

Rpt. 5a.

REPORT ON BOILERS.

No. 29691

Received at London Office

3 APR 1928

Date of writing Report

192

When handed in at Local Office

2 APR 1928

Port of Sunderland

No. in Survey held at
Reg. Book.

Sunderland

Date, First Survey

Last Survey

M. J. 24 1928

(Number of Visits

Gross 5573

Tons

Net 3353

39984 on the

S. S. "BADJESTAN"

Master

Built at Sunderland

By whom built

Bartram & Sons, L^d

Yard No. 260

When built 1928

Engines made at

Sunderland

By whom made

MacColl & Pollock, L^d

Engine No. 352

When made 1928

Boilers made at

Sunderland

By whom made

MacColl & Pollock, L^d

Boiler No. 352

When made 1928

Nominal Horse Power

415

Owners

Hindustan Steam Shipping Co. L^d

Port belonging to

Newcastle.

MULTITUBULAR BOILERS—MAIN, ~~AUXILIARY~~, OR ~~DONKEY~~.

Manufacturers of Steel

The Steel Company of Scotland Limited

(Letter for Record (S))

Total Heating Surface of Boilers

5801 ft²

Is forced draught fitted

Yes

Coal or Oil fired

Coal

No. and Description of Boilers

Three—Single ended Marine type Corrugated Furnaces. Working Pressure 220 lbs. □

Tested by hydraulic pressure to

380 lbs. □

Dates of tests

P. & C. 16-9-27.

3957.

Nos. of Certificates

3958.

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

46.56 ft²

No. and Description of safety valves to each boiler

Two. Direct Spring loaded. (High Lift)

Area of each set of valves per boiler

(per Rule)

5.14 (1 H.L.)

Pressure to which they are adjusted

225 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

Is oil fuel carried in the double bottom under boilers

No

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

13' 3"

Length 11' 9" (FULL)

Shell plates: Material

Steel

Tensile strength

29 to 33 tons □

Thickness

1 3/32"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end

D. R. Lap.

long. seams

I. R. D. B. S.

Diameter of rivet holes in

circ. seams

1 5/16"

Pitch of rivets

3 7/8"

Percentage of strength of circ. end seams

plate

66.12

rivets

43.23

Percentage of strength of circ. intermediate seam

plate

85.23

rivets

Percentage of strength of longitudinal joint

plate

92.6

rivets

89.0

Working pressure of shell by Rules

220.5 lbs. □

Thickness of butt straps

outer

1 1/16"

inner

1 1/8"

No. and Description of Furnaces in each Boiler

Three—Corrugated—Deighton type.

Material

Steel

Tensile strength

26 to 30 tons □

Smallest outside diameter

3' 2 7/16"

Length of plain part

top

✓

bottom

✓

Thickness of plates

crown

19"

bottom

32"

Description of longitudinal joint

Welded

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

Working pressure of furnace by Rules

224 lbs. □

End plates in steam space: Material

Steel

Tensile strength

26 to 30 tons □

Thickness

1 3/16"

Pitch of stays

17 1/2" x 16 1/2"

How are stays secured

Double Nuts & Washers outside.

Working pressure by Rules

227.2 lbs. □

Tube plates: Material

front

Steel

back

Steel

Tensile strength

26 to 30 tons □

Thickness

27/32"

Mean pitch of stay tubes in nests

10.593"

Pitch across wide water spaces

14"

Working pressure

front 229.4 lbs. □

back 229.1 lbs. □

Girders to combustion chamber tops: Material

Steel

Tensile strength

26 to 30 tons □

Depth and thickness of girder

at centre

9 1/4" x 1 7/8"

Length as per Rule

34.375"

Distance apart

8 3/4"

No. and pitch of stays

in each

3 x 8 1/8"

Working pressure by Rules

224 lbs. □

Combustion chamber plates: Material

Steel

Tensile strength

26 to 30 tons □

Thickness: Sides

23/32"

Back

3/4"

Top

11/16"

Bottom

32"

Pitch of stays to ditto: Sides

9 7/8" x 8 1/8"

Back

Wings 9 1/2" x 8 1/8"

Top

8 3/4" x 8 1/8"

Are stays fitted with nuts or riveted over

Fitted with nuts.

