

REPORT ON BOILERS.

No. 10282

Received at London Office 17 AUG 1948

Date of writing Report 28 MAY 1947 When handed in at Local Office 28 MAY 1947 Port of BILBAO

No. in Reg. Book. Survey held at VIGO + SANTANDER Date, First Survey 20 JANUARY 1947 Last Survey 17 DECEMBER 1947

on the S.S. "MINA MARY" (Number of Visits 15) Gross 392 Tons Net 251

Master Built at GIRON By whom built ASTILLEROS G. RIERA Yard No. 9 When built 1947

Engines made at SANTANDER By whom made VIUÑA DE MARTIN MARTIN Engine No. 16 When made 1947

Boilers made at VIGO By whom made MA. ENRIQUE LORENZO + CO Boiler No. 646 When made 1947

Nominal Horse Power 37.2 Owners NICANOR NOVAL HEVIA Port belonging to SANTANDER

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel ALTOS HORNOS DE VIZCAYA BILBAO + SAGUNTO (Letter for Record S)

Total Heating Surface of Boilers 75 MS² = 807 Is forced draught fitted NO Coal or Oil fired COAL

No. and Description of Boilers ONE SCOTCH TYPE SINGLE ENDED Working Pressure 180 kg/cm²

Tested by hydraulic pressure to 22.5 kg/cm² Date of test 9-7-47 No. of Certificate 168 Can each boiler be worked separately

Area of Firegrate in each Boiler 2.7 MS² No. and Description of safety valves to each boiler 2 SPRINGS LOADED UP 50% EACH

Area of each set of valves per boiler {per Rule 3302 as fitted 3925 Pressure to which they are adjusted 180 kg/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 400 mm Is oil fuel carried in the double bottom under boilers NO

Smallest distance between shell of boiler and tank top plating NO DOUBLE BOTTOM UNDER Is the bottom of the boiler insulated NO

Largest internal dia. of boilers 2.856 MS Length 2.650 MS Shell plates: Material S.M. STEEL Tensile strength 44-55 kg/cm²

Thickness 22 mm Are the shell plates welded or flanged NONE Description of riveting: circ. seams {end 2 R.B.L. inter. 80 mm

long. seams 3 R.B.S. Diameter of rivet holes in {circ. seams 24.2 mm long. seams 24.2 mm Pitch of rivets {80 mm 172 mm

Percentage of strength of circ. end seams {plate 69.9% rivets 78.4% Percentage of strength of circ. intermediate seam {plate 93.9% rivets 90.7%

Percentage of strength of longitudinal joint {plate 93.9% rivets 90.7% combined Working pressure of shell by Rules 14.5 kg/cm²

Thickness of butt straps {outer 22 mm inner 22 mm No. and Description of Furnaces in each Boiler 2 CORRUGATED HORIZONTAL TYPE

Material STEEL Tensile strength 41-47 kg/cm² Smallest outside diameter 400 mm

Length of plain part {top 206 mm bottom 206 mm Thickness of plates {crown 18 mm bottom 18 mm Description of longitudinal joint

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 13.2 kg/cm²

End plates in steam space: Material S.M. STEEL Tensile strength 41-47 kg/cm² Thickness 22 mm Pitch of stays 400 x 280 mm

How are stays secured BY NUTS OUT + INSIDE + WASHERS Working pressure by Rules 13.2 kg/cm²

Tube plates: Material {front S.M. STEEL back S.M. STEEL Tensile strength {41-47 kg/cm² Thickness {22 mm 22 mm

Mean pitch of stay tubes in nests 206 x 206 mm Pitch across wide water spaces 300 x 206 mm Working pressure {front 19.8 kg/cm² back 19.8 kg/cm²

Girders to combustion chamber tops: Material S.M. STEEL Tensile strength 44-55 kg/cm² Depth and thickness of girder

at centre 206 x 150 x 15 mm Length as per Rule 513 mm Distance apart 200 mm No. and pitch of stays

each ONE Working pressure by Rules 14.5 kg/cm² Combustion chamber plates: Material S.M. STEEL

Tensile strength 41-47 kg/cm² Thickness: Sides 18 mm Back 18 mm Top 18 mm Bottom 18 mm

Pitch of stays to ditto: Sides 190 x 294 mm Back 210 x 220 mm Top 200 x 294 mm Are stays fitted with nuts or riveted over NUTS + WASHERS

