

REPORT ON BOILERS.

No. 34064

17 NOV 1944

Received London Office

Date of writing Report

19

When handed in at Local Office

31 OCT 1944

Port of

Sunderland.

No. in Reg. Book. Survey held at

Sunderland

Date, First Survey

Last Survey 28 Oct 1944

on the

"EMPIRE COWDRAY"

(Number of Visits) Gross 7072
Net 4816

Built at
Engines made at

Sunderland

Glasgow.

By whom built

Shipbuilding Corp. (Leas Branch)

Yard No. 4

When built 1944.

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)

Total Heating Surface of Boilers

5446 sq ft

Is forced draught fitted

Yes

Coal or Oil fired

S.

Coal

No. and Description of Boilers

Two cylindrical multitubular return tube marine

Working Pressure

220 lbs

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
as fitted 11-80

Pressure to which they are adjusted

220 lbs

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

-

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'-0" (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

and

inter.

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

crown

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 5/32"

Pitch of stays

1'-9" x 1'-10"

How are stays secured

Washers

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

1/8"

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" ✓ 3 1/2 ✓ 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 N.E.M. Smoke tube ✓ Manufacturers of { Tubes Sluwa & Clark. ✓ Steel forgings Appleby Nottingham Steel Co. ✓ Steel castings - }
 Number of elements 124. ✓ Material of tubes S.D. Steel ✓ Internal diameter and thickness of tubes 1 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 sq ✓ Are the safety valves fitted with easing gear Yes. ✓
 Pressure to which the safety valves are adjusted 220 lbs/psi ✓ Hydraulic test pressure: tubes 1500 lbs/psi ✓ forgings and castings 600 lbs/psi ✓ and after assembly in place 440 lbs/psi ✓ 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,
 G. GEORGE CLARK (1988 LTD) 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 3000 lbs. & 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

J. H. Kason.
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 17 NOV 1944
 Assigned See Minute on Sla. H. Mack Rpt

