

## REPORT ON BOILERS.

No. 78206

Received at London Office

23 AUG 1924

Date of writing Report

192

When handed in at Local Office

9/8/1924 Port of

NEWCASTLE-ON-TYN.

No. in Survey held at Newcastle

Date, First Survey 31<sup>st</sup> March 1924 Last Survey 8<sup>th</sup> August 1924

70661 on the Steel Co. SENTRY

(Number of Visits —) Tons { Gross 1036  
Net 495

Built at Newcastle By whom built Tyne Iron Works Ltd. Yard No. 228 When built 1924

Engines made at Newcastle By whom made North Eastern Marine Eng. Co. Ltd. Engine No. 2582 When made 1924

Boilers made at Newcastle By whom made North Eastern Marine Eng. Co. Ltd. Boiler No. 2582 When made 1924

Nominal Horse Power 193 Owners J. &amp; R. Remond, Manchester - London Steamers Ltd. Port belonging to Manchester

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

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

Total Heating Surface of Boilers 3560 sq ft Is forced draught fitted No Coal or Oil fired Coal

No. and Description of Boilers Two single ended cylindrical Working Pressure 180 lbs/sq in

Tested by hydraulic pressure to 320 lbs Date of test 12.6.24 No. of Certificate 9831 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler 48.5 sq ft No. and Description of safety valves to each boiler Two Spring-loaded

Area of each set of valves per boiler { per Rule 11.4 sq in as fitted 11.8 sq in Pressure to which they are adjusted 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 22 in Is oil fuel carried in the double bottom under boilers No

Smallest distance between shell of boiler and tank top plating 23 1/2 in Is the bottom of the boiler insulated No

Largest internal dia. of boilers 158 3/8 in Length 10'9" Shell plates: Material Steel Tensile strength 28-32 tons

Thickness 1 7/8 in Are the shell plates welded or flanged No Description of riveting: circ. seams { end Double inter. 3 1/2 in

g. seams Double Rivet D.B.S. Diameter of rivet holes in { circ. seams 1 1/8 in long. seams 1 1/8 in Pitch of rivets { 8 in

Percentage of strength of circ. end seams { plate 59.2 rivets 44.5 Percentage of strength of circ. intermediate seam { plate 85.93 rivets 88.7

Percentage of strength of longitudinal joint { plate 7 3/8 in rivets 88.7 combined 89.36 Working pressure of shell by Rules 180 lbs

Thickness of butt straps { outer 1 5/8 in inner 1 7/8 in No. and Description of Furnaces in each Boiler Three Main

Material Steel Tensile strength 26-30 tons Smallest outside diameter 35 3/8 in

Length of plain part { top bottom Thickness of plates { crown 1 1/2 in bottom 3/2 in Description of longitudinal joint Welded

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 191 lbs

Stays in steam space: Material Steel Tensile strength 26-30 tons Thickness 1 1/4 in Pitch of stays 24" x 18"

Are stays secured Double Nuts &amp; Washers (320) Working pressure by Rules 182 lbs

Furnace plates: Material { front Steel back Steel Tensile strength { 26-30 tons Thickness { 1 5/8 in 3/4 in

Pitch of stay tubes in nests 8 7/8 in Pitch across wide water spaces 14 1/2 in Working pressure { front 185 lbs back 244 lbs

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

Centre 8"-1 1/2 in Length as per Rule 30 in Distance apart 10 in No. and pitch of stays

Each Two 9 1/2 in Working pressure by Rules 185 lbs Combustion chamber plates: Material Steel

Tensile strength 26-30 tons Thickness: Sides 23 3/32 in Back 23 3/32 in Top 23 3/32 in Bottom 7 3/8 in

Pitch of stays to ditto: Sides 10 1/2 x 9 1/2 in Back 11 1/4 x 8 1/2 in Top 10 x 9 1/2 in Are stays fitted with nuts or riveted over Nuts

Working pressure by Rules 181 lbs Front plate at bottom: Material Steel Tensile strength 26-30 tons

Thickness 1 5/8 in Lower back plate: Material Steel Tensile strength 26-30 tons Thickness 7 3/8 in

Pitch of stays at wide water space 14 1/2 in Are stays fitted with nuts or riveted over Nuts

Working Pressure 187 lbs Main stays: Material Steel Tensile strength 28-32 tons

Pitch of stays { At body of stay, 3 in No. of threads per inch Six Area supported by each stay 432 sq in

Working pressure by Rules 182 lbs Screw stays: Material Steel Tensile strength 26-30 tons

Pitch of stays { At turned off part, 1 3/4 in No. of threads per inch Nine Area supported by each stay 99.75 sq in



Working pressure by Rules *182 lb.* Are the stays drilled at the outer ends *no.* Margin stays: Diameter { At turned off part, *1 3/4"* or Over threads *1 3/4"* ✓  
 No. of threads per inch *nine* ✓ Area supported by each stay *109.4375 sq"* Working pressure by Rules *195 lb.*  
 Tubes: Material *low* ✓ External diameter { Plain *3 1/4"* ✓ Thickness { *ho. 8. 14. 9.* ✓ No. of threads per inch *nine* ✓  
 Stay *3 1/4"* ✓  
 Pitch of tubes *4 1/2" x 4 3/8"* Working pressure by Rules *plain 230 lb. stay 192 lb.* Manhole compensation: Size of opening in  
 shell plate *16" x 12"* ✓ Section of compensating ring ✓ 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 *low* ✓  
 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,  
 THE NORTH EASTERN MARINE ENGINEERING Co., LTD. Manufacturer.

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

*See Machinery Report*

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

Total No. of visits

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) *These Boilers were constructed under Special Survey. The materials and workmanship are sound and good. The Boilers satisfactorily withstood the hydraulic pressure test. The safety valves were adjusted under steam.*

*In my opinion the vessel is now eligible for notation T.L.M.C. 8. 24.*

Survey Fee ... £ *See Machinery Report* : : When applied for. 192  
 Travelling Expenses (if any) £ : : When received. 192

*R. Lee Armes.*

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *TUES. 26 AUG 1924*

Assigned



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