

# REPORT ON BOILERS.

No. 95264

JUL 28 1937

Received at London Office

Date of writing Report 19 When handed in at Local Office 28771 1937 Port of NEWCASTLE-ON-TYNE

No. in Reg. Book. Survey held at Wallcend Date, First Survey 3<sup>rd</sup> Nov/36 Last Survey 21<sup>st</sup> July 1937

on the Twin Screw Steamer "MISOA" (Number of Visits           ) Tons { Gross 4890 Net 2432

Master            Built at Middlesbrough By whom built Furness S.B.C. Ltd. Yard No. 267 When built 1937

Engines made at Wallcend By whom made North Eastern Marine Eng. Co. Ltd. Engine No. 2871 When made 1937

Boilers made at Wallcend By whom made North Eastern Marine Eng. Co. Ltd. Boiler No. 2871 When made 1937

Nominal Horse Power 551 Owners Lago Shipping Co Port belonging to London

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

Manufacturers of Steel Steel Co of Scotland, Colvilles Ltd. (Letter for Record S ✓)

Total Heating Surface of Boilers 8870 sq ft Is forced draught fitted Yes Coal or Oil fired Oil ✓

No. and Description of Boilers Two single ended multitubular. Working Pressure 225 lbs ✓

Tested by hydraulic pressure to 388 lbs Date of test 14-4-37 No. of Certificate 711 Can each boiler be worked separately Yes ✓

Area of Firegrate in each Boiler            No. and Description of safety valves to each boiler Two spring loaded ✓

Area of each set of valves per boiler { per Rule 28.9 sq" as fitted 11.86 sq" Pressure to which they are adjusted 230 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 9'-6" Is oil fuel carried in the double bottom under boilers No ✓

Smallest distance between shell of boiler and tank top plating 3'-0" Is the bottom of the boiler insulated Yes ✓

Largest internal dia. of boilers 17'-5 5/8" Length 11'-9" Shell plates: Material Steel Tensile strength 29 1/2 - 33 1/2 ✓

Thickness 1 1/16" Are the shell plates welded or flanged No Description of riveting: circ. seams { end L.D.R. } ✓

long. seams T.R. 5/16" Straps Diameter of rivet holes in { circ. seams 1 1/16" } Pitch of rivets { 4 3/8" } ✓

Percentage of strength of circ. end seams { plate 61.0 rivets 47.2 } Percentage of strength of circ. intermediate seam { plate            rivets            } ✓

Percentage of strength of longitudinal joint { plate 85.1 rivets 85.2 combined 87.2 } Working pressure of shell by Rules 226 lbs ✓

Thickness of butt straps { outer 1 5/16" inner 1 3/16" } No. and Description of Furnaces in each Boiler Four - Morrison Type ✓

Material Steel Tensile strength 26-30 tons Smallest outside diameter 41 9/16" ✓

Length of plain part { top            bottom            } Thickness of plates { crown 2 1/8" bottom 2 1/8" } Description of longitudinal joint Weld ✓

Dimensions of stiffening rings on furnace or c.c. bottom None Working pressure of furnace by Rules 230 lbs ✓

End plates in steam space: Material Steel Tensile strength 26-30 tons Thickness 1 5/16" Pitch of stays 20" x 17 1/4" ✓

How are stays secured Double nuts Working pressure by Rules 231 lbs ✓

Tube plates: Material { front Steel back Steel } Tensile strength { 26-30 tons } Thickness { 1 1/16" } ✓

Mean pitch of stay tubes in nests 8 1/16" Pitch across wide water spaces 14" Working pressure { front 239 lbs back 258 lbs } ✓

Girders to combustion chamber tops: Material Steel Tensile strength 29-33 tons Depth and thickness of girder            ✓

at centre 10 1/4" x 2 @ 1" Length as per Rule 39" Distance apart 9 1/2" No. and pitch of stays            ✓

in each 3 @ 8 7/8" Working pressure by Rules 230 lbs Combustion chamber plates: Material Steel ✓

Tensile strength 26-30 tons Thickness: Sides 1 3/16" Back 1 3/16" Top 1 3/16" Bottom 1" ✓

Pitch of stays to ditto: Sides 8 7/8" x 7 1/2" Back 8 7/8" x 7 1/2" Top 8 7/8" x 9 1/2" Are stays fitted with nuts or riveted over Nuts to top ✓

Working pressure by Rules 277 lbs Front plate at bottom: Material Steel Tensile strength 26-30 tons ✓

Thickness 1" Lower back plate: Material Steel Tensile strength 26-30 tons Thickness 7/8" ✓

Pitch of stays at wide water space 14 1/2" x 7 1/2" Are stays fitted with nuts or riveted over Nuts - outside: riveted over on inside. ✓

Working Pressure 235 lbs Main stays: Material Steel Tensile strength 28-32 tons ✓

Diameter { At body of stay, 3" or Over threads            } No. of threads per inch 6 Area supported by each stay 345 sq" ✓

Working pressure by Rules 227 lbs Screw stays: Material Steel Tensile strength 26-30 tons ✓

Diameter { At turned off part,            or Over threads 15/16" + 1 3/8" } No. of threads per inch 9 Area supported by each stay 84.3 sq" ✓

Working pressure by Rules 253 lbs ✓ Are the stays drilled at the outer ends Yes <sup>Sidestays back</sup> Margin stays: Diameter 1 7/8" <sup>At turned off part, or Over threads</sup>

No. of threads per inch 9 ✓ Area supported by each stay 87.6 sq" ✓ Working pressure by Rules 243 lbs ✓

Tubes: Material Seamless Steel External diameter 2 1/4" <sup>Plain</sup> Thickness 99 <sup>Stay</sup> 5/16" No. of threads per inch 9

Pitch of tubes 3 1/2" x 3 1/2" ✓ Working pressure by Rules 250 lbs ✓ 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 1/8" ✓ Steam Dome: Material —

Tensile strength — Thickness of shell — Description of longitudinal joint —

Diameter of rivet holes — Pitch of rivets — Percentage of strength of joint — <sup>Plate Rivets</sup>

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 not fitted Manufacturers of — <sup>Tubes Steel castings</sup>

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 22 inclusive for boilers been complied with Yes

The foregoing is a correct description,

For THE NORTH EASTERN MARINE ENGINEERING CO. LTD. John Neil Manufacturer.

Dates of Survey See Machinery Report <sup>During progress of work in shops - - - During erection on board vessel - - -</sup> Are the approved plans of boiler and superheater forwarded herewith Report No 95173 <sup>(If not state date of approval.)</sup> Forwarded with Report No 95173

Total No. of visits —

Is this Boiler a duplicate of a previous case Yes If so, state Vessel's name and Report No. U.S. BACHAQUERO RPT No 95173

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These boilers have been built under Special Survey, in accordance with the approved plan and the Rules. The materials and workmanship are good, on completion they were tested by water pressure to 388 lbs per square inch and found tight and satisfactory. The boilers have been fitted in the ship in an efficient manner, tried under steam and found satisfactory.

Survey Fee ... £ Charged on Machinery Rpt. When applied for, 19

Travelling Expenses (if any) £ — When received, 19

J. S. W. Nicholson  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI 6 AUG 1937

Assigned See 16055

