

REPORT ON BOILERS.

No. 59635

Received at London Office

APR 20 1938

Date of writing Report 14th April 1938 When handed in at Local Office 14. 4. 1938 Port of Glasgow

No. in Reg. Book. 18139 Survey held at Glasgow Date, First Survey 12: 11: 37 Last Survey 11th April 1938

on the Single Screw Jug "M.S.C. Archer" (Number of Visits 22) Tons { Gross 144 Net Nil }

Master Leith Built at Leith By whom built Henry Robb & Co Ltd Yard No. 265 When built 1938

Engines made at Clydebank By whom made Aitchison Blair & Co Ltd Engine No. 214 When made 1938

Boilers made at Glasgow By whom made Barclay Curle & Co Ltd Boiler No. 37/8 When made 1938

Nominal Horse Power 153.6 Owners Manchester Ship Canal Co. Port belonging to Manchester

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Colville Ltd (Letter for Record S ✓)

Total Heating Surface of Boilers 2304 sq ft Is forced draught fitted No Coal or Oil fired Coal

No. and Description of Boilers One - Single ended Working Pressure 140 lb

Tested by hydraulic pressure to 260 lb Date of test 31.3.38 No. of Certificate 20146 Can each boiler be worked separately

Area of Firegrate in each Boiler 69 sq ft No. and Description of safety valves to each boiler Double Spring-loaded

Area of each set of valves per boiler { per Rule 18.58 sq as fitted 19.24 } Pressure to which they are adjusted 143 lbs 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 10" 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 No

Largest internal dia. of boilers 15'-6" Length 11'-6" max Shell plates: Material Steel Tensile strength 29/33 tons

Thickness 3 1/32" Are the shell plates welded or flanged No Description of riveting: circ. seams { end D.R. Lat inter. ✓ }

long. seams T.R.D.B.S. Diameter of rivet holes in { circ. seams 1 1/16" long. seams 1 1/16" } Pitch of rivets { 3" 4 3/8" }

Percentage of strength of circ. end seams { plate 64.58 rivets 48.39 } Percentage of strength of circ. intermediate seam { plate 85.59 rivets 92.24 } Working pressure of shell by Rules 140 lbs

Percentage of strength of longitudinal joint { plate 85.59 rivets 92.24 combined 89.63 }

Thickness of butt straps { outer 3/4" inner 7/8" } No. and Description of Furnaces in each Boiler Three - Dugout ✓

Material Steel Tensile strength 26/30 tons Smallest outside diameter 4 1/4"

Length of plain part { top ✓ bottom ✓ } Thickness of plates { crown 15/32" bottom ✓ } Description of longitudinal joint welded ✓

Dimensions of stiffening rings on furnace or c.c. bottom ✓ Working pressure of furnace by Rules 142 lbs

End plates in steam space: Material Steel Tensile strength 26/30 tons Thickness 1 3/16" Pitch of stays 21x22"

How are stays secured Double nuts ✓ Working pressure by Rules 142 lbs

Tube plates: Material { front Steel back ✓ } Tensile strength { 26/30 tons } Thickness { 13/16" 3/4" }

Mean pitch of stay tubes in nests 11.845" Pitch across wide water spaces 14 1/2" Working pressure { front 149 w.w.s back 142 lb }

Girders to combustion chamber tops: Material Steel Tensile strength 28/32 tons Depth and thickness of girder

at centre 2 @ 8 3/4" x 1 1/16" Length as per Rule 33 3/32" Distance apart 10" No. and pitch of stays

in each 3 @ 8 3/4" Working pressure by Rules 146 lb Combustion chamber plates: Material Steel

Tensile strength 26/30 tons Thickness: Sides 19/32" Back 19/32" Top 19/32" Bottom 19/32"

Pitch of stays to ditto: Sides 8 3/4" x 10" Back 8 3/4" x 10" Top 8 3/4" x 10" Are stays fitted with nuts or riveted over Nuts ✓

Working pressure by Rules 144 lb Front plate at bottom: Material Steel Tensile strength 26/30 tons

Thickness 13/16" Lower back plate: Material Steel Tensile strength 26/30 tons Thickness 27/32"

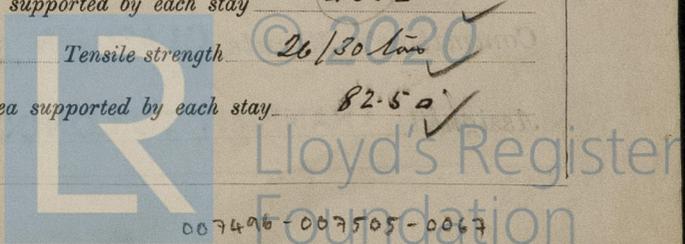
Pitch of stays at wide water space 14 1/2" Are stays fitted with nuts or riveted over Nuts ✓

Working Pressure 149 lb Main stays: Material Steel Tensile strength 28/32 tons

Diameter { At body of stay, 3" or Over threads ✓ } No. of threads per inch 6 Area supported by each stay 451 sq

Working pressure by Rules 149 Screw stays: Material Steel Tensile strength 26/30 tons

Diameter { At turned off part, 1 1/2" or Over threads ✓ } No. of threads per inch 9 Area supported by each stay 82.5 sq



Working pressure by Rules 152 lb. Are the stays drilled at the outer ends No Margin stays: Diameter ^{At turned off part.} 1 5/8" or ^{Over threads} 1 5/8"

No. of threads per inch 9 Area supported by each stay 101 sq. Working pressure by Rules 150 lb.

Tubes: Material L.W.W.A.B. Iron External diameter ^{Plain} 3 1/2" Thickness ^{Stay} 3/8, 5/16, 1/4" No. of threads per inch 9

Pitch of tubes 4 3/4" x 4 3/4" Working pressure by Rules 165 lb. Manhole compensation: Size of opening in shell plate 20" x 16" Section of compensating ring 2 x 4 1/2" x 3 1/2" No. of rivets and diameter of rivet holes 40 @ 1 3/16"

Outer row rivet pitch at ends 8" 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 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 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

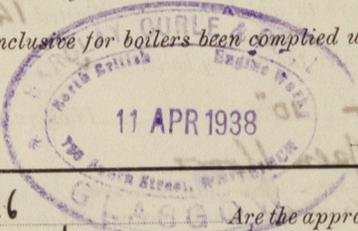
Area of each safety valve Are the safety valves fitted with easing gear Working pressure as per Rules Pressure to which the safety valves are adjusted Hydraulic test pressure: tubes forgings and castings and after assembly in place Are drain cocks or valves fitted to free the superheater from water where necessary

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

The foregoing is a correct description,

FOR GARDLAY, GURLE & CO., LTD.

Alexander Macnutt, Manufacturer.



Dates of Survey ^{During progress of work in shops - -} 1937 Nov: 12.17.26 ^{Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)} No - 26437

^{while building} ^{During erection on board vessel - - -} Dec: 3.9.16.29 (1938) Jan: 10.27.31 Total No. of visits 22

Feb: 4.11.18.28 Mar: 10.11.17.23.30.31 Apr: 6.11

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 plan. The materials and workmanship are good. It is intended for Messrs. Aitchison Blair & Co. Engine No 214 and Messrs. Henry Robt Ltd Ship No 265.

Survey Fee £ 15 : 6 : - } When applied for, 15/4/38.

Travelling Expenses (if any) £ : : } When received, 3/6/38.

G. Anderson
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **GLASGOW 19 APR 1938**

Assigned **TRANSMIT TO LONDON**

APR 11 JUL 1938
See 2th. 76. 19612

14-4-38