

REPORT ON BOILERS.

No. 60891

Received at London Office **MAR 29 1939**

Date of writing Report 19 When handed in at Local Office 28:3:10 39 Port of Glasgow

No. in Reg. Book. Survey held at Barfin Date, First Survey 18:10:38 Last Survey 15:3:19 39

on the Boiler No 3540. "BARBOSA" (Number of Visits 15) Tons } Gross } Net }

Master Built at By whom built Yard No. When built

Engines made at By whom made Engine No. When made

Boilers made at Barfin By whom made Alex Anderson & Sons Ltd. Boiler No. 3540. When made

Nominal Horse Power Owners Port belonging to

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Bolvilles (Letter for Record S)

Total Heating Surface of Boilers 924.5 ft^2 Is forced draught fitted Yes Coal or Oil fired Oil

No. and Description of Boilers 1 Multitubular cylindrical Working Pressure 140 lb/in^2

Tested by hydraulic pressure to 260 Date of test 15-3-39 No. of Certificate 20365 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler 7.450 $sq\ ft$ No. and Description of safety valves to each boiler 2-2 1/4" dia Spring loaded MC

Area of each set of valves per boiler {per Rule } as fitted } 80" Pressure to which they are adjusted 140 lb/in^2 Are they fitted with easing gear Yes MC

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

Smallest distance between boilers or uptakes and bunkers or woodwork (Bunkers) 2'-6" MC Is oil fuel carried in the double bottom under boilers no MC

Smallest distance between shell of boiler and tank top plating Open floors MC Is the bottom of the boiler insulated Yes MC

Largest internal dia. of boilers 9' 4 1/16" Length 9' 6" Shell plates: Material Steel Tensile strength 29-33

Thickness 2 1/32 Are the shell plates welded or flanged No Description of riveting: circ. seams {end } inter. } DR Let

long. seams DR D.B.S. Diameter of rivet holes in {circ. seams } long. seams } 15/16 Pitch of rivets 2 7/8

Percentage of strength of circ. end seams {plate } rivets } 67.5 Percentage of strength of circ. intermediate seam {plate } rivets } 58.125

Percentage of strength of longitudinal joint {plate } rivets } 81 82.25 89.5 Working pressure of shell by Rules 144 lb/in^2

Thickness of butt straps {outer } inner } 9/16 1 1/16 No. and Description of Furnaces in each Boiler 2 Morrison

Material Steel Tensile strength 26-30 Smallest outside diameter 2' 8 1/4"

Length of plain part {top } bottom } Thickness of plates {crown } bottom } 7/16 Description of longitudinal joint Welded

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 193

End plates in steam space: Material Steel Tensile strength 26-30 Thickness 2 5/32 Pitch of stays 16" x 12"

How are stays secured Nuts & loose washers Working pressure by Rules 140

Tube plates: Material {front } back } Steel Tensile strength { } 26-30 Thickness { } 2 5/32 2 1/32

Mean pitch of stay tubes in nests 8 3/4 Pitch across wide water spaces 12 3/4 Working pressure {front } back } 141 200

Girders to combustion chamber tops: Material Steel Tensile strength 28-32 Depth and thickness of girder at centre 6 1/2" x 5 7/8" Length as per Rule 24 Distance apart 10 1/2" + 9 1/2" No. and pitch of stays in each 2 - 7 1/2" Working pressure by Rules 150 Combustion chamber plates: Material Steel

Tensile strength 26-30 Thickness: Sides 5/8 Back 5/8 Top 2 1/32 Bottom 3/4

Pitch of stays to ditto: Sides 7 1/2" x 8 1/2" Back 8" x 7 3/4" Top 7 1/2" x 10 1/2" Are stays fitted with nuts or riveted over Nuts on girders & margin stays. Others riveted

Working pressure by Rules 145 Front plate at bottom: Material Steel Tensile strength 26-30

Thickness 2 5/32 Lower back plate: Material Steel Tensile strength 26-30 Thickness 2 5/32

Pitch of stays at wide water space 13" x 7 3/4" Are stays fitted with nuts or riveted over Nut

Working Pressure 215 Main stays: Material Steel Tensile strength 28-32

Diameter {At body of stay } or } Over threads } 2 1/8 No. of threads per inch 6 Area supported by each stay 16 x 12

Working pressure by Rules 158 Screw stays: Material Steel Tensile strength 26-30

Diameter {At turned off part } or } Over threads } 1 1/2" x 1 3/8" No. of threads per inch 9 Area supported by each stay 8 x 7 3/4

Working pressure by Rules 163 Are the stays drilled at the outer ends Yes Margin stays: Diameter 1 1/2" + 1/8"
 No. of threads per inch 9 Area supported by each stay 7 3/4" x 10 1/2" Working pressure by Rules 154
 Tubes: Material Iron External diameter 2 1/2" Thickness 5/16" No. of threads per inch 9
 Pitch of tubes 3 1/2" Working pressure by Rules 230 Manhole compensation: Size of opening in shell plate 1 9/16" x 1 5/8" Section of compensating ring 14 x 3/4" No. of rivets and diameter of rivet holes 46 - 1 3/16"
 Outer row rivet pitch at ends 4.2869 Depth of flange if manhole flanged 3" 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
 Internal diameter _____ Working pressure by Rules _____ Thickness of crown _____ Rivets _____
 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 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 _____
 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 _____ forgings and castings _____ and after assembly in place _____
 valves fitted to free the superheater from water where necessary _____ Are drain cocks or

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with _____

The foregoing is a correct description,
 Per Pro. ALEX. ANDERSON & SONS, LTD.
S. W. B. Fleming Manufacturer.

Dates of Survey During progress of work in shops - - 1938 Oct: 18-26 Nov: 3 10-20 29 Dec Are the approved plans of boiler and superheater forwarded herewith _____
while building During erection on board vessel - - - 12-22 (1939) Jan: 19 26 Feb: 2-9-23 (If not state date of approval.)
Mar: 7-15 Total No. of visits 15

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 constructed under special survey according to the Rules of the Society and the approved plan. The material and workmanship are good. The boiler has been made to the order of Messrs Plenty & Sons, Newbury.

2/9/39
26/9/39

Survey Fee £ 4 : 4 : } When applied for, 28 MAR 1939
 Travelling Expenses (if any) £ : : } When received, 11.5 10/29/7/6

JR Dale
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 28 MAR 1939 GLASGOW 11 JUL 1939

Assigned TRANSMIT TO LONDON

SEE ACCOMPANYING MACHINERY REPORT.

