

REPORT ON BOILERS.

No. 626

Received at London Office

5 NOV 1927

Date of writing Report

192

When handed in at Local Office

3 Nov

1927

Port of

ROUEN.

No. in Survey held at
Reg. Book.

Rouen.

Date, First Survey 23 Dec 1926

Last Survey 29 Oct

1927.

5138 on the

TWIN SCREW MOTOR VESSEL "ITAPAGE"

(Number of Visits 17)

Gross 4998.
Tons Net 3012.

Master

Built at

Rouen

By whom built

Ch de Normandie Yard No. PS

When built 1927.

Engines made at

Penhoet & Hazaire

By whom made

Ch et Atée de St Hazaire

Engine No. PS

When made 1927

Boilers made at

Penhoet & Hazaire

By whom made

Ch et Atée de St Hazaire

Boiler Nos 1205/6

When made 1927.

Nominal Horse Power

714

Owners

Compagnia Nacional Navegacao Costeira

Port belonging to

Rio de Janeiro

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

See Nts Rpt 1506.

Manufacturers of Steel

U.M.B.L. Ingénier, Longwy and Colville & Son

(Letter for Record

S. ✓

Total Heating Surface of Boilers

198 m² 06

Is forced draught fitted

yes ✓

Coal or Oil fired

oil ✓

No. and Description of Boilers

Two cylindrical multitubular

Working Pressure

180 lb 12.65 K/cm²

Tested by hydraulic pressure to

22.5 K/cm²

Date of test 19.1.26

No. of Certificate

89

Can each boiler be worked separately

yes

Area of Firegrate in each Boiler

O.F.

No. and Description of safety valves to each boiler

2 Spring Load Cockburn Mac Nicoll

Area of each set of valves per boiler

(per Rule

3545 m²

(as fitted

6484 m²

Pressure to which they are adjusted

12.65 K/cm²

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 m 73. ✓

Is oil fuel carried in the double bottom under boilers

yes. ✓

Smallest distance between shell of boiler and tank top plating

457 mm. ✓

Is the bottom of the boiler insulated

yes. ✓

Largest internal dia. of boilers

3.200

Length

3.104

Shell plates: Material

Steel

Tensile strength

49/55 20%

Thickness

22.

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

(end

D.R.

Long. seams

D.B.S. T.R.

Diameter of rivet holes in

(circ. seams

26

(long. seams

26

Pitch of rivets

72.7

152.5

Percentage of strength of circ. end seams

(plate

65.9

(rivets

49.8

Percentage of strength of circ. intermediate seam

(plate

✓

(rivets

✓

Percentage of strength of longitudinal joint

(plate

82.9

(rivets

109.0

(combined

87.7

Working pressure of shell by Rules

13.5 K/cm²

Thickness of butt straps

(outer

18

(inner

21.

No. and Description of Furnaces in each Boiler

2. Brighton corrugated with arcweld

Material

Steel

Tensile strength

41/47 26%.

Smallest outside diameter

926.

Length of plain part

(top

✓

(bottom

Thickness of plates

(crown

13 1/2

(bottom

Description of longitudinal joint

welded.

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

None

Working pressure of furnace by Rules

14.2 K/cm²

End plates in steam space: Material

Steel

Tensile strength

41/47 26%

Thickness

27

Pitch of stays 495 x 360

How are stays secured

Screwed into end plates double nuts & washers outside

Working pressure by Rules

12.65 K/cm²

Tube plates: Material

(front

Steel

(back

Steel

Tensile strength

41/47 26%

Tensile strength

41/47 26%

Thickness

27.

Thickness

20.

Lean pitch of stay tubes in nests

190

Pitch across wide water spaces

370

Working pressure

(front

20.7

(back

23.8

Girders to combustion chamber tops: Material

Steel

Tensile strength

41/47 26%

Depth and thickness of girder

Centre

200 x 36

Length as per Rule

684

Distance apart

250

No. and pitch of stays

Each

2 @ 210

Working pressure by Rules

13.4 K/cm²

Combustion chamber plates: Material

Steel

Tensile strength

41/47

27%

Thickness: Sides

16

Back

16

Top

17

Bottom

16

Pitch of stays to ditto: Sides

210 x 210

Back

235 x 188

Top

250 x 210

Are stays fitted with nuts or riveted over

nuts

Working pressure by Rules

13.3 K/cm²

Front plate at bottom: Material

Steel

Tensile strength

41/47 26%.

