

# 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 Riva Trigoso + Incide Date, First Survey Trieste 19.8.27 Last Survey Tri. 24.2.1928

Reg. Book. 225 on the s/s "CONTE GRANDE" (Number of Visits 23) Gross 25661 Tons Net 15303

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

Engines made at Trieste By whom made Stab. Sec. Triestino Engine No. 78-81 When made 1928

Boilers made at Riva Trigoso By whom made Cantieri del Tirreno Boiler No. 725 When made 1927

Nominal Horse Power 4512 Owners Lloyd Sabatolo Port belonging to Genoa

## MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Messrs August Thyssen Hütte Gewerkschaft, Muehlen Ruhr (Letter for Record 5)

Total Heating Surface of Boilers 584 sq m. Is forced draught fitted Yes Coal or Oil fired oil

No. and Description of Boilers 2 single ended multitubular scotch type Working Pressure 15.46 Kg/cm<sup>2</sup>

Tested by hydraulic pressure to 267 Kg/cm<sup>2</sup> Date of test 19.4.27 No. of Certificate 195 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler ✓ No. and Description of safety valves to each boiler 2 spring loaded lockburn high lift

Area of each set of valves per boiler per Rule 13000 cm<sup>2</sup> or more 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 3492 mm Shell plates: Material steel Tensile strength 44-50 Kg/mm<sup>2</sup>

Thickness 41.5 mm Are the shell plates welded or flanged ✓ Description of riveting: circ. seams end DR22

Long. seams T.R.O.B.S. Diameter of rivet holes in circ. seams 40 mm Pitch of rivets 100 mm

Percentage of strength of circ. end seams plate 60% Percentage of strength of circ. intermediate seam plate 85.3%

Percentage of strength of longitudinal joint rivets 49.5% Working pressure of shell by Rules 15.46 Kg/cm<sup>2</sup>

Thickness of butt straps outer 32 mm No. and Description of Furnaces in each Boiler 4 Morrison

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

Length of plain part top 16 mm Thickness of plates crown 16 mm Description of longitudinal joint welded

Dimensions of stiffening rings on furnace or c.c. bottom nil Working pressure of furnace by Rules 15.56 Kg

End plates in steam space: Material steel Tensile strength 41-47 Thickness 31 mm Pitch of stays 465 x 432 mm

How are stays secured Double nuts and washers Working pressure by Rules 15.56 Kg/cm<sup>2</sup>

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

lean pitch of stay tubes in nests 270 mm x 210 mm Pitch across wide water spaces 356 mm Working pressure front 15.9 Kg/cm<sup>2</sup>

riders to combustion chamber tops: Material steel Tensile strength 44-50 Kg/cm<sup>2</sup> Depth and thickness of girder

centre 232 mm x 200 mm Length as per Rule 446.5 mm Distance apart 203 mm No. and pitch of stays

each 20 228 Working pressure by Rules 21.7 Kg/cm<sup>2</sup> Combustion chamber plates: Material steel

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

pitch of stays to ditto: Sides 228 mm x 203 mm Back 254 mm x 203 mm Top 228 mm x 203 mm Are stays fitted with nuts or riveted over nuts

Working pressure by Rules 16 Kg/cm<sup>2</sup> Front plate at bottom: Material steel Tensile strength 41-47

Thickness 23 mm Lower back plate: Material steel Tensile strength 41-47 Thickness 24 mm

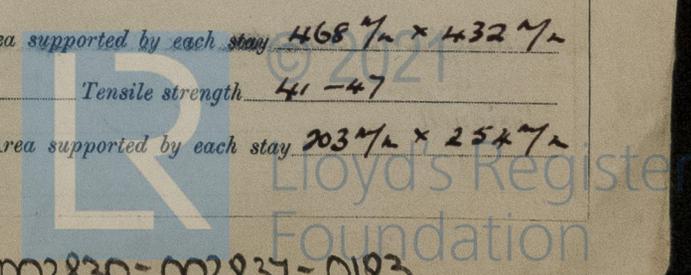
pitch of stays at wide water space 387 mm x 203 mm Are stays fitted with nuts or riveted over nuts

Working Pressure 19.5 Kg/cm<sup>2</sup> Main stays: Material steel Tensile strength 44-50

diameter At body of stay, 85 mm No. of threads per inch 6 per inch Area supported by each stay 468 mm x 432 mm

Working pressure by Rules 19.7 Kg/cm<sup>2</sup> Screw stays: Material steel Tensile strength 41-47

diameter At turned off part, 44 mm No. of threads per inch 9 per inch Area supported by each stay 203 mm x 254 mm



