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# REPORT ON BOILERS.

No. 14,795

N.D.O.

Received at London Office 29 DEC 1949

Date of writing Report 19 When handed in at Local Office 19 Port of Belfast

No. in Reg. Book. Survey held at Belfast. Date, First Survey March 11<sup>th</sup> 1949 Last Survey July 1<sup>st</sup> 1949

on the M.V. British Captain (Number of Visits 22) Tons {Gross 8400  
Net

Master Built at Glasgow By whom built Harland & Wolff Ltd. Yard No. 13949 When built 1949

Engines made at Glasgow By whom made do Engine No. 13949 When made 1949

Boilers made at Belfast. By whom made Harland & Wolff Ltd. Boiler No. 1397 G When made 1949.

Nominal Horse Power Owners British Tanker Co Ltd Port belonging to London

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

Manufacturers of Steel Colviken. (Letter for Record 5)

Total Heating Surface of Boilers 2047 x 2 ft Is forced draught fitted Yes Coal or Oil fired oil on both faces.

No. and Description of Boilers 2 Cylindrical Smoke tube type. Working Pressure 150 lbs. sq

Tested by hydraulic pressure to 275 lbs. Date of test 27.6.49. No. of Certificates 1424. Can each boiler be worked separately Yes.

Area of Firegrate in each Boiler 7.75 sq No. and Description of safety valves to each boiler 1 @ 2 1/4 dia improved high lift double safety valve.

Area of each set of valves per boiler {per Rule 7.75 sq  
as fitted 8.0 sq} Pressure to which they are adjusted 150 lbs. sq Are they fitted with easing gear Yes

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

Smallest distance between boilers or uptakes and bunkers or woodwork Adequate Is oil fuel carried in the double bottom under boilers Situated over Tank Room

Smallest distance between shell of boiler and tank top plating 2' 4" Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers 12' - 10 3/8" Length 11' - 6" Shell plates: Material Steel Tensile strength 29-33 tons sq

Thickness 29/32" Are the shell plates welded or flanged No. Description of riveting: circ. seams {end DR.  
inter. Yes

long. seams T.R.D.B.S. Diameter of rivet holes in {circ. seams 1 3/32"  
long. seams 1 1/32"} Pitch of rivets { 3.08"  
6 9/16"

Percentage of strength of circ. end seams {plate 64.5.  
rivets 53.0} Percentage of strength of circ. intermediate seam {plate 84.3.  
rivets 104.

Percentage of strength of longitudinal joint {plate 84.3.  
rivets 104.  
combined 89.3.} Working pressure of shell by Rules 155 lbs. sq

Thickness of butt straps {outer 23/32"  
inner 27/32"} No. and Description of Furnaces in each Boiler 2 Digniton.

Material Steel Tensile strength 26-30 tons sq Smallest outside diameter 3' - 8"

Length of plain part {top Yes  
bottom Yes} Thickness of plates {crown 1/2"  
bottom 1/2"} Description of longitudinal joint Forge Weld.

Dimensions of stiffening rings on furnace or c.c. bottom Yes Working pressure of furnace by Rules 163 lbs. sq

End plates in steam space: Material Steel Tensile strength 26-30 tons sq Thickness 15/16" Pitch of stays 16 x 15"

How are stays secured Nuts - in & out. Working pressure by Rules As approved.

Tube plates: Material {front Steel  
back Steel} Tensile strength { 26-30 tons sq } Thickness { 7/8"  
3/4" }

Mean pitch of stay tubes in nests 8 5/16" Pitch across wide water spaces 13 1/2" Working pressure {front As approved.  
back As approved.

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

at centre 9 1/2" x 1 1/32" Length as per Rule 32 1/2" Distance apart 9 3/8" No. and pitch of stays

in each Welded. Working pressure by Rules As approved. Combustion chamber plates: Material Steel.

Tensile strength 26-30 tons sq Thickness: Sides 3/4" Back 3/4" Top 3/4" Bottom 3/4"

Pitch of stays to ditto: Sides 8 1/2" x 8 1/2" x 9" Back 8 1/4" x 9 1/2" Top Yes Are stays fitted with nuts or riveted over At Shell - others Welded.

