

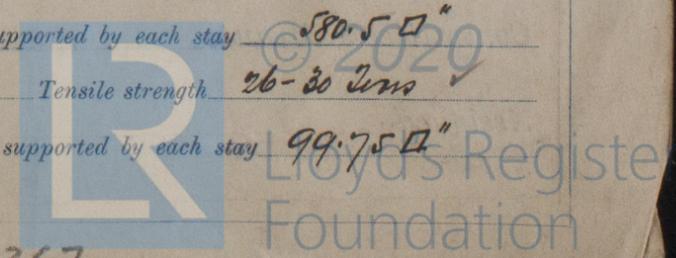
REPORT ON BOILERS.

No. 78442

Date of writing Report Sept 11th 1924 When handed in at Local Office Sept 11th 1924 Port of NEWCASTLE-ON-TYNE
 Received at London Office 24 Oct 1924
 No. in Reg. Book 70676 Survey held at Newcastle Date, First Survey Feb 27th Last Survey Sept 9th 1924
 on the Steel S. SHEAF CREST (Number of Visits 39) Tons {Gross 2728 Net 1686} *approx*
 Master ✓ Built at Blyth By whom built Blyth S. & D. Co. Ld. Yard No. 231 When built 1924
 Engines made at Newcastle By whom made North Eastern Marine Eng. Co. Ld. Engine No. 2570 When made 1924
 Boilers made at Newcastle By whom made North Eastern Marine Eng. Co. Ld. Boiler No. 2570 When made 1924
 Nominal Horse Power 305 Owners Sheaf Steam Shipping Co. Ld. M. A. Louie & Co. Mgrs. Port belonging to Newcastle

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Spencer & Sons Ld. & Colville & Sons Ld. (Letter for Record S.)
 Total Heating Surface of Boilers 4930 sq ft Is forced draught fitted no. Coal or Oil fired Coal
 No. and Description of Boilers Two long ended cylindrical Working Pressure 180 lbs
 Tested by hydraulic pressure to 320 lbs Date of test 15.8.24 No. of Certificate 9846 Can each boiler be worked separately Yes
 Area of Firegrate in each Boiler 60 sq ft No. and Description of safety valves to each boiler Two Spring-loaded
 Area of each set of valves per boiler {per Rule 15.8 sq ft as fitted 16.59 sq ft} Pressure to which they are adjusted 180 Are they fitted with easing gear Yes
 In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler No donkey boiler
 Smallest distance between boilers or uptakes and bunkers or woodwork 5-1/2" Is oil fuel carried in the double bottom under boilers None
 Smallest distance between shell of boiler and tank top plating 2-5/2" Is the bottom of the boiler insulated Yes
 Largest internal dia. of boilers 186 1/2" Length 11'-0" Shell plates: Material Steel Tensile strength 28 1/2 - 32 1/2 Tons
 Thickness 1 1/4" Are the shell plates welded or flanged no. Description of riveting: circ. seams {end A.R. inter. ✓}
 Long. seams Weld. A.B.S. Diameter of rivet holes in {circ. seams 1 5/16" long. seams 1 5/16"} Pitch of rivets {4" 9"}
 Percentage of strength of circ. end seams {plate 67.1 rivets 43.75} Percentage of strength of circ. intermediate seam {plate 85.41 rivets 91}
 Percentage of strength of longitudinal joint {plate 85.41 rivets 91 combined 89} Working pressure of shell by Rules 180.4 lbs
 Thickness of butt straps {outer 1" inner 1 1/8"} No. and Description of Furnaces in each Boiler Three Brighton
 Material Steel Tensile strength 26-30 Tons Smallest outside diameter 44 3/8"
 Length of plain part {top ✓ bottom ✓} Thickness of plates {crown 9/16" bottom 9/16"} Description of longitudinal joint Welded
 Dimensions of stiffening rings on furnace or c.c. bottom None Working pressure of furnace by Rules 184 lbs
 End plates in steam space: Material Steel Tensile strength 26-30 Tons Thickness 1 3/16" Pitch of stays 21 1/2" x 27"
 How are stays secured Double nuts & washers (3 1/2") Working pressure by Rules 182.8 lbs
 Tube plates: Material {front Steel back Steel} Tensile strength {26-30 Tons 26-30 Tons} Thickness {1 5/16" 3/4"}
 Lean pitch of stay tubes in nests 9" Pitch across wide water spaces 14 1/2" Working pressure {front 182 lbs back 222 lbs}
 Girders to combustion chamber tops: Material Steel Tensile strength 28-32 Tons Depth and thickness of girder
 at centre 9" x 1 1/2" Length as per Rule 33" Distance apart 10" No. and pitch of stays
 in each Two - 9 1/2" Working pressure by Rules 190 lbs Combustion chamber plates: Material Steel
 Tensile strength 26-30 Tons Thickness: Sides 23/32" Back 23/32" Top 23/32" Bottom 15/16"
 Pitch of stays to ditto: Sides 9 1/2" x 10" Back 9 1/2" x 10 1/2" Top 9 1/2" x 10" Are stays fitted with nuts or riveted over Nuts
 Working pressure by Rules 181 Tons Front plate at bottom: Material Steel Tensile strength 26-30 Tons
 Thickness 1 5/16" Lower back plate: Material Steel Tensile strength 26-30 Tons Thickness 7/8"
 Pitch of stays at wide water space 14 1/2" Are stays fitted with nuts or riveted over Nuts
 Working Pressure 187 lbs Main stays: Material Steel Tensile strength 28-32 Tons
 Diameter {At body of stay, or Over threads 3 1/2"} No. of threads per inch Six Area supported by each stay 580.5 sq in
 Working pressure by Rules 186 lbs Screw stays: Material Steel Tensile strength 26-30 Tons
 Diameter {At turned off part, or Over threads 1 3/4"} No. of threads per inch Nine Area supported by each stay 99.75 sq in



