

REPORT ON BOILERS.

No. 87354

15 JUL 1931

Received at London Office

Date of writing Report

1921 When handed in at Local Office

1171 31

Port of Newcastle-on-Tyne

No. in Reg. Book

Wallsend-on-Tyne

Date, First Survey

11 Nov 1930

Last Survey

8 July 1931

1931

on the

New Steel S.S. Pan Bolivar

(Number of Visits)

Gross 9320
Net 5718
Tons

Master

Built at

Wallsend

By whom built

Swan Hunter W & Co Ltd

Yard No.

1465

When built

1931

Engines made at

Wallsend

By whom made

Wallsend Slipway & Co Ltd

Engine No.

906

When made

1931

Boilers made at

Wallsend

By whom made

Wallsend Slipway & Co Ltd

Boiler No.

906

When made

1931

Nominal Horse Power

413

Owners

Pan American Petroleum Transport Co Ltd

Port belonging to

Los Angeles

MULTITUBULAR BOILERS - MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

The Steel Company of Scotland Ltd

(Letter for Record

S.

Total Heating Surface of Boilers

8640 sq ft

Is forced draught fitted

yes

Coal or Oil fired

oil

No. and Description of Boilers

Three single ended

Working Pressure

220 lbs

Tested by hydraulic pressure to

380 lbs

Date of test

2-2-31

No. of Certificate

545

Can each boiler be worked separately

yes

Area of Firegrate in each Boiler

O.F. only

No. and Description of safety valves to each boiler

Two sprung loaded. High lift.

Area of each set of valves per boiler

per Rule 18-29

as fitted

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

1'-11"

Is oil fuel carried in the double bottom under boilers

yes

Smallest distance between shell of boiler and tank top plating

2'-6"

Is the bottom of the boiler insulated

yes

Largest internal dia. of boilers

16'-2 1/8"

Length

11'-9"

Shell plates: Material

Steel

Tensile strength

30.4 to 35 tons

Thickness

1 9/16"

Are the shell plates welded or flanged

no

Description of riveting: circ. seams

end

T.R.

long. seams

T.R.D. B.S.

Diameter of rivet holes in

circ. seams

1 19/32"

long. seams

Pitch of rivets

4.6 to 5"

11"

Percentage of strength of circ. end seams

plate 64.5

rivets 40.2

Percentage of strength of circ. intermediate seam

plate 85.5

rivets 81.25

Percentage of strength of longitudinal joint

plate 81.25

combined 81.25

Working pressure of shell by Rules

223 lbs

Thickness of butt straps

outer 1 3/16"

inner 1 5/16"

No. and Description of Furnaces in each Boiler

1 corr. (Deighton)

Material

Steel

Tensile strength

26 to 30 tons

Smallest outside diameter

3'-5 1/4"

Length of plain part

top ✓

bottom ✓

Thickness of plates

crown 5/8"

bottom

Description of longitudinal joint

weld

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

none

Working pressure of furnace by Rules

221 lbs

End plates in steam space: Material

Steel

Tensile strength

26 to 30 tons

Thickness

1 1/4"

Pitch of stays

13 1/2" x 19 1/2"

How are stays secured

double nuts

Working pressure by Rules

235 lbs

Tube plates: Material

front Steel

back

Tensile strength

26 to 30 tons

Thickness

1 1/16"

Mean pitch of stay tubes in nests

9.8"

Pitch across wide water spaces

13 3/4" x 8 1/2"

Working pressure

front 232 lbs

back 229 lbs

Girders to combustion chamber tops: Material

Steel

Tensile strength

29 to 33 tons

Depth and thickness of girder

at centre

2 @ 11 3/8" x 3 1/4"

Length as per Rule

2'-10 1/2"

Distance apart

9"

No. and pitch of stays

in each

3 @ 8 1/8"

Working pressure by Rules

225 lbs

Combustion chamber plates: Material

Steel

Tensile strength

26 to 30 tons

Thickness: Sides

1 1/16"

Back

23/32"

Top

1 1/16"

Bottom

1 1/8"

Pitch of stays to ditto: Sides

8 1/8" x 9"

