

REPORT ON BOILERS.

No. 66447

24 DEC 1942

Received at London Office

Date of writing Report

19

When handed in at Local Office

21.12

19

Port of

GLASGOW

No. in
Reg. Book.

Survey held at

GLASGOW

Date, First Survey

8.12.41

Last Survey

7th Dec. 1942

1942

on the

S/S "EMPIRE GERAIN"

(Number of Visits)

Gross

Tons

Net

Master

Built at

GLASGOW

By whom built

C. CONNELLY & CO.

Yard No.

439

When built

1942

Engines made at

GLASGOW

By whom made

DAVID ROWAN & CO. LD.

Engine No.

1097

When made

1942

Boilers made at

-DO-

By whom made

-DO-

Boiler No.

1097

When made

1942

Nominal Horse Power

558

Owners

MINISTRY OF WAR TRANSPORT

Port belonging to

GLASGOW

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

(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

1- Single-ended

Working Pressure

220 lb.

Tested by hydraulic pressure to

380 lb.

Date of test

21-5-42

No. of Certificate

21065

Can each boiler be worked separately

-

Area of Firegrate in each Boiler

55 sq

No. and Description of safety valves to each boiler

1-3" anti

Area of each set of valves per boiler

per Rule 12.8 sq

as fitted 14.12 sq

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

Is oil fuel carried in the double bottom under boilers

No

Smallest distance between shell of boiler and tank top plating

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 anti

long. seams

DBS TR

Diameter of rivet holes in

circ. seams B 1 1/2" F 1 3/8"

Pitch of rivets

B 4 1/3" F 3 4/5"

Percentage of strength of circ. end seams

plate B 63.68 F 60

rivets 47.2

47.8

Percentage of strength of circ. intermediate seam

plate

Percentage of strength of longitudinal joint

plate 86.36

rivets 89

combined 88.5

Working pressure of shell by Rules

Thickness of butt straps

outer 1 3/32"

inner 1 7/32"

No. and Description of Furnaces in each Boiler

3 Sleighton

Material

S

Tensile strength

26/30 tons

Smallest outside diameter

3'-9 3/8"

Length of plain part

top

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

Working pressure of furnace by Rules

End plates in steam space: Material

S

Tensile strength

26/30 tons

Thickness

1 3/8"

Pitch of stays

22" x 16 1/4"

How are stays secured

D.N.

Working pressure by Rules

Tube plates: Material

front S

back

Tensile strength

26/30 tons

Thickness

15/16"

25/32"

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

2'-9 1/2"

Distance apart

8"

No. and pitch of stays

in each

3 @ 8 1/4"

Working pressure by Rules

Combustion chamber plates: Material

S

Tensile strength

36/30 tons

Thickness: Sides

2 1/32"

Back

2 3/32"

Top

2 1/32"

Bottom

13/16"

Pitch of stays to ditto: Sides

8" x 8 1/4"

Back

8" x 10"

Top

8" x 8 1/4"

Are stays fitted with nuts or riveted over

nuts

Working pressure by Rules

Front plate at bottom: Material

S

Tensile strength

26/30 tons

Thickness

15/16"

Lower back plate: Material

S

Tensile strength

26/30 tons

Thickness

13/16"

Pitch of stays at wide water space

13 7/16"

Are stays fitted with nuts or riveted over

nuts

Working Pressure

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

Working pressure by Rules

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

Working pressure by Rules 100 Are the stays drilled at the outer ends Yes Margin stays: Diameter 7 1/8" (At turned off part, or Over threads)

No. of threads per inch 9 Area supported by each stay 3" Working pressure by Rules 8 W 9

Tubes: Material S External diameter 3" Thickness 1/4", 5/16", 3/8" 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 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 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 - 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 - 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,
For David Rowan & Co. Ltd. Manufacturer.
Arch. H. Grierson

Dates of Survey - (During progress of work in shops - - -) Are the approved plans of boiler and superheater forwarded herewith Yes (If not state date of approval.)

while building - (During erection on board vessel - - -) Total No. of visits -

SEE ACCOMPANYING MACHINERY REPORT.

Is this Boiler a duplicate of a previous case Yes If so, state Vessel's name and Report No. "EMPIRE LANCER" No. 6635

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)

This boiler has been built under special survey in accordance with the Rules and approved plans, and 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 ... £ 5 See mech. rpt. When applied for, 19

Travelling Expenses (if any) £ 5 When received, 19

A. B. Brown
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 22 DEC 1942

Assigned SEE ACCOMPANYING MACHINERY REPORT.



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