

REPORT ON BOILERS.

Date of writing Report

19

When handed in at Local Office

10 DEC 1945

Port of

Received London Office

12 DEC 1945

Sunderland.

No. in Survey held at
1. Book.

Sunderland

Date, First Survey

Last Survey

1945

"EMPIRE PASSMORE"

(Number of Visits

Gross

974

Net

388

uilt at

Blyth.

By whom built

Blyth S.B. Co Ld.

Yard No.

313

When built

1945.

Engines made at

Sunderland

By whom made

G. Clark (1938) Ld.

Engine No.

1346

When made

1945.

Boilers made at

Sunderland

By whom made

G. Clark (1938) Ld.

Boiler No.

1346

When made

1945.

nominal Horse Power

162.

Owners

Ministry of War Transport.

Port belonging to

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Colville Ld.

(Letter for Record

3.

Total Heating Surface of Boilers

2490 sq

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

28/8/45

No. of Certificate

4605

Can each boiler be worked separately

Yes.

Area of Firegrate in each Boiler

No. and Description of safety valves to each boiler

2 Cockburn Imp' high lift

Area of each set of valves per boiler

per Rule

4.05

as fitted

4.81

Pressure to which they are adjusted

200

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

2'-1"

Is oil fuel carried in the double bottom under boilers

Yes.

Smallest distance between shell of boiler and tank top plating

1'-4 1/2"

Is the bottom of the boiler insulated

Yes.

Largest internal dia. of boilers

11'-6 15/16"

Length

11'-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

and

DR. lap

long. seams

T.R.D.B.S.

Diameter of rivet holes in

circ. seams

1 1/8"

Pitch of rivets

3 1/4"

4 13/16"

Percentage of strength of circ. end seams

plate

60.55

rivets

44.0

Percentage of strength of circ. intermediate seam

plate

85.6

rivets

91.6

Percentage of strength of longitudinal joint

plate

85.6

rivets

89.5

Thickness of butt straps

outer

25/32"

inner

29/32"

No. and Description of Furnaces in each Boiler

Three Corrugated (Brighton)

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"

bottom

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

Leather nuts

Tube plates: Material

front

back

Steel

Tensile strength

26/30

Thickness

1"

25/32"

Mean pitch of stay tubes in nests

8" x 10 5/8"

Pitch across wide water spaces

14"

Girders to combustion chamber tops: Material

Steel

Tensile strength

29/33

Depth and thickness of girder

at centre

11" x 1 1/16"

Length as per Rule

3'-0"

Distance apart

4"

No. and pitch of stays

in each

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 (riveted 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

Main stays: Material

Steel

Tensile strength

28/31

Diameter

At body of stay,

2 1/2"

or

Over threads

2 3/4"

No. of threads per inch

6

Screw stays: Material

Steel

Tensile strength

26/30

Diameter

At turned off part,

1 3/4"

or

Over threads

No. of threads per inch

9



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Are the stays drilled at the outer ends *No.*

No. of threads per inch *9.*

Margin stays: Diameter { At turned off part, *2"*
or
Over threads

Tubes: Material *P.D. Steel* External diameter { Plain *3"*
Stay *3"* Thickness { *8 lbs.*
7/16" 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

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

Number of elements Material of tubes Manufacturers of { Tubes
Steel forgings
Steel castings
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

tubes forgings and castings and after assembly in place Hydraulic test pressure: 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,

GEORGE CLARK (1908) LTD

Manufacturer.

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

Please see Rpt. 4.

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

Total No. of visits

Wm. L. Perry Retained for
Stirling vend.

Is this Boiler a duplicate of a previous case *Yes.* If so, state Vessel's name and Report No. *Empire Pavilion Rpt. 34291*

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 rule of the Society. The materials & workmanship are good. On completion they were tested by hydraulic pressure of 350 lbs. & found tight & sound at that pressure. The boilers have been securely fitted on board the vessel, fitted to burn oil fuel (F.P. above 150°F) Section 20 of the rules has been complied with & the Safety valves adjusted to working pressure in accordance with rule requirements.*

In recommendation please see Machinery Rpt.

Survey Fee ... *See Machinery Rpt.*

Travelling Expenses (if any) £

When applied for, 19

When received, 19

D. J. Kraus

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI. 15 MAR 1946*

Assigned *See F. E. machy. rpt.*