

REPORT ON BOILERS.

No. 21834.

Received at London Office

13 MAY 1942

Date of writing Report 8th MAY 1942. When handed in at Local Office 9th MAY 1942. Port of GREENOCK

No. in Reg. Book. Survey held at

GREENOCK

Date, First Survey 1st JULY 1941.Last Survey 6th MAY 1942.

on the

S.S. EMPIRE AUSTEN

(Number of Visits /)

Gross 1057.29

Net 4991.26

Built at PORT GLASGOW

By whom built

LITHGOWS LTD

Yard No. 969

When built 1942

Engines made at

GREENOCK

By whom made

JOHN G. KINCAID & CO LTD

Engine No. 732

When made 1942

Boilers made at

GREENOCK

By whom made

JOHN G. KINCAID & CO LTD

Boiler No. 732

When made 1942

Nominal Horse Power

520

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

5932 sq

Is forced draught fitted Yes

Coal or Oil fired Coal

No. and Description of Boilers

Two SE multitubular

Working Pressure 220 lb

Tested by hydraulic pressure to

380 lb

Date of test 19-12-41

No. of Certificate 2263

Can each boiler be worked separately Yes

Area of Firegrate in each Boiler

67 sq

No. and Description of safety valves to each boiler

Two CI double opening 1 1/2" 2 1/2" dia

Area of each set of valves per boiler

per Rule 7.88

as fitted 7.96

Pressure to which they are adjusted 220

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' 9"

Is oil fuel carried in the double bottom under boilers

No

Smallest distance between shell of boiler and tank top plating

1' 11"

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boilers

16' 3"

Length 12' 13/32"

Shell plates: Material S

Tensile strength

29/33 ton

Thickness

1 9/16"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end 2R

long. seams

TR. DBS.

Diameter of rivet holes in

circ. seams 1 9/16"

long. seams 1 9/16"

Pitch of rivets

4' 41"

Percentage of strength of circ. end seams

plate 64.5%

rivets 44.14%

Percentage of strength of circ. intermediate seam

plate

rivets

Percentage of strength of longitudinal joint

plate 85.7%

rivets 87.7%

combined 88.7%

Thickness of butt straps

outer 1 3/16"

inner 1 5/16"

No. and Description of Furnaces in each Boiler

Four Dighton

Material

S

Tensile strength

26/30 ton

Smallest outside diameter

3' 5 1/4"

Length of plain part

top

bottom

Thickness of plates

crown 5"

bottom 5"

Description of longitudinal joint

Weld

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

End plates in steam space: Material

S

Tensile strength

26/30 ton

Thickness

1 13/32"

Pitch of stays 19" x 2 1/2"

How are stays secured

Double Nuts

Tube plates: Material

front S

back S

Tensile strength

26/30 ton

Thickness

15/16"

27/32"

Mean pitch of stay tubes in nests

10.4375"

Pitch across wide water spaces

1' 2"

Girders to combustion chamber tops: Material

S

Tensile strength

29/33 ton

Depth and thickness of girder

at centre

9 3/4" x 1 1/2"

Length as per Rule

2' 11 15/32"

Distance apart

8 1/4"

No. and pitch of stays

in each

3 @ 1 5/8"

Combustion chamber plates: Material S

Tensile strength

26/30 ton

Thickness: Sides

2 1/32"

Back

1 1/16"

Top

2 1/32"

Bottom

2 5/32"

Pitch of stays to ditto: Sides

8 1/4" x 8 1/4"

Back

8 1/8" x 8 1/8"

Top

8 1/4" x 8 1/4"

Are stays fitted with nuts or riveted over

NUTS INSIDE MARGINS CAULKED SIDES & BACK

Front plate at bottom: Material

S

Tensile strength

26/30 ton

Thickness

15/16"

Lower back plate: Material

S

Tensile strength

26/30

Thickness

27/32"

Pitch of stays at wide water space

1' 1 1/16"

Are stays fitted with nuts or riveted over

NUTS

Main stays: Material

S

Tensile strength

28/32 ton

Diameter

At body of stay, 3 1/4"

Over threads

No. of threads per inch

6

Screw stays: Material

S

Tensile strength

26/30 ton

Diameter

At turned off part, 1 3/4" x 1 5/8"

Over threads

No. of threads per inch

9

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Lloyd's Register
Foundation

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Are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part, 1 7/8" Over threads

No. of threads per inch 9

Tubes: Material S External diameter { Plain 3" Stay 3" Thickness { 8/16" 3/8" No. of threads per inch 9

Pitch of tubes 4 1/4" x 4 1/8" Manhole compensation: Size of opening in shell plate 16 1/2" x 20 1/2" Section of compensating ring 37 1/2" x 33 1/2" x 1 9/16" No. of rivets and diameter of rivet holes 36 - 1 1/2"

Outer row rivet pitch at ends 10-5" Depth of flange if manhole flanged W. Null type 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 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 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. KINCALD & CO. LIMITED.
W. C. Kincald Director. Manufacturer.

Dates of Survey { During progress of work in shops - - - while building { During erection on board vessel - - -

SEE MACHINERY REPORT

Are the approved plans of boiler and superheater forwarded herewith 25-10-40 (If not state date of approval.)

Total No. of visits

Is this Boiler a duplicate of a previous case Yes If so, state Vessel's name and Report No. EMPIRE LEAL GPK rpl 21769.

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

These boilers have been built under Special Survey in accordance with the Rules & approved plans. The materials & workmanship are sound & good. The safety valves have been adjusted under steam accumulation test. 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 12 MAY 1942

Assigned SEE ACCOMPANYING MACHINERY REPORT.