

## REPORT ON BOILERS.

No. 78442

Date of writing Report Sept 11<sup>th</sup> 1924 When handed in at Local Office Sept 11<sup>th</sup> 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 27<sup>th</sup> Last Survey Oct 7<sup>th</sup> 1924  
 on the Steel Co. SHEAF CREST (Number of Visits 39) Tons {Gross 2728 Net 1686} approx  
 Master ✓ Built at Blyth By whom built Blyth S.S. & D. Co. Ltd. Yard No. 231 When built 1924  
 Engines made at Newcastle By whom made North Eastern Marine Eng. Co. Ltd. Engine No. 2570 When made 1924  
 Boilers made at Newcastle By whom made North Eastern Marine Eng. Co. Ltd. Boiler No. 2570 When made 1924  
 Nominal Horse Power 305 Owners Sheaf Steam Shipping Co. Ltd.  
M. A. Louie & Co. Mgrs. Port belonging to Newcastle

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

Manufacturers of Steel Spencer & Sons Ltd. & Colville & Sons Ltd. (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 Ling 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 lbs 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 2-5-1/2" 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 Helic. 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 Eighteen  
 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 {15/16" 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 15/16" 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, 3 1/2" or Over threads ✓} 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, 1 3/4" or Over threads ✓} 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, 2" 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.s. ✓ 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 ✓ 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 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 lbs 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 ENGINEERING CO. LTD

J. J. Harrison Manufacturer.  
Secretary Yes ✓

Dates { During progress of work in shops - - } see Engine sheet  
 while { During erection on board vessel - - } " " "  
 building

Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) Yes ✓  
 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 Ainslie & Marjorie Piton  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUES. 28 OCT 1924

Assigned



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 Foundation