Back

4 3/4" x 4"

Top

8 1/8" x 9"

Are stays fitted with nuts or riveted over

Back stays riveted

Side & margin riveted

Working pressure by Rules

222 lbs

Front plate at bottom: Material

Steel

Tensile strength

26 to 30 tons

Thickness

1"

Lower back plate: Material

Steel

Tensile strength

26 to 30 tons

Thickness

1 1/8"

Pitch of stays at wide water space

14 1/2" x 4 3/4"

Are stays fitted with nuts or riveted over

riveted

nutted (4/7/31)

Working Pressure

470 lbs

Main stays: Material

Steel

Tensile strength

28 to 32 tons

Diameter: At body of stay

3 1/2"

No. of threads per inch

6

Area supported by each stay

302 1/4"

Working pressure by Rules

222 lbs

Screw stays: Material

Steel

Tensile strength

26 to 30 tons

Diameter: At turned off part

1 1/2"

No. of threads per inch

9

Area supported by each stay

54 1/4"



Lloyd's Register Foundation

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Working pressure by Rules **231 lbs** Are the stays drilled at the outer ends **yes** Margin stays: Diameter **1 7/8"**
 No. of threads per inch **9** Area supported by each stay **84.4"** Working pressure by Rules **250 lbs**
 Tubes: Material **S.D. Steel** External diameter **3"** Thickness **3/8 - 5/16 - 1/2"** No. of threads per inch **9**
 Pitch of tubes **4 3/8" x 4 3/8" + 4 1/4" x 4 3/8"** Working pressure by Rules **221 lbs** Manhole compensation: Size of opening in shell plate **16" x 20"** Section of compensating ring **13 1/2" x 1 9/16"** No. of rivets and diameter of rivet holes **36 x 1 19/32"**
 Outer row rivet pitch at ends **11"** Depth of flange if manhole flanged **3 9/16"** Steam Dome: Material **none**
 Tensile strength **2041** Thickness of shell **3/8"** Description of longitudinal joint
 Diameter of rivet holes **3/8"** Pitch of rivets **2 1/2"** Percentage of strength of joint **100%**
 Internal diameter **2 1/2"** Working pressure by Rules **221 lbs** Thickness of crown **3/8"** No. and diameter of stays
 How connected to shell **Welded** Inner radius of crown **3 9/16"** Working pressure by Rules **221 lbs**
 Size of doubling plate under dome **6 1/2"** Diameter of rivet holes and pitch of rivets in outer row in dome connection to shell

Type of Superheater **North Eastern Insketube** Manufacturers of **Weldless Steel Tube Coy Ltd**
 Number of elements **156** Material of tubes **S.D. Steel** Internal diameter and thickness of tubes **1 1/4" x 2 1/8" thro**
 Material of headers **wrot steel** Tensile strength **26 to 30 tons** Thickness **1 3/8"** Can the superheater be shut off and the boiler be worked separately **yes**
 Area of each safety valve **1.4 sq. High Lift** Are the safety valves fitted to every part of the superheater which can be shut off from the boiler **yes**
 Rules **220 lbs** Pressure to which the safety valves are adjusted **225 lbs** Working pressure as per tubes **1500 lbs** and after assembly in place **550 lbs** Hydraulic test pressure: **660 lbs**
 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**

FOR THE WALLSEND SLIPWAY & ENGINEERING CO. LIMITED.
J. M. Pherson GENERAL MANAGER Manufacturer.

Dates of Survey **See Encl Report** Are the approved plans of boiler and superheater forwarded herewith **Yes**
 while building **See Encl Report** (If not state date of approval.)
 Total No. of visits

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)
 These Boilers have been built under Special Survey, Materials & Workmanship good. Hydraulic tests Satisfactory. They have been efficiently installed & fired in place, examined under steam & safety valves adjusted.

Survey Fee ... £ : When applied for, 192
 Travelling Expenses (if any) £ : When received, 192
William Butler
 Engineer-Surveyor to Lloyd's Register of Shipping.

Committee's Minute **TUE. 21 JUL 1931**
 Assigned **See F.C. Rpt.**