

# REPORT ON BOILERS.

No. 80118

17 FEB 1926

Received at London Office

Date of writing Report 1926 When handed in at Local Office 4/2/1926 Port of NEWCASTLE-ON-TYNE.

No. in Survey held at Newcastle-on-Tyne Date, First Survey 6 May 1925 Last Survey 3 Feb 1926

38496 on the CITY OF LYONS (Number of Visits) Gross Tons Net

Master Built at Newcastle By whom built Swan Hunter & Wigham Richardson Yard No. 1287 When built 1926

Engines made at Newcastle By whom made Walkend Shipway & Engineering Co. Ltd. Engine No. 861 When made 1926

Boilers made at Newcastle By whom made Walkend Shipway & Engineering Co. Ltd. Boiler No. 861 When made 1926

Nominal Horse Power 709 Owners Ellerman Lines Ltd. (Hall Lines Ltd. Mgrs) Port belonging to Liverpool

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

Manufacturers of Steel The Steel Company of Scotland Ltd. (Letter for Record S)

Total Heating Surface of Boilers 9069 sq ft Is forced draught fitted Yes Coal or Oil fired Both

No. and Description of Boilers Three Single Ended Cylindrical Working Pressure 240 lbs

Tested by hydraulic pressure to 410 lbs. Date of test 28-7-25 No. of Certificate 9932 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler 76 sq ft No. and Description of safety valves to each boiler Two Spring-loaded High Lift

Area of each set of valves per boiler per Rule 11.9 x 2/3 = 7.9 sq ft as fitted 14.120 sq ft Pressure to which they are adjusted 240 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. N.R.V. fitted

Smallest distance between boilers or uptakes and bunkers or woodwork 5" Is oil fuel carried in the double bottom under boilers No

Smallest distance between shell of boiler and tank top plating 2 1/2" Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers 16'-9 1/4" Length 12'-6" Shell plates: Material Steel Tensile strength 31-35 Tons

Thickness 1 5/8" Are the shell plates welded or flanged No. Description of riveting: circ. seams end Dark inter. Pitch of rivets 4.611"

long. seams Jaffle DBS Diameter of rivet holes in circ. seams 1 21/32" long. seams 1 21/32" Pitch of rivets 10 7/8"

Percentage of strength of circ. end seams plate 85.7 rivets 42.57 Percentage of strength of circ. intermediate seam plate rivets 84.87 combined 85.63 Working pressure of shell by Rules 241 lbs

Thickness of butt straps outer 1 3/8" inner 1 3/8" No. and Description of Furnaces in each Boiler Four Neighton

Material Steel Tensile strength 26-30 Tons Smallest outside diameter 41 3/4"

Length of plain part top bottom Thickness of plates crown 11" bottom 7/16" Description of longitudinal joint Weld

Dimensions of stiffening rings on furnace or c.c. bottom none Working pressure of furnace by Rules 241 lbs

End plates in steam space: Material Steel Tensile strength 26-30 Tons Thickness 1 3/8" Pitch of stays 17 3/4" x 15 1/8"

How are stays secured Double nuts Working pressure by Rules 255 lbs

Tube plates: Material front back Steel Tensile strength 26-30 Tons Thickness 1 3/8"-1" 7/8"

Mean pitch of stay tubes in nests 10 3/4" Pitch across wide water spaces 13 3/4" Working pressure front 353-284 lbs back 240 lbs

Girders to combustion chamber tops: Material Steel Tensile strength 28-32 Tons Depth and thickness of girder at centre 10 1/2"-1 1/2" Length as per Rule 38 3/32" Distance apart 7 1/4" No. and pitch of stays in each Three 9 1/8" Working pressure by Rules 243 lbs Combustion chamber plates: Material Steel Tensile strength 26-30 Tons Thickness: Sides 7/16" Back 7/16" Top 7/16" Bottom 29/32"

Pitch of stays to ditto: Sides 8 1/4" x 8 1/4" Back 8 1/4" x 8 1/4" Top 9 1/8" x 7 1/4" Are stays fitted with nuts or riveted over Nuts

Working pressure by Rules 243 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 15/16"

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

Working Pressure 259 lbs Main stays: Material Steel Tensile strength 28-32 Tons

Diameter At body of stay 3 1/4" - 3" No. of threads per inch Six Area supported by each stay 320-268 sq in

Working pressure by Rules 257-250 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 68.5 sq in

Working pressure by Rules 2670 Are the stays drilled at the outer ends no. Margin stays: Diameter 2 { At turned off part, or Over threads } 2 ✓  
 No. of threads per inch nine Area supported by each stay 93.80 Working pressure by Rules 2640  
 Tubes: Material Iron External diameter { Plain 3 Stay 3 } Thickness No. 8 S.P.C. 7/16 3/8 7/16 No. of threads per inch nine  
 Pitch of tubes 4 3/8 x 4 3/16 Working pressure by Rules plain 250 lbs Day 241 lbs Manhole compensation: Size of opening in shell plate 19" x 15" Section of compensating ring 36" x 37 1/2" x 1 5/8" No. of rivets and diameter of rivet holes 36 - 1 3/2"  
 Outer row rivet pitch at ends 10 7/8" Depth of flange if manhole flanged 3 7/8" 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 North Eastern Marine Type Manufacturers of Tubes Tubes Ltd.  
 Number of elements 56 x 3168 Material of tubes Solid drawn Steel Internal diameter and thickness of tubes 17mm 2 1/2mm  
 Material of headers Rolled Steel Tensile strength 26-30 tons Thickness 3/8" Can the superheater be shut off and the boiler be worked separately Yes Is a safety valve fitted to every part of the superheater which can be shut off from the boiler Yes  
 Area of each safety valve 2.40 sq" Are the safety valves fitted with easing gear Yes Working pressure as per plates 23 1/2  
 Rules 240 lbs Pressure to which the safety valves are adjusted 245 lbs Hydraulic test pressure 300 lbs  
 tubes Headers 770 lbs and after assembly in place 500 lbs Are drain cocks or valves fitted to free the superheater from water where necessary Yes

Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with Yes  
 FOR THE WALLSEND SLIPWAY & ENGINEERING CO. LIMITED.

*S. Haring*  
 The foregoing is a correct description,  
 Manufacturer

Dates of Survey { During progress of work in shops - - }  
 while building { During erection on board vessel - - }  
 See *truly Report*  
 Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)  
 Total No. of visits

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These Boilers have been constructed under special survey. The materials and workmanship are some good. They were satisfactorily subjected to hydraulic pressure, have been efficiently installed in the vessel & the safety valves have been adjusted under steam. The Superheaters were examined during manufacture & were subsequently examined under hydraulic test after being installed. The boilers are fitted with the Howden-Gunnington air preheaters.

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

*R. Lee Amos*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 19 FEB 1926  
 Assigned See J.L. rpt attached



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