

REPORT ON BOILERS.

No. 31892

Date of writing Report

192

When handed in at Local Office

24 AUG. 1936

Received at London Office

25 AUG 1936

Port of

Sunderland.

No. in
Reg. Book.

Survey held at

Sunderland.

Date, First Survey

19 Mar

Last Survey

21 Aug 1936

on the

S.S. ST "MARGARET"

(Number of Visits

56)

(Gross

4312

Tons

Net

2604

Master

Built at

Sunderland.

By whom built

J.P. Thompson & Co. Ld.

Yard No.

544.

When built

1936

Engines made at

Hoburn & Dyne

By whom made

White's Mar. Eng. Co. Ld.

Engine No.

C5

When made

1936.

Boilers made at

Sunderland

By whom made

G. Black (1936) Ld.

Boiler No.

1194

When made

1936.

Nominal Horse Power

304

Owners

St. Quentin Shipping Co. Ld.

Port belonging to

Newport.

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Colville's Ld.

Total Heating Surface of Boilers

3430 sq ft

Is forced draught fitted

Yes.

(Letter for Record

S. ✓)

No. and Description of Boilers

Two single ended multitubular marine

Coal or Oil fired

Both ✓

Tested by hydraulic pressure to

395 lb

Date of test

10/4/36

No. of Certificate

4184

Working Pressure

230 ✓

Area of Firegrate in each Boiler

38 sq ft

No. and Description of safety valves to each boiler

Two "Bockburn" High Lift.

Area of each set of valves per boiler

per Rule

4.450"

as fitted

4.80"

Pressure to which they are adjusted

230 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

woodwork

9'-0"

Is oil fuel carried in the double bottom under boilers

Yes.

Smallest distance between shell of boiler and tank top plating

2'-0"

Is the bottom of the boiler insulated

Yes.

Largest internal dia. of boilers

12'-10 1/16"

Length

11'-6"

Shell plates: Material

Steel

Tensile strength

29/33

Thickness

1 5/16"

Are the shell plates welded or flanged

no.

Description of riveting: circ. seams

D.R. Lap.

long. seams

T.R.D.B.S.

Diameter of rivet holes in

circ. seams

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

long. seams

1 3/8"

Pitch of rivets

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

Percentage of strength of circ. end seams

plate

B. 66.6 F. 65.4

rivets

B. 43.5 F. 43.4

Percentage of strength of circ. intermediate seam

plate

85.13

rivets

Percentage of strength of longitudinal joint

plate

90.8

rivets

88.6

Working pressure of shell by Rules

232.

Thickness of butt straps

outer

1"

inner

1 1/8"

No. and Description of Furnaces in each Boiler

Three corrugated (Brighton).

Material

Steel

Tensile strength

26/30

Smallest outside diameter

2'-11 3/8"

Length of plain part

top

bottom

Thickness of plates

crown

9/16"

Description of longitudinal joint

weld.

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

Working pressure of furnace by Rules

231

End plates in steam space: Material

Steel

Tensile strength

26/30

Thickness

1 1/32"

Pitch of stays

22" x 18"

How are stays secured

Double nuts.

Working pressure by Rules

230.

Tube plates: Material

Steel

Tensile strength

26/30.

Thickness

1 1/16"

Mean pitch of stay tubes in nests

9 3/8" x 4 1/2"

Pitch across wide water spaces

13 1/2"

Working pressure

front

580 W.W.S. 336.

back

365

Girders to combustion chamber tops: Material

Steel

Tensile strength

29/33

Depth and thickness of girder

at centre

8 5/8" x 1 3/4"

Length as per Rule

2'-9"

Distance apart

8 1/4"

No. and pitch of stays

in each

3 @ 1 3/4"

Working pressure by Rules

232

Combustion chamber plates: Material

Steel

Tensile strength

26/30

Thickness: Sides

23/32"

Back

3/4"

Top

23/32"

Bottom

7/8"

Pitch of stays to ditto: Sides

9 1/4" x 8"

Back

C. 8 1/2" x 8 3/4"

Top

8" x 8 1/4"

Are stays fitted with nuts or riveted over

nuts.

Working pressure by Rules

245, 254

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 1/32"

Pitch of stays at wide water space

14 1/2"

Are stays fitted with nuts or riveted over

nuts.

Working Pressure

294.

Main stays: Material

Steel

Tensile strength

28/32.

Diameter

At body of stay,

3 1/4" 3"

or

3 5/8" 3 3/8"

No. of threads per inch

6.

Area supported by each stay

21" x 18 1/2"

Working pressure by Rules

234, 240

Screw stays: Material

Steel

Tensile strength

26/30.

Diameter

At turned off part,

1 3/4" 1 1/8" 2" 2 1/4"

or

1 3/4" 1 1/8" 2" 2 1/4"

No. of threads per inch

9.

Area supported by each stay

8 5/8" x 9"

11 3/4" x 9"

W116-0178

Working pressure by Rules **245, 232** Are the stays drilled at the outer ends **no.** Margin stays: Diameter { At turned off part, Over threads **1 1/8", 2", 2 1/4"**

No. of threads per inch **9.** Area supported by each stay **82" 103" 141"** Working pressure by Rules **232, 240, 230.**

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 5/8"** Working pressure by Rules **238.** Manhole compensation: Size of opening in 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 1/8"** 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 of 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 **"Combustion Chamber" (Superheater Co. Ltd.)** Manufacturers of Tubes **see Manchester Cent.**

Number of elements **40.** Material of tubes **S.D. Steel** Internal diameter and thickness of tubes **1 1/8" x 10 G.W.**

Material of headers **Forged Steel** Tensile strength **✓** Thickness **✓** 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.** Working pressure as per Rules **✓** Pressure to which the safety valves are adjusted **230 lbs** Hydraulic test pressure: tubes (Manchester) castings **690 lbs/sq"** and after assembly in place **460 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,
FOR GEORGE CLARK (1936) LTD. Manufacturer.

Dates of Survey { During progress of work in shops - - } **Please see Rpt. H.** Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) **Retained for Dist. Ship.**

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 and have been fitted to burn oil fuel (F.P. about 150° Fah).

Section 20 of the Rules has been complied with, main and superheat safety valves adjusted to working pressure and accumulation test carried out satisfactorily.

For recommendation please see Mach. Rpt.

Survey Fee ... **charged on Mach. Report!** When applied for, 192

Travelling Expenses (if any) £ ... When received, 192

J. H. Fraser & M. Caldwell
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **FRI. 28 AUG 1936**

Assigned **See Std. J.E. 31892**