

REPORT ON BOILERS.

No. 79467

Received at London Office - 17 AUG 1925

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 Survey held at Scotwood & Walker Date, First Survey 19th March 1924 Last Survey 21st July 1925
(Number of Visits —) Gross Tons 6100 575 Net Tons 3800 3504

Master Sir H. G. Armstrong Built at Newcastle By whom built 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 663 Owners Newfoundland Export & Shipping Co. Port belonging to St Johns N.F.L.

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

RETAIN

Manufacturers of Steel David Colville & Sons Ltd (Letter for Record (7))
 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 Two, direct spring
 Area of each set of valves per boiler per Rule 24.10" 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 Lap
 long. seams Double straps, 5 rivets Diameter of rivet holes in circ. seams 1 3/8" Pitch of rivets inter None
 Percentage of strength of circ. end seams plate 66.5 rivets 44.0 Percentage of strength of circ. intermediate seam plate None rivets None
 Percentage of strength of longitudinal joint plate 85.5 rivets 85.5 combined 88.0 Working pressure of shell by Rules 181 lb per sq in
 Thickness of butt straps outer 3/32" inner 1/32" No. and Description of Furnaces in each Boiler 4. Dighton's
 Material Steel Tensile strength 26/30 tons Smallest outside diameter 41 1/16"
 Length of plain part top Thickness of plates bottom 3 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 nuts & washers 11 3/8" x 1 3/16" Working pressure by Rules 181 lb
 Tube plates: Material front Steel Tensile strength 26/30 tons Thickness 13/16" Working pressure 189
 Mean pitch of stay tubes in nests 11 1/4" x 7 1/2" Pitch across wide water spaces 13 1/2" Working pressure back
 Girders to combustion chamber tops: Material Steel Tensile strength 28/32 tons Depth and thickness of girder
 at centre 7 1/4" x 1 3/4" Length as per Rule 33 3/4" Distance apart 8" No. and pitch of stays
 in each Two, 11 7/8" Working pressure by Rules 189 lb Combustion chamber plates: Material Steel
 Tensile strength 26/30 tons Thickness: Sides 23/32" Back 11/16" Top 23/32" Bottom 1"
 Pitch of stays to ditto: Sides 11 5/8" x 8" Back 10 7/8" x 8 3/8" Centre 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 13/16" Lower back plate: Material Steel Tensile strength 26/30 tons Thickness 13/16"
 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 2 1/2 tons
 Diameter At turned off part 1 3/4", 1 7/8", 2" & 2 1/8" No. of threads per inch 9 Area supported by each stay 93, 107, 122 & 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} 2" ^{Over threads}

No. of threads per inch 9 Area supported by each stay 1220" Working pressure by Rules 203 lb per sq. in.

Tubes: Material Iron External diameter ^{Plain} 2 1/2" ^{Stay} 2 1/2" Thickness 9/16" 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, 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

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

Area of each safety valve Is a safety valve fitted to every part of the superheater which can be shut off from the boiler

Rules Pressure to which the safety valves are adjusted Working pressure as per tubes and after assembly in place Hydraulic test pressure:

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.
Arthur Johnson

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

See Machinery Report

Are the approved plans of boiler forwarded herewith yes.
 (If not state date of approval.)

Total No. of visits 1

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 ... £ : 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

