

REPORT ON BOILERS.

No. 10664

Received at London Office

16 JAN 1935

Date of writing Report 12/12/1934 When handed in at Local Office 12/12/1934 Port of TRIESTE

No. in Survey held at PALERMO Date, First Survey 13th October 1934 Last Survey 3rd Dec. 1934

88308 on the M.D. "ANTEO" (Number of Visits 4) Tons { Gross 6771.65 Net 4036.60

Master Built at PALERMO By whom built CANTIERI NAVALI RIUNITI Yard No. 448 When built 1934

Engines made at TURIN By whom made FIAT STABILIMENTO GRANDI MOTORI Engine No. 1715 When made 1934

Boilers made at PALERMO By whom made CANTIERI NAVALI RIUNITI Boiler No. 4646 When made 1934

Nominal Horse Power 913 Owners SOCIETÀ LIGURE DI ARMAMENTO Port belonging to GENOA

MULTITUBULAR BOILERS ~~MAIN, AUXILIARY, OR~~ DONKEY.

Manufacturers of Steel Brown & Tawse - Dundee (Letter for Record S. ✓)

Total Heating Surface of Boilers 210 m² Is forced draught fitted yes Coal or Oil fired oil

No. and Description of Boilers one single ended marine Working Pressure 14 atm.

Tested by hydraulic pressure to 20 atm. Date of test (R) 4.4.34 No. of Certificate 4646(R) Can each boiler be worked separately yes

Area of Firegrate in each Boiler ✓ No. and Description of safety valves to each boiler Two spring loaded

Area of each set of valves per boiler { per Rule 12827 mm² as fitted 15708 mm² Pressure to which they are adjusted 14 atm. 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 ✓ Is oil fuel carried in the double bottom under boilers no

Smallest distance between shell of boiler and tank top plating ✓ Is the bottom of the boiler insulated yes

Largest internal dia. of boilers 3700 mm. Length 3213 mm Shell plates: Material S.M. steel Tensile strength 45-50 Kg/mm²

Thickness 22.5 mm. Are the shell plates welded or flanged ✓ Description of riveting: circ. seams { end D.R. laps inter. ✓

long. seams T.R.-D.B.S. Diameter of rivet holes in { circ. seams 25 mm. long. seams 25 mm. Pitch of rivets { 98.04 mm. 174 mm. ✓

Percentage of strength of circ. end seams { plate 73.47 rivets 39.37 Percentage of strength of circ. intermediate seam { plate ✓ rivets ✓

Percentage of strength of longitudinal joint { plate 85.05 rivets 94.03 Working pressure of shell by Rules 11.73 Kg/cm² combined 88.91

Thickness of butt straps { outer 18 mm. inner 20 mm. No. and Description of Furnaces in each Boiler two MORISON ✓

Material S.M. steel Tensile strength 41-47 Kg/mm² Smallest outside diameter 1100 mm. 1024

Length of plain part { top 12 mm. bottom 12 mm. Thickness of plates { crown 12 mm. bottom 12 mm. Description of longitudinal joint ✓

Dimensions of stiffening rings on furnace or c.c. bottom ✓ Working pressure of furnace by Rules 14 Kg/cm²End plates in steam space: Material S.M. steel Tensile strength 41-47 Kg/mm² Thickness 21.5 mm. Pitch of stays 450 x 400 mm.How are stays secured NUT INSIDE, RIVETED WASHER AND NUT OUTSIDE. Working pressure by Rules 11.7 Kg/cm²Tube plates: Material { front S.M. steel Tensile strength 41-47 Kg/mm² Thickness 21.5 mm. back S.M. steel 41-47 Kg/mm² 19 mm. ✓Mean pitch of stay tubes in nests 91 mm Pitch across wide water spaces 340 mm. Working pressure { front 15.74 Kg/cm² back 15.70 Kg/cm²Girders to combustion chamber tops: Material S.M. steel Tensile strength 44-50 Kg/mm² Depth and thickness of girder

at centre 200 x 14 mm. Length as per Rule 707 mm. Distance apart 200 mm. No. and pitch of stays

in each 2 x 250 mm. Working pressure by Rules 14.42 Kg/cm² Combustion chamber plates: Material S.M. steelTensile strength 41-47 Kg/mm² Thickness: Sides 16 mm. Back 14 mm. Top 16 mm. Bottom 18 mm. ✓

Pitch of stays to ditto: Sides 250 mm. Back 200 mm. Top 250 mm. Are stays fitted with nuts or riveted over RIVETED ✓

Working pressure by Rules 10.5 Kg/cm² Front plate at bottom: Material S.M. steel Tensile strength 41-47 Kg/mm²Thickness 21.5 mm. Lower back plate: Material S.M. steel Tensile strength 41-47 Kg/mm² Thickness 21.5 mm. ✓

