

REPORT ON BOILERS.

No. 69178

Received at London Office

to of writing Report

19

When handed in at Local Office

2

1

19

Port of

Glasgow

No. in Survey held at

Glasgow

Date, First Survey

9. 5. 44

Last Survey

21. 12. 1944

19

Book.

on the

S.S. "EMPIRE KUMASI"

(Number of Visits

36

Tons

Gross 7201
Net 4935

ister

Built at

Port Glasgow

By whom built

Wm. Hamilton & Co. Ltd.

Card 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

Bolwilles Ltd

(Letter for Record

"S"

Total Heating Surface of Boilers

2416 sq

Is forced draught fitted

Yes

Coal or Oil fired

Coal

No. and Description of Boilers

One Single Ended

Working Pressure

220 LBS/sq

Tested by hydraulic pressure to

380 LBS/sq

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

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

as fitted

14.14 sq

Pressure to which they are adjusted

220 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

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.

Long. seams

D.B.S.T.R.

Diameter of rivet holes in

circ. seams

3/8"

long. seams

1 1/2"

Pitch of rivets

8 + 13

F 3.435"

10 1/2"

Percentage of strength of circ. end seams

plate 8.63.68 F 60

rivets 8.47.2 F 47.8

Percentage of strength of circ. intermediate seam

plate

85.36

rivets

89

Percentage of strength of longitudinal joint

plate 85.36

rivets 89

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

300

Material

S

Tensile strength

26/30 Tons

Smallest outside diameter

3'-9 3/8"

Length of plain part

top

bottom

Thickness of plates

crowd

11/16"

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

9.66"

Pitch across wide water spaces

14"

Working pressure

front

back

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" x 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" x 1 3/4"

No. of threads per inch

9

Area supported by each stay

Yes

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Foundation

Working pressure by Rules ☒ Are the stays drilled at the outer ends *no* ✓ Margin stays: Diameter ^{At turned off part,} _{or} ^{Over threads} *1 7/8* ✓

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

Tubes: Material *S.* ✓ External diameter ^{Plain} *3"* ^{Stay} *3"* Thickness *8 W.G.* ✓ No. of threads per inch *9* ✓

Pitch of tubes *4 3/16" x 4 1/8"* ✓ Working pressure by Rules ☒ Manhole compensation: Size of opening *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 *None* ✓

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 _____

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 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 _____

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,
For David Rowntree & Co. Ltd.
Archd. H. Grierson, Manufacturer

Dates of Survey ^{During progress of} *1944 May 9, 19, 25 Jun 10, 20 Jul 13 Aug 1, 7, 14* ^{work in shops} *24, 28, 29 Sep 6, 26 Oct 2, 5, 9, 12, 16, 18 Nov 7, 13, 14, 16, 20, 25, 28, 30* ^{while building} *1, 2, 4, 5, 12, 15, 21* ^{board vessel} *1, 2, 4, 5, 12, 15, 21*

Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) *Yes* ✓

Total No. of visits *36*

Is this Boiler a duplicate of a previous case *Yes* ✓ Plan attached *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 Machinery Report* When applied for, 19

Travelling Expenses (if any) £ ... When received, 19

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

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

Assigned **ACCOMPANYING MACHINERY REPORT**



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