

REPORT ON BOILERS.

No. 19106

Received at London Office

23 OCT 1929

Date of writing Report 3-10-29 When handed in at Local Office 14th October 1929 Port of Greenock

No. in Reg. Book. Survey held at Greenock Date, First Survey 13th March 1929 Last Survey 14th October 1929
on the S/S "Barrowbie" (Number of Visits ✓) Gross 4998.21 Net 2940.40

Master Built at Greenock By whom built Greenock Dry Dock Co. Ltd. Yard No. 417 When built 1929
Engines made at Greenock By whom made Rankine & Blackmore Ltd. Engine No. 441 When made 1929
Boilers made at ditto By whom made Rankine & Blackmore Ltd. Boiler No. 441 When made 1929
Nominal Horse Power 448 Owners The Barrow Shipping Co. Ltd. Port belonging to Glasgow

MULTITUBULAR BOILERS - MAIN, [REDACTED]

Manufacturers of Steel Steel Co. of Scotland, Gutehoffnungshutte Vereinigte Stahlwerke (Letter for Record S ✓)

Total Heating Surface of Boilers 6051 # Is forced draught fitted yes Coal or oil fired coal ✓

No. and Description of Boilers 3 Single ended Working Pressure 200

Tested by hydraulic pressure to 350 Date of test 1-8-29 No. of Certificate 1881 Can each boiler be worked separately yes ✓

Area of Firegrate in each Boiler 43 1/2 # No. and Description of safety valves to each boiler 2 Cochran Improved High Lift

Area of each set of valves per boiler {per Rule 7.18 # as fitted 9.8 # Pressure to which they are adjusted 205 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 1-5 Is oil fuel carried in the double bottom under boilers 910

Smallest distance between shell of boiler and tank top plating 2:6 Is the bottom of the boiler insulated yes ✓

Largest internal dia. of boilers 13-10.719 Length 11-9 Shell plates: Material S Tensile strength 28-32

Thickness 1 9/32 Are the shell plates welded or flanged ✓ Description of riveting: circ. seams end DR inter. ✓

long. seams T R O B S Diameter of rivet holes in {circ. seams 1 5/16 long. seams 1 5/16 Pitch of rivets {H" 9 5/16" ✓

Percentage of strength of circ. end seams {plate 64.25 rivets 43.3 Percentage of strength of circ. intermediate seam {plate 85.9 rivets 87.4 ✓

Percentage of strength of longitudinal joint {plate 85.9 rivets 87.4 combined 89.3 Working pressure of shell by Rules 204

Thickness of butt straps {outer 1 5/16 inner 1 1/16 No. and Description of Furnaces in each Boiler 3 Singletons 3cf.

Material S Tensile strength 26-30 Smallest outside diameter 3-5 3/16" ✓

Length of plain part {top bottom ✓ Thickness of plates {crown 19/32 bottom } Description of longitudinal joint weld ✓

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 209

End plates in steam space: Material S Tensile strength 26.30 Thickness 1 7/32 Pitch of stays 14 1/2 + 19 1/2" ✓

How are stays secured D N Washers Working pressure by Rules 202

Tube plates: Material {front back } S Tensile strength { } 26-30 Thickness { 3/4" ✓

Mean pitch of stay tubes in nests 12.84 Pitch across wide water spaces 14 1/2" Working pressure {front 240 back 226 ✓

Girders to combustion chamber tops: Material S Tensile strength 28-32 Depth and thickness of girder

at centre 11 1/2 x 3 1/4 (2) Length as per Rule 3-1 19/32 Distance apart 11 7/16" No. and pitch of stays

in each 4 at 4 15/16" Working pressure by Rules 204. Combustion chamber plates: Material S

Tensile strength 26.30 Thickness: Sides 3/4" Back 2 1/32 Top 3/4" Bottom 1 3/16" ✓

Pitch of stays to ditto: Sides 11 7/16 + 7 15/16 Back 9 1/4 + 8 1/4" Top 11 7/16 + 7 15/16" Are stays fitted with nuts or riveted over Nuts ✓

Working pressure by Rules 204 Front plate at bottom: Material S Tensile strength 26.30

Thickness 1" Lower back plate: Material S Tensile strength 26.30 Thickness 2 7/32 ✓

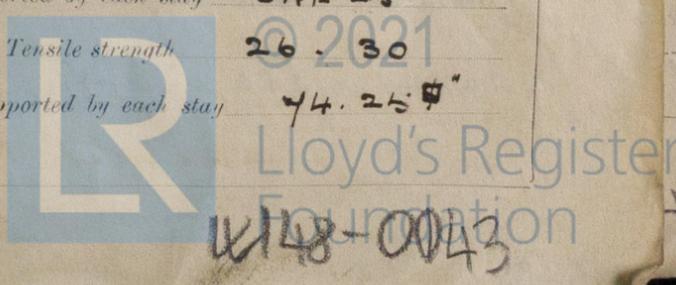
Pitch of stays at wide water space 14 1/4" Are stays fitted with nuts or riveted over Nuts ✓

Working Pressure 214 Main stays: Material S Tensile strength 28-32 ✓

Diameter {At body of stay, 3 1/8 or Over threads. No. of threads per inch 6 Area supported by each stay 341.25 # ✓

Working pressure by Rules 216 Screw stays: Material S Tensile strength 26.30

Diameter {At turned off part, 1 5/8 or Over threads. No. of threads per inch 9 Area supported by each stay 44.25 # ✓



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Working pressure by Rules 201. Are the stays drilled at the outer ends 910 Margin stays: Diameter (At turned off part. 17/8" or Over threads) ✓
 No. of threads per inch 9 Area supported by each stay 95.90" Working pressure by Rules 222
 Tubes: Material Iron External diameter (Plain Stay) 2 1/2" Thickness 9 WG 1/2" 5/16" No. of threads per inch 9
 Pitch of tubes 3 23/32" x 3 5/8" Working pressure by Rules 210 Manhole compensation: Size of opening in shell plate 16" x 12" Section of compensating ring 2.8" x 2.4" 1/2" x 3/32" No. of rivets and diameter of rivet holes 28 at 1 5/16"
 Outer row rivet pitch at ends 9 1/2" 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
 How connected to shell Inner radius of crown Working pressure by Rules
 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
 In 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 22 inclusive for boilers been complied with

The foregoing is a correct description,
 RANKIN & BLACKMORE, LTD., Manufacturer.
 Director.

Dates of Survey { During progress of work in shops - - }
 while building { During erection on board vessel - - - }
 Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)
 Total No. of visits ✓
 SEE MACHINERY REPORT

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These Boilers have been built under special survey in accordance with the approved plans & the workmanship & material are of good quality. They are now securely fitted on board. This Report accompanies that of the Machinery.

Survey Fee charged on Machinery Report
 Travelling Expenses (if any)

When applied for. 192
 When received. 192

W. Gordon-Maclean
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 22 OCT 1929 JPH

Assigned See accompanying mach^y report.

