

Rpt. 5a.

## REPORT ON BOILERS.

No. 15341

Received at London Office 27 SEP 1928

Date of writing Report 26-9-1928 When handed in at Local Office 26-9-1928 Port of Aberdeen

No. in Reg. Book. Survey held at Aberdeen Date, First Survey 17-4-28 Last Survey 20-9-1928

on the steam trawler "STRATHLYON"

(Number of Visits 13) Gross 217.65 Tons Net 92.81

Master Built at Aberdeen By whom built Hall, Russell &amp; Co. Ltd. Ward No. 696 When built 1928

Engines made at Aberdeen By whom made Hall, Russell &amp; Co. Ltd. Engine No. 696 When made 1928

Boilers made at Aberdeen By whom made Hall, Russell &amp; Co. Ltd. Boiler No. 696 When made 1928

Nominal Horse Power 75 Owners Aberdeen S.T. &amp; F. Co. Ltd. Port belonging to Aberdeen

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

Manufacturers of Steel The Steel Co. of Scotland (Letter for Record R.)

Total Heating Surface of Boilers 1350  $\text{sq ft}$  Is forced draught fitted no Coal or Oil fired Coal

No. and Description of Boilers One S.E. main. Working Pressure 180 lb

Tested by hydraulic pressure to 320 lb Date of test 5-7-28 No. of Certificate 1065 Can each boiler be worked separately ☒Area of Firegrate in each Boiler 41.5  $\text{sq ft}$  No. and Description of safety valves to each boiler 2 spring loaded.Area of each set of valves per boiler  $\left\{ \begin{array}{l} \text{per Rule} \\ \text{as fitted} \end{array} \right. \left\{ \begin{array}{l} 8.65 \text{ sq ft} \\ 11.88 \text{ sq ft} \end{array} \right.$  Pressure to which they are adjusted 180 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 or uptakes and bunkers or woodwork 8" Is oil fuel carried in the double bottom under boilers no

Smallest distance between shell of boiler and tank top plating no tank Is the bottom of the boiler insulated no

Largest internal dia. of boilers 12'-6" Length 10'-0" Shell plates: Material Steel Tensile strength 29/33 tons

Thickness 1" Are the shell plates welded or flanged no Description of riveting: circ. seams  $\left\{ \begin{array}{l} \text{end} \\ \text{inter.} \end{array} \right. \left\{ \begin{array}{l} \text{D.R.} \\ 3/8 \end{array} \right.$ long. seams T.R.D.B.S. Diameter of rivet holes in  $\left\{ \begin{array}{l} \text{circ. seams} \\ \text{long. seams} \end{array} \right. \left\{ \begin{array}{l} 1 1/16 \\ 1 1/16 \end{array} \right.$  Pitch of rivets  $\left\{ \begin{array}{l} 3 1/8 \\ 7 5/8 \end{array} \right.$ Percentage of strength of circ. end seams  $\left\{ \begin{array}{l} \text{plate} \\ \text{rivets} \end{array} \right. \left\{ \begin{array}{l} 66 \\ 45 \end{array} \right.$  Percentage of strength of circ. intermediate seam  $\left\{ \begin{array}{l} \text{plate} \\ \text{rivets} \end{array} \right. \left\{ \begin{array}{l} 86.06 \\ 86.45 \end{array} \right.$ Percentage of strength of longitudinal joint  $\left\{ \begin{array}{l} \text{plate} \\ \text{rivets} \\ \text{combined} \end{array} \right. \left\{ \begin{array}{l} 86.06 \\ 86.45 \\ 89.47 \end{array} \right.$  Working pressure of shell by Rules 181.7 lb.Thickness of butt straps  $\left\{ \begin{array}{l} \text{outer} \\ \text{inner} \end{array} \right. \left\{ \begin{array}{l} 3/4 \\ 7/8 \end{array} \right.$  No. and Description of Furnaces in each Boiler 3 plain 3 pf

Material Steel Tensile strength 26/30 tons Smallest outside diameter 36 1/2"

Length of plain part  $\left\{ \begin{array}{l} \text{top} \\ \text{bottom} \end{array} \right. \left\{ \begin{array}{l} 74.5 \\ 67.25 \end{array} \right.$  Thickness of plates  $\left\{ \begin{array}{l} \text{crown} \\ \text{bottom} \end{array} \right. \left\{ \begin{array}{l} 3/4 \\ 3/4 \end{array} \right.$  Description of longitudinal joint weldedDimensions of stiffening rings on furnace or c.e. bottom ☒ Working pressure of furnace by Rules 213.5 lb.

End plates in steam space: Material Steel Tensile strength 26/30 tons Thickness 1 1/16" Pitch of stays 18 3/8" x 15 1/2"

How are stays secured Double nuts Working pressure by Rules 180.7 lb.

