

## REPORT ON BOILERS.

No. 81827

Received at London Office

23 SEP 1927

Date of writing Report 21 Sept 1927 When handed in at Local Office 21st Sept 1927 Port of

NEWCASTLE-ON-TYNE.

No. in Survey held at St Peters + Hebburn Date, First Survey 1st March Last Survey 20th Sept 1927

2966 on the S. S. Ireland (Number of Visits —) Tons {Gross 4689 Net 2876}

Master Built at Hebburn on Tyne By whom built R. W. Hawthorn Leslie &amp; Co Ltd Yard No. 546 When built 1927

Engines made at St Peters By whom made R. W. Hawthorn Leslie &amp; Co Ltd Engine No. 3668 When made 1927

Boilers made at do By whom made J. Harris, S. S. Co Ltd Boiler No. 3668 When made 1927

Nominal Horse Power 470. Owners Foster Ham &amp; Reed Port belonging to London

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

Manufacturers of Steel J. Colville &amp; Son Ltd (Letter for Record S)

Total Heating Surface of Boilers 7830 sq. ft. Is forced draught fitted No Coal or Oil fired Coal

No. and Description of Boilers Three, Single Ended Scotch Type Working Pressure 200 lb

Tested by hydraulic pressure to 350 lb Date of test 10/6/27 No. of Certificate (1) 156 Can each boiler be worked separately yes

Area of Firegrate in each Boiler 72 sq. ft. No. and Description of safety valves to each boiler 2 direct spring high lift

Area of each set of valves per boiler 7.5 sq. in. Pressure to which they are adjusted 200 lb Are they fitted with easing gear yes

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

Smallest distance between boilers or uptakes and bunkers or woodwork 7 feet 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 yes

Largest internal dia. of boilers 16'-0" Length 12'-0" Shell plates: Material Steel Tensile strength 28/32 tons

Thickness 1 7/16" Are the shell plates welded or flanged No Description of riveting: circ. seams {end 2R Butt inter 3R Butt

Long. seams S.R. Butt Diameter of rivet holes in {circ. seams 1 7/16" long. seams 1 7/16" Pitch of rivets {4.05 10 3/32

Percentage of strength of circ. end seams {plate 64.5 rivets 45.8 Percentage of strength of circ. intermediate seam {plate 67.1 rivets 63.6

Percentage of strength of longitudinal joint {plate 85.75 rivets 86.2 combined 88.75 Working pressure of shell by Rules 200 lb

Thickness of butt straps {outer 1 3/32" inner 1 7/32" No. and Description of Furnaces in each Boiler 3, Brightons

Material Steel Tensile strength 26/30 tons Smallest outside diameter 49 3/8"

Length of plain part {top bottom Thickness of plates {crown 1 1/16" bottom 1 1/16" Description of longitudinal joint Welded

Dimensions of stiffening rings on furnace or c.c. bottom None Working pressure of furnace by Rules 205 lb

End plates in steam space: Material Steel Tensile strength 26/30 tons Thickness 1 7/16" Pitch of stays 22 1/2 x 20"

How are stays secured Double nut washers Working pressure by Rules 214 lb

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

Mean pitch of stay tubes in nests 11 1/8" Pitch across wide water spaces 14 1/4" Working pressure {front 216 back 207

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

t centre 11" x 2 x 3/4" Length as per Rule 35" Distance apart 10" No. and pitch of stays

each Three 5 1/2" Working pressure by Rules 232 lb Combustion chamber plates: Material Steel

Tensile strength 26/30 tons Thickness: Sides 4 5/64" 2 3/32" Back 4 5/64" Top 4 5/64" Bottom 15/16"

Pitch of stays to ditto: Sides 10" x 9" Back 10" x 5 1/2" Top 10" x 5 1/2" Are stays fitted with nuts or riveted over Nuts

Working pressure by Rules 200 lb Front plate at bottom: Material Steel Tensile strength 26/30 tons

Thickness 1" Lower back plate: Material Steel Tensile strength 26/30 tons Thickness 15/16"

Pitch of stays at wide water space 15 3/4" Are stays fitted with nuts or riveted over Nuts

Working Pressure 207 lb Main stays: Material Steel Tensile strength 28/32 tons

Diameter {At body of stay 3 5/8" or Over threads 3 5/8" No. of threads per inch 6 Area supported by each stay 484 sq. in.

Working pressure by Rules 211 Screw stays: Material Steel Tensile strength 26/30 tons

Diameter {At turned off part 1 3/4" or Over threads 1 3/4" No. of threads per inch 9 Area supported by each stay 90 sq. in.



Working pressure by Rules 200 lb Are the stays drilled at the outer ends No ✓ Margin stays: Diameter { At turned off part. ✓  
 No. of threads per inch 9 Area supported by each stay 121 sq in Working pressure by Rules 204 lb ✓  
 Tubes: Material Iron ✓ External diameter { Plain 3 3/4 ✓ Thickness 5/8 ✓ No. of threads per inch 9 ✓  
 Pitch of tubes 4 1/2" x 4 3/8" Working pressure by Rules 230 lb per sq in ✓ Manhole compensation: Size of opening 14 ✓  
 shell plate 17" x 13" Section of compensating ring 18" x 1 7/8" No. of rivets and diameter of rivet holes 14 ✓  
 Outer row rivet pitch at ends 10 5/16" 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 ✓  
 Internal diameter ✓ Working pressure by Rules ✓ Thickness of crown ✓ Rivets ✓  
 stays ✓ Inner radius of crown ✓ Working pressure by Rules ✓ No. and diameters made at  
 How connected to shell ✓ Size of doubling plate under dome ✓ Diameter of rivet holes and  
 of rivets in outer row in dome connection to shell ✓

Type of Superheater None Manufacturers of { Tubes  
 Number of elements Material of tubes Steel castings  
 Material of headers Tensile strength Internal diameter and thickness of tubes  
 the boiler be worked separately Is a safety valve fitted to every part of the superheater which can be shut off  
 Area of each safety valve Are the safety valves fitted with easing gear Can the superheater be shut off  
 Rules Pressure to which the safety valves are adjusted Working pressure at  
 tubes castings and after assembly in place Hydraulic test pressure  
 to free the superheater from water where necessary Are drain cocks or valves

Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with yes

The foregoing is a correct description,  
 16 SEP. 1927  
 W. HAWTHORN, LESLIE & CO. LTD.  
 ENGINEERS & SHIPBUILDERS  
 NEWCASTLE-ON-TYNE

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 yes  
 (If not state date of approval.)  
 Total No. of visits

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, the safety valves adjusted to 200 lb per sq in & were found tight and sound at that pressure.

For recommendations, please see machinery report now attached.

Survey Fee ... See Machinery Report When applied for, 192  
 Travelling Expenses (if any) £ : ✓ When received, 192

Committee's Minute TUES. 27 SEP 1927

Assigned See Machinery Report attached

Engineer Surveyor to Lloyd's Register of Shipping.



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 Foundation