

REPORT ON BOILERS.

19 MAR 1928

Received at London Office

Date of writing Report 1928 When handed in at Local Office Mar 12 1928 Port of Trieste

No. in Survey held at Genoa & Trieste Date, First Survey Tri. Aug. 19th, 1927, Last Survey Tri. Feb 24, 1928

Reg. Book. 40225 on the s/s "CONTE GRANDE" (Number of Visits Tri. 33)

Master Trieste Built at Trieste By whom built Stab. Tec. Triestino Yard No. 764 When built 1928

Engines made at Trieste By whom made Stab. Tecnica Triestina Engine No. 78/81 When made 1928

Boilers made at Sampierdarena, Genoa By whom made Ansaldo S.A. Boiler No. 2974-5 When made 1927

Nominal Horse Power 4512 Owners Lloyd Sabatini Port belonging to Genoa

Gross Tons 25661
Net Tons 15303

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Messrs August Thyssen Hutt. & Messrs Krupp, etc. (Letter for Record S.)

Total Heating Surface of Boilers 4088 sq. metres Is forced draught fitted Yes Coal or Oil fired Oil

No. and Description of Boilers 4 Double end cylindrical multitubular Scotch type Working Pressure 15.46 kg/cm²

Tested by hydraulic pressure to 26.70 kg. Date of test 18.5.27, 31.5.27, 7.7.27 No. of Certificate 191, 194 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler 26,000 for ordinary valves No. and Description of safety valves to each boiler 2 Spring loaded Lockburn's High Life.

Area of each set of valves per boiler 16,220 mm² Pressure to which they are adjusted 225 lb/sq. in. 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 18" Is oil fuel carried in the double bottom under boilers Yes

Smallest distance between shell of boiler and tank top plating 14" Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers 5030 mm Length 6700 mm Shell plates: Material Steel Tensile strength 44-50 kg/mm²

Thickness 41.5 mm Are the shell plates welded or flanged Yes Description of riveting: circ. seams Double Rivets

long. seams Locke rivets Diameter of rivet holes in circ. seams 40 mm, long. seams 40 mm Pitch of rivets 100 + 117 mm

Percentage of strength of circ. end seams plate 60%, rivets 49.53% Percentage of strength of circ. intermediate seam plate 65.5%, rivets 63.5%

Percentage of strength of longitudinal joint plate 85%, rivets 87.7% Working pressure of shell by Rules 15.46 kg/cm²

Thickness of butt straps outer 32 mm, inner 35 mm No. and Description of Furnaces in each Boiler 8 Morrison Corrugated.

Material Steel Tensile strength 41-47 Smallest outside diameter 1057 mm

Length of plain part top, bottom Thickness of plates crowns 16 mm, bottoms 16 mm Description of longitudinal joint Welded

Dimensions of stiffening rings on furnace or c.c. bottom - Working pressure of furnace by Rules 15.56 kg/cm²

End plates in steam space: Material Steel Tensile strength 41-47 Thickness 31 mm Pitch of stays 468 x 432 mm

How are stays secured Double nuts & washers Working pressure by Rules 15.56 kg/cm²

Tube plates: Material Steel Tensile strength 41-47 Thickness 23 mm

Mean pitch of stay tubes in nests 270 x 210 mm Pitch across wide water spaces 356 mm Working pressure front 15.9 kg/cm², back 19.7 kg/cm²

Girders to combustion chamber tops: Material Steel Tensile strength 44-50 Depth and thickness of girder

centre 232 x 36 mm Length as per Rule 746.5 mm Distance apart 203 mm No. and pitch of stays

each 2 - 228 mm Working pressure by Rules 20.5 kg/cm² Combustion chamber plates: Material Steel

Tensile strength 41 x 47 Thickness: Sides 17.5 mm Back 18.5 mm Top 17.5 mm Bottom 22 mm

Pitch of stays to ditto: Sides 203 x 228 mm Back 203 x 257 mm Top 228 x 203 mm Are stays fitted with nuts or riveted over Nuts

Working pressure by Rules 16.3 + 16.0 kg/cm² Front plate at bottom: Material Steel Tensile strength 41-47

Thickness 23 mm Lower back plate: Material Steel Tensile strength 41-47 Thickness 23 mm

Pitch of stays at wide water space 203 mm Are stays fitted with nuts or riveted over Yes

Working Pressure 15.46 kg/cm² Main stays: Material Steel Tensile strength 44-50

Diameter 86 mm No. of threads per inch 6 Area supported by each stay 202176 mm²

Working pressure by Rules 19.8 kg/cm² Screw stays: Material Steel Tensile strength 41-47

