

2 MAR 1944

REPORT ON BOILERS.

No. 68149

2 MAR 1944

Received at London Office

Date of writing Report 16. 2. 1944 When handed in at Local Office 28. 2. 1944 Port of GLASGOW.

No. in Survey held at CLYDEBANK. Date, First Survey 21. 8. 1942 Last Survey 12. 1. 1944

on the S.S. "EMPIRE KUMASI" (Number of Visits 81) Tons { Gross 7301 Net 4935

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

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

Boilers made at CLYDEBANK. By whom made JOHN BROWN & CO. LTD. Boiler No. A.64 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 COLVILLES Ltd.

(Letter for Record S. ✓)

Total Heating Surface of Boilers 5920 square feet Is forced draught fitted Yes. ✓ Coal or Oil fired Coal. ✓

No. and Description of Boilers 2 - Multitubular Working Pressure 220 ✓

Tested by hydraulic pressure to 380 Date of test 20. 9. 43. No. of Certificate 21506 21550 Can each boiler be worked separately Yes ✓

Area of Firegrate in each Boiler 66.6 sq. ft. No. and Description of safety valves to each boiler 2 - 3 1/4" S.L. ✓

Area of each set of valves per boiler { per Rule 15.74 sq. in. as fitted 16.58 sq. in. Pressure to which they are adjusted 220 lb. 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 1'-9" Is oil fuel carried in the double bottom under boilers No. ✓

Smallest distance between shell of boiler and tank top plating 3'-3" Is the bottom of the boiler insulated Yes ✓

Largest internal dia. of boilers 16'-1 29/64" Length 12'-0 15/16" Shell plates: Material S Tensile strength 29-33 ✓

Thickness 1 35/64" Are the shell plates welded or flanged No. Description of riveting: circ. seams { end D.R. inter. Nil. 19/16" Pitch of rivets { B. 4.196" F. 3.4" 10 13/16" ✓

Long. seams T.R.D.B.S. Diameter of rivet holes in { circ. seams B. 19/16" F. 1 3/8" long. seams 19/16" Percentage of strength of circ. intermediate seam { plate - - rivets - - ✓

Percentage of strength of circ. end seams { plate F. 60 B. 62.7 rivets F. 44.7 B. 47 Working pressure of shell by Rules - - ✓

Percentage of strength of longitudinal joint { plate 85.5 rivets 85.26 combined 88.13 ✓

Thickness of butt straps { outer 1 11/64" inner 1 19/64" No. and Description of Furnaces in each Boiler 4 - Deighton ✓

Material S. Tensile strength 26.30 Smallest outside diameter 3' 5 1/4" ✓

Length of plain part { top - bottom - Thickness of plates { crown 5/8" bottom 5/8" Description of longitudinal joint Weld ✓

Dimensions of stiffening rings on furnace or c.c. bottom None Working pressure of furnace by Rules - - ✓

End plates in steam space: Material S Tensile strength 26.30 Thickness 1 13/32" Pitch of stays 20.0" x 21 1/2" ✓

How are stays secured D.N. Working pressure by Rules - - ✓

Tube plates: Material { front S. back S. Tensile strength { 26-30 26-30 Thickness { 15/16" 25/32" ✓

Mean pitch of stay tubes in nests 10" Pitch across wide water spaces 14" Working pressure { front - - back - - ✓

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

at centre 10" x 1 3/4" Length as per Rule 36.6" Distance apart 9 3/8" No. and pitch of stays

in each 3 - 8 3/4" Working pressure by Rules - - Combustion chamber plates: Material S. 25/32" ✓

Tensile strength 26.30 Thickness: Sides 25/32" Back 21/32" Top 25/32" Bottom 25/32" ✓

Pitch of stays to ditto: Sides 8 3/4" x 9 5/8" Back 8 3/4" x 8" Top 9 5/8" x 8 3/4" Are stays fitted with nuts or riveted over Nuts ✓

Working pressure by Rules - - Front plate at bottom: Material S Tensile strength 26-30

Thickness 15/16" Lower back plate: Material S Tensile strength 26-30 Thickness 53/64" ✓

Pitch of stays at wide water space 13 1/2" Are stays fitted with nuts or riveted over Nuts ✓

Working Pressure - - Main stays: Material S Tensile strength 28-32 ✓

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

Working pressure by Rules - - Screw stays: Material S Tensile strength 26-30 ✓

Diameter { At turned off part, 1 5/8", 1 3/4", 1 7/8", 2 1/4" No. of threads per inch 9 Area supported by each stay - - ✓

Working pressure by Rules - - Are the stays drilled at the outer ends No ✓ Margin stays: Diameter { At turned off part, or Over threads 1 1/4" ✓
No. of threads per inch 9 ✓ Area supported by each stay - - Working pressure by Rules - -
Tubes: Material S External diameter { Plain 3" ✓ Thickness { 8 W.G. 5/16" 8/8" No. of threads per inch 9 ✓
Pitch of tubes 4 1/8" x 4 3/16" ✓ Working pressure by Rules - - Manhole compensation: Size of opening in shell plate
Section of compensating ring No. of rivets and diameter of rivet holes
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 Smoke tube Manufacturers of { Tubes The Superheater Co. Ltd. Copy of Steel forgings Manchester Certificate C2003, C2004 here with Steel castings
Number of elements ✓ Material of tubes ✓ Internal diameter and thickness of tubes 22 / 17 mm. ✓
Material of headers ✓ Tensile strength ✓ Thickness ✓ Can the superheater be shut off and the boiler be worked separately No ✓ 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 1.76 sq ft ✓ Are the safety valves fitted with easing gear Yes Working pressure as per Rules ✓ Pressure to which the safety valves are adjusted 220 lbs/sq in ✓ Hydraulic test pressure: tubes ✓ forgings and castings ✓ and after assembly in place 440 lbs. ✓ Are drain cocks or valves fitted to free the superheater from water where necessary Yes
Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with Yes

FOR JOHN BROWN & CO. LIMITED

The foregoing is a correct description,

Manufacturer.

Dates of Survey { During progress of work in shops - - 1942 Aug 21, 24, Sep 8, 11, 21, 28 Oct 6, 12, 16, 22, 26 Nov 3, 12, 19, 24 Dec 2, 9, 15, 21, 28 1943 Jan 7, 13, 29
while building { During erection on board vessel - - - 13, 15, 29 Nov 1, 3, 5, 6, 10, 11, 17, 24, 29 Dec 6, 8, 1944 Jan 12
Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)
Total No. of visits 81.

Is this Boiler a duplicate of a previous case Yes. If so, state Vessel's name and Report No. "SIRCHEI" Glasgow No. 63572.

GENERAL REMARKS (State quality of workmanship, opinions as to class, etc.) These boilers have been built under Special Survey in accordance with the Society's Rules and approved plans.

The material and workmanship are good.
The requirements of the Ministry of Shipping Specification have been carried out satisfactorily.
As these boilers are not allocated they have been placed in storage at Yoker.
These boilers have been satisfactorily installed aboard the S.S. "Empire Kumasi" tested under steam & found satisfactory. The safety valves adjusted to the working pressure.
Jas. Stevenson.

Survey Fee ... £ 32 : 5 :
Travelling Expenses (if any) £ 8 : 1 :
When applied for, 29 FEB 1944
When received, Apr 3 1944

For J. Cairns self. M. Russell
Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute GLASGOW 29 FEB 1944 GLASGOW 4 JAN 1945

Assigned J. Cairns & Co. Ltd.