Pitch of stays at wide water space 580 mm. 360 Are stays fitted with nuts or riveted over NUTS ✓

Working Pressure 14.2 Kg/cm² Main stays: Material S.M. steel Tensile strength 44-50 Kg/mm²Diameter { At body of stay, 57 mm. No. of threads per inch 6 Area supported by each stay 180,000 mm² Over threads 70 mm. ✓Working pressure by Rules 14 Kg/cm² Screw stays: Material S.M. steel Tensile strength 41-47 Kg/mm²Diameter { At turned off part, 30 mm. No. of threads per inch 7 Area supported by each stay 38,000 mm² Over threads 35 mm. ✓

Working pressure by Rules 11 Kg/cm^2 Are the stays drilled at the outer ends no Margin stays: Diameter $\begin{cases} \text{At turned off part, } 35 \text{ mm.} \\ \text{or} \\ \text{Over threads } 41 \text{ mm.} \end{cases}$

No. of threads per inch 9 Area supported by each stay 35150 mm^2 Working pressure by Rules 17.93 Kg/cm^2

Tubes: Material S.M. steel External diameter $\begin{cases} \text{Plain } 70 \text{ mm.} \\ \text{Stay } 70 \text{ mm.} \end{cases}$ Thickness $\begin{cases} 3 \text{ mm.} \\ 7 \text{ mm.} \end{cases}$ No. of threads per inch 9

Pitch of tubes $273 \times 273 \text{ mm}$ Working pressure by Rules 11.14 Kg/cm^2 Manhole compensation: Size of opening in shell plate $500 \times 400 \text{ mm}$ Section of compensating ring $883 \times 700 \times 23 \text{ mm}$ No. of rivets and diameter of rivet holes $36 \times 26 \text{ mm}$

Outer row rivet pitch at ends 135 mm Depth of flange if manhole flanged 80 mm Steam Dome: Material S.M. steel

Tensile strength 44.50 Kg/mm^2 Thickness of shell 12 mm Description of longitudinal joint T.R. lap

Diameter of rivet holes 20 mm Pitch of rivets 80 mm Percentage of strength of joint $\begin{cases} \text{Plate } 75 \\ \text{Rivets } 47.35 \end{cases}$

Internal diameter 935 mm Working pressure by Rules 11.94 Kg/cm^2 Thickness of crown 15 mm No. and diameter of stays ✓ Inner radius of crown 915 mm Working pressure by Rules 13.60 Kg/cm^2

How connected to shell D.R. Size of doubling plate under dome $\phi 600 \times 23 \text{ mm}$ Diameter of rivet holes and pitch of rivets in outer row in dome connection to shell $26 \times 80 \text{ mm}$

Type of Superheater _____ Manufacturers of $\begin{cases} \text{Tubes} \\ \text{Steel castings} \end{cases}$

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,

Antonio Perio

Manufacturers

Dates of Survey $\begin{cases} \text{During progress of work in shops} \\ \text{while building} \end{cases}$

1934 Oct 13, 15 - Nov. 26 - Dec. 3

Are the approved plans of boiler and superheater forwarded herewith no (If not state date of approval.) E. - 11, 10, 34

Total No. of visits 4

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This boiler has been examined internally & externally together with its mountings, safety valves, doors & fastenings and found in good condition. The workmanship is good & the boiler is satisfactorily fitted in place. The safety valves have been adjusted to blow off at 11 atm. - The scantling of this boiler has been checked with the approved plan and found in accordance. - This boiler has been constructed and tested hydraulically at Palermo by the Cantieri Navali Rinniti under the special Survey of the R.I.N.G. & B.C. (please see letter E 12, 10, 34) - This boiler is marked: "No 4646 - P.P. = 20 Kg. P.S. = 11 Kg. - O.B. - 4, 4, 34." (Certificates of test for the material used, herewith attached)

The steam oil fuel burning arrangements for this & second donkey boiler (please see report apart) have been examined and found in accordance with the requirements of Section 20 of the Rules. The plant has been tested under working condition with satisfactory results.

With reference to letter E 11, 10, 34, the blow down pipes have been specially examined & found efficient. The blow down and pump valves have been made non-return. The oil fuel pressure pipes conveying heated oil to the burners are of solid drawn steel.

A copy of the approved plan forwarded by the Genoa office on the 4, 10, 34, has been retained in London. For notation please see Machinery Report.

Survey Fee ... £ } Please see Machinery Rpt. 46
Travelling Expenses (if any) £ } When applied for, 192
When received, 192

W. Perio & T. Perio

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE. 29 JAN 1935

Assigned

See for JE 13728



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