

REPORT ON BOILERS.

No. ~~78394~~ 78421

20 OCT 1924

Received at London Office

Date of writing Report 12th Sept 1924 When handed in at Local Office 12th Sept 1924 Port of Newcastle on TyneNo. in Survey held at Newcastle on Tyne Date, First Survey 30 April 24 Last Survey 8 October 1924
Reg. Book.on the S.S. Middlesbro' (Number of Visits 23) Tons { Gross
NetMaster _____ Built at Hebburn on Tyne By whom built R. H. Hawthorn Leslie & Co. Ltd Yard No. 535 When built 1924Engines made at North Shields By whom made Shields Engineering & D. D. Co. Ltd Engine No. 377 When made 1924Boilers made at St. Peter's, Newcastle By whom made R. H. Hawthorn Leslie & Co. Ltd Boiler No. 8814 When made 1924Nominal Horse Power _____ Owner Tyne-Tees Steam Shipping Co. Ltd Port belonging to Newcastle

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Bleichwalzwerk, Schulz Knaand, Stul Co. of Liep & D. Colville, Sons (Letter for Record S)Total Heating Surface of Boilers 3322 sq ft (3262 for fus) Is forced draught fitted No Coal or Oil fired CoalNo. and Description of Boilers No. 1, Single Ended Working Pressure 180 lb per sq inTested by hydraulic pressure to 320 lb Date of test 6/8/24 No. of Certificate 9841 Can each boiler be worked separately yesArea of Firegrate in each Boiler 55 sq ft No. and Description of safety valves to each boiler No, direct springArea of each set of valves per boiler { per Rule 10.6 sq ft as fitted 11.88 sq ft Pressure to which they are adjusted 185 lb Are they fitted with easing gear yesIn case of donkey boilers, state whether steam from main boilers can enter the donkey boiler ✓Smallest distance between boilers 6'-0" Is oil fuel carried in the double bottom under boilers NoSmallest distance between shell of boiler and tank top plating Open floors Is the bottom of the boiler insulated NoLargest internal dia. of boilers 13'-6" Length 11'-0 1/2" Shell plates: Material Steel Tensile strength 28/32 tonsThickness 1 1/8" Are the shell plates welded or flanged No Description of riveting: circ. seams { end 2 R Lap inter. Nonelong. seams Double straps, 5 rivets Diameter of rivet holes in { circ. seams 1 3/16" long. seams 1 3/16" Pitch of rivets { 3 1/2" 8 3/8"Percentage of strength of circ. end seams { plate 66.0 rivets 45.9 Percentage of strength of circ. intermediate seam { plate 183 rivets NonePercentage of strength of longitudinal joint { plate 85.8 rivets 89.9 combined 89.5 Working pressure of shell by Rules 183 lb per sq inThickness of butt straps { inner 31/32" outer 27/32" No. and Description of Furnaces in each Boiler 3, Mousoni'sMaterial Steel Tensile strength 26/30 tons per sq in Smallest outside diameter 41 7/32"Length of plain part { top ✓ bottom ✓ Thickness of plates { crown 17/32" bottom ✓ Description of longitudinal joint WeldedDimensions of stiffening rings on furnace or c.c. bottom None Working pressure of furnace by Rules 186 lbEnd plates in steam space: Material Steel Tensile strength 26/30 tons Thickness 1 1/32" Pitch of stays 25 x 17 1/2"How are stays secured Double nuts & washers Working pressure by Rules 182 lbTube plates: Material { front Steel back ✓ Tensile strength { 26/30 tons Thickness { 31/32" 3/4"Mean pitch of stay tubes in nests 9 1/2" Pitch across wide water spaces 14 1/2" Working pressure { front 188 lb back ✓Girders to combustion chamber tops: Material Steel Tensile strength 28/32 tons Depth and thickness of girderat centre 8" x 1 1/2" Length as per Rule 29 5/8" Distance apart 8 1/4" No. and pitch of staysin each No. 9" Working pressure by Rules 226 lb Combustion chamber plates: Material SteelTensile strength 26/30 tons Thickness: Sides 5/8" Back 5/8" Top 5/8" Bottom 29/32"Pitch of stays to ditto: Sides 9 3/4" x 7 1/8" Back 8 3/4" x 7 3/4" Top 9" x 8 1/4" Are stays fitted with nuts or riveted over NutsWorking pressure by Rules 181 lb Front plate at bottom: Material Steel Tensile strength 26/30 tonsThickness 31/32" Lower back plate: Material Steel Tensile strength 26/30 tons Thickness 27/32"Pitch of stays at wide water space 15" Are stays fitted with nuts or riveted over NutsWorking Pressure 193 lb per sq in Main stays: Material Steel Tensile strength 28/32 tonsDiameter { At body of stay 3 1/4" or Over threads ✓ No. of threads per inch 6 Area supported by each stay 437 1/2 sq inWorking pressure by Rules 183 lb Screw stays: Material Steel Tensile strength 26/30 tonsDiameter { At turned off part 1 5/8" - 1 1/2" or Over threads ✓ No. of threads per inch 9 Area supported by each stay 74 1/4 sq in x 67.8 sq in

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Working pressure by Rules 84 lb Are the stays drilled at the outer ends no ✓ Margin stays: Diameter { At turned off part, 3/4" ✓
Over threads 1 3/4" ✓
No. of threads per inch 9 ✓ Area supported by each stay 99 1/2 sq" Working pressure by Rules 181 lb
Tubes: Material Iron ✓ External diameter { Plain 3 1/2" ✓ Thickness { 5 L.W.G. ✓
Stay 3 1/2" ✓ 5/16" ✓ No. of threads per inch 9 ✓
Pitch of tubes 4 3/4" x 4 3/4" ✓ Working pressure by Rules 215 lb p.s.i. ✓ Manhole compensation: Size of opening in
shell plate 17" x 13" ✓ Section of compensating ring 19" x 1 7/8" ✓ No. of rivets and diameter of rivet holes 15, 1 9/16"
Outer row rivet pitch at ends 10" ✓ Depth of flange if manhole flanged Recessed ✓ 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 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

The foregoing is a correct description,

Manufacturer.

1924
Dates of Survey { During progress of work in shops - - Apr. 30, May 2, 7, 9, 14, 20, 27, 28, June 5 ✓
while building { During erection on board vessel - - July 10, 29, Aug 6, 8, 13, 20, 23, 26, Sept. 2, 3, 15, 23, 24, Oct. 8 ✓
Are the approved plans of boiler and superheater forwarded herewith yes.
(If not state date of approval.)
Total No. of visits 23

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These main boilers have been constructed under special survey, the materials and workmanship are of good quality, they have been securely fitted on board.
For recommendations as to class please see report on machinery.
Boiler plan & steel invoices now forwarded.

Survey Fee £ 21 : 14 : 0

When applied for, 18 SEP 1924

Travelling Expenses (if any) £ ✓

When received, 18 SEP 1924

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

Committee's Minute FRI, 24 OCT 1924

Assigned



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