

REPORT ON BOILERS.

No. 79467

Received at London Office

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Date of writing Report 22nd July 1925 When handed in at Local Office 22/7/25 Port of NEWCASTLE-ON-TYNE

No. in Reg. Book. 9187 on the Steel Screw Steamer, Humber Arm

Date, First Survey 19th March 1924Last Survey 21st July 1925

(Number of Visits)

Tons

Gross 6100 575

Net 3800 3504

Master Built at Newcastle By whom built Sir H. G. Armstrong Whitworth & Co Ltd Yard No 1000 When built 1925

Engines made at Newcastle By whom made Sir H. G. Armstrong Whitworth & Co Ltd Engine No. 52 When made 1925

Boilers made at do By whom made do Boiler No. 52 When made 1925

Rule Nominal Horse Power 663 Owners Newfoundland Export & Shipping Co Port belonging to St Johns N.F.L.

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel David Colville & Sons Ltd

Total Heating Surface of Boilers 9420 sq ft Is forced draught fitted yes Coal or Oil fired Oil now

No. and Description of Boilers 3 Single Ended Multitubular Working Pressure 180 lb per sq in

Tested by hydraulic pressure to 320 lb Date of test 23/1/25 No. of Certificate 9886 Can each boiler be worked separately yes

Area of Firegrate in each Boiler 75 sq ft No. and Description of safety valves to each boiler 1 No, direct spring

Area of each set of valves per boiler per Rule 24.10" as fitted 25.120" Pressure to which they are adjusted 183 lb Are they fitted with easing gear yes

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler None

Smallest distance between boilers or uptakes and bunkers or woodwork 18" Is oil fuel carried in the double bottom under boilers yes

Smallest distance between shell of boiler and tank top plating 28" Is the bottom of the boiler insulated yes

Largest internal dia. of boilers 16'-3 1/2" Length 12'-0" Shell plates: Material Steel Tensile strength 30/34 tons

Thickness 1 1/4" Are the shell plates welded or flanged No Description of riveting: circ. seams end 2 R Kept inter None

long. seam Double strap, 5 rivets Diameter of rivet holes in circ. seams 1 3/8" long. seams 1 5/16" Pitch of rivets 4.146 9/8"

Percentage of strength of circ. end seams plate 66.5 rivets 44.0 Percentage of strength of circ. intermediate seam plate 85.5 rivets 85.5 combined 88.0

Percentage of strength of longitudinal joint plate 81.32 rivets 85.5 Working pressure of shell by Rules 181 lb per sq in

Thickness of butt straps outer 3 1/32" inner 1 3/32" No. and Description of Furnaces in each Boiler 4, Dighton's 4 C.F.

Material Steel Tensile strength 26/30 tons Smallest outside diameter 41 1/16"

Length of plain part top bottom Thickness of plates crown 1 7/32" bottom 1 1/32" Description of longitudinal joint Welded

Dimensions of stiffening rings on furnace or c.c. bottom None Working pressure of furnace by Rules 187 lb per sq in

End plates in steam space: Material Steel Tensile strength 26/30 tons Thickness 1 3/16" Pitch of stays 22 1/2" x 17 1/2"

How are stays secured Double nut & washers 11 3/8" x 1 3/16" Working pressure by Rules 181 lb

Tube plates: Material front back Steel Tensile strength 26/30 tons Thickness 1 3/16" 23/32" Working pressure front 189 back

Mean pitch of stay tubes in nests 11 1/4" x 7 1/2" Pitch across wide water spaces 13 1/2" Depth and thickness of girder

Girders to combustion chamber tops: Material Steel Tensile strength 28/32 tons Distance apart 8" No. and pitch of stays

at centre 7 1/4" x 1 3/4" Length as per Rule 33 3/4" Working pressure by Rules 189 lb

in each 11 7/8" Tensile strength 26/30 tons Thickness: Sides 23/32" Back 1 1/16" Top 23/32" Bottom 1"

Pitch of stays to ditto: Sides 11 5/8" x 8" Back 10 1/2" x 8 3/8" Top 11 7/8" x 8" Are stays fitted with nuts or riveted over Nuts inside

Working pressure by Rules 194 lb Front plate at bottom: Material Steel Tensile strength 26/30 tons Thickness 1 3/16"

Pitch of stays at wide water space 15" Are stays fitted with nuts or riveted over Nuts

Working Pressure 182 lb per sq in Main stays: Material Steel Tensile strength 28/32 tons

Diameter At body of stay 3 1/4" No. of threads per inch 6 Area supported by each stay 4030"

Working pressure by Rules 204 lb per sq in Screw stays: Material Iron Tensile strength 21 1/2 tons

Diameter At turned off part 1 3/4", 1 7/8", 2" x 2 1/8" No. of threads per inch 9 Area supported by each stay 93.107, 122 x 1520"

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Working pressure by Rules *194 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 *122 0"* Working pressure by Rules *203 lb per sq in*

Tubes: Material *Iron* External diameter { Plain *2 1/2"* Thickness { *9 1/4"* 5/16" No. of threads per inch *9*

Pitch of tubes *11 1/4" x 7 1/2"* Working pressure by Rules *224 lb* Manhole compensation: Size of opening in shell plate *20" x 16"* Section of compensating ring *flanged ring 32" x 3/4" x 1/4"* No. of rivets and diameter of rivet holes *11, 40 1 5/16"*

Outer row rivet pitch at ends *9"* Depth of flange if manhole flanged *3 7/8"* 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 *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.*

The foregoing is a correct description,
SIR W. G. ARMSTRONG, WHITWORTH & CO. LIMITED, Manufacturer.
John D. Brown

Dates of Survey { During progress of work in shops - - } *See Machinery Report* Are the approved plans of boiler *✓* forwarded herewith *yes.*
(If not state date of approval.)
while building { During erection on board vessel - - }
Total No. of visits

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

These boilers have been constructed under special survey. The materials and workmanship are of good quality, and have been securely fitted on board.

For recommendations, please see machinery report.

Survey Fee *as on machinery report* *✓* : When applied for, 192
Travelling Expenses (if any) *✓* : When received, 192

George Murdoch
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI. 14 AUG 1925*

Assigned



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