

REPORT ON BOILERS.

No. 64838

25 DEC 1941

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Rpt. 5a.

Date of writing Report *10/1* When handed in at Local Office *22: 12: 1941* Port of *Glasgow*
 No. in Survey held at *Thorne + Glasgow* Date, First Survey *25: 6: 41* Last Survey *2: 12: 1941*
 (Number of Visits *15*) Tons {Gross *129* Net *118*
 on the *EMPIRE SPRUCE*
 Master Built at *Thorne* By whom built *R Dunston & Co.* Yard No. *364* When built *1942-3*
 Engines made at *Paisley* By whom made *M'Kie & Baxter Ltd* Engine No. *1333* When made *etc.*
 Boilers made at *Glasgow* By whom made *John Thomson (Motive Boilers) Ltd* Boiler No. *5166* When made *1941*
 Nominal Horse Power *85* Owners *The Ministry of War Transport* Port belonging to

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel *Bohills Ltd.* (Letter for Record *S.*)
 Total Heating Surface of Boilers *1356* Is forced draught fitted
 No. and Description of Boilers *1- Single ended.* Working Pressure *200*
 Tested by hydraulic pressure to *350* Date of test *2-12-41* No. of Certificate *20928* Can each boiler be worked separately
 Area of Firegrate in each Boiler *36.5* No. and Description of safety valves to each boiler *2 1/2" Lable Spring*
 Area of each set of valves per boiler {per Rule *7.88* as fitted *9.8* Pressure to which they are adjusted *200 lb/p* 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 *18"* Is oil fuel carried in the double bottom under boilers *No*
 Smallest distance between shell of boiler and tank top plating *✓* Is the bottom of the boiler insulated *No*
 Largest internal dia. of boilers *11' 6"* Length *11' 0"* Shell plates: Material *Steel* Tensile strength *29-33*
 Thickness *1 1/2"* Are the shell plates welded or flanged *No* Description of riveting: circ. seams {end *DR lat* inter. *3 1/2"*
 Long. seams *TRDBS* Diameter of rivet holes in {circ. seams *1 1/2"* long. seams *1 1/2"* Pitch of rivets *7 1/4"*
 Percentage of strength of circ. end seams {plate *67.85* rivets *43.68* Percentage of strength of circ. intermediate seam {plate *85.48* rivets *92.47*
 Percentage of strength of longitudinal joint {plate *85.48* rivets *92.47* combined *89.45* Working pressure of shell by Rules *202*
 Thickness of butt straps {outer *2 5/32"* inner *2 3/32"* No. and Description of Furnaces in each Boiler *2 Monson*
 Material *Steel* Tensile strength *26-30* Smallest outside diameter *3' 5 3/16"*
 Length of plain part {top *✓* bottom *✓* Thickness of plates {crown *1 1/2"* bottom *3/2"* Description of longitudinal joint *Welded*
 Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules
 End plates in steam space: Material *Steel* Tensile strength *26-30* Thickness *1 1/2"* Pitch of stays *14" x 13 1/2"*
 How are stays secured *Double Nuts* Working pressure by Rules
 Tube plates: Material {front *steel* back *steel* Tensile strength *26/30* Thickness {*7/8"* *3/4"*
 Mean pitch of stay tubes in nests *8-8"* Pitch across wide water spaces *13 1/2"* Working pressure {front *✓* back
 Girders to combustion chamber tops: Material *Steel* Tensile strength *28-32* Depth and thickness of girder
 at centre *2 @ 8 1/2" x 7/8"* Length as per Rule *2' 6"* Distance apart *8"* No. and pitch of stays
 in each *3-7 1/2"* Working pressure by Rules
 Tensile strength *26-30* Thickness: Sides *1/6"* Back *1/6"* Top *1 1/2"* Bottom *1/6"*
 Pitch of stays to ditto: Sides *7 1/2" x 8"* Back *8 1/2" x 8 1/2"* Top *7 1/2" x 8"* Are stays fitted with nuts or riveted over *Yes*
 Working pressure by Rules
 Front plate at bottom: Material *Steel* Tensile strength *26-30*
 Thickness *7/8"* Lower back plate: Material *Steel* Tensile strength *26-30* Thickness *1 1/6"*
 Pitch of stays at wide water space *13 3/4"* Are stays fitted with nuts or riveted over *Yes*
 Working Pressure *200* Main stays: Material *Steel* Tensile strength *28-32*
 Diameter {At body of stay, *2 1/2"* or *2 1/2"* No. of threads per inch *6* Area supported by each stay
 Working pressure by Rules
 Diameter {At turned off part, *1 7/8" - 1 1/2"* or *1 1/2"* No. of threads per inch *9* Area supported by each stay
 Screw stays: Material *Steel* Tensile strength *26-30*