Diameter 44.5 mm No. of threads per inch 9 Area supported by each stay 46284 mm²

REPORT ON BOILERS

Working pressure by Rules $14.4 + 16 \text{ Kg/cm}^2$ Are the stays drilled at the outer ends *No* Margin stays: Diameter $\left\{ \begin{array}{l} \text{At turned off part,} \\ \text{or} \\ \text{Over threads} \end{array} \right. 50.8 \text{ mm}$

No. of threads per inch *9* Area supported by each stay 47705 sq. mm Working pressure by Rules 23.6 Kg/cm^2

Tubes: Material *Steel* External diameter $\left\{ \begin{array}{l} \text{Plain} \\ \text{Stay} \end{array} \right. 46$ Thickness $\left\{ \begin{array}{l} 4.06 \text{ mm} \\ 9\frac{1}{2} \times 4 \text{ mm} \end{array} \right.$ No. of threads per inch *9*

Pitch of tubes $108 \times 105 \text{ mm}$ Working pressure by Rules 14.5 Kg/cm^2 Manhole compensation: Size of opening $40 \times 40 \text{ mm}$

shell plate $404 \times 540 \text{ mm}$ Section of compensating ring $307 \times 35 \text{ mm}$ No. of rivets and diameter of rivet holes $40 \times 40 \text{ mm}$

Outer row rivet pitch at ends 273 mm Depth of flange if manhole flanged 102 mm 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 pitch _____

of rivets in outer row in dome connection to shell _____

See Manchester Rpt.
Type of Superheater *Smoke tube type* Manufacturers of $\left\{ \begin{array}{l} \text{Tubes} \\ \text{Steel castings} \end{array} \right. \text{The Superheater Co Ltd. Manchester.}$

Number of elements *518* Material of tubes *S.O. Steel* Internal diameter and thickness of tubes $16 \text{ mm} \times 3 \text{ mm}$

Material of headers *wrought steel* Tensile strength *See certificate* Thickness *min 5/8"* Can the superheater be shut off *Yes*

the boiler be worked separately *Yes* Is a safety valve fitted to every part of the superheater which can be shut off from the boiler *Yes*

Area of each safety valve $3/20 \text{ m}^2$ Are the safety valves fitted with easing gear *Yes* Working pressure as _____

Rules *See certificate* Pressure to which the safety valves are adjusted 225 lb/0" Hydraulic test pressure _____

tubes 1000 lb/0" , castings 660 lb/0" and after assembly in place *Not tested* Are drain cocks or valves fitted _____

to free the superheater from water where necessary *Yes*

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

The Director
The foregoing is a correct description,
Onesdo Socchi Anonima
Stabilimento Meccanico
San Rocco di Genova Signature illegible. Manufacture _____

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

1926, Nov 10, 19, Dec 2, 6, 15, 1927, Jan 27, Feb 3, 8, 14, 16, 22, March 2, 5, 4, 10, 11, 19.
April 4, 11, 12, 25, 26, 28, May 3, 12, 16, 18, 19, 25, 31, June 3, 11, 24, 29, 30, July 7.
1927 Aug 19, Sep. 2, 6, 11, 19, 25, 27, Nov 8, 17, 18.
Dec 8, 21, 23, 27, 28, 1928 Jan 3, 5, 9, 24, 27, 28, 29, 29.
Feb 2, 3, 4, 11, 17, 20, 20, 23, 23, 24.

Are the approved plans of boiler and superheater forwarded herewith *Yes*.
(If not state date of approval.)

Total No. of visits *Genoa 57. Trieste 33*

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) *These boilers have been constructed of best material under special survey and in accordance with approved plans, Secretary's letters and Rule requirements. The workmanship and materials are good, and when tested hydraulically, at 26.70 Kg/cm^2 were found light and satisfactory. These boilers are intended for the S/S Conte Grande, now building at Trieste, and will be eligible in our opinion to be classed in the Register Book when they have been satisfactorily fitted on board, all safety valves and mountings fitted; safety valves adjusted under steam and accumulation tests satisfactorily carried out.*

These boilers have been satisfactorily fitted on board, the safety valves and mountings fitted, the safety valves adjusted under steam, and the accumulation tests satisfactorily carried out. The superheaters have been satisfactorily fitted in place, their safety valves adjusted under steam, and the whole seen under working conditions and found in order.

Survey Fee £ 7450 : : When applied for, 16. 7 1927 J.W.L.

Travelling Expenses (if any) £ 500 : : When received, 29. 11 1927 Recd See London Memo 29. 11. 27.

See also Nichey Report

Signed J.R. Morrison & J.W. Leicester & V. Lockrey
Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute _____ TUES. 3 APR 1928

Assigned *See p. 6 rpt. attached*