Working pressure by Rules

Sides 222 lbs. □

Back 276 lbs. □

Wings 241 lbs. □

Tops 232 lbs. □

Front plate at bottom: Material

Steel

Tensile strength

26 to 30 tons □

Thickness

15/16"

Lower back plate: Material

Steel

Tensile strength

26 to 30 tons □

Thickness

27/32"

Pitch of stays at wide water space

13 7/16" x 8 5/8"

Are stays fitted with nuts or riveted over

Fitted with nuts.

Working Pressure

228 lbs. □

Main stays: Material

Steel

Tensile strength

28 to 32 tons □

Diameter

At body of stay,

3" & 2 5/8"

Over threads

No. of threads per inch

6

Area supported by each stay

288.75 □

217.25 □

Working pressure by Rules

232.8 lbs. □ & 228 lbs. □

Screw stays: Material

Steel

Tensile strength

26 to 30 tons □

Diameter

At turned off part,

1 5/8" & 1 3/4"

Over threads

No. of threads per inch

9

Area supported by each stay

Side 80.25 □

C. Back 70.625 □

W. Back 82 □

Tops 71.125 □

005480-005488-0050

Sides 226 lbs 0"
Backs 239 lbs 0"
Tops 255 lbs 0"

Working pressure by Rules *228 lbs 0"* Are the stays drilled at the outer ends *No* Margin stays: Diameter { At turned off part, *1 7/8"* or Over threads

No. of threads per inch *9* Area supported by each stay *93.60"* Working pressure by Rules *228 lbs 0"*

Tubes: Material *Wrought Iron* External diameter { Plain *3"* Stay *3"* Thickness { *7.4.6.* No. of threads per inch *9*

Pitch of tubes *4 1/16" x 4 1/8"* Working pressure by Rules *228 lbs 0"* Manhole compensation: Size of opening *32 @ 1 3/8" Dia.*

shell plate *16" x 12"* Section of compensating ring *8" x 10 1/16" x 1 9/32"* No. of rivets and diameter of rivet holes *32 @ 1 3/8" Dia.*

Outer row rivet pitch at ends *9 5/16"* Depth of flange if manhole flanged *✓* Steam Dome: Material *✓*

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 *Smoke tube type made by the Superheater Manufacturers of* Tubes *The Superheater Co. Ltd.*

Number of elements *94* Material of tubes *Solid Drawn Steel* Steel castings *The Superheater Co. Ltd.*

Material of headers *Forged Steel* Tensile strength *26 to 30 tons 0"* Thickness *1" (min)* Can the superheater be shut off and the boiler be worked separately *Yes*

Area of each safety valve *1.7671 sq ins* Are the safety valves fitted with easing gear *yes* Working pressure as per Rules *220 lbs 0"*

Pressure to which the safety valves are adjusted *228 lbs 0"* Hydraulic test pressure: Tested tubes *1250 lbs 0" (at maker's works)* and after assembly in place *450 lbs 0"*

Are drain cocks or valves fitted to free the superheater from water where necessary *yes*

Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with *yes.*

The foregoing is a correct description,
PER PRO MACCOLL & POLLOCK LTD.

JH Delling
Manufacturer.

Dates of Survey { During progress of work in shops - - - *Please see Machinery Report* 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

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)

The Materials and workmanship are good.

The Boilers have been constructed under Special Survey, and satisfactorily fitted in the vessel.

For notation see Machinery Report.

Survey Fee ... £ *Please see Machinery Report* When applied for, 192

Travelling Expenses (if any) £ *Please see Machinery Report* When received, 192

A. T. Griffith.
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *WED. 11 APR 1928*

Assigned *See Minute on Sld Rpt 29691 attached*