

REPORT ON BOILERS.

No.

16585

Received at London Office

20 DEC 1927

Date of writing Report 8 Dec 1927

When handed in at Local Office

14.12.1927

Port of

West Hartlepool

No. in Reg. Book. Survey held at West Hartlepool Date, First Survey 14th Dec. Last Survey 8th Dec. 1927.

on the S.S. "CITY OF CANBERRA"

(Number of Visits)

Gross

Tons

Net

Master Built at West Hartlepool By whom built Wm Gray & Co Ltd Yard No. 985 When built 1927

Engines made at West Hartlepool By whom made Central Marine Engine Engine No. 985 When made 1927.

Boilers made at ditto By whom made Works. Boiler No. 985 When made 1927.

Nominal Horse Power

Owners

Port belonging to

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel D Colville & Sons Ltd. (Letter for Record S. ✓)

Total Heating Surface of Boilers 12052 sq. ft. Is forced draught fitted yes ✓ Coal or Oil fired both ✓

No. and Description of Boilers 4 single ended ✓ Working Pressure 265 lbs ✓

Tested by hydraulic pressure to 448 lbs Date of test 26.8.27(2) ✓ No. of Certificate 3710(2) ✓ Can each boiler be worked separately yes ✓

Area of Firegrate in each Boiler 69.25 No. and Description of safety valves to each boiler 2 Cockburns improved high lift ✓

Area of each set of valves per boiler (per Rule 8.07 ✓) as fitted 10.88 ✓ Pressure to which they are adjusted 270 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 Is oil fuel carried in the double bottom under boilers no ✓

Smallest distance between shell of boiler and tank top plating Is the bottom of the boiler insulated ✓

Largest internal dia. of boilers 16'-0" ✓ Length 12'-6" ✓ Shell plates: Material Steel ✓ Tensile strength 31/35 ✓

Thickness 1 3/4" ✓ Are the shell plates welded or flanged no Description of riveting: circ. seams (end 2 riv. lap ✓ inter. 2 riv. lap ✓) long. seams 1 1/2" 1 1/3" ✓ Pitch of rivets End 5" inter 5 3/8" ✓

Percentage of strength of circ. end seams (plate 63.7 ✓ rivets 71) Percentage of strength of circ. intermediate seam (plate 66.3 ✓ rivets 61)

Percentage of strength of longitudinal joint (plate 84.9 ✓ rivets 85.5 ✓ combined 86.85) Working pressure of shell by Rules 269 lbs ✓

Thickness of butt straps (outer 1 3/8" ✓ inner 1 1/32" ✓) No. and Description of Furnaces in each Boiler 4 Deightons ✓

Material Steel ✓ Tensile strength 26/30 ✓ Smallest outside diameter 40 7/16" ✓

Length of plain part (top 25" ✓ bottom 32" ✓) Thickness of plates (crown 25" ✓ bottom 32" ✓) Description of longitudinal joint welded ✓

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 284 lbs ✓

End plates in steam space: Material Steel ✓ Tensile strength 26/30 ✓ Thickness 1 3/8" ✓ Pitch of stays 18" x 18 3/8" ✓

How are stays secured Double nuts & washers Working pressure by Rules 266 lbs ✓

Tube plates: Material (front Steel ✓ back Steel ✓) Tensile strength 26/30 ✓ Thickness 1 1/2" 7/8" ✓

Mean pitch of stay tubes in nests 8 1/2" x 8 1/4" ✓ Pitch across wide water spaces 14" ✓ Working pressure (front 278 lbs ✓ back 286 lbs ✓)

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

at centre 10" x 1 3/4" ✓ Length as per Rule 35 3/8" ✓ Distance apart 8 1/8" ✓ No. and pitch of stays

in each 3 - 8 3/8" ✓ Working pressure by Rules 268 lbs ✓ Combustion chamber plates: Material Steel ✓

Tensile strength 26/30 ✓ Thickness: Sides 2 3/32" ✓ Back 2 3/32" ✓ Top 2 3/32" ✓ Bottom 1 5/16" ✓

Pitch of stays to ditto: Sides 9" x 7 1/2" ✓ Back 8" x 8 1/2" ✓ Top 8 1/8" x 8 3/8" ✓ Are stays fitted with nuts or riveted over nuts ✓

Working pressure by Rules 266 lbs ✓ Front plate at bottom: Material Steel ✓ Tensile strength 26/30 ✓

Thickness 1 1/2" ✓ Lower back plate: Material Steel ✓ Tensile strength 26/30 ✓ Thickness 1 5/16" ✓

Pitch of stays at wide water space 14" x 8" ✓ Are stays fitted with nuts or riveted over nuts ✓

Working Pressure 278 lbs ✓ Main stays: Material Steel ✓ Tensile strength 28/32 ✓

Diameter (At body of stay, 3 3/8" ✓ or Over threads) No. of threads per inch 6 ✓ Area supported by each stay 19" x 1 1/4" ✓

Working pressure by Rules 266 lbs ✓ Screw stays: Material Steel ✓ Tensile strength 26/30 ✓

Diameter (At turned off part, 1 3/4" ✓ or Over threads) No. of threads per inch 9 ✓ Area supported by each stay 8 1/2" x 8" ✓

Working pressure by Rules **266 lb** Are the stays drilled at the outer ends **no** Margin stays: Diameter { At turned off part, **2"** or Over threads **2"** ✓
 No. of threads per inch **9** ✓ Area supported by each stay **11½ × 8"** Working pressure by Rules **270 lb**
 Tubes: Material **Iron** ✓ External diameter { Plain **3"** ✓ Thickness { **7/16"** ✓ No. of threads per inch **9**
 Pitch of tubes **4½ × 4¼"** ✓ Working pressure by Rules **300 + 294 lb** Manhole compensation: Size of opening in
 shell plate **16 × 20"** ✓ Section of compensating ring **22¾ × 1¾"** ✓ No. of rivets and diameter of rivet holes **28 1⅜"** ✓
 Outer row rivet pitch at ends **12"** ✓ Depth of flange if manhole flanged **4¼"** ✓ Steam Dome: Material **none** ✓
 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 **Smoke tube** Manufacturers of Tubes **Chesterfield Tube Co.**
 Number of elements **60 per boiler** Material of tubes **Solid drawn steel** **Forging Gutehoffnungshutte.**
 Material of headers **forged steel** Tensile strength **26/30** Thickness **7/8"** Internal diameter and thickness of tubes **15 29/32" dia 2½ m/m.**
 the boiler be worked separately **yes** Is a safety valve fitted to every part of the superheater which can be shut off from the boiler **yes**
 Area of each safety valve **1.77 sq. ft. Cockburn's improved high lift** Are the safety valves fitted with easing gear **yes** Working pressure as per
 Rules **265 lb** Pressure to which the safety valves are adjusted **270 lb** Hydraulic test pressure:
 tubes **1500 lb** castings **195 lb.** and after assembly in place **530 lb.** Are drain cocks or valves fitted
 to free the superheater from water where necessary **yes**
 Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with **yes** FOR THE CENTRAL MARINE ENGINE WORKS,
 The foregoing is a correct description, (Sd. John H. Seame) Manufacturer.
 DIRECTOR

Dates of Survey { During progress of work in shops - -
 while building { During erection on board vessel - - -

All machinery report

Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) **yes**
 Total No. of visits **1**

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)

See accompanying machinery report.

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

R. D. Shilston.
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **FRI. 30 DEC 1927**

Assigned **See Report attached**



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