

REPORT ON BOILERS.

No. 29637

Received at London Office 13 FEB 1928

Date of writing Report

192

When handed in at Local Office

192

Port of

Sunderland

No. in Survey held at
eg. Book.

Sunderland

Date, First Survey

Last Survey

4th Feb 1928

2764 on the

I. S. S. "SAN CASTO"

(Number of Visits

Tons

Gross 2450

Net 1250

Master

Built at Sunderland

By whom built

J. L. Thompson & Sons Ltd

Yard No. 559

When built 1928

Engines made at

Sunderland

By whom made

MacColl & Pollock Ltd

Engine No. 360

When made 1928

Boilers made at

Sunderland

By whom made

MacColl & Pollock Ltd

Boiler No. 360

When made 1928

Nominal Horse Power

217

Owners

Anglo-Mexican Petroleum Co. Ltd

Port belonging to

London

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Messrs The Steel Company of Scotland Limited

(Letter for Record (S))

Total Heating Surface of Boilers

4209 sq ft

Is forced draught fitted

No

Coal or Oil fired

Oil fired

No. and Description of Boilers

Two - Single ended Marine type, corrugated furnaces.

Working Pressure 180 lbs sq in

Tested by hydraulic pressure to

320 lbs sq in

Dates of tests

6.12.27.

12.12.27.

Nos of Certificate

3970

3971

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

Oil fired

No. and Description of safety valves to each boiler

Two - Direct Spring loaded.

Area of each set of valves per boiler

per Rule

16.19 sq in

as fitted

16.59 sq in

Pressure to which they are adjusted

185 lbs 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

Yes

Smallest distance between boilers

on uptakes and bunkers on woodwork

3' 6"

Is oil fuel carried in the double bottom under boilers

Yes

Smallest distance between shell of boiler and

top plating

1' 3"

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boilers

14' 6 5/8"

Length

11' 6" (FULL)

Shell plates: Material

Steel

Tensile strength

28 1/2 to 32 1/2 tons sq in

Thickness

1 3/16"

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 1/4"

long. seams

1 1/4"

Pitch of rivets

3 3/8"

8.571"

Percentage of strength of circ. end seams

plate

67.74

rivets

43.04

Percentage of strength of circ. intermediate seam

plate

85.42

rivets

Percentage of strength of longitudinal joint

plate

85.42

rivets

91.2

combined

89.0

Working pressure of shell by Rules

182.6 lbs sq in

Thickness of butt straps

outer

1"

inner

1 1/8"

No. and Description of Furnaces in each Boiler

Three - corrugated. Dighton type.

Material

Steel

Tensile strength

26 to 30 tons sq in

Smallest outside diameter

3' 6 9/16"

Length of plain part

top

1"

bottom

1"

Thickness of plates

crown

1 1/2"

bottom

1 3/32"

Description of longitudinal joint

Welded.

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

Yes

Working pressure of furnace by Rules

180.4 lbs sq in

End plates in steam space: Material

Steel

Tensile strength

26 to 30 tons sq in

Thickness

1 1/4"

Pitch of stays

20" x 20 1/4"

How are stays secured

Double Nuts & Washers outside

Working pressure by Rules

180.3 lbs sq in

Side plates: Material

front

Steel

back

Steel

Tensile strength

26 to 30 tons sq in

Thickness

27 3/32"

25 3/32"

Mean pitch of stay tubes in nests

10.59"

Pitch across wide water spaces

14"

Working pressure

front 184.5 lbs sq in (W.W. space)

back 195 lbs sq in

Orders to combustion chamber tops: Material

Steel

Tensile strength

28 to 32 tons sq in

Depth and thickness of girder

centre

7 5/8" x 1 5/8"

Length as per Rule

32.56"

Distance apart

8 1/4"

No. and pitch of stays

each

2 @ 10 3/16"

Working pressure by Rules

185 lbs sq in

Combustion chamber plates: Material

Steel

Tensile strength

26 to 30 tons

Thickness: Sides

1 1/16"

Back

2 1/32"

Top

1 1/16"

Bottom

1 1/16"

Pitch of stays to ditto: Sides

10 3/16" x 8 1/4"

Back

Wings 9 5/8" x 8 3/4"

Top

10 3/16" x 8 1/4"

Are stays fitted with nuts or riveted over

Fitted with nuts.

Working pressure by Rules

Sides & tops 192 lbs sq in

Centre Back 185 lbs sq in

Wings Back 182 lbs sq in

Front plate at bottom: Material

Steel

Tensile strength

26 to 30 tons sq in

Thickness

13 1/16"

Pitch of stays at wide water space

14" x 8 1/2"

Are stays fitted with nuts or riveted over

Fitted with nuts

Working Pressure

200 lbs sq in

Main stays: Material

Steel

Tensile strength

28 to 32 tons sq in

Diameter

At body of stay,

or

3 1/8" & 3"

No. of threads per inch

6

Area supported by each stay

405 sq in

Working pressure by Rules

182 lbs sq in

Screw stays: Material

Steel

Tensile strength

26 to 30 tons sq in

Diameter

At turned off part,

or

1 5/8" & 1 3/4"

No. of threads per inch

9

Area supported by each stay

Sides 84.10 sq in

Backs 81.75 sq in

Working pressure by Rules *180.8 lbs/sq* Are the stays drilled at the outer ends *No* Margin stays: Diameter { At turned off part, *1 7/8* " 1 3/4" By 1 1/2" or Over threads

No. of threads per inch *9* Area supported by each stay *119 sq* Working pressure by Rules *180.8 lbs/sq*

Tubes: Material *Wrought Iron* External diameter { Plain *3* " Stay *3* " Thickness { *5/16* " 9. W. L. No. of threads per inch *9*

Pitch of tubes *4 1/8" x 4 5/16"* Working pressure by Rules *Stay Tubes 190 lbs/sq* Manhole compensation: Size of opening

shell plate *16" x 12"* Section of compensating ring *6 1/2" x 8 3/4" x 1 3/16"* No. of rivets and diameter of rivet holes *32 @ 1 1/4" dia.*

Outer row rivet pitch at ends *8.571" (min)* Depth of flange if manhole flanged

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 Manufacturers of { Tubes Steel Castings

Number of elements Material of tubes Internal diameter and thickness of tubes

Material of headers Tensile strength Thickness Can the superheater be shut off and the boiler be worked separately

Is a safety valve fitted to every part of the superheater which can be shut off from the boiler

Area of each safety valve Are the safety valves fitted with easing gear Working pressure as per Rules

Pressure to which the safety valves are adjusted Hydraulic test pressure

tubes, castings and after assembly in place Are drain cocks or valves fitted to free the superheater from water where necessary

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

Manufacturer

Dates of Survey { During progress of work in shops - - - *Please see M. chg. 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 £ *Charged on Machinery Report* When applied for, 192

Travelling Expenses (if any) £ When received, 192

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

Committee's Minute

FRI. 17 FEB 1928

Assigned

See pt. of M. attached



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Lloyd's Register
Foundation