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Working pressure by Rules *182 1/2* Are the stays drilled at the outer ends *No* Margin stays: Diameter ^{At turned off part,} _{or} ^{Over threads} *2"*

No. of threads per inch *nine* Area supported by each stay *123 1/4"* Working pressure by Rules *201 1/2*

Tubes: Material *Iron* External diameter ^{Plain} *3 1/4"* _{Stay} *3 1/4"* Thickness ^{no. 8. m. g.} *5/16" + 1/4"* No. of threads per inch *nine*

Pitch of tubes *4 1/2"* Working pressure by Rules *192 1/2* Manhole compensation: Size of opening in *End* *16" x 12"* Section of compensating ring *flanged* No. of rivets and diameter of rivet holes *✓*

Outer row rivet pitch at ends *✓* Depth of flange if manhole flanged *4 1/4"* Steam Dome: Material *Iron*

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 *North Eastern marine* Manufacturers of ^{Tubes} *Tubes Ltd Birmingham* _{Steel castings} *Seylands Ltd*

Number of elements *114* Material of tubes *S.D. steel* Internal diameter and thickness of tubes *17 mm internal* *22" - external*

Material of headers *Mild steel* Tensile strength *26-30 tons* Thickness *7/8"* Can the superheater be shut off and 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 *3.1416 1/4"* Are the safety valves fitted with easing gear *Yes* Working pressure as per Rules *180 lbs* Pressure to which the safety valves are adjusted *185 lbs* Hydraulic test pressure: tubes *1500 lbs*, castings *540 lbs 1/4"* and after assembly in place *450 1/2 1/4"* 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*

The foregoing is a correct description,
THE NORTH EASTERN MARINE ENGINEERS

J. J. Harrison Manufacturer.
Secretary *Yes*

Dates of Survey ^{During progress of work in shops - -} *see Engine sheet* Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) *Yes*

^{while building} _{board vessel - - -} *✓* Total No. of visits *39*

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) *This vessel's boilers have been examined during construction, and the materials and workmanship are good & in accordance with the approved plan & the requirements of the Rules.*

Survey Fee £ : : When applied for. 192

Travelling Expenses (if any) £ : : When received. 192

R. Lee Armes & Mannie Piton
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **TUES. 28 OCT 1924**

Assigned

