

REPORT ON BOILERS.

No. 32092

Received at London Office

MAY 21 1937

Date of writing Report

When handed in at Local Office

10 May 1937

Port of

Sunderland.

No. in
Reg. Book.

Survey held at

Sunderland.

Date, First Survey

Last Survey

7 May 1937

on the

Steel Screw Steamer "LLANDAFF"

(Number of Visits

Gross

4825

Net

2902

Master

Built at

Sunderland

By whom built

Bartram & Sons Ltd

Yard No.

245

When built

1934

Engines made at

Newcastle-on-Tyne

By whom made

White's Mar. Eng. Co. Ltd

Engine No.

90

When made

1934

Boilers made at

Sunderland

By whom made

G. Clark (1936) Ltd

Boiler No.

1201

When made

1934

Nominal Horse Power

348.

Owners

Kimbene S. S. Co. Ltd

Port belonging to

London.

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

The Steel Company of Scotland.

Total Heating Surface of Boilers

3540 sq. ft.

Is forced draught fitted

Yes.

(Letter for Record

S.

Coal or Oil fired

Coal.

No. and Description of Boilers

Two single ended multitubular marine (Spt.)

Working Pressure

230

Tested by hydraulic pressure to

395.

Date of test

26/2/37

No. of Certificate

4219

Can each boiler be worked separately

Yes.

Area of Firegrate in each Boiler

41.25 sq. ft.

No. and Description of safety valves to each boiler

Two "backburn" High Lift.

Area of each set of valves per boiler

(per Rule

4.6 sq. ft.

as fitted

4.8 sq. ft.

Pressure to which they are adjusted

230

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'-6"

Is oil fuel carried in the double bottom under boilers

No.

Smallest distance between shell of boiler and tank top plating

3'-0"

Is the bottom of the boiler insulated

Yes.

Largest internal dia. of boilers

12'-9 1/32"

Length

11'-6"

Shell plates: Material

Steel

Tensile strength

29/33.

Thickness

1 1/4"

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

F. 1 5/16" A. 1 3/8"

Pitch of rivets

F. 3 3/4" A. 4 1/8"

inter.

9 1/4"

Percentage of strength of circ. end seams

plate

F. 65 B. 66.6

rivets

F. 44.1 B. 44.

Percentage of strength of circ. intermediate seam

plate

85.13

Percentage of strength of longitudinal joint

rivets

92.0

combined

88.9

Working pressure of shell by Rules

231.

Thickness of butt straps

outer

1 1/8"

inner

No. and Description of Furnaces in each Boiler

Three Corrugated (Brighton).

Material

Steel

Tensile strength

26/30.

Smallest outside diameter

2'-9 1/8"

Length of plain part

top

bottom

Thickness of plates

crown

9/16"

Description of longitudinal joint

welded.

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

Working pressure of furnace by Rules

240.

End plates in steam space: Material

Steel

Tensile strength

26/30.

Thickness

1 5/16"

Pitch of stays

19" x 18"

How are stays secured

Leakable nuts.

Working pressure by Rules

235.

Tube plates: Material

front

Steel

Tensile strength

26/30.

Thickness

1 1/16"

Pitch of stays

24/32"

Working pressure

front

580 h.v. 310

Mean pitch of stay tubes in nests

9 3/8" x 4 1/2"

Pitch across wide water spaces

14"

Working pressure

back

365.

Girders to combustion chamber tops: Material

Steel

Tensile strength

29/33.

Depth and thickness of girder

9 3/8"

No. and pitch of stays

3 @ 8 1/4"

at centre

9 3/4" x 1 3/4"

Length as per Rule

2'-11"

Distance apart

9 3/8"

in each

3 @ 8 1/4"

Working pressure by Rules

233

Combustion chamber plates: Material

Steel.

Tensile strength

26/30.

Thickness: Sides

2 3/32"

Back

3/4"

Top

2 3/32"

Bottom

1/8"

Are stays fitted with nuts or riveted over

nuts.

Pitch of stays to ditto: Sides

9" x 8 5/8"

Back

8 1/2" x 8 5/8"

Top

8 1/4" x 9 3/8"

Working pressure by Rules

232, 269, 233.

Front plate at bottom: Material

Steel

Tensile strength

26/30.

