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# REPORT ON BOILERS.

No. 46604

Received at London Office

7 MAR 1936

6 MAR 1936

of writing Report 19 When handed in at Local Office 19 Port of HULL

in Survey held at Hull Date, First Survey 24th Nov. 1935 Last Survey 28th Feb. 1936

on the Steam Trawler "Kingston Granite" (Number of Visits 433) Gross Tons 166 Net Tons 166

main boiler Built at Beverley By whom built Cook, Welton & Semmell Yard No. 607 When built 1936

boilers made at Hull By whom made C.D. Holmes & Co Ltd. Engine No. 1492 When made 1936

top joiners made at do By whom made do Boiler No. 1492 When made 1936

Final Horse Power 117 Owners Kingston Steam Trawling Co Ltd Port belonging to Hull

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

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

Heating Surface of Boilers 1940 sq ft. Is forced draught fitted No Coal or Oil fired Coal

Description of Boilers One Single-ended. Working Pressure 215 lbs/sq in.

Tested by hydraulic pressure to 373 lbs/sq in. Date of test 8/1/36 No. of Certificate 3927 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler 53.7 sq ft. No. and Description of safety valves to each boiler Two 2 3/4" dia Spring-loaded.

Pressure of each set of valves per boiler per Rule 10.55 sq ins Pressure to which they are adjusted 215 lbs/sq in. Are they fitted with easing gear Yes

Use of donkey boilers, state whether steam from main boilers can enter the donkey boiler Yes

Least distance between boilers or uptakes and bunkers or woodwork 9" Is oil fuel carried in the double bottom under boilers No

Least distance between shell of boiler and tank top plating Yes Is the bottom of the boiler insulated No

Least internal dia. of boilers 14'-6" Length 10'-8" Shell plates: Material Steel Tensile strength 29/33 Tons/sq in.

Thickness 1 3/8" Are the shell plates welded or flanged No Description of riveting: circ. seams DR.

Seams T.R. DB.S. Diameter of rivet holes in circ. seams 1 3/8" Pitch of rivets 9 1/4"

Percentage of strength of circ. end seams: plate 63.2 rivets 45.5 Percentage of strength of circ. intermediate seam: plate 3 3/4" rivets 9 1/4"

Percentage of strength of longitudinal joint: plate 85.1 rivets 86.8 combined 87.6 Working pressure of shell by Rules 217 lbs/sq in.

Thickness of butt straps: outer 1 1/6" inner 1 3/16" No. and Description of Furnaces in each Boiler 3 Plain type, with Jowley necks.

Material Steel Tensile strength 26/30 Tons/sq in. Smallest outside diameter 42 1/2"

Thickness of plain part: top 72" bottom 72" Thickness of plates: crown 53/64" bottom 53/64" Description of longitudinal joint Welded.

Dimensions of stiffening rings on furnace or c.c. bottom Yes Working pressure of furnace by Rules 221 lbs/sq in.

Plates in steam space: Material Steel Tensile strength 26/30 Tons/sq in. Thickness 1 7/32" Pitch of stays 19 3/4" x 18 1/4"

Are stays secured Double nuts & washers Working pressure by Rules 221 lbs/sq in.

Plates: Material Steel Tensile strength 26/30 Tons/sq in. Thickness: front 15/16" back 7/8"

Pitch of stay tubes in nests 10.7" Pitch across wide water spaces 14" Working pressure: front 228 lbs/sq in. back 222 lbs/sq in.

Boilers to combustion chamber tops: Material Steel Tensile strength 29/33 Tons/sq in. Depth and thickness of girder

Between 10" x 2 @ 7/8" Length as per Rule 36 7/32" Distance apart 9 1/2" Centre, 9" Wings No. and pitch of stays

Each 3 @ 8" Working pressure by Rules 215 lbs/sq in. Combustion chamber plates: Material Steel

Tensile strength 26/30 Tons/sq in. Thickness: Sides 3/4" Back 23/32" Top 23/32" Bottom 3/4"

Thickness of stays to ditto: Sides 9 1/2" x 8 1/2" Back 9 3/8" x 8 1/4" Top 9 1/2" x 8" Are stays fitted with nuts or riveted over Nuts

Working pressure by Rules 232 lbs/sq in. Front plate at bottom: Material Steel Tensile strength 26/30 Tons/sq in.

Thickness 15/16" Lower back plate: Material Steel Tensile strength 26/30 Tons/sq in. Thickness 7/8"

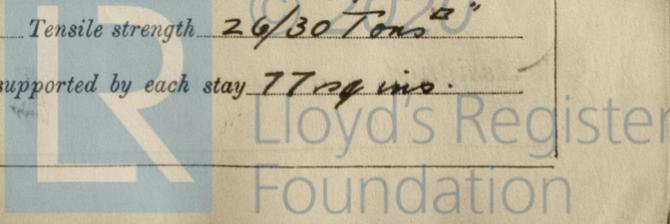
Thickness of stays at wide water space 14 1/4" x 8 1/4" Are stays fitted with nuts or riveted over Nuts

Working Pressure 230 lbs/sq in. Main stays: Material Steel Tensile strength 28/32 Tons/sq in.

At body of stay, or Over threads 3 1/4" No. of threads per inch 8 Area supported by each stay 360 sq ins.

Working pressure by Rules 223 lbs/sq in. Screw stays: Material Steel Tensile strength 26/30 Tons/sq in.

At turned off part, or Over threads 1 3/4", 1 7/8", 2" & 2 1/2" No. of threads per inch 10 Area supported by each stay 77 sq ins.



