

REPORT ON BOILERS.

No. 34201

Received at London Office

7 MAY 1945

Date of writing Report

19

When handed in at Local Office

4 MAY 1945

Port of

Sunderland.

No. in Survey held at
Reg. Book.

Sunderland.

Date, First Survey

Last Survey

3 May 1945

23498 on the

3/5 "Empire Pacific"

(Number of Visits)

Gross 984
Net 380

Built at

By whom built

Burntisland S.B. Co. Ltd.

Yard No. 298

When built 1945

Engines made at

Sunderland

By whom made

G. Clark (1938) Ltd.

Engine No. 1344

When made 1945

Boilers made at

Sunderland

By whom made

G. Clark (1938) Ltd.

Boiler No. 1344

When made 1945

Nominal Horse Power

Owners

Ministry of War Transport. Port belonging to Burntisland.

MULTITUBULAR BOILERS - MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Colvilles Ltd.

(Letter for Record)

S.

Total Heating Surface of Boilers

2490 sq. ft.

Is forced draught fitted

Yes

Coal or Oil fired

oil

No. and Description of Boilers

Two Single ended multitubular return tube marine

Working Pressure

200

Tested by hydraulic pressure to

350

Date of test

4/3/45

No. of Certificate

4588

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

No. and Description of safety valves to each boiler

2 "Lockburn" Imp. high lift.

Area of each set of valves per boiler

per Rule

4.05 sq. ft.

as fitted

Pressure to which they are adjusted

206 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 boiler uptakes and bunkers or woodwork

1'-3"

Is oil fuel carried in the double bottom under boilers

Yes

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

11'-6 1/16"

Length

4'-0"

Shell plates: Material

Steel

Tensile strength

29/33

Thickness

1 1/32"

Are the shell plates welded or flanged

No.

Description of riveting: circ. seams

end

D.R. Lap.

Long. seams

T.R.D.B.S.

Diameter of rivet holes in

circ. seams

1 1/8"

Pitch of rivets

3 1/4"

Percentage of strength of circ. end seams

plate

60.55

rivets

44.0

Percentage of strength of circ. intermediate seam

plate

-

Percentage of strength of longitudinal joint

plate

85.6

rivets

91.6

combined

89.5

Thickness of butt straps

outer 25/32"
inner 29/32"

No. and Description of Furnaces in each Boiler

Three Corrugated (Leighton)

Material

Steel

Tensile strength

26/30

Smallest outside diameter

2'-9 3/4"

Length of plain part

top
bottom

Thickness of plates

crown

1/2"

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

Thickness

1"

Pitch of stays

15" x 15"

How are stays secured

Washers nuts.

Tube plates: Material

front
back

Steel

Tensile strength

26/30

Thickness

1"

25/32"

Can pitch of stay tubes in nests

8" x 10 7/8"

Pitch across wide water spaces

14"

Orders to combustion chamber tops: Material

Steel

Tensile strength

29/33

Depth and thickness of girder

centre

11" x 1 1/16"

Length as per Rule

3'-0"

Distance apart

4"

No. and pitch of stays

each

No stays - welded to c.c. top plate.

Combustion chamber plates: Material

Steel

Tensile strength

26/30

Thickness: Sides

23/32"

Back

23/32"

Top

23/32"

Bottom

23/32"

Pitch of stays to ditto: Sides

10" x 8 1/2"

Back

10" x 8 1/2"

Top

Are stays fitted with nuts or riveted over

nuts (4 Caulked at shell outside)

Front plate at bottom: Material

Steel

Tensile strength

26/30

Thickness

1"

Lower back plate: Material

Steel

Tensile strength

26/30

Thickness

1"

Pitch of stays at wide water space

14 1/2" x 10"

Are stays fitted with nuts or riveted over

nuts.

Pitch in stays: Material

Steel

Tensile strength

28/32

Pitch at body of stay, or

2 1/2"

Over threads

2 3/4"

No. of threads per inch

6.

Pitch at turned off part, or

1 3/4"

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, or Over threads *2"* ✓

No. of threads per inch *9.*

Tubes: Material *S.D. Steel* External diameter { Plain *3"* ✓ Stay *3"* ✓ Thickness { *8 lb.* ✓ *5/16" + 3/8"* No. of threads per inch *9.* ✓

Pitch of tubes *4" x 4 1/4"* Manhole compensation: Size of opening in shell plate *20 1/8" x 16 1/8"* ✓ Section of compensating ring *4 1/16" x 1 1/16"* No. of rivets and diameter of rivet holes *32 @ 1 3/8"* ✓

Outer row rivet pitch at ends *10"* Depth of flange if manhole flanged *3 3/4"* ✓ 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 _____

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,

GEORGE CLARK (1938) LTD

Manufacturer.

Dates of Survey { During progress of work in shops - - } *Please see Rpt 4* ✓
while building { During erection on board vessel - - } _____

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

Total No. of visits _____

Is this Boiler a duplicate of a previous case _____ If so, state Vessel's name and Report No. _____

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

These boilers have been constructed under Special Survey in accordance with the approved Plans, Specification & the rules of the Society.

The materials & workmanship are good.

In completion they were tested by hydraulic pressure of 350 lbs. & found tight & sound at that pressure.

These boilers have been despatched to Busutoland for installation on board the vessel.

In recommendation please see Machinery Rpt.

Survey Fee ... £ *See Machinery Rpt.* When applied for, 19

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

J. H. Green.

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

21 SEP 1945

Assigned

see P.B. Rpt.



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