

Inspected at London office 8 MAR 1929

Name of vessel

Name of vessel

13th March 1929

Port of

Cadiz

No. in Survey held at

Vigo

Date, First Survey

February 24/1929

Last Survey

20th February 1929

86420 on the

SINGLE SCR TUG "TORRES GARCIA"

Number of visits

Tons

Master

Built at

Vigo

By whom built

Itijos de J. Barroas SA

Engine No.

When built

1929

Engines made at

Vigo

By whom made

Itijos de J. Barroas SA

Engine No.

When made

Boilers made at

Vigo

By whom made

" " " "

Boiler No.

When made

Nominal Horse Power

63

Owners

Portuguese Government

Port belonging to

Lisbon

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel *Altos Hornos de Vizcaya, Beguin, Glasgow SA de Fabrique de la Carliere* (Letter for Record)

Total Heating Surface of Boilers *1211 sq. ft.* Is forced draught forced *No* Coal or Oil fired *Coal*

No. and Description of Boilers *one multitubular cylindrical* Working Pressure *200 lb.*

Tested by hydraulic pressure to *350 lb.* Date of test *15-11-28* No. of Certificate *104* Can each boiler be worked separately *Yes*

Area of fire grate in each boiler *41 sq. ft.* No. and Description of safety valves to each boiler *2 spring loaded*

Area of each set of valves per boiler *per Rule 9.8 sq. ft.* Pressure to which they are adjusted *205 lb.* 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 or uptakes and bunkers or woodwork *12"* Is oil fuel carried in the double bottom under boilers *No*

Smallest distance between shell of boiler and tank top plating *12"* Is the bottom of the boiler insulated *Yes*

Largest internal dia. of boilers *10'-8 1/2"* Length *10'-4"* Shell plates: Material *Steel* Tensile strength *28-32*

Thickness *1 1/4"* Are the shell plates welded or flanged *No* Description of riveting: *circ. seams* *Double Riveted*

Long. seams *3 R.D. butt straps* Diameter of rivet holes in *circ. seams 1 3/32"* *long. seams 1 3/32"* Pitch of rivets *4 1/2"*

Percentage of strength of circ. end seams *plate 69%* *rivets 46.3%* Percentage of strength of circ. intermediate seam *plate 69%* *rivets 64.0%*

Percentage of strength of longitudinal joint *plate 74%* *combined 91.8%* Working pressure of shell by Rules *215 lb.*

Thickness of butt straps *outer 7/8"* *inner 82"* No. and Description of Furnaces in each Boiler *2 Corrugated Iron*

Material *Steel* Tensile strength *26-30* Smallest outside diameter *37.45"*

Length of plain part *top 63"* *bottom 63"* Thickness of plates *top 63"* *bottom 63"* Description of longitudinal joint *weld*

Dimensions of stiffening rings on furnace or a.c. bottom *Yes* Working pressure of furnace by Rules *243 lb.*

End plates in steam space: Material *Steel* Tensile strength *26-30* Thickness *.98"* Pitch of stays *9.64 x 13.38"*

How are stays secured *into inside and outside* Working pressure by Rules *244 lb.*

Tube plates: Material *front Steel* *back Steel* Tensile strength *26-30* Thickness *.866"*

Mean pitch of stay tubes in nests *8.4"* Pitch across wide water spaces *16.69"* Working pressure *241 lb.*

Girders to combustion chamber tops: Material *Steel* Tensile strength *28-32* Depth and thickness of girder *6.4"*

at centre *6 3/4 x 9 1/4"* Length as per Rule *24 1/8"* Distance apart *6.4"* No. and pitch of stays *20 @ 2.8"*

Tensile strength *26-30* Thickness: Sides *8.5 x 4.4"* Back *8.26 x 8.26"* Top *4.8 x 6.4"* Are stays fitted with nuts or riveted over *Nuts*

Pitch of stays to ditto: Sides *8.5 x 4.4"* Back *8.26 x 8.26"* Top *4.8 x 6.4"* Working pressure by Rules *244 lb.*

Working pressure by Rules *244 lb.* Front plate at bottom: Material *Steel* Tensile strength *26-30*

Thickness *1"* Lower back plate: Material *Steel* Tensile strength *26-30* Thickness *1"*

Pitch of stays at wide water space *25 1/8"* Are stays fitted with nuts or riveted over *Nuts*

Working Pressure *25 1/8"* Main stays: Material *Steel* Tensile strength *28-32*

Diameter *At body of stay 2 5/8"* *Over threads 2 1/8"* No. of threads per inch *6* Area supported by each stay *128.6"*

Working pressure by Rules *383* Screw stays: Material *Steel* Tensile strength *26-30*

Diameter *At turned off part 1 7/8"* *Over threads 1 7/8"* No. of threads per inch *9* Area supported by each stay *883"*

Working pressure by Rules **302 lb.** Are the stays drilled at the outer ends **No.** Margin stays: Diameter { At turned off part, or Over threads **1.875** ✓
No. of threads per inch **9** ✓ Area supported by each stay **8.24 x 12.28** Working pressure by Rules **210 lbs**
Material **Steel** External diameter { Plate **3 1/4** ✓ Thickness { **1.57** ✓ No. of threads per inch **9** ✓
Pitch of stays **8.4" x 8.4"** **4.2 x 4.2** Working pressure by Rules **200 lb.** Manhole compensation: Size of opening in shell plate **19" x 15"** Section of compensating ring **12" x 1 1/8"** ? No. of rivets and diameter of rivet holes **44 @ 1 1/8"**
Outer row rivet pitch at ends **4"** Depth of flange if ~~machined~~ flanged **1 1/4"** Steam Dome: Material **Steel**
Tensile strength **26-30** Thickness of shell **.59"** ✓ Description of longitudinal joint **Weld with cooping straps.**
Diameter of rivet holes **1/8"** Pitch of rivets **3 1/4"** ✓ Percentage of strength of joint { Plate { **40%** Rivets {
Internal diameter **30.315"** ✓ Working pressure by Rules **200 lb.** Thickness of crown **0.59"** No. and diameter of stays **none** ✓ Inner radius of crown **30.315"** ✓ Working pressure by Rules **162 lb.**
How connected to shell **riveted flange** Size of doubling plate under dome **12" diam. Compensating ring 24" x 1"** Diameter of rivet holes and pitch of rivets in outer row in dome connection to shell **1/8" x 4 1/4"** ✓

Type of Superheater **none** Manufacturers of Tubes _____
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 _____
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 drains 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 _____

The foregoing is a correct description,
HIJOS DE J. BARRERAS, S. A. Manufacturer.

Dates of survey **1925** During progress of work in shops **Feb. 24, 25, Apr. 9-10, May 25-26, July 10-12** See the approved plans of boiler and superheater forwarded herewith (If not, give date of approval) **21-8-25**
While building **Jan. 18, 19, Feb. 18, 19, 20** Total No. of visits **19**

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) **This boiler has been constructed with good materials and workmanship, and according to the Rules, it has been securely fitted on board and tested under steam and found satisfactory and eligible in my opinion to be classed**

Survey Fee ... £ **See Machinery** When applied for, **✓** 192
Travelling Expenses (if any) £ **Repair** When received, 192
Thomas Miller
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute
Assigned **See Minute on Cd3 Rpt 1186 attached**