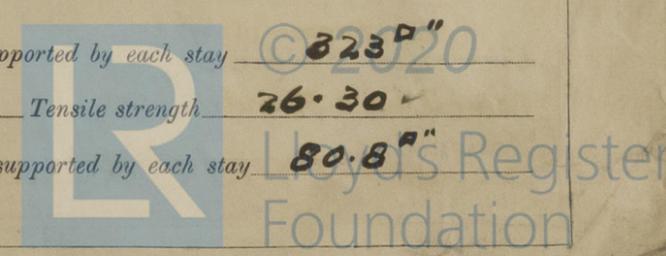
Pitch of stays at wide water space 13 1/4" Are stays fitted with nuts or riveted over nuts

Working Pressure 189 Main stays: Material S. Tensile strength 28-32

Diameter At body of stay, 2 7/8" Over threads No. of threads per inch 6 Area supported by each stay 823 sq. in.

Working pressure by Rules 188 Screw stays: Material S. Tensile strength 26-30

Diameter At turned off part, 1 3/4" & 1 5/8" Over threads No. of threads per inch 9 Area supported by each stay 80.8 sq. in.



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Working pressure by Rules 187 Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, 1 3/4" or Over threads }
 No. of threads per inch 9 Area supported by each stay 93.5" Working pressure by Rules 194
 Tubes; Material Iron External diameter { Plain 3 1/4" Stay 3 1/4" Thickness { 9 W.C. 5/16" to 7/16" No. of threads per inch 9 }
 Pitch of tubes 4 5/8" x 4 3/8" Working pressure by Rules 180 Manhole compensation: Size of opening in shell plate 16" x 12" Section of compensating ring 32" x 29 3/4" x 1 5/8" No. of rivets and diameter of rivet holes 32-1 1/2"
 Outer row rivet pitch at ends 8 5/8" 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 _____ 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 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 _____ 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 _____
 Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with _____

The foregoing is a correct description,
 FOR THE FORTH SHIPBUILDING & ENGINEERING CO. (LINDSAY BURNET'S BOILER WORKS) Snieldair Cooper Manufacturer.

Dates of Survey { During progress of 1923 May 31 Aug 29 15 29 Oct 3. Nov 14 27 Dec work in shops - - - } Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)
 while building { During erection on board vessel - - - }
 Total No. of visits 15

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 Society's Rules, and requirements. The materials and workmanship are good. This boiler has now been satisfactorily fitted on board the S.S. "Gerr" (please see G's Report N° 43907)

Annual Survey Request.

Survey Fee £ 12 : 4 : - } When applied for, 8/4/1924
 Travelling Expenses (if any) £ : : } When received, 10/4/1924
 h.m.s.t.

Jas. Cairns
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW - 8 APR 1924

Assigned TRANSMIT TO LONDON

See G's Rpt. No. 43907

