

REPORT ON BOILERS.

Received at London Office

Date of writing Report **22 - 10 - 1932** When handed in at Local Office **22 - 10 - 1932** Port of **LISBON.** 25 OCT 1932

No. in Survey held at **LISBON.** Date, First Survey **27 - 8 - 31.** Last Survey **22 - 10 - 1932**

67809 on the **Twin Screw Steamer "MOÇAMBIQUE"** (Number of Visits **10**) Tons { Gross **6052** Net **3770**

Master **-** Built at **Glasgow** By whom built **A. Stephen & Sons, Ltd** Yard No. **427** When built **1909**

Engines made at **Glasgow** By whom made **A. Stephen & Sons, Ltd.** Engine No. **427** When made **1909**

Boilers made at **Glasgow** By whom made **A. Stephen & Sons, Ltd.** Boiler No. **427** When made **1909**

Nominal Horse Power **1282** Owners **Cia. Nacional de Navegação.** Port belonging to **LISBON.**

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel **-** (Letter for Record **26-8-31**)

Total Heating Surface of Boilers **11809 sq.ft.** Is forced draught fitted **Yes.** Coal or Oil fired **Coal.**

No. and Description of Boilers **Five Single-ended Return Tube.** Working Pressure **190 lbs.**

Tested by hydraulic pressure to **-** Date of test **-** No. of Certificate **-** Can each boiler be worked separately **Yes.**

Area of Firegrate in each Boiler **57.74** No. and Description of safety valves to each boiler **2 Spring loaded.**

Area of each set of valves per boiler { per Rule **14.4 sq.in.** as fitted **16.6 sq.in.** Pressure to which they are adjusted **190 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 **10"** Is oil fuel carried in the double bottom under boilers **No.**

Smallest distance between shell of boiler and tank top plating **2'-6"** Is the bottom of the boiler insulated **No.**

Largest internal dia. of boilers **14'-9"** Length **11'-7"** Shell plates: Material **Steel.** Tensile strength **28/32 tons.**

Thickness **1 7/16"** Are the shell plates welded or flanged **No.** Description of riveting: circ. seams { end **Double** inter. **Treble**

seams **Treble** Diameter of rivet holes in { circ. seams **1 7/16"** Pitch of rivets { **3 1/2"** long. seams **1 7/16"** **9 1/2"**

Percentage of strength of circ. end seams { plate **59.** rivets **48.5** Percentage of strength of circ. intermediate seam { plate **66.2** rivets **60**

Percentage of strength of longitudinal joint { plate **84.8** rivets **83.7** combined **87.8** Working pressure of shell by Rules **212 lbs per sq.in.**

Thickness of butt straps { outer **(1 3/32"** inner **(1 3/32"** No. and Description of Furnaces in each Boiler **3 Purves Ribbed.**

Material **Steel.** Tensile strength **26/30 tons.** Smallest outside diameter **43 1/8"**

Length of plain part { top **(7'-7 1/4"** Thickness of plates { crown **(19/32"** Description of longitudinal joint **Firewelded**

Dimensions of stiffening rings on furnace or c.c. bottom **-** Working pressure of furnace by Rules **208 lbs per sq.in.**

Head plates in steam space: Material **Steel.** Tensile strength **26/30 tons.** Thickness **1 3/16"** Pitch of stays **18"x 16"**

How are stays secured **Nuts inside and outside.** Working pressure by Rules **210 lbs per sq.in.**

Head plates: Material { front **(Steel.** Tensile strength { **26/30 tons** Thickness { **7/8"** back **(13/16"**

Span pitch of stay tubes in nests **7 1/2" x 7 1/4"** Pitch across wide water spaces **13 1/2"** Working pressure { front **237 lbs per sq.in.** back **237 lbs per sq.in.**

Standards to combustion chamber tops: Material **Steel.** Tensile strength **26/30 tons.** Depth and thickness of girder

centre **8 7/8" x 3/4"** Length as per Rule **21"** Distance apart **8"** No. and pitch of stays

each **Three x 8"** Working pressure by Rules **219 lbs per sq.in.** Combustion chamber plates: Material **Steel**

Tensile strength **26/30 tons.** Thickness: Sides **21/32"** Back **5/8"** Top **21/32"** Bottom **1"**

