

## REPORT ON BOILERS.

No. 19163.

Received at London Office 13 MAR 1930

Date of writing Report 28 Feb 1930 When handed in at Local Office 12<sup>th</sup> MARCH 1930 Port of GreenockNo. in Reg. Book. 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

Tons

Net

Master Built at Irvine By whom built Ayrshire Dockyard Yard No. 515 When built 1929-30

Engines made at Greenock By whom made Rankin &amp; 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 Cardiff

## MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Witkowitz Bergbau und Eisenhütten-Gewerks (Letter for Record S)

Total Heating Surface of Boilers 5200 sq ft Is forced draught fitted yes Coal or Oil fired Coal

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

Tested by hydraulic pressure to 350 lbs Date of test 26-9-29 No. of Certificate 1889 Can each boiler be worked separately yes

Area of Firegrate in each Boiler 60.25 sq ft No. and Description of safety valves to each boiler one double lockburns improved high lift

Area of each set of valves per boiler { per Rule 7.54 sq ft as fitted 11.88 sq ft 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 1'-3" Is oil fuel carried in the double bottom under boilers no

Smallest distance between shell of boiler and tank top plating 2'-0" Is the bottom of the boiler insulated no

Largest internal dia. of boilers 15'-4 5/8" Length 12'-0" Shell plates: Material S Tensile strength 28 1/2 - 32 1/2

Thickness 1 3/8" Are the shell plates welded or flanged no Description of riveting: circ. seams { end Double as fitted 11.88 sq ft

long. seams J. D. B. S. Diameter of rivet holes in { circ. seams 1 1/2" long. seams 1 7/16" Pitch of rivets { 4.002" 9 7/8"

Percentage of strength of circ. end seams { plate 62.5 rivets 51.8 Percentage of strength of circ. intermediate seam { plate rivets

Percentage of strength of longitudinal joint { plate 85.4 rivets 90.2 combined 89.2 Working pressure of shell by Rules 201.9 lbs

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

Material S Tensile strength 26-30 Smallest outside diameter 3'-10 5/16"

Length of plain part { top bottom Thickness of plates { crown 2 1/2" bottom 2 1/2" Description of longitudinal joint

Dimensions of stiffening rings on furnace or c.c. bottom ✓ Working pressure of furnace by Rules 207 lbs

End plates in steam space: Material S Tensile strength 26-30 Thickness 1 5/16" Pitch of stays 19 1/8" - 20 7/8"

How are stays secured nuts inside &amp; outside Working pressure by Rules 201.9 lbs

Tube plates: Material { front S back S Tensile strength { 26-30 Thickness { 3/4" wing 1 1/8" centre 204 lbs

Mean pitch of stay tubes in nests 9.78" Pitch across wide water spaces 13 1/2" Working pressure { front 204 lbs back 210 lbs

Girders to combustion chamber tops: Material S Tensile strength 28 1/2 - 32 1/2 Depth and thickness of girder

at centre 10 1/8" x 1 1/2" Length as per Rule 3'-0 15/32" + 3'-0 32/32" Distance apart 9 1/4" No. and pitch of stays

in each 3 @ 9 3/4" Working pressure by Rules 202.5 lbs Combustion chamber plates: Material S

Tensile strength 26-30 Thickness: Sides 23/32" Back 23/32" Top 23/32" Bottom 27/32"

Pitch of stays to ditto: Sides 9 1/4" x 9 3/4" Back 10" x 8 3/4" Top 9 1/4" x 9 3/4" Are stays fitted with nuts or riveted over nuts

Working pressure by Rules 200.3 lbs Front plate at bottom: Material S Tensile strength 26-30

Thickness 1" Lower back plate: Material S Tensile strength 26-30 Thickness 7/8"

Pitch of stays at wide water space 13 1/2" x 8 3/4" Are stays fitted with nuts or riveted over nuts

Working Pressure 213 lbs Main stays: Material S Tensile strength 28-32

Diameter { At body of stay, 3 1/4" No. of threads per inch 6 Area supported by each stay 399 8/10"

Working pressure by Rules 201.3 lbs Screw stays: Material S Tensile strength 26-30

Diameter { At turned off part, 1 3/4" No. of threads per inch 9 Area supported by each stay 87 1/2"



Working pressure by Rules 207.5 lbs Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, 1 7/8" or Over threads  
No. of threads per inch 9 Area supported by each stay 118 1/2 sq" Working pressure by Rules 206 lbs  
Tubes: Material Iron External diameter { Plain 2 3/4" Stay 2 3/4" Thickness { 9 W.S. 7/16" + 3/16" No. of threads per inch 9  
Pitch of tubes 3 7/8" x 3 15/16" Working pressure by Rules 206 lbs Manhole compensation: Size of opening in Ref. Bo  
shell plate in h.p. plate Section of compensating ring No. of rivets and diameter of rivet holes

Outer row rivet pitch at ends 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,  
W. H. W. A. S. 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.) These boilers have been built under special survey in accordance with the approved plans and the workmanship and material are of good quality, they are now securely fitted on board.  
This report accompanies that of the machinery

Survey Fee ... £  
Travelling Expenses changed on machinery report : :  
When applied for, 192  
When received, 192

Chas R Rowcliffe & W. H. W. A. S.  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 18 MAR 1930

Assigned See accompanying mach. report