

## REPORT ON BOILERS.

No. 19163

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Date of writing Report 28<sup>th</sup> February 1930 When handed in at Local Office 12<sup>th</sup> MARCH 1930 Port of GreenockNo. in Survey held at Greenock Date, First Survey 11<sup>th</sup> February 1929 Last Survey 11<sup>th</sup> MARCH 1930

on the

S/S Charterhurst

(Number of Visits ✓)

Gross

Net

Master Built at Irvine By whom built Agroline Dockyard Yard No. 515 When built 1929-30  
Engines made at Greenock By whom made Rankin & Blackmore Ltd Engine No. 435 When made 1929-30  
Boilers made at — " — By whom made — " — Boiler No. 435 When made 1929-30  
Nominal Horse Power 470 Owners Charter Shipping Co Port belonging to Gardiff

## MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Wilkowitz Bergbau und Eisenhütten - Gewerkschaft (Letter for Record S)

Total Heating Surface of Boilers 1495 sq ft Is forced draught fitted no Coal or Oil fired coal

No. and Description of Boilers One single ended Working Pressure 200 lbs

Tested by hydraulic pressure to 350 lbs Date of test 26-9-29 No. of Certificate 1891 Can each boiler be worked separately ✓

Area of Firegrate in each Boiler 52.5 sq ft No. and Description of safety valves to each boiler one double backburns improved high lift

Area of each set of valves per boiler { per Rule 4.350 ✓  
as fitted 6.280 ✓ Pressure to which they are adjusted 205 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 2'-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 no

Largest internal dia. of boilers 13'-4<sup>35</sup>/<sub>32</sub>" Length 10'-6" Shell plates: Material S Tensile strength 28-32 ✓

Thickness 1<sup>1</sup>/<sub>32</sub>" Are the shell plates welded or flanged no Description of riveting: circ. seams { end Double ✓  
inter. ✓

long. seams J + D.B.S. ✓ Diameter of rivet holes in { circ. seams 1<sup>5</sup>/<sub>16</sub>" ✓  
long. seams 1<sup>1</sup>/<sub>4</sub>" ✓ Pitch of rivets { 3.9" ✓  
8<sup>15</sup>/<sub>16</sub>" ✓

Percentage of strength of circ. end seams { plate 66.4  
rivets 46.8 Percentage of strength of circ. intermediate seam { plate ✓  
rivets ✓

Percentage of strength of longitudinal joint { plate 86.01  
rivets 86.74 Working pressure of shell by Rules 202 lbs  
combined 89.38

Thickness of butt straps { outer 1" ✓  
inner 1<sup>1</sup>/<sub>8</sub>" ✓ No. and Description of Furnaces in each Boiler Three Deighton type 3 cf.

Material S Tensile strength 26-30 Smallest outside diameter 3'-4<sup>1</sup>/<sub>8</sub>"

Length of plain part { top ✓  
bottom ✓ Thickness of plates { crown 9<sup>1</sup>/<sub>16</sub>" ✓  
bottom 9<sup>1</sup>/<sub>16</sub>" ✓ Description of longitudinal joint ✓

Dimensions of stiffening rings on furnace or c.c. bottom ✓ Working pressure of furnace by Rules 203.4 lbs

End plates in steam space: Material S Tensile strength 26-30 Thickness 1<sup>3</sup>/<sub>8</sub>" Pitch of stays 17<sup>3</sup>/<sub>4</sub>" x 2<sup>1</sup>/<sub>2</sub>"

How are stays secured nuts inside & outside Working pressure by Rules 20.7 lbs

Tube plates: Material { front S  
back S Tensile strength { 26-30  
26-30 Thickness { 3<sup>1</sup>/<sub>32</sub>" ✓  
3<sup>1</sup>/<sub>32</sub>" ✓

Mean pitch of stay tubes in nests 10.219 Pitch across wide water spaces 1'-1<sup>3</sup>/<sub>4</sub>" Working pressure { front 213 lbs  
back 214 lbs

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

at centre 10<sup>1</sup>/<sub>8</sub>" x 1<sup>1</sup>/<sub>2</sub>" ✓ Length as per Rule 2'-10<sup>1</sup>/<sub>32</sub>" Distance apart 10" No. and pitch of stays

in each 32 q" ✓ Working pressure by Rules 205 lbs Combustion chamber plates: Material S

Tensile strength 26-30 Thickness: Sides 23<sup>1</sup>/<sub>32</sub>" ✓ Back 1<sup>1</sup>/<sub>16</sub>" ✓ Top 23<sup>1</sup>/<sub>32</sub>" ✓ Bottom 25<sup>1</sup>/<sub>32</sub>" ✓

Pitch of stays to ditto: Sides 10" x 9" ✓ Back 9<sup>1</sup>/<sub>2</sub>" x 8<sup>1</sup>/<sub>2</sub>" ✓ Top 10" x 9" ✓ Are stays fitted with nuts or riveted over nuts ✓

Working pressure by Rules 203.5 lbs Front plate at bottom: Material S Tensile strength 26-30

Thickness 3<sup>1</sup>/<sub>32</sub>" ✓ Lower back plate: Material S Tensile strength 26-30 Thickness 7<sup>1</sup>/<sub>8</sub>" ✓

Pitch of stays at wide water space 1'-1<sup>3</sup>/<sub>4</sub>" x 8<sup>1</sup>/<sub>2</sub>" Are stays fitted with nuts or riveted over nuts ✓

Working Pressure 205.8 lbs Main stays: Material S Tensile strength 28-32 ✓

Diameter { At body of stay, 3<sup>1</sup>/<sub>8</sub>" x 3<sup>3</sup>/<sub>8</sub>" ✓  
or  
Over threads No. of threads per inch 6 ✓ Area supported by each stay 3550" ✓

Working pressure by Rules 208 lbs Screw stays: Material S Tensile strength 26-30

Diameter { At turned off part, 1<sup>3</sup>/<sub>4</sub>" ✓  
or  
Over threads No. of threads per inch 9 ✓ Area supported by each stay 80<sup>3</sup>/<sub>4</sub>" ✓



Working pressure by Rules 225 lbs Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part. 1 7/8"  
 No. of threads per inch 9 Area supported by each stay 114 3/4 sq" Working pressure by Rules 218 lbs  
 Tubes: Material Iron External diameter { Plain 3 1/4" Thickness { 8 W.G. No. of threads per inch 9  
 Stay 3 1/4" 5/16 + 7/16"  
 Pitch of tubes 4 1/2" x 4 3/8" Working pressure by Rules 214 lbs Manhole compensation: Size of opening in  
 shell plate 16" x 12" Section of compensating ring 2-10 1/2" x 2-5 3/4" x 1 7/32" No. of rivets and diameter of rivet holes 28 @ 1 5/16"  
 Outer row rivet pitch at ends 10" 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,  
 RANKIN & BLACKMORE, LTD.  
 Manufacturer.

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.) yes  
 Total No. of visits ✓

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 workmanship and material are of good quality, it is now securely fitted on board.  
This report accompanies that of the machinery

Survey Fee ... charged on machinery report When applied for, 192  
 Travelling Expenses (if any) £ : : When received, 192

Chas R Rowcliffe & Wm Gordon Macdonald  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 18 MAR 1930

Assigned See accompanying mach<sup>y</sup> report.



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