

REPORT ON BOILERS.

No. 34064

17 NOV 1944

Received at London Office

31 OCT 1944

Port of

Sunderland.

Date of writing Report

19

When handed in at Local Office

No. in
Reg. Book.

Surrey held at

Sunderland

Date, First Survey

Last Survey 28 Oct 1944

(Number of Visits)

Gross 7072
Net 4816

on the

"EMPIRE COWDRAY"

Built at

Sunderland

By whom built

Shipbuilding Corp. (Leas Branch)

Yard No.

4

When built

1944.

Engines made at

Glasgow.

By whom made

J. Brown & Co. Ld.

Engine No.

A65

When made

Boilers made at

Sunderland

By whom made

G. Clark (1938) Ld.

Boiler No.

1332

When made

1944.

Nominal Horse Power

Owners

Ministry of War Transport

Port belonging to

Sunderland.

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Messrs Colvilles Ld.

(Letter for Record

S.

Total Heating Surface of Boilers

5446 sq ft

Is forced draught fitted

Yes

Coal or Oil fired

Coal

No. and Description of Boilers

Two cylindrical multitubular return tube marine

Working Pressure

220 lb/sq in

Tested by hydraulic pressure to

380

Date of test

31/3/44

No. of Certificate

4541

Can each boiler be worked separately

Yes.

Area of Firegrate in each Boiler

64 sq ft

No. and Description of safety valves to each boiler

2 - 2 3/4" Imp. High Lift.

Area of each set of valves per boiler

per Rule 7-65

Pressure to which they are adjusted

220 lb/sq in

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

1'-11"

Is oil fuel carried in the double bottom under boilers

No.

Smallest distance between shell of boiler and tank top plating

2'-3"

Is the bottom of the boiler insulated

Yes.

Largest internal dia. of boilers

16'-3"

Length

12'-6" (mean)

Shell plates: Material

Steel

Tensile strength

29/33

Thickness

1 19/32"

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 5/8"

long. seams

1 5/8"

Pitch of rivets

4-23"

11 1/16"

Percentage of strength of circ. end seams

plate

61.5

rivets

48.4

Percentage of strength of circ. intermediate seam

plate

85.3

rivets

Percentage of strength of longitudinal joint

plate

84.2

rivets

88.1

Thickness of butt straps

outer

1 1/4"

inner

1 3/8"

No. and Description of Furnaces in each Boiler

Four Corrugated (Heighten)

Material

Steel

Tensile strength

26/30

Smallest outside diameter

41 5/16"

Length of plain part

top

bottom

Thickness of plates

crowd

2 1/32"

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 1/2"

Pitch of stays

1'-9" x 1'-10"

How are stays secured

Washers and nuts

Tube plates: Material

front

Steel

back

Tensile strength

26/30

Thickness

1 1/32"

13/16"

Mean pitch of stay tubes in nests

10 5/8" x 8 1/4"

Pitch across wide water spaces

14" x 9 1/4"

Girders to combustion chamber tops: Material

Steel

Tensile strength

29/33

Depth and thickness of girder

at centre

10 1/2" x 3 1/4" (2)

Length as per Rule

2'-10 1/16"

Distance apart

9 1/2"

No. and pitch of stays

in each

3 @ 1 3/4"

Combustion chamber plates: Material

Steel

Tensile strength

26/30

Thickness: Sides

3/4"

Back

3/4"

Top

3/4"

Bottom

4/8"

Pitch of stays to ditto: Sides

9 1/2" x 8 1/2"

Back

9 1/2" x 8 1/2"

Top

9 1/2" x 8 1/2"

Are stays fitted with nuts or riveted over

Nuts.

Front plate at bottom: Material

Steel

Tensile strength

26/30

Thickness

1 1/32"

Lower back plate: Material

Steel

Tensile strength

26/30

Thickness

1"

Pitch of stays at wide water space

1'-2 1/4" x 9 1/2"

Are stays fitted with nuts or riveted over

Nuts.

Main stays: Material

Steel

Tensile strength

28/32

Diameter

At body of stay, or over threads

3 1/2"

No. of threads per inch

6

Screw stays: Material

Steel

Tensile strength

26/30

Comb. other stays screwed

Diameter

At turned off part, or over threads

1 3/4"

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, *2"* ✓ or Over threads *2"* ✓
No. of threads per inch *9.* ✓
Tubes: Material *Wrot. iron* External diameter { Plain *3"* ✓ Stay *3"* ✓ Thickness { *8 lb.* ✓ *5/16 + 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 (*In End 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 1/4"* ✓ 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 *N.E.M Smoke tube* Manufacturers of { Tubes *Sluvert & Lloredo.* Steel forgings *Appley Roddingham Steel Co.* Steel castings
Number of elements *124.* ✓ Material of tubes *S.D. Steel* Internal diameter and thickness of tubes *14 1/2" x 2 1/2"* ✓
Material of headers *In Fed Steel* Tensile strength *26/30* Thickness *7/8"* ✓ Can the superheater be shut off and the boiler be worked separately *Yes.* Is a safety valve fitted to every part of the superheater which can be shut off from the boiler *Yes.* ✓
Area of each safety valve *3.14"* ✓ Are the safety valves fitted with easing gear *Yes.* ✓
Pressure to which the safety valves are adjusted *220 lb/ft* - Hydraulic test pressure: tubes *1500 lb/ft* ✓ forgings and castings *660 lb/ft* ✓ and after assembly in place *440 lb/ft* ✓ Are drain cocks or valves fitted to free the superheater from water where necessary *Yes.* ✓
Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with *Yes.* ✓

The foregoing is a correct description,

GEORGE CLARK (1888 LTH)

Manufacturer.

Dates of Survey { During progress of work in shops - - } *Please see Rpt +* 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 - 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 Plan, Specification & the rules of the Society. The materials & workmanship are good. On completion they have been tested by hydraulic pressure of 380 lb/ft. & found tight & sound at that pressure. They have been securely fixed on board the vessel & the Safety valves of boiler & superheater adjusted to working pressure as above in accordance with rule requirements.*

In recommendation please see Machinery Rpt.

Survey Fee ... £ *please see Rpt +* When applied for, 19
Travelling Expenses (if any) £ *see Rpt +* When received, 19

W. H. Rasm.

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 17 NOV 1944

Assigned

See Minute on Rtd. H. Mack Rpt



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