

## REPORT ON BOILERS.

No. 14543

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Date of writing Report 19 When handed in at Local Office 13 / 4 / 19 48 Port of Belfast.

No. in Reg. Book. Survey held at Belfast. Date, First Survey 25 Nov 1947 Last Survey 23 Feb. 19 48

on the Tanker M.V. "British ~~Enterprise~~ RANGER" (Number of Visits 20) Tons { Gross 8545 Net 4949

Master Built at Glasgow By whom built Harland & Wolff Ltd. Yard No. 13626 When built 1948

Engines made at Glasgow By whom made Harland & Wolff Ltd. Engine No. 13626 When made 1948

Boilers made at Belfast By whom made Harland & Wolff Ltd. Boiler No. 13626 When made 1948

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

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

Manufacturers of Steel Chriles. (Letter for Record S.)

Total Heating Surface of Boilers 2047 x 2 sq. ft. Is forced draught fitted Yes. Coal or Oil fired Oil & No. 1 fuel

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

Tested by hydraulic pressure to 275 lb. Date of test 23. 2. 48. No. of Certificate 1379. Can each boiler be worked separately Yes

Area of Firegrate in each Boiler — No. and Description of safety valves to each boiler 2 Improved High Lift

Area of each set of valves per boiler { per Rule 15.9 as fitted 4.95 Pressure to which they are adjusted 153 lb/sq. in. 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 Adequate Is oil fuel carried in the double bottom under boilers

Smallest distance between shell of boiler and tank top plating (Keel above flat venturial recess) Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers 12' - 10 1/4" Length 11' - 6" Shell plates: Material Steel Tensile strength 29-33 tons/sq. in.

Thickness 39/32" Are the shell plates welded or flanged No. Description of riveting: circ. seams { end D. R. inter. 3.08" 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 { 6 9/16"

Percentage of strength of circ. end seams { plate 64.5 rivets 53 Percentage of strength of circ. intermediate seam { plate 84.3 rivets 104 Working pressure of shell by Rules 156 lb/sq. in.

Percentage of strength of longitudinal joint { plate 84.3 rivets 104 combined 89.3

Thickness of butt straps { outer 29/32" inner 27/32" No. and Description of Furnaces in each Boiler 2 Sleigher Corrugated.

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

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

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 163 lb/sq. in.

End plates in steam space: Material Steel Tensile strength 26-30 tons/sq. in. Thickness 1/16" Pitch of stays 16" x 16"

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. in. 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 15/16"

Girders to combustion chamber tops: Material Steel Tensile strength 28/32 tons/sq. in. 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 Helled Working pressure by Rules As approved Combustion chamber plates: Material Steel Tensile strength 26-30 tons/sq. in. 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" 9 Back 8 1/4" x 9 1/2" Top 9 Are stays fitted with nuts or riveted over at Shell. Shire Welded.

Working pressure by Rules As approved. Front plate at bottom: Material Steel Tensile strength 26-30 tons/sq. in. Thickness 7/8" Lower back plate: Material Steel Tensile strength 26-30 tons/sq. in. 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. in.

Diameter { At body of stay, 2 3/4" No. of threads per inch 6 Area supported by each stay Various Over threads 1 1/2"

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

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

Screwed at Shell, only Riveted in Comb. Chambers.

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Working pressure by Rules *As approved* Are the stays drilled at the outer ends ☒ Margin stays: Diameter *1 3/4 x 2"*  
 No. of threads per inch *Welded* Area supported by each stay *14" x 9 1/2"* Working pressure by Rules *As approved*  
 Tubes: Material *H. D. S* External diameter *2 1/2* Thickness *10 LSG* No. of threads per inch *9*  
 Pitch of tubes *3 3/4 x 3 5/8* Working pressure by Rules *As approved* Manhole compensation: Size of opening in  
 shell plate *13 3/4* Section of compensating ring *2'-8" x 2'-4" x 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 *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 *None* Manufacturers of *Tubes Steel forgings Steel castings*  
 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 \_\_\_\_\_ 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. H. Hartley* Manufacturer.

Dates of Survey *1947* During progress of work in shops - *Nov. 25 Dec. 8 Jan. 5, 7, 20, 23, 24* Are the approved plans of boiler and superheater forwarded herewith *Yes*  
*2, 3, 6, 7, 9, 10, 13, 16, 17, 18, 19, 20, 23* (If not state date of approval.)  
 while building During erection on board vessel - - - Total No. of visits *20*

Is this Boiler a duplicate of a previous case *No* *With caption of small stays* If so, state Vessel's name and Report No. *1307 G. Report No. 14188*

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 plans. The materials and workmanship are good. They have been despatched to Glasgow for installation in the vessel.*

*These Boilers have now been installed in the above named vessel, run under steam, and safety valves adjusted to 153 LBS/SQ. IN.*  
*H. Clive-Jones*  
*Glasgow 3/6/48*

Survey Fee ... £68 : 4 : 0 When applied for, *13/4/48*  
 Travelling Expenses (if any) *R* : : When received, *19*

*W. H. Hartley*  
 Engineer Surveyor to Lloyd's Register of Shipping.