Thickness

1 1/16"

Lower back plate: Material

Steel

Tensile strength

26/30.

Thickness

1 1/16"

Pitch of stays at wide water space

14 1/2" x 15 3/4" x 8 5/8"

Are stays fitted with nuts or riveted over

nuts.

Working Pressure

288.

Main stays: Material

Steel

Tensile strength

28/32.

Diameter

At body of stay,

2 7/8"

3"

No. of threads per inch

6.

Area supported by each stay

18 1/2" x 18"

Over threads

3 1/4"

3 3/8"

Working pressure by Rules

246, 234

Screw stays: Material

Steel

Tensile strength

26/30.

Diameter

At turned off part,

1 3/4"

No. of threads per inch

9.

Area supported by each stay

8 3/8" x 9"

Over threads

1 3/4"

8 5/8" x 8 1/2"

8 5/8" x 8 1/2"

8 5/8" x 8 1/2"

8 5/8" x 8 1/2"

8 5/8" x 8 1/2"

8 5/8" x 8 1/2"

8 5/8" x 8 1/2"

8 5/8" x 8 1/2"

8 5/8" x 8 1/2"

8 5/8" x 8 1/2"

8 5/8" x 8 1/2"

8 5/8" x 8 1/2"

8 5/8" x 8 1/2"

8 5/8" x 8 1/2"

002427-002434-0065

Lloyd's Register
Foundation

PILLAR
Centre
Stiffer
Platin
STRINGE
Upper
String
Thick
in v
Thick
in v
If She
Second
String
STR
FLAT PLAT
I
BOTTOM PI
of Strake
BILGE PLAT
Strakes
SIDE PLAT
Strakes
UPPER DE
strake in
UPPER DE
strake in
STRAKE BE
strake in
STRAKE BE
strake in
POOP SIDE
BRIDGE SID
FOREC'TLE S
Total No.
MIDSHIP
COLLISIO
AFTER P
STEEL.

Working pressure by Rules 233. Are the stays drilled at the outer ends *no.* Margin stays: Diameter { At turned off part, *1 1/8"* Over threads *2"* No. of threads per inch *9.* Area supported by each stay *11" x 8 5/8"* Working pressure by Rules *261.* Tubes: Material *S.D. Steel* External diameter { Plain *2 1/2"* Stay *2 1/2"* Thickness { *5/16"* *3/8"* *13/32"* No. of threads per inch *9.* Pitch of tubes *3 3/4" x 3 7/8"* Working pressure by Rules 232. Manhole compensation: Size of opening *none.* shell plate *(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"* 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 *✓* Working pressure by Rules *✓* Thickness of crown *✓* No. and diameter stays *✓* Inner radius of crown *✓* Working pressure by Rules *✓* 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 *"Sudden Combustion Chamber"* Manufacturers of Tubes *(Manchester Lst.)* Number of elements *20* Material of tubes *S.D. Steel* Internal diameter and thickness of tubes *1 3/8" x 9 LG.* Material of headers *Forged Steel* Tensile strength *✓* Thickness *✓* Can the superheater be shut off from the boiler *Yes.* 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.* Rules *230 lbs/sq"* Pressure to which the safety valves are adjusted *230 lbs/sq"* Working pressure as tested by hydraulic test pressure *500 lbs/sq"* tubes *1000 lbs/sq"* castings *690 lbs/sq"* and after assembly in place *500 lbs/sq"* 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,
H. H. H. H. H. Manufacturer
Dates of Survey { During progress of work in shops - - - *Please see Mech. Rpt.* Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) *Yes.* while building { During erection on board vessel - - - *✓* Total No. of visits *✓*

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 & the Rules of the Society. The materials & workmanship are good. On completion the boilers were tested by hydraulic pressure in accordance with the Rules & found tight & sound. The boilers have been securely fixed on board the vessel, & examined under steam, safety valves of boilers & superheaters adjusted to working pressure & accumulation test carried out satisfactorily.
For recommendation please see Mech. Rpt.

Survey Fee ... *Charged on Mech. Rpt.* When applied for, 192
Travelling Expenses (if any) *£* When received, 192
J. H. H. H.
Engineer Surveyor to Lloyd's Register of Shipping.
Committee's Minute *TUE 25 MAY 1937*
Assigned *See Std J.E. 22092*