Working pressure by Rules  $15.56 \text{ kg/cm}^2$  Are the stays drilled at the outer ends. No Margin stays: Diameter  $57 \text{ mm} \times 50.8 \text{ mm}$  (At turned off part, or Over threads)

No. of threads per inch 9 Area supported by each stay  $36743 \text{ mm}^2$  Working pressure by Rules  $29.4 \text{ kg/cm}^2$

Tubes: Material steel External diameter { Plain  $46 \text{ mm}$  Stay  $46 \text{ mm}$  Thickness  $4 \text{ mm}$  } No. of threads per inch 9

Pitch of tubes  $108 \text{ mm} \times 105 \text{ mm}$  Working pressure by Rules  $17.5 \text{ kg/cm}^2$  Manhole compensation: Size of opening

shell plate  $300 \text{ mm} \times 400 \text{ mm}$  Section of compensating ring flanged plate No. of rivets and diameter of rivet holes  $40 - 40 \text{ mm}$

Outer row rivet pitch at ends  $273 \text{ mm}$  Depth of flange if manhole flanged  $102 \text{ mm}$  Steam Dome: Material

Tensile strength Thickness of shell Description of longitudinal joint

Diameter of rivet holes Pitch of rivets Percentage of strength of joint { Plate Rivets }

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 p

of rivets in outer row in dome connection to shell

See Manchester Rpt. Type of Superheater Smoke tube type Manufacturers of { Tubes The Superheater Co Ltd Manchester. Steel castings do. }

Number of elements 148 Material of tubes S.D. steel Internal diameter and thickness of tubes  $16 \text{ mm} \times 3 \text{ mm}$

Material of headers wrought steel Tensile strength see certificate Thickness 3 mm Can the superheater be shut off

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  $1960 \text{ mm}^2$  Are the safety valves fitted with easing gear Yes. Working pressure as

Rules see certificate Pressure to which the safety valves are adjusted  $225 \text{ lb/0"}$  Hydraulic test press

tubes  $1000 \text{ lb/0"}$ , castings  $660 \text{ lb/0"}$  and after assembly in place hot tested Are drain cocks or valves

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 foregoing is a correct description,  
 Sigel Fabrics del Ferro  
 Stabilimento Meccanico di  
 Ronzegno (I) Manufact

Dates of Survey { During progress of work in shops - - - } 21.2.27, 3.3.27, 11.3.27, 8.4.27, 29.4.27, 2.5.27, 9.5.27, 23.5.27, 27.6.27, 7.7.27, 19.7.27, 23.7.27 Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)

{ During erection on board vessel - - - } 1927, Aug 19, Sep 2.6, Oct 11.19, 25, Nov 8. 18, Dec 5. 21, 23, 28, 1928 Jan 5. 9, 24, 29, Feb 2. 4, 11, 17, 20, 23, 26 Total No. of visits Trieste 23

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These boilers have been constructed under special survey and in accordance with approved plans, Secretary's letter Rule requirements. The workmanship and materials are good and when tested hydraulically to 26.70 kg/cm<sup>2</sup> were found tight and satisfactory. These boilers are intended for the S.P. Cinto Grotto now building at Trieste and will be eligible in my opinion to be classed in the Register Book which have been satisfactorily fitted on board, all safety valves and mountings fitted, safety valves adjusted under steam and accumulator tests satisfactorily carried out. Copy of this report has been sent Trieste. The boilers have been stamped for identification as follows:

<u>No 195</u> Lloyd's Test T.P. $26.70 \text{ kg/cm}^2$ W.P. $15.46 \text{ kg/cm}^2$ G.C.V. 19.7.27. S.C.V.	<u>No 196</u> Lloyd's Test T.P. $26.70 \text{ kg/cm}^2$ W.P. $15.46 \text{ kg/cm}^2$ G.C.V. 23.7.27. S.C.V.
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These boilers have been satisfactorily fitted on board, the safety valves and mountings fitted, the safety valves adjusted under steam, and the accumulator tests satisfactorily carried out.

The superheaters have been satisfactorily fitted on board, the safety valves and mountings fitted, the safety valves adjusted under steam, and the whole seen under working conditions and found in order. These boilers are eligible in my opinion to be classed in the Register Book.

Survey Fee ... See Machinery Rpt. When applied for, 192  
 Travelling Expenses (if any) ... When received, 192

(Signed) G. Clark Yarr. & V. Lockney.  
 Engineer Surveyor to Lloyd's Register of Ships

Committee's Minute TUES. 3 APR 1928  
 Assigned See Rpt attached

