

REPORT ON BOILERS.

No. 69198

Received at London Office

Date of writing Report

19 ⁴⁵ When handed in at Local Office 2 1 10 ⁴⁵

Port of Glasgow

No. in Survey held at Glasgow

Date, First Survey 9. 5. 44 Last Survey 21. 12. 1944

on the S.S. "EMPIRE KUMASI"

(Number of Visits 36) Tons { Gross 7201 Net 4935

Built at Port Glasgow By whom built Wm Hamilton & Co Ltd Ward No. 465 When built 1944

Engines made at Glasgow By whom made Fairfield S.B. and E. Co. Ltd Engine No. 699 When made 1943

Boilers made at Glasgow By whom made David Rowan & Co. Ltd Boiler No. 1163 When made 1944

Nominal Horse Power 558 Owners Ministry of War Transport Port belonging to Greenock

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Bolwelles Ltd (Letter for Record "S")

Total Heating Surface of Boilers 2416 sq ft Is forced draught fitted Yes Coal or Oil fired Coal

No. and Description of Boilers One Single Ended Working Pressure 220 lbs/sq in

Tested by hydraulic pressure to 380 lbs/sq in Date of test 18-10-44 No. of Certificate 21803 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler 55 sq ft No. and Description of safety valves to each boiler One - 3" double

Area of each set of valves per boiler { per Rule 12.95 sq in as fitted 14.14 sq in Pressure to which they are adjusted 220 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 Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 2'-0" Is oil fuel carried in the double bottom under boilers No

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

Largest internal dia. of boilers 15'-3" Length 11'-6" Shell plates: Material S Tensile strength 29/33 Tons

Thickness 1 7/16" Are the shell plates welded or flanged No Description of riveting: circ. seams { end D.R inter. Yes

Long. seams D.B.S.T.R. Diameter of rivet holes in { circ. seams 3. 1 1/2" F. 1 3/8" Pitch of rivets { 8. 4. 13" F. 3. 4. 35" long. seams 1 1/2" 10 1/2"

Percentage of strength of circ. end seams { plate 8. 6. 3. 6. 8 F 60 rivets 8. 4. 7. 2 F 47. 8 Percentage of strength of circ. intermediate seam { plate Yes rivets Yes

Percentage of strength of longitudinal joint { plate 85. 36 rivets 89 combined 88. 5 Working pressure of shell by Rules Yes

Thickness of butt straps { outer 1 3/32" inner 1 3/32" No. and Description of Furnaces in each Boiler 3 Deighton 30hp

Material S Tensile strength 26/30 Tons Smallest outside diameter 3'-9 3/8"

Length of plain part { top Yes bottom Yes Thickness of plates { crown 1 1/16" bottom 1 1/16" Description of longitudinal joint Welded

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

End plates in steam space: Material S Tensile strength 26/30 Tons Thickness 1 3/8" Pitch of stays 19" x 22"

How are stays secured D.H. Working pressure by Rules Yes

Tube plates: Material { front S back S Tensile strength { 26/30 Tons Thickness { 1 5/16" 2 5/32" 3/32"

Mean pitch of stay tubes in nests 9. 6. 6" Pitch across wide water spaces 14" Working pressure { front Yes back Yes

Girders to combustion chamber tops: Material S Tensile strength 28/32 Tons Depth and thickness of girder

at centre 2 @ 8 3/4" x 7/8" Length as per Rule 33 1/2" Distance apart 8" No. and pitch of stays

in each 3 @ 8 1/4" Working pressure by Rules Yes Combustion chamber plates: Material S

Tensile strength 26/30 Tons Thickness: Sides 2 1/32" Back 2 3/32" Top 2 1/32" Bottom 1 3/16"

Pitch of stays to ditto: Sides 8 1/4" x 8" Back 10" x 8" Top 8 1/4" x 8" Are stays fitted with nuts or riveted over Nuts

Working pressure by Rules Yes Front plate at bottom: Material S Tensile strength 26/30 Tons

Thickness 1 5/16" Lower back plate: Material S Tensile strength 26/30 Tons Thickness 1 3/16"

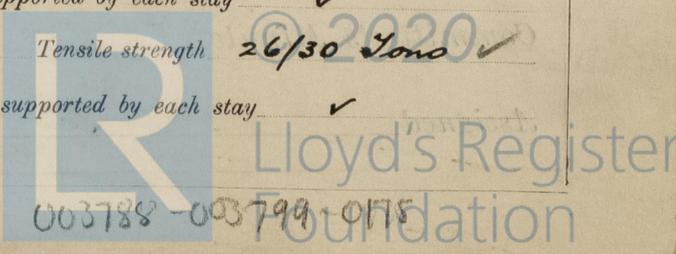
Pitch of stays at wide water space 13 7/16" Are stays fitted with nuts or riveted over Nuts

Working Pressure Yes Main stays: Material S Tensile strength 28/32 Tons

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

Working pressure by Rules Yes Screw stays: Material S Tensile strength 26/30 Tons

Diameter { At turned off part, 1 5/8" & 1 3/4" No. of threads per inch 9 Area supported by each stay Yes



Working pressure by Rules Are the stays drilled at the outer ends *no* ✓ Margin stays: Diameter $\left\{ \begin{array}{l} \text{At turned off part, } \checkmark \\ \text{or} \\ \text{Over threads } 1\frac{7}{8} \checkmark \end{array} \right.$

No. of threads per inch *9* ✓ Area supported by each stay Working pressure by Rules

Tubes: Material *S.* ✓ External diameter $\left\{ \begin{array}{l} \text{Plain } 3'' \\ \text{Stay } 3'' \end{array} \right.$ Thickness $\left\{ \begin{array}{l} 8 \text{ W.G. } \checkmark \\ \frac{1}{4}, \frac{5}{16}, \frac{3}{8} \checkmark \end{array} \right.$ No. of threads per inch *9* ✓

Pitch of tubes *4\frac{3}{16}'' x 4\frac{1}{8}''* ✓ Working pressure by Rules Manhole compensation: Size of opening *end*

shell plate *16'' x 12''* ✓ Section of compensating ring No. of rivets and diameter of rivet holes

Outer row rivet pitch at ends Depth of flange if manhole flanged *4''* ✓ 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 from the boiler _____

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 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,
For David Rowant & Co
Arch. H. Grierson

Dates of Survey $\left\{ \begin{array}{l} \text{During progress of work in shops} \\ \text{while building} \end{array} \right.$ *1944 May 9, 19, 25 Jun 10, 20 Jul 13 Aug 1, 7, 14* Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)

24, 29, 29 Sep 6, 26 Oct 2, 5, 9, 12, 16, 18 Nov 7, 13 14, 16, 20, 25, 27, 30

1, 2, 4, 5, 12, 15, 21

Total No. of visits *36*

Is this Boiler a duplicate of a previous case *Yes* *Plan attached* If so, state Vessel's name and Report No. *"Empire Swordsman" Gls. Rept No. 686*

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) *This boiler has been built under special survey in accordance with the Rules & approved plans. The materials and workmanship are good. It has been efficiently installed in the vessel and the safety valves have been adjusted to the working pressure. The specification requirements have been carried out satisfactorily.*

Survey Fee ... *See Machy Report.* When applied for, 10

Travelling Expenses (if any) £ : : When received, 10

Jas. Stevenson
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **GLASGOW** 4 JAN 1945

Assigned **ACCOMPANYING MACHINERY REPORT**