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 Is the Vessel

Working pressure by Rules  $232 \frac{1}{2} \text{ lbs } ^\circ$  Are the stays drilled at the outer ends *No* Margin stays: Diameter  $\left\{ \begin{array}{l} \text{At turned off part,} \\ \text{Over threads } 1 \frac{1}{8}, 2 \text{ or } 2 \frac{1}{8} \end{array} \right. \checkmark$   
 No. of threads per inch *10* Area supported by each stay  $89 \text{ sq ins } \checkmark$  Working pressure by Rules  $240 \frac{1}{2} \text{ lbs } ^\circ \checkmark$   
 Tubes: Material *Iron* External diameter  $\left\{ \begin{array}{l} \text{Plain } 3 \frac{1}{2} \\ \text{Stay } 3 \frac{1}{2} \end{array} \right. \checkmark$  Thickness  $\left\{ \begin{array}{l} 8 \text{ W.G.} \\ 5/16, 3/8 \text{ or } 7/16 \end{array} \right. \checkmark$  No. of threads per inch *9*  $\checkmark$   
 Pitch of tubes  $4 \frac{3}{4} \times 4 \frac{3}{4} \checkmark$  Working pressure by Rules  $215 \frac{1}{2} \text{ lbs } ^\circ \checkmark$  Manhole compensation: Size of opening in  
 shell plate  $16 \times 12 \checkmark$  Section of compensating ring  $57 \frac{1}{2} \text{ dia} \times 1 \frac{3}{8} \checkmark$  No. of rivets and diameter of rivet holes  $59 @ 1 \frac{3}{8} \checkmark$   
 Outer row rivet pitch at ends  $10.4 \checkmark$  Depth of flange if manhole flanged  $\checkmark$  Steam Dome: Material *Steel*  $\checkmark$   
 Tensile strength  $26/30 \text{ Tons } ^\circ$  Thickness of shell  $3/4 \checkmark$  Description of longitudinal joint *S.R. Lap*  $\checkmark$   
 Diameter of rivet holes  $1 \frac{1}{2} \checkmark$  Pitch of rivets  $2 \frac{1}{4} \checkmark$  Percentage of strength of joint  $\left\{ \begin{array}{l} \text{Plate } 54 \\ \text{Rivets } 43.8 \end{array} \right. \checkmark$   
 Internal diameter  $33 \checkmark$  Working pressure by Rules  $229 \frac{1}{2} \text{ lbs } ^\circ \checkmark$  Thickness of crown  $7/8 \checkmark$  No. and diameter of  
 stays  $2 @ 2 \frac{1}{4} \text{ dia } \checkmark$  Inner radius of crown  $\checkmark$  Working pressure by Rules *Ample*  $\checkmark$   
 How connected to shell *D.R. Lap* Size of doubling plate under dome  $57 \frac{1}{2} \times 1 \frac{3}{8} \checkmark$  Diameter of rivet holes and pitch  
 of rivets in outer row in dome connection to shell  $1 \frac{3}{8} \times 10.4 \checkmark$   
 Type of Superheater *Smoke-tube type* Manufacturers of  $\left\{ \begin{array}{l} \text{Tubes } \textit{The Superheater Co Ltd Merton} \\ \text{Steel castings } \textit{Blackett, Hutton & Co Ltd Guisborough} \end{array} \right. \checkmark$   
 Number of elements *41* Material of tubes *S.D. Steel* Internal diameter and thickness of tubes  $17 \text{ mm} \times 3 \text{ mm} \checkmark$   
 Material of headers *Forged Steel* Tensile strength  $26/30 \text{ Tons } ^\circ$  Thickness  $3/4 \checkmark$  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  $1.77 \text{ sq ins } \checkmark$  Are the safety valves fitted with easing gear *Yes* Working pressure as per  
 Rules  $396 \frac{1}{2} \text{ lbs } ^\circ$  Pressure to which the safety valves are adjusted  $215 \frac{1}{2} \text{ lbs } ^\circ \checkmark$  Hydraulic test pressure:  
 tubes  $1000 \frac{1}{2} \text{ lbs } ^\circ$ , castings  $645 \frac{1}{2} \text{ lbs } ^\circ \checkmark$  and after assembly in place  $645 \frac{1}{2} \text{ lbs } ^\circ \checkmark$  Are drain cocks or valves fitted  
 to free the superheater from water where necessary *Yes*  $\checkmark$   
 Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with *Yes*.

The foregoing is a correct description,  
 FOR CHARLES D. HOLMES & CO., LTD  
 Manufacturer

Dates of Survey  $\left\{ \begin{array}{l} \text{During progress of} \\ \text{work in shops - -} \end{array} \right. \textit{See machinery report}$  Are the approved plans of boiler and superheater forwarded herewith *No*  
 while building  $\left\{ \begin{array}{l} \text{During erection on} \\ \text{board vessel - - -} \end{array} \right. \textit{Herewith}$  (If not state date of approval.) Boiler plan  $13/11/35$   
 Superheater  $24/11/35$   
 Total No. of visits  $\checkmark$

Is this Boiler a duplicate of a previous case *Yes* If so, state Vessel's name and Report No. *"Kington Chrysoleryl"*  
 (Plus Superheater) *(Hul Rpt No 457/62)*

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)  
*This boiler has been constructed under special survey and in accordance with the approved plans. It has been satisfactorily fitted on board, examined under steam, and found satisfactory, and the safety valves adjusted as above.*

Survey Fee *Charged on Engine Rpt* When applied for, 19  
*Herewith*  
 Travelling Expenses (if any) £ : : When received, 19

*A. B. Edwards*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *TUE. 10 MAR 1936*  
 Assigned *See other sub. J.E. Rpt.*