Working pressure by Rules As approved. Front plate at bottom: Material Steel Tensile strength 26-30 tons sq

Thickness 7/8" Lower back plate: Material Steel Tensile strength 26-30 tons sq Thickness 15/16"

Pitch of stays at wide water space 16 1/4" x 9 1/2" Are stays fitted with nuts or riveted over Welded.

Working Pressure As approved. Main stays: Material Steel Tensile strength 28-32 tons sq

Diameter {At body of stay, 2 3/4"  
or 2 3/4"  
Over threads 2 3/4"} No. of threads per inch 6 Area supported by each stay Various

Working pressure by Rules As approved. Screw stays: Material Steel Tensile strength 26-30 tons sq

Diameter {At turned off part, 1 1/2"  
or 1 1/2"  
Over threads 1 1/2"} No. of threads per inch 9 Area supported by each stay 9 1/2" x 8 1/4"

Screwed at Shell only  
Welded in Combustion Chamber.

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14795

Working pressure by Rules *As approved* the stays drilled at the outer ends  Margin stays: Diameter  $\left\{ \begin{array}{l} \text{At turned off part, } 1\frac{3}{4} \times 2 \text{''} \\ \text{or} \\ \text{Over threads} \end{array} \right.$

No. of threads per inch *Welded*. Area supported by each stay  $14 \times 9\frac{1}{2}$  Working pressure by Rules *As approved*.

Tubes: Material *H.D.S.* External diameter  $\left\{ \begin{array}{l} \text{Plain } 2\frac{1}{2} \\ \text{Stay } 2\frac{1}{2} \end{array} \right.$  Thickness  $\left\{ \begin{array}{l} 10 \text{ L.S.G.} \\ 1/4, 5/16, 13/32 \end{array} \right.$  No. of threads per inch *9*.

Pitch of tubes  $3\frac{3}{4} \times 3\frac{5}{8}$  Working pressure by Rules *As approved*. Manhole compensation: Size of opening in shell plate  $13\frac{3}{4}$  Section of compensating ring  $2'-8 \times 2'-4 \times \frac{7}{8}$  No. of rivets and diameter of rivet holes *Welded to shell*

Outer row rivet pitch at ends  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  $\left\{ \begin{array}{l} \text{Plate} \\ \text{Rivets} \end{array} \right.$

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 *None* 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 and the boiler be worked separately

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: forgings and 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 22 inclusive for boilers been complied with *Yes*

The foregoing is a correct description, *W. Marshall* Manufacturer.

Dates of Survey  $\left\{ \begin{array}{l} \text{During progress of work in shops - } \\ \text{while building } \left\{ \begin{array}{l} \text{During erection on board vessel - - -} \end{array} \right. \end{array} \right.$

March. 11. 14. April 12. 25. May. 2. 3. 4. 5. 9. 12. 19. 27. June. 3. 6. 7. 8. 10. 13. 27. 28. 29. July. 1.

Are the approved plans of boiler and superheater forwarded herewith *Yes* (If not state date of approval.) *Approval letter No. 1148 stays retained for sister vessels*

Total No. of visits *22*

Is this Boiler a duplicate of a previous case *Yes* If so, state Vessel's name and Report No. *1379G Rpt No. 14729* with exception of bottom manhole (in back plate) & position of bottom main stay

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

*These boilers have been built under special survey in accordance with the Rules and approved plan. The materials and workmanship are good. The boilers have been dispatched to Glasgow for installation in the vessel.*

*These boilers have been efficiently installed in the vessel, run under steam, safety valves adjusted to 150 LBS/SQ. and accumulation tests as per Rules carried out satisfactorily.*

*H. Cairns Juniper*  
Glasgow December 1949

Survey Fee ... £ 59 : 2 : } When applied for, 28/7/1949  
Travelling Expenses (if any) £ : : } When received, 19

*MLD* Committee's Minute **GLASGOW - 7 DEC 1949** Engineer Surveyor to Lloyd's Register of Shipping.

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