

REPORT ON BOILERS.

No. 21590.

Received at London Office

16 OCT 1941

Date of writing Report 6th OCTOBER 1941When handed in at Local Office 10th OCTOBER 1941

Port of GREENOCK

No. in Survey held at
Reg. Book.

Greenock

Date First Survey

8th OCTOBER 1940

Last Survey

8th Oct

1941

23307 on the

"EMPIRE TIDE"

(Number of Visits)

Gross 6978.37
Net 4147.17

Built at Port Glasgow By whom built

Lithgows L^{td}

Yard No. 945 When built 1941

Engines made at

Greenock

By whom made

John G. Kincaid & Co L^{td}

Engine No. 5142 When made 1941

Boilers made at

Greenock

By whom made

John G. Kincaid & Co L^{td}

Boiler No. 5142 When made 1941

Nominal Horse Power

490

Owners

Ministry of War Transport

Port belonging to

Greenock

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

The Steel Company of Scotland

Total Heating Surface of Boilers

2246 6

Is forced draught fitted

yes

(Letter for Record S

One oil or gas

Coal or Oil fired One oil

No. and Description of Boilers

Two cylindrical

Working Pressure 150 lbs

Tested by hydraulic pressure to

275 lbs

Date of test

2-4-41

No. of Certificate

2235

Can each boiler be worked separately

yes

Area of Firegrate in each Boiler

No. and Description of safety valves to each boiler

1 3/4 double opening IHL

Area of each set of valves per boiler

per Rule

4.28"

as fitted

4.80"

Pressure to which they are adjusted

150 lbs

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

Is oil fuel carried in the double bottom under boilers

yes

Smallest distance between shell of boiler and tank top plating

2'-6"

Is the bottom of the boiler insulated

yes

Largest internal dia. of boilers

10'-8 7/32"

Length

10'-6 1/2"

Shell plates: Material

S

Tensile strength

29/33 tons

Thickness

25"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end 29

long. seams

TR DBS

Diameter of rivet holes in

circ. seams

3/32"

long. seams

27/32"

Pitch of rivets

3-2948"

6.125"

Percentage of strength of circ. end seams

plate 70.6

rivets 46.7

Percentage of strength of circ. intermediate seam

plate

rivets

Percentage of strength of longitudinal joint

plate 86.23

rivets 86.8

combined 88.

Thickness of butt straps

outer 5/8"

inner 3/4"

No. and Description of Furnaces in each Boiler

Two Dighton

Material

S

Tensile strength

24/30 tons

Smallest outside diameter

3'-1 1/16"

Length of plain part

top

bottom

Thickness of plates

crown 13/32"

bottom 13/32"

Description of longitudinal joint

Weld

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

End plates in steam space: Material

S

Tensile strength

24/30 tons

Thickness

15/16"

Pitch of stays

16x16"

How are stays secured

D.H.

Tube plates: Material

front S

back

Tensile strength

24/30 tons

Thickness

15/16"

5/8"

Mean pitch of stay tubes in nests

9.5"

Pitch across wide water spaces

14"

Girders to combustion chamber tops: Material

S

Tensile strength

29/33 tons

Depth and thickness of girder

at centre

8"x13 1/8"

Length as per Rule

29 3/4"

Distance apart

10"

No. and pitch of stays

in each

two @ 9"

Combustion chamber plates: Material

S

Tensile strength

24/30 tons

Thickness: Sides

5/8"

Back

5/8"

Top

5/8"

Bottom

5/8"

Pitch of stays to ditto: Sides

9 1/2"x9 1/2"

Back

9 1/2"x9"

Top

9"x10"

Are stays fitted with nuts or riveted over

Nuts

Front plate at bottom: Material

S

Tensile strength

24/30 tons

Thickness

15/16"

Lower back plate: Material

S

Tensile strength

24/30 tons

Thickness

15/16"

Pitch of stays at wide water space

14"x9 1/2"

Are stays fitted with nuts or riveted over

Nuts

Main stays: Material

S

Tensile strength

28/33 tons

Diameter

At body of stay,

2 3/8"

Over threads

No. of threads per inch

6

Screw stays: Material

S

Tensile strength

24/30 tons

Diameter

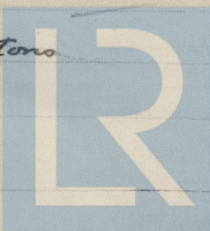
At turned off part,

1 5/8"

Over threads

No. of threads per inch

9.



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Are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part, 1 3/4" or Over threads

No. of threads per inch 9

Tubes: Material S External diameter { Plain 3" Stay 3" Thickness { 9/16" 5/16" No. of threads per inch 9

Pitch of tubes 4 1/4" x 4 3/16" Manhole compensation: Size of opening in shell plate 16" x 20" Section of compensating ring 32 1/2" x 28 1/2" x 5/16" No. of rivets and diameter of rivet holes 38 - 1 1/2"

Outer row rivet pitch at ends 8" Depth of flange if manhole flanged 2 1/2" 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 Thickness of crown No. and diameter of stays

How connected to shell Inner radius of crown

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

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 JOHN G. KINCAID & CO. LIMITED Director. Manufacturer.

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

while building { During erection on board vessel - - - } Total No. of visits

Is this Boiler a duplicate of a previous case Yes If so, state Vessel's name and Report No. Empire Spring JGR 21458

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. The materials & workmanship are sound & good. The safety valves have been adjusted under steam, accumulation nil. These boilers are eligible in my opinion to be fitted in a vessel classed in the Society's Register Book

Survey Fee ... £ : : When applied for, 19

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

See machinery report

Charles J. Hunter
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 14 OCT 1941

Assigned SEE ACCOMPANYING MACHINERY REPORT.



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