

## REPORT ON BOILERS.

No. 78443

Date of writing Report

192

When handed in at Local Office

23/10/

1924

Port of

Received at London Office

NEWCASTLE-ON-TYNE.

No. in Survey held at Newcastle-on-Tyne

Reg. Book.

Date, First Survey 27<sup>th</sup> March/24 Last Survey 17<sup>th</sup> Oct. 1924

90911 on the Steel Co. TULLOCHMOOR

(Number of Visits —)

Gross 2728

Tons

Net

Master Built at Blyth By whom built Blyth S.S. &amp; D. Co. Ltd. Yard No. 229 When built 1924

Engines made at Newcastle By whom made Rath Eastern Marine Eng. Co. Ltd. Engine No. 2563 When made 1924

Boilers made at Newcastle By whom made Rath Eastern Marine Eng. Co. Ltd. Boiler No. 2563 When made 1924

Nominal Horse Power 323 Owners W. Runciman &amp; Co. Ltd. mgs Port belonging to London

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

Manufacturers of Steel John Spencer &amp; Sons Ltd. David Colville &amp; Sons Ltd. (Letter for Record 5)

Total Heating Surface of Boilers 5464 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

Tested by hydraulic pressure to 320 lbs Date of test 21.7.24 No. of Certificate 9837 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler 63 sq ft No. and Description of safety valves to each boiler Two Spring-loaded

Area of each set of valves per boiler {per Rule 17.5 sq ft as fitted 19.24 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

Smallest distance between boilers or uptakes and bunkers or woodwork 56" Is oil fuel carried in the double bottom under boilers No

Smallest distance between shell of boiler and tank top plating 30" Is the bottom of the boiler insulated No

Largest internal dia. of boilers 16'-3 3/8" Length 11'-0" Shell plates: Material Steel Tensile strength 28 1/2-32 1/2 tons

Thickness 1 5/16" Are the shell plates welded or flanged No Description of riveting: circ. seams {end Double inter. 4" Pitch of rivets {9 1/4"

long. seams Double D.B.S. Diameter of rivet holes in {circ. seams 1 1/32" long. seams 1 1/32"

Percentage of strength of circ. end seams {plate 66.4 rivets 43.5 Percentage of strength of circ. intermediate seam {plate rivets

Percentage of strength of longitudinal joint {plate 85.47 rivets 88.36 combined 88.5 Working pressure of shell by Rules 181 lbs

Thickness of butt straps {outer 1" inner 1 1/8" No. and Description of Furnaces in each Boiler Four Leighton

Material Steel Tensile strength 26-30 tons Smallest outside diameter 38 1/2"

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

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 199 lbs

End plates in steam space: Material Steel Tensile strength 26-30 tons Thickness 1 3/8" Pitch of stays 24 x 22 1/2"

How are stays secured Double nuts &amp; washers Working pressure by Rules 185 lbs

Tube plates: Material {front Steel back Steel Tensile strength {26/30 tons Thickness {2 3/32" 3/4"

Mean pitch of stay tubes in nests 8 7/8" Pitch across wide water spaces 14 1/2" Working pressure {front 194 lbs back 255 lbs

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

at centre 9 3/8"-1 1/2" Length as per Rule 33" Distance apart 11" No. and pitch of stays

in each Two-9" Working pressure by Rules 185 lbs Combustion chamber plates: Material Steel

Tensile strength 26-30 tons Thickness: Sides 23/32" Back 3/4" Top 23/32" Bottom 1"

Pitch of stays to ditto: Sides 4" x 9" Back 10 1/16" x 9 3/4" Top 11" x 9" Are stays fitted with nuts or riveted over nuts

Working pressure by Rules 180 lbs Front plate at bottom: Material Steel Tensile strength 26/30 tons

Thickness 3/32" Lower back plate: Material Steel Tensile strength 26-30 tons Thickness 7/8"

Pitch of stays at wide water space 14 1/2" x 9 3/4" Are stays fitted with nuts or riveted over nuts

Working Pressure 243 lbs Main stays: Material Steel Tensile strength 28-32 tons

Diameter {At body of stay, 3 1/2" Over threads 3 3/4" No. of threads per inch Six Area supported by each stay 540 sq in

Working pressure by Rules 200 lbs Screw stays: Material Steel Tensile strength 26/30 tons

Diameter {At turned off part, 1 7/8" Over threads No. of threads per inch Nine Area supported by each stay 106.64 sq in



Working pressure by Rules 200 lbs Are the stays drilled at the outer ends no ✓ Margin stays: Diameter { At turned off part, 2" ✓  
 No. of threads per inch nine ✓ Area supported by each stay 124.3 sq" Working pressure by Rules 199 lbs  
 Tubes: Material Iron ✓ External diameter { Plain 3 1/4" ✓ Thickness { 8 L.S.G. ✓ No. of threads per inch nine ✓  
 Pitch of tubes 4 1/2" x 4 3/8" ✓ Working pressure by Rules plain 230 lbs stay 169 lbs ✓ Manhole compensation: Size of opening  
 Section of compensating ring none ✓ No. of rivets and diameter of rivet holes ✓  
 Outer row rivet pitch at ends ✓ Depth of flange if manhole flanged 4 1/2" ✓ 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  
 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. Manufacture

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 & workmanship are sound and good. They were satisfactorily subjected to a hydraulic pressure test, were efficiently installed on the Steamer "Tullochmoor" and the safety valves were adjusted under steam. In our opinion this vessel is eligible for notation -1- L.M.C. 10-24 in the Society's Register Book.

It is submitted that  
 this vessel is eligible for  
 THE RECORD. + LMC 10. 24. CL.

*JWD.*  
 27/10/24

Survey Fee ... £  
 Travelling Expenses (if any) £

When applied for. 192  
 When received. 192

*See Machinery Report*

*R. A. Ainslie + J. R. Beveridge*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUES. 28 OCT 1924

Assigned + L.M.C. 10. 24  
 C.L.