

REPORT ON BOILERS.

Sld. No. 28742

Nwc. No. 77350

MON 24 MAR 1924

THU. MAY.

Received at London Office

THU. 27 DEC. 1923

Date of writing Report 22nd Dec 1923 When handed in at Local Office 22nd Dec 1923 Port of NEWCASTLE-ON-TYNE

No. in Reg. Book. Survey held at Newcastle on Tyne Date, First Survey 18 May Last Survey 21st Dec 1923

on the Donkey Boiler for Messrs H. Doxford & Sons Ltd Motor vessel No 577 (Number of Visits 17) Gross 6304 Tons Net 5850

Master _____ Built at Sunderland By whom built H Doxford & Sons Ltd No. 577 When built 1924

Engines made at Sunderland By whom made H Doxford & Sons Ltd Engine No. 561 When made 1924

Boilers made at Newcastle on Tyne By whom made Hawthorn Leslie & Co Ltd Boiler No. 8721 When made 1923

Nominal Horse Power _____ Owners Furness, Withy & Co Ltd Port belonging to London

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel J. Spencer & Sons Ltd (Letter for Record S)

Total Heating Surface of Boilers 1830 sq ft 1500 for fuel Is forced draught fitted NO Coal or Oil fired OIL

No. and Description of Boilers One, Single Ended Multitubular Working Pressure 125 lb per sq in

Tested by hydraulic pressure to 238 lb Date of test 15/6/23 No. of Certificate 9770 Can each boiler be worked separately ✓

Area of Firegrate in each Boiler OIL FIRED No. and Description of safety valves to each boiler Two, direct spring

Area of each set of valves per boiler { per Rule 19.6 sq in as fitted 20.64 sq in Pressure to which they are adjusted 130 lb 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 4'-3" Is oil fuel carried in the double bottom under boilers YES

Smallest distance between shell of boiler and tank top plating 4'-3" Is the bottom of the boiler insulated NO

Largest internal dia. of boilers 13'-6" Length 11'-0" Shell plates: Material Steel Tensile strength 28 to 32 tons

Thickness 27/32" Are the shell plates welded or flanged No Description of riveting: circ. seams { end S.R. inter. ✓

long. seams Double strap, 3 rivets Diameter of rivet holes in { circ. seams 1 1/16" long. seams 1 1/16" Pitch of rivets { 3" 5 1/2"

Percentage of strength of circ. end seams { plate 66.6 rivets 50.6 Percentage of strength of circ. intermediate seam { plate 50.7 rivets 55.7 Working pressure of shell by Rules 126 lb.

Percentage of strength of longitudinal joint { plate 50.7 rivets 55.7 combined 90.9 Working pressure of shell by Rules 126 lb.

Thickness of butt straps { outer 23/32" inner 27/32" No. and Description of Furnaces in each Boiler Three, Morrison's

Material Steel Tensile strength 26/30 tons Smallest outside diameter 38 1/4"

Length of plain part { top _____ bottom _____ Thickness of plates { crown 3/8" bottom 3/8" Description of longitudinal joint Welded

Dimensions of stiffening rings on furnace or c.c. bottom ✓ Working pressure of furnace by Rules 138 lb.

End plates in steam space: Material Steel Tensile strength 26/30 tons Thickness 1" Pitch of stays 22" x 16"

How are stays secured Double Nuts & washers Working pressure by Rules 129 lb.

Tube plates: Material { front Steel back Steel Tensile strength { 26 to 30 tons Thickness { 7/8" 3/4"

Mean pitch of stay tubes in nests 11 1/8" Pitch across wide water spaces 14 1/4" Working pressure { front 136 lb back ✓

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

at centre 9" x 1 1/2" Length as per Rule 34" Distance apart 11 7/8" No. and pitch of stays

in each Two, 10 1/2" Working pressure by Rules 159 lb. Combustion chamber plates: Material Steel

Tensile strength 26/30 tons Thickness: Sides 1/16" Back 1/16" Top 1/16" Bottom 7/8"