Working pressure by Rules 12.7 kg/cm² Front plate at bottom: Material S.M. STEEL Tensile strength 41-47 kg/cm²

Thickness 22 mm Lower back plate: Material S.M. STEEL Tensile strength 41-47 kg/cm² Thickness 22 mm

Pitch of stays at wide water space 206 x 210 mm Are stays fitted with nuts or riveted over NUTS + WASHERS

Working Pressure 30 kg/cm² Main stays: Material S.M. STEEL Tensile strength 44-55 kg/cm²

Diameter {At body of stay, or Over threads 2 3/8" = 63.5 mm No. of threads per inch 6 Area supported by each stay 400 x 280 mm

Working pressure by Rules 18 kg/cm² Screw stays: Material S.M. STEEL Tensile strength 41-47 kg/cm²

Diameter {At turned off part, or Over threads 1 5/8" = 41.2 mm No. of threads per inch 9 Area supported by each stay 220 x 220 mm

End
27/8/48

Working pressure by Rules 14.2 Kg/cm^2 Are the stays drilled at the outer ends NO ✓ Margin stays: Diameter { At turned off part, or Over threads $15/8" = 41.2 \text{ mm}$ ✓
No. of threads per inch 9 ✓ Area supported by each stay $210 \times 250 \text{ mm}$ ✓ Working pressure by Rules 13.01 Kg/cm^2 ✓
Tubes: Material S.M. STEEL ✓ External diameter { Plain 76 mm ✓ Stay 80 mm ✓ Thickness { 3.65 mm ✓ 6 mm ALL ✓ No. of threads per inch 9 ✓
Pitch of tubes $206 \times 206 \text{ mm}$ ✓ Working pressure by Rules 15.6 Kg/cm^2 ✓ Manhole compensation: Size of opening in shell plate $475 \times 376 \text{ mm}$ ✓ Section of compensating ring $22 \times 449 \text{ mm}$ ✓ No. of rivets and diameter of rivet holes 40 of 24 mm ✓
Outer row rivet pitch at ends 115 mm ✓ Depth of flange if manhole flanged 70 mm ✓ Steam Dome: Material STEEL ✓
Tensile strength 41-47 Kg/cm}^2 ✓ Thickness of shell 14 mm ✓ Description of longitudinal joint D.R.B.L. ✓
Diameter of rivet holes 22.2 mm ✓ Pitch of rivets 72 mm ✓ Percentage of strength of joint { Plate 69.3 Rivets 67.2 ✓
Internal diameter 550 mm ✓ Working pressure by Rules 30.5 Kg/cm}^2 ✓ Thickness of crown 16 mm ✓ No. and diameter of stays NONE ✓ Inner radius of crown 550 mm ✓ Working pressure by Rules 24.2 Kg/cm}^2 ✓
How connected to shell BY FLANGED PART OF BOTTOM SHELL PLATE ✓ Size of doubling plate under dome 20 x 920 mm ✓ Diameter of rivet holes and pitch of rivets in outer row in dome connection to shell 22.2 x 72 mm ✓

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 22 inclusive for boilers been complied with YES ✓

The foregoing is a correct description.

5-4-48

Dates of Survey { During progress of work in shops - - 1947 JULY 30 SEP 6, 19 OCT 17 NOV 12, 22 DEC 12, 17 ✓ Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)
while building { During erection on board vessel - - - 1947 JULY 30 SEP 6, 19 OCT 17 NOV 12, 22 DEC 12, 17 ✓ Total No. of visits 15 ✓

Is this Boiler a duplicate of a previous case YES ✓ If so, state Vessel's name and Report No. 10130 ✓

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This boiler has been constructed under

Special Survey and in accordance to the approved plans and to our Rules & Regulations and

the workmanship is good.

The material used in the construction has been tested to Rule requirements.

The boiler has been tested with hydraulic pressure to Rule requirements found same tight &

sound, the safety valves have been adjusted under steam found the boiler to work satisfactory.

Survey Fee ... 2.00 ✓ When applied for, 17/9/1947 ✓

Travelling Expenses (if any) £ 40 ✓ When received, 17/9/1947 ✓

Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute FRI. 10 SEP 1948

Assigned For unit see J.E. Pfl