

REPORT ON BOILERS.

No. 82387

Received at London Office 20 FEB 1928

Date of writing Report 1928 When handed in at Local Office 10/21 1928 Port of Newcastle-on-Tyne.

No. in Survey held at Wallsend-on-Tyne. Date, First Survey 6th Jan 1927 Last Survey 7th Feb 1928

Reg. Book. on the New Steel S.S. "Frontenac" (Number of Visits —) Gross 6777 Tons Net 4397

Master Built at Wallsend. By whom built Swan Hunter & W. R. Yard No. 1303 When built 1928

Engines made at Wallsend-on-Tyne By whom made Wallsend Slipway & E. Coy. Ltd. Engine No. 8478 When made 1928

Boilers made at Wallsend-on-Tyne By whom made Wallsend Slipway & E. Coy. Ltd. Boiler No. 8472 When made 1928

Nominal Horse Power Owners Port belonging to

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

Manufacturers of Steel Steel Company of Scotland Ltd. (Letter for Record 3.)

Total Heating Surface of Boilers 9186 sq. ft. Is forced draught fitted Yes Coal or Oil fired oil.

No. and Description of Boilers Three Single ended. Working Pressure 180 lbs

Tested by hydraulic pressure to 320 Date of test 15-8-27. No. of Certificate 180, 181, 182. Can each boiler be worked separately yes.

Area of Firegrate in each Boiler 45.2 sq. ft. No. and Description of safety valves to each boiler Two spring loaded.

Area of each set of valves per boiler per Rule 23.6 sq. ft. Pressure to which they are adjusted 185 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 condenser 2'-0" Is oil fuel carried in the double bottom under boilers yes.

Smallest distance between shell of boiler and tank top plating 2'-6" Is the bottom of the boiler insulated no.

Largest internal dia. of boilers 16'-6 1/16" Length 12'-0" Shell plates: Material Steel Tensile strength 30 to 34 tons

Thickness 1 3/32" Are the shell plates welded or flanged no Description of riveting: circ. seams {end D.R. inter. 3.921"

long. seams T.R.D.B.S. Diameter of rivet holes in {circ. seams 1 1/32" long. seams 1 1/32" Pitch of rivets 9 1/4"

Percentage of strength of circ. end seams {plate 65.4 rivets 49 Percentage of strength of circ. intermediate seam {plate 85.4 rivets 85.8

Percentage of strength of longitudinal joint {plate 85.4 rivets 88.2 Working pressure of shell by Rules 182.5 lbs

Thickness of butt straps {outer 1 3/32" inner 1 3/32" No. and Description of Furnaces in each Boiler 4 corrugated (Deighton)

Material Steel Tensile strength 26 to 30 tons Smallest outside diameter 3'-5 1/4"

Length of plain part {top 1 3/32" bottom 1 3/32" Thickness of plates {crown 1 1/32" bottom 1 3/32" Description of longitudinal joint weld.

Dimensions of stiffening rings on furnace or c.c. bottom none Working pressure of furnace by Rules 186.1 lbs

End plates in steam space: Material Steel Tensile strength 26 to 30 tons Thickness 1 1/4" Pitch of stays 1 1/4" x 22"

How are stays secured D. Nuts Working pressure by Rules 189 lbs

Tube plates: Material {front Steel Steel Tensile strength {26 to 30 tons Thickness {3/16" 4" 1 1/4" 1 1/4"

Mean pitch of stay tubes in nests 4 1/4" x 10 1/8" Pitch across wide water spaces 13 1/4" x 4 1/4" Working pressure {front 192 lbs back 229 lbs

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

at centre 2 @ 3 1/4" x 8" Length as per Rule 2'-11" Distance apart 4 1/8" No. and pitch of stays

in each 2 @ 11" Working pressure by Rules 181 lbs Combustion chamber plates: Material Steel

Tensile strength 26 to 30 tons Thickness: Sides 1 1/16" Back 2 1/32" Top 1 1/16" Bottom 1 1/16"

Pitch of stays to ditto: Sides 11" x 4 1/8" Back 8 1/8" x 8 1/8" Top 11" x 7 1/8" Are stays fitted with nuts or riveted over nuts

Working pressure by Rules 182.5 lbs Front plate at bottom: Material Steel Tensile strength 26 to 30 tons Thickness 4/8"

Thickness 1 5/16" Lower back plate: Material Steel Tensile strength 26 to 30 tons Thickness 4/8"

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

Working Pressure 245 lbs Main stays: Material Steel Tensile strength 28 to 32 tons

Diameter {At body of stay, 3 1/4" No. of threads per inch 6 Area supported by each stay 3 1/4 x 40"

Working pressure by Rules 215 lbs Screw stays: Material Steel Tensile strength 26 to 30 lbs

Diameter {At turned off part, 1 5/8" No. of threads per inch 9 Area supported by each stay 82.5 sq"

Working pressure by Rules **184 lbs.** Are the stays drilled at the outer ends **ho** Margin stays: Diameter { At turned off part, **1 3/4"** or Over threads **186 lbs.**

No. of threads per inch **9** Area supported by each stay **98.2 sq"** Working pressure by Rules **186 lbs.**

Tubes: Material **W. Iron** External diameter { Plain **2 1/2"** Stay **2 1/2"** Thickness { **8 wls** No. of threads per inch **9**

Pitch of tubes **3 3/4 x 3 3/8 + 3 7/8 x 3 5/8** Working pressure by Rules **191 lbs.** Manhole compensation: Size of opening in shell plate **16 x 20"** Section of compensating ring **2 1/4 x 1 9/32** No. of rivets and diameter of rivet holes **42 @ 1 1/32"**

Outer row rivet pitch at ends **9 1/4"** Depth of flange if manhole flanged **3 9/32"** 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

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 **none.** 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 **yes**
FOR THE WALLSEND SLIPWAY & ENGINEERING CO. LIMITED.

Having The foregoing is a correct description, **Manufacturer.**

Dates of Survey { During progress of work in shops - - } **See Weekly Report** Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)

while building { During erection on board vessel - - - } **See Weekly Report** Total No. of visits

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) **These Boilers have been built under Special Survey. Materials & Workmanship good. Hydraulic tests satisfactory. They have been efficiently installed & fixed in the Kessel & safety valves adjusted under steam.**

Survey Fee ... £ **see weekly report** When applied for, 192

Travelling Expenses (if any) £ **see weekly report** When received, 192

William Butler
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **TUES. 21 FEB 1928**

Assigned **See report attached**