

REPORT ON BOILERS.

No. 14543

Received at London Office 23 JUN 1948

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. 1948

on the Tanker M.V. "British ~~Banker~~ 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 *Coville*. (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. 2 fuel*

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

Tested by hydraulic pressure to *275 lbs.* 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 *Two 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 lbs/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 *Yes*

Smallest distance between shell of boiler and tank top plating *(See above for 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*

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

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.* Percentage of strength of circ. intermediate seam {plate *—* rivets *—*

Percentage of strength of longitudinal joint {plate *84.3.* rivets *104.* combined *89.3.* Working pressure of shell by Rules *156 lbs*

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

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

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

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

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

Girders to combustion chamber tops: Material *Steel* Tensile strength *28/32 tons* Depth and thickness of girder at centre *9 1/2" x 1 1/2"* 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*

Tensile strength *26-30 tons* 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"* Back *8 1/4" x 9 1/2"* Top *—* 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*

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

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

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

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

Screwed at Shell, only Riveted in Comb Chamber.

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

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 $\left\{ \begin{array}{l} 10 \text{ LSG} \\ 1/4, 5/16, 13/32 \end{array} \right.$ 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 $2'-8'' \times 2'-4'' \times 7/8''$ 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 _____ 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 casing 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, *[Signature]* Manufacturer.

Dates of Survey $\left\{ \begin{array}{l} \text{During progress of work in shops - - } \text{Nov. 25 Dec. 8 Jan. 5, 7, 20, 23, 24} \\ \text{while building } \left\{ \begin{array}{l} \text{During erection on board vessel - - - } 2, 3, 6, 7, 9, 10, 13, 16, 17, 18, 19, 20, 23 \end{array} \right. \end{array} \right.$ Are the approved plans of boiler and superheater forwarded herewith *ho.* (If not state date of approval.)

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.

H. Clive Jumper
Glasgow 3/6/188.

Survey Fee £68 : 4 : 0 } When applied for, *13/4/1888*

Travelling Expenses (if any) *R* : : } When received, 10

[Signature]
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *SEE ACCOMPANYING MACHINERY REPORT*

Assigned *GLASGOW 22 JUN 1888*



NOTE.—The words which do not apply should be deleted. Is a Report also sent on the Hull of the Ship? If not, state whether, and when, one will be sent.