Pitch of stays to ditto: Sides 11 7/8" x 10 1/2" Back 11" x 10 1/2" Top 11 7/8" x 10 1/2" Are stays fitted with nuts or riveted over Nuts

Working pressure by Rules 131 lb. Front plate at bottom: Material Steel Tensile strength 26/30 tons

Thickness 7/8" Lower back plate: Material Steel Tensile strength 26/30 tons Thickness 3/4"

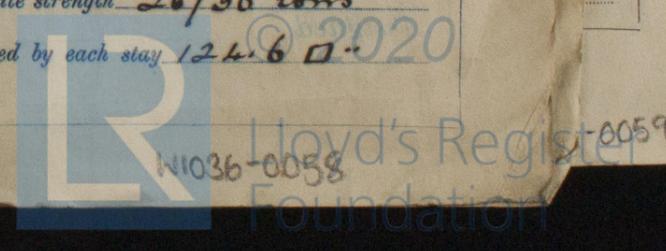
Pitch of stays at wide water space 14 1/4" Are stays fitted with nuts or riveted over Nuts

Working Pressure 162 lb. Main stays: Material Steel Tensile strength 28/32 tons

Diameter { At body of stay, ✓ or Over threads 2 1/2" No. of threads per inch 6 Area supported by each stay 352 sq in

Working pressure by Rules 164 lb. Screw stays: Material Steel Tensile strength 26/30 tons

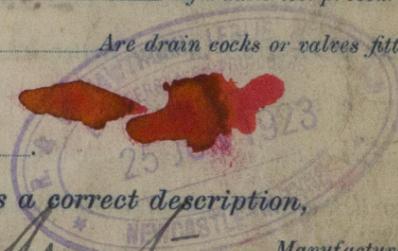
Diameter { At turned off part, ✓ or Over threads 1 3/4" No. of threads per inch 9 Area supported by each stay 124.6 sq in



Working pressure by Rules 145 lb Are the stays drilled at the outer ends No Margin stays: Diameter At turned off part, 1 3/4"
 No. of threads per inch 9 Area supported by each stay 134 sq" Working pressure by Rules 135 lb
 Tubes: Material Iron External diameter Plain 3 1/4" Thickness 5/16" + 1/4" No. of threads per inch 9
 Pitch of tubes 4 1/2" x 4 3/8" Working pressure by Rules 130 Stay 150 Manhole compensation: Size of opening in
 shell plate 16" x 12" Section of compensating ring 7" x 7/8" No. of rivets and diameter of rivet holes forty, 1"
 Outer row rivet pitch at ends 3 3/4" Depth of flange if manhole flanged ✓ 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 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 ✓ Manufacturers of ✓
 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 ✓
 The foregoing is a correct description,
R. P. Armstrong Manufacturer.



Dates of Survey ¹⁹²³ During progress of work in shops - - May 18, 28, 29, June 5, 8, 11, 13, 15, 18, 21, 22, July 24, 26 Are the approved plans of boiler and superheater forwarded herewith yes
 while building [✓] During erection on board vessel - - Aug. 3, 22, Oct. 23, Dec. 21. (If not state date of approval.)
 Total No. of visits 17.

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This boiler has been built under special survey, the materials and workmanship are of good quality and on completion was tested by hydraulic pressure to 238 pounds per square inch and was found tight & sound at that pressure. The mountings were tested to 250 lb per sq. This boiler is to be forwarded to Sunderland for fitting on board.

The steel test docket flimsies and the report on safety valves now forwarded with plan of boiler are for 2 boilers, Messrs Doxford numbers being 577 and 578.

This boiler has now been fitted and fired in the vessel in a satisfactory manner, the oil burning installation has been examined and tested under working conditions & found satisfactory.

Survey Fee £ 12 : 0 : 0 When applied for 24 DEC 1923
 Travelling Expenses (if any) £ : : : When received 10.1.1924

George Murdoch
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRIMAR 28 1924

Assigned See Std 28772