Pitch of stays to ditto: Sides **8"x 8"** Back **7 1/2" x 7 1/2"** **8" x 8"** Are stays fitted with nuts or riveted over **Nuts.**

Working pressure by Rules **271 lbs** Front plate at bottom: Material **Steel.** Tensile strength **26/30 tons.**

Thickness **3/4"** Lower back plate: Material **Steel.** Tensile strength **26/30 tons.** Thickness **7/8"**

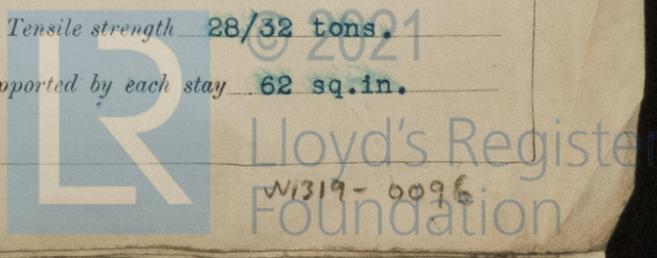
Pitch of stays at wide water space **13.5"** Are stays fitted with nuts or riveted over **Nuts.**

Working Pressure **284 lbs.** Main stays: Material **Steel.** Tensile strength **28/32 tons.**

Diameter { At body of stay, **(3 1/8"** No. of threads per inch **6** Area supported by each stay **288 sq.in.**

Working pressure by Rules **255 lbs.** Screw stays: Material **Steel.** Tensile strength **28/32 tons.**

Diameter { At turned off part, **(1 1/2"** No. of threads per inch **11** Area supported by each stay **62 sq.in.**



Working pressure by Rules 202 lbs Are the stays drilled at the outer ends No. Margin stays: Diameter $\left\{ \begin{array}{l} \text{At turned off part,} \\ \text{or} \\ \text{Over threads} \end{array} \right. \left(\begin{array}{l} 1\ 3/4'' \\ \\ \end{array} \right.$

No. of threads per inch 11 Area supported by each stay 105 sq.in. Working pressure by Rules 173 lbs.

Tubes: Material Steel. External diameter $\left\{ \begin{array}{l} \text{Plain} \\ \text{Stay} \end{array} \right. \left(\begin{array}{l} 2\ 1/2'' \\ \\ \end{array} \right.$ Thickness $\left\{ \begin{array}{l} \text{8 L.S.G.} \\ \text{5/16'', 3/8'', 1/2''} \end{array} \right. \left. \right\}$ No. of threads per inch 11

Pitch of tubes 3 3/4" x 3 7/8" Working pressure by Rules 13 300 lbs per sq.in. Manhole compensation: Size of opening

shell plate 20 1/2" x 16 1/2" oval Section of compensating ring 12 1/2" x 1 1/2" No. of rivets and diameter of rivet holes 32" x 1 1/8"

Outer row rivet pitch at ends 5" Depth of flange if manhole flanged 3 1/4" 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

stays Inner radius of crown Working pressure by Rules

How connected to shell Size of doubling plate under dome Diameter of rivet holes and

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

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

Rules Pressure to which the safety valves are adjusted Hydraulic test press

tubes, castings and after assembly in place Are drain cocks or valves

to free the superheater from water where necessary

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

The foregoing is a correct description,

Manufact

Dates of Survey $\left\{ \begin{array}{l} \text{During progress of} \\ \text{work in shops - -} \\ \text{while} \\ \text{building} \end{array} \right. \left\{ \begin{array}{l} \text{During erection on} \\ \text{board vessel - - -} \end{array} \right.$

Are the approved plans of boiler and superheater forwarded herewith 24-8-3
(If not state date of approval.)

Total No. of visits 10

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

All boilers have been examined internally and externally and all doors and mountings.

All plates carefully examined and found in good condition. Some plates drilled and gauged and scantlings of boilers verified with plan.

The material and workmanship are of good description.

All boilers examined under steam and their safety valves adjusted to 190 lbs. per sq.in.

Survey Fee £	:	:	When applied for,	192
Travelling Expenses (if any) £	:	:	When received,	192

G. J. H. ...
 FRI. 10 FEB 1933
 Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute **FRI. 24 FEB 1933**

Assigned *See F. G. Rpt.* **TUE. 22 AUG 1933**

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