Working pressure by Rules Are the stays drilled at the outer ends *No* Margin stays: Diameter $\left\{ \begin{array}{l} \text{At turned off part} \\ \text{or} \\ \text{Over threads} \end{array} \right. 1\frac{7}{8}$

No. of threads per inch *9* Area supported by each stay Working pressure by Rules

Tubes: Material *SD Steel* External diameter $\left\{ \begin{array}{l} \text{Plain} \\ \text{Stay} \end{array} \right. \left. \begin{array}{l} 2\frac{3}{4} \\ 2\frac{3}{4} \end{array} \right.$ Thickness $\left\{ \begin{array}{l} 8 \text{ wgs} \\ 3/8 \end{array} \right.$ No. of threads per inch *9*

Pitch of tubes *4 x 3 3/4* Working pressure by Rules Manhole compensation: Size of opening

shell plate *16 1/2 x 20 1/2* Section of compensating ring *17 x 1 1/2* No. of rivets and diameter of rivet holes *44 - 1 1/2*

Outer row rivet pitch at ends *8 1/2* Depth of flange if manhole flanged *3 1/2* Steam Dome: Material

Tensile strength Thickness of shell Description of longitudinal joint

Diameter of rivet holes Pitch of rivets Percentage of strength of joint $\left\{ \begin{array}{l} \text{Plate} \\ \text{Rivets} \end{array} \right.$

Internal diameter Working pressure by Rules Thickness of crown No. and diameter

stays Inner radius of crown Working pressure by Rules Diameter of rivet holes and pitch

How connected to shell Size of doubling plate under dome

of rivets in outer row in dome connection to shell

Type of Superheater

Manufacturers of $\left\{ \begin{array}{l} \text{Tubes} \\ \text{Steel forgings} \\ \text{Steel castings} \end{array} \right.$

Number of elements Material of tubes Internal diameter and thickness of tubes

Material of headers Tensile strength Thickness Can the superheater be shut off

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

Rules Pressure to which the safety valves are adjusted Hydraulic test pressure

tubes forgings and castings and after assembly in place Are drain cocks

valves fitted to free the superheater from water where necessary

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with

The foregoing is a correct description,

R. F. Lindleton

Manufacture

John Thompson (Marine Boilers) Ltd

Dates of Survey while building $\left\{ \begin{array}{l} \text{During progress of work in shops} \\ \text{During erection on board vessel} \end{array} \right.$ Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)

June: 26-30 July: 14 Aug: 7-20-30

Sep: 11-24 Oct: 7-16-20-29 Nov: 11-18 Total No. of visits *15*

Dec: 2

Is this Boiler a duplicate of a previous case *Yes* If so, state Vessel's name and Report No. *BR N° 5156 R.P. N° 63981*

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)

The boiler has been constructed under Special Survey in accordance with the approved plan and the Society's Rules.

The material and workmanship are good.

The boiler is intended for Messrs R. Lindleton, Thorne Yard N° 364.

Rob
22/12/41

Survey Fee ... £ *9* When applied for *23 DEC 1941*

Travelling Expenses (if any) £ : : When received, *19*

J.R. Dale

Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute **GLASGOW 23 DEC 1941**

Assigned *Depured*

FRI. 15 MAY 1942

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