Tube plates: Material  $\left\{ \begin{array}{l} \text{front} \\ \text{back} \end{array} \right. \left\{ \begin{array}{l} \text{Steel} \\ \text{Steel} \end{array} \right.$  Tensile strength  $\left\{ \begin{array}{l} 26/30 \text{ tons} \\ \text{do} \end{array} \right.$  Thickness  $\left\{ \begin{array}{l} 29/32 \\ 13/16 \end{array} \right.$ Mean pitch of stay tubes in nests 10.97" Pitch across wide water spaces 14 1/2" Working pressure  $\left\{ \begin{array}{l} \text{front} \\ \text{back} \end{array} \right. \left\{ \begin{array}{l} 187.8 \text{ lb.} \\ 197 \end{array} \right.$ 

Girders to combustion chamber tops: Material Steel Tensile strength 29/33 tons Depth and thickness of girder

at centre 7 1/8" x 1 3/4" Length as per Rule 29.03" Distance apart 10.125" No. and pitch of stays

in each 2 @ 9" Working pressure by Rules 185.5 lb. Combustion chamber plates: Material Steel

Tensile strength 26/30 tons Thickness: Sides 1 1/16" Back 2 1/32" Top 1 1/16" Bottom 1 1/16"

Pitch of stays to ditto: Sides 9" x 9 3/4" Back 8" x 9 3/4" Top 9" x 10 3/8" Are stays fitted with nuts or riveted over nuts

Working pressure by Rules 180.2 lb. Front plate at bottom: Material Steel Tensile strength 26/30 tons

Thickness 29/32 Lower back plate: Material Steel Tensile strength 26/30 tons Thickness 27/32

Pitch of stays at wide water space 14 1/4" Are stays fitted with nuts or riveted over nuts

Working Pressure 194.8 lb Main stays: Material Steel Tensile strength 28/32 tons

Diameter  $\left\{ \begin{array}{l} \text{At body of stay,} \\ \text{or} \\ \text{Over threads} \end{array} \right. \left\{ \begin{array}{l} 2 3/4 \\ 2 3/4 \end{array} \right.$  No. of threads per inch 6 Area supported by each stay 311 sq in

Working pressure by Rules 177.5 lb. Screw stays: Material Iron Tensile strength 21 1/2 tons

Diameter  $\left\{ \begin{array}{l} \text{At turned off part,} \\ \text{or} \\ \text{Over threads} \end{array} \right. \left\{ \begin{array}{l} 1 3/4 \\ 1 3/4 \end{array} \right.$  No. of threads per inch 9 Area supported by each stay 91.125 sq in

Is a Report also sent on the Hull of the Ship?

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Working pressure by Rules 199 lb. Are the stays drilled at the outer ends *no* Margin stays: Diameter <sup>At turned off part.</sup> <sub>or</sub> Over threads 2" ✓  
No. of threads per inch 9 Area supported by each stay 108 sq. in. Working pressure by Rules 228 lb.  
Tubes: Material *Iron* External diameter <sup>Plain</sup> <sub>Stay</sub> 3 1/2" Thickness 8 S.W.G. No. of threads per inch 9  
Pitch of tubes 4 3/4" Working pressure by Rules 215 Manhole compensation: Size of opening in  
shell plate 16" x 12" Section of compensating ring 2-4" dia x 1" No. of rivets and diameter of rivet holes 34 @ 1 1/16"  
Outer row rivet pitch at ends 7 5/8" Depth of flange if manhole flanged ✓ Steam Dome: Material ✓  
Tensile strength ✓ Thickness of shell ✓ Description of longitudinal joint ✓  
Diameter of rivet holes ✓ Pitch of rivets ✓ Percentage of strength of joint <sup>Plate</sup> <sub>Rivets</sub> ✓  
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 Manufacturers of Tubes  
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,

HALL, RUSSELL & CO., LTD.

*James H. Hunter*

Manufacturer.

Dates of Survey { During progress of work in shops - - - } *Apr 17, Jun 17, 12, 21, 26, 27, 5, 26 Aug. 8, 13* Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)  
while building { During erection on board vessel - - - } *Sept. 10-12, 20* Total No. of visits 13

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

*This boiler has been constructed under special survey in accordance with the approved plan and the Rules of this Society. The materials and workmanship are good. The boiler has been satisfactorily fitted on board the vessel, the safety valves adjusted under steam & tried for accumulation, & the boiler examined under working conditions & found satisfactory.*

Survey Fee ... .. £ *See report on machinery* When applied for, 192  
Travelling Expenses (if any) £ : : When received, 192

*P. Fitzgerald.*

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE. 2 OCT 1928

Assigned

*See report attached*



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