Thickness

27.

Lower back plate: Material

Steel

Tensile strength

41/47 26%

Thickness

27.

Pitch of stays at wide water space

360 x 235

Are stays fitted with nuts or riveted over

nuts

Working Pressure

23 K/cm²

Main stays: Material

Steel

Tensile strength

44/50

23%

Diameter

At body of stay,

62

Over threads

✓

No. of threads per inch

6.35

Area supported by each stay

© 1773 cm²

Working pressure by Rules

13 K/cm²

Screw stays: Material

Steel

Tensile strength

41/47

23%.

Diameter

At turned off part,

✓

Over threads

Old 38

margin 46.

No. of threads per inch

10

Area supported by each stay

441 cm²

Comm 50

W1196-0192

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Working pressure by Rules 12.8 K/cm^2 Are the stays drilled at the outer ends *No* Margin stays: Diameter $\left\{ \begin{array}{l} \text{At turned off part} \\ \text{or} \\ \text{Over threads} \end{array} \right. 46.$

No. of threads per inch 10 Area supported by each stay 644 cm^2 Working pressure by Rules 13.8 cm^2

Tubes: Material *Steel* External diameter $\left\{ \begin{array}{l} \text{Plain} \\ \text{Stay} \end{array} \right. 63.5$ Thickness $\left\{ \begin{array}{l} \text{max} \\ \text{and} \end{array} \right. 9.0 \text{ and } 6.0$ No. of threads per inch $10.$

Pitch of tubes 97×93 Working pressure by Rules 12.6 K/cm^2 Manhole compensation: Size of opening in

Shell plate 300×400 Section of compensating ring $900 \times 894 \times 22$ No. of rivets and diameter of rivet holes $66 - 26 \frac{1}{2}$

Outer row rivet pitch at ends 155 Depth of flange if manhole flanged 70 Steam Dome: Material

Tensile strength Thickness of shell Description of longitudinal joint

Diameter of rivet holes Pitch of rivets Percentage of strength of joint $\left\{ \begin{array}{l} \text{Plate} \\ \text{Rivets} \end{array} \right.$

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 Manufacturers of $\left\{ \begin{array}{l} \text{Tubes} \\ \text{Steel castings} \end{array} \right.$

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,

Manufacture

Dates of Survey $\left\{ \begin{array}{l} \text{During progress of} \\ \text{work in shops} - - \end{array} \right.$ Are the approved plans of boiler and superheater forwarded herewith $12.1.25$

while building $\left\{ \begin{array}{l} \text{During erection on} \\ \text{board vessel} - - \end{array} \right.$ Included in *Weekly Report*. Total No. of visits

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

The auxiliary boilers have been specially surveyed during construction. They have been built in accordance with the approved plan and the material used has been made at approved works and tested by the Surveyors to this Society.

They will be eligible in my opinion for notation in the Register Book of suitable ^{date} when fitted on board as required by the Rules.

These Boilers have now been efficiently installed on board, their steam pressure tested hydraulically to 25.3 K/cm^2 and their safety valves adjusted under steam to 12.65 K/cm^2 . Boilers examined under steam and found in order. Compression

Rings *P. Boiler* $PR 9.7 \frac{1}{2} SV 8.7 \frac{1}{2}$ *S. Boiler* $PR 9.6 \frac{1}{2} SV 9.6 \frac{1}{2}$. notation *auxiliary Boilers* 180 LBS.

2 DB

Survey Fee ... *No* : 347; 201 When applied for, 25. 10. 1927

Travelling Expenses (if any) *See Weekly Report* When received, 2. 11. 1927

L. Peskett. R. B. Grier
Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute

FRI. 2 DEC 1927

Assigned

See P.R. rpt attached



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