

## REPORT ON BOILERS.

No. 79635

25 SEP 1925

Received at London Office

Date of writing Report Sept 22 1925 When handed in at Local Office Sept 22<sup>nd</sup> 1925 Port of NEWCASTLE-ON-TYNENo. in Reg. Book. 36017 Survey held at Newcastle-on-Tyne Date, First Survey June 6<sup>th</sup> 1924 Last Survey Sept 18<sup>th</sup> 1925  
on the S.S. "USWORTH" (Number of Visits 3/) Gross 1969 Tons Net 1100Master ✓ Built at Newcastle By whom built Wood Skinner & Co. Ltd. Yard No. 237 When built 1925  
Engines made at Newcastle By whom made North Eastern Marine Eng. Co. Ltd. Engine No. 2580 When made 1925  
Boilers made at Newcastle By whom made North Eastern Marine Eng. Co. Ltd. Boiler No. 2580 When made 1925  
Nominal Horse Power 225 Owners Robert Stanley Shipping Co. Ltd. Port belonging to Newcastle  
R. S. Dalgleish & Co. Agents

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

Manufacturers of Steel S. A. Colville & Sons Ltd. Steel Co. of Scotland Ltd. Wm. Beardmore (Letter for Record 5)

Total Heating Surface of Boilers 3660 sq Is forced draught fitted No. Coal or Oil fired Coal.

No. and Description of Boilers Two Single-Ended Cylindrical 238 Working Pressure 180 lbs.

Tested by hydraulic pressure to 320 lbs. Date of test 10. 10. 25 No. of Certificate 9866 Can each boiler be worked separately Yes.

Area of Firegrate in each Boiler 50.5 sq No. and Description of safety valves to each boiler Two Spring-loaded

Area of each set of valves per boiler { per Rule 11.73 sq as fitted 14.14 sq Pressure to which they are adjusted 185 lbs. Are they fitted with easing gear Yes

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler No. Donkey Boiler.

Smallest distance between boilers or uptakes and bunkers 6'0" Is oil fuel carried in the double bottom under boilers No.

Smallest distance between shell of boiler and tank top plating 3'4" Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers 13'9 3/4" Length 10'6" Shell plates: Material Steel Tensile strength 28 1/2 to 32 1/2 tons

Thickness 1 1/8" Are the shell plates welded or flanged No. Description of riveting: circ. seams { end Double inter. ✓

long. seams Double Rivet D.B.S. Diameter of rivet holes in { circ. seams 1 3/16" long. seams 1 1/16" Pitch of rivets { 3 1/2" 8 3/8"

Percentage of strength of circ. end seams { plate 66 rivets 46 Percentage of strength of circ. intermediate seam { plate ✓ rivets ✓

Percentage of strength of longitudinal joint { plate 85.82 rivets 90 combined 89.5 Working pressure of shell by Rules 181

Thickness of butt straps { outer 7/8" inner 1" No. and Description of Furnaces in each Boiler Three Morrison 239

Material Steel Tensile strength 26-30 tons Smallest outside diameter 36 1/16"

Length of plain part { top ✓ bottom ✓ Thickness of plates { crown 1 1/2" bottom 3/32" Description of longitudinal joint welded

Dimensions of stiffening rings on furnace or c.c. bottom ✓ Working pressure of furnace by Rules 183 lbs.

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

How are stays secured Double Nuts & Washers Working pressure by Rules 182 lbs.

Tube plates: Material { front Steel back Steel Tensile strength { 26-30 tons Thickness { 1 1/16" 3/4"

Mean pitch of stay tubes in nests 9" Pitch across wide water spaces 14 1/2" Working pressure { front 182 lbs. back 210 lbs.

Girders to combustion chamber tops: Material Steel Tensile strength 28-32 tons Depth and thickness of girder at centre 8 1/4" - 1 1/2" Length as per Rule 30" Distance apart 10 1/2" No. and pitch of stays in each Two 9 1/2" Working pressure by Rules 187 lbs. Combustion chamber plates: Material Steel

Tensile strength 26-30 tons Thickness: Sides 3/32" Back 1/16" Top 23/32" Bottom 7/8"

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

Working pressure by Rules 182 lbs. Front plate at bottom: Material Steel Tensile strength 26-30 tons

Thickness 1 1/16" Lower back plate: Material Steel Tensile strength 26-30 tons Thickness 7/8"

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

Working Pressure 216 lbs. Main stays: Material Steel Tensile strength 28-32 tons

Diameter { At body of stay, 3" No. of threads per inch Six Area supported by each stay 432 sq

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

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



Working pressure by Rules *182 lbs* Are the stays drilled at the outer ends *No.* Margin stays: Diameter { At turned off part, *1 3/8"* or Over threads *1 3/8"*  
No. of threads per inch *nine* Area supported by each stay *110.25 sq"* Working pressure by Rules *193 lbs*  
Tubes: Material *Iron* External diameter { Plain *3 1/4"* Thickness { *No. 8 W.G. 5/16" + 1/4"* No. of threads per inch *nine*  
Pitch of tubes *1 1/2"* Working pressure by Rules *plain 230 lbs stay 192 lbs* Manhole compensation: Size of opening in  
shell plate *20" x 16"* Section of compensating ring *3 1/4" x 3 1/4" x 1 1/8"* No. of rivets and diameter of rivet holes *36 - 1 5/16"*  
Outer row rivet pitch at ends *9 1/2"* Depth of flange if manhole flanged *4"* Steam Dome: Material *Iron*  
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,

*G. A. Stephenson* Manufacturer.

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

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

Total No. of visits *3/*

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) *These boilers have been examined during construction, and the materials and workmanship are good and in accordance with the requirements of the Rules & the approved plan. On completion they were tested by hydraulic pressure & found tight & sound. For opinions as to class, see Mach Report.*

Survey Fee ... £ *see Mach report* When applied for. 192  
Travelling Expenses (if any) £ : : When received. 192

*M. P. Pilton* & *R. Lee Amner*  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUES. 29 SEP 1925

Assigned



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Foundation