

REPORT ON BOILERS.

No. 63736

Received at London Office

MAY -1 1941

Date of writing Report

19

When handed in at Local Office

28: 4:

1941

Port of GLASGOW

No. in Survey held at

Glasgow

Date, First Survey

20th June 1940

Last Survey

22nd Apr. 1941

Reg. Book.

On the

S/S

"EMPIRE ZEPHYR"

(Number of Visits 56)

Gross

6327

Net

4592

Built at

Glasgow

By whom built

Chas. Connell & Co. Ltd.

Yard No. 432

When built 1941

Engines made at

Glasgow

By whom made

David Rowan & Co. Ltd.

Engine No. 1066

When made 1941

Boilers made at

-do-

By whom made

-do-

Boiler No. 1066

When made 1941

Nominal Horse Power

439

Owners

Ministry of Shipping

Port belonging to

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Colnillas, Ltd.

(Letter for Record S)

Total Heating Surface of Boilers

5920 sq ft

Is forced draught fitted

Yes

Coal or Oil fired

Coal

No. and Description of Boilers

2 Single-ended

Working Pressure 220 lb.

Tested by hydraulic pressure to

380 lb.

Date of test

31-1-41

No. of Certificate

20701

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 1/2" spring loaded

Area of each set of valves per boiler

per Rule 15.740"

as fitted 16.580"

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

27"

Is oil fuel carried in the double bottom under boilers

No

Smallest distance between shell of boiler and tank top plating

25"

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boilers

16"-1 29/64"

Length

12'-0"

Shell plates: Material

Steel

Tensile strength

29/33 tons

Thickness

1 35/64"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end

butt

long. seams

DBS TR

Diameter of rivet holes in

circ. seams

B 19/16" F 1 7/8"

Pitch of rivets

B 4 1/8" F 3 1/4"

10 1/8"

Percentage of strength of circ. end seams

plate

B 62.7 F 60

rivets

47

Percentage of strength of circ. intermediate seam

plate

rivets

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 Reighton

Material

Steel

Tensile strength

26/30 tons

Smallest outside diameter

3'-5 1/4"

Length of plain part

top

Thickness of plates

crown

5/8"

Description of longitudinal joint

welded

Dimensions of stiffening rings on furnace or c.c. bottom

-

End plates in steam space: Material

Steel

Tensile strength

26/30 tons

Thickness

1 13/32"

Pitch of stays

20"x23 1/2"

How are stays secured

DN

Tube plates: Material

front Steel

back

Tensile strength

26/30 tons

Thickness

15/16"

25/32"

Mean pitch of stay tubes in nests

9.54"

Pitch across wide water spaces

14"

Girders to combustion chamber tops: Material

Steel

Tensile strength

28/32 tons

Depth and thickness of girder

at centre

2 @ 10"x7/8"

Length as per Rule

3'-0 9/16"

Distance apart

9 3/8" W 7 1/2" C

No. and pitch of stays

in each

3 @ 8 3/4"

Combustion chamber plates: Material

Steel

Tensile strength

26/30 tons

Thickness: Sides

25/32"

Back

21/32"

Top

25/32"

Bottom

2 7/32"

Pitch of stays to ditto: Sides

8 3/4"x9 3/8"

Back

8"x8 1/2"W 7 9/16"x8"C

Top

8 3/4"x9 3/8"W 8 3/4"x7 1/2"C

Are stays fitted with nuts or riveted over

Nuts

Front plate at bottom: Material

Steel

Tensile strength

26/30 tons

Thickness

1 5/16"

Lower back plate: Material

Steel

Tensile strength

26/30 tons

Thickness

5 3/64"

Pitch of stays at wide water space

13 1/2"

Are stays fitted with nuts or riveted over

Nuts

Main stays: Material

Steel

Tensile strength

28/32 tons

Diameter

At body of stay,

3 1/4" & 3 1/2"

No. of threads per inch

6

Screw stays: Material

Steel

Tensile strength

26/30 tons

Diameter

At turned off part,

1 5/8"

No. of threads per inch

9

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Are the stays drilled at the outer ends *lw* Margin stays: Diameter ^{At turned off part,} *1 3/4"*
 No. of threads per inch *9*
 Tubes: Material *steel* External diameter ^{Plain} *3"* ^{Stay} *3"* Thickness ^{8 W 4} *1/4" 3/8" 7/16" 1/2"* No. of threads per inch *9*
 Pitch of tubes *4 1/8" x 4 3/16"* 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 *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 *-* Thickness of crown *-* No. and diameter of stays *-* Inner radius of crown *-*
 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 *-*
 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 *-*

The foregoing is a correct description,
 For David Rowan & Co. Ltd. Manufacturer.
 Arch. H. Grierson

Dates of Survey ^{During progress of work in shops - -} *-* ^{while building} ^{During erection on board vessel - - -} *-*
 Are the approved plans of boiler and superheater forwarded herewith *Yes*
 SEE ACCOMPANYING MACHINERY REPORT
 Total No. of visits *-*

Is this Boiler a duplicate of a previous case *Yes* If so, state Vessel's name and Report No. *"EMPIRE SNOW" GLS. R. 63432*

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, and the materials and workmanship are good. They have been satisfactorily installed in the vessel and the safety valves have been adjusted to the working pressure.*

EWB
29/4/44

Survey Fee £ *see mach. 1st.* When applied for, 19
 Travelling Expenses (if any) £ *see mach. 1st.* When received, 19

W. J. Brown
 Engineer *Surveyor* to Lloyd's Register of Shipping.

Committee's Minute *GLASGOW* 29 APR 1944

Assigned *SEE ACCOMPANYING MACHINERY REPORT*



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