

REPORT ON BOILERS.

No. 12987

Date of writing Report 192 When handed in at Local Office 13.6.46 Port of Trieste
No. in Reg. Book Survey held at Trieste Date, First Survey 17.9.1941 Last Survey 6.5.1943
on the M.T. "Carnaro" yard No 1251 CRDA (Number of Visits 50) Tons { Gross 8257 Net 4913
Master Built at Trieste By whom built CRDA Cant. S. Marco Yard No. 1257 When built 1943
Engines made at Turin By whom made FIAT S.G.M. Engine No. 2806 When made 1943
Boilers made at Trieste By whom made CRDA Fabbr. Macch. S. Andrea Boiler No. 1866/7 When made 1943
Nominal Horse Power 1328 Owners "SIDARMA", Società Italiana di Armamento Port belonging to

MULTITUBULAR BOILERS - MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Witkowitz B & E G. (Letter for Record S)
Total Heating Surface of Boilers $164 \text{ m}^2 = 1764 \text{ ft}^2$ each Is forced draught fitted yes Coal or Oil fired oil and waste
No. and Description of Boilers Cyl. Marine adapted for waste gas also Working Pressure 12.70 kg/cm^2
Tested by hydraulic pressure to 319 lbs Date of test 11.11.42 No. of Certificate Can each boiler be worked separately yes
Area of Firegrate in each Boiler oil burn No. and Description of safety valves to each boiler 2 improved spring loaded
Area of each set of valves per boiler { per Rule 7.263 m^2 as fitted 10306 Pressure to which they are adjusted 185 lbs 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
Smallest distance between shell of boiler and tank top plating 600 m/m Is the bottom of the boiler insulated yes
Largest internal dia. of boilers 3700 m/m Length 3340 m/m Shell plates: Material S.M.S. Tensile strength 44-55 kg
Thickness 26 m/m Are the shell plates welded or flanged no Description of riveting: circ. seams { end D.R.L. inter. 104.3 mm
Long. seams Treb D.B.S. Diameter of rivet holes in { circ. seams 31 m/m long. seams 28 m/m Pitch of rivets { 183 m/m
Percentage of strength of circ. end seams { plate 70 rivets 46 Percentage of strength of circ. intermediate seam { plate 84.7 rivets 99
Percentage of strength of longitudinal joint { plate 84.7 rivets 99 combined 93.8 Working pressure of shell by Rules $12.8 \text{ kg/cm}^2 = 182 \text{ lbs}$
Thickness of butt straps { outer 20 m/m inner 23 No. and Description of Furnaces in each Boiler 3 Morison
Material S.M.S. Tensile strength 41-47 kg/mm^2 Smallest outside diameter 1028 m/m
Length of plain part { top 14 m/m bottom 14 m/m Thickness of plates { crown 14 m/m bottom 14 m/m Description of longitudinal joint welded
Dimensions of stiffening rings on furnace or c.c. bottom none Working pressure of furnace by Rules $13.9 \text{ kg/cm}^2 = 198 \text{ lbs}$
End plates in steam space: Material S.M.S. Tensile strength 41-47 kg/mm^2 Thickness 27 m/m Pitch of stays 450 x 375 m/m
How are stays secured Nuts & Washers Working pressure by Rules $13.8 \text{ kg/cm}^2 = 196 \text{ lbs}$
Tube plates: Material { front S.M.S. back S.M.S. Tensile strength { 41-47 kg/mm^2 Thickness { 25 m/m 19 m/m
Mean pitch of stay tubes in nests 187 m/m Pitch across wide water spaces 346 x 184 358 x 197 Working pressure { front 14.4 $\text{kg} = 204 \text{ lbs}$ back 15.25 $\text{kg} = 216$
Girders to combustion chamber tops: Material S.M.S. Tensile strength 44-55 kg/mm^2 Depth and thickness of girder
at centre 250 m/m Length as per Rule 800 m/m Distance apart 210 No. and pitch of stays
in each 3 = C 180 Working pressure by Rules $16 \text{ kg/cm}^2 = 227 \text{ lbs}$ Combustion chamber plates: Material S.M.S.
Tensile strength 41-47 kg/mm^2 Thickness: Sides 17 m/m Back 19 m/m Top 17 m/m Bottom 20 m/m
Pitch of stays to ditto: Sides 180 x 200 m/m Back 197 x 197 Top 180 x 210 m/m Are stays fitted with nuts or riveted over riveted - Nut at marg.
Working pressure by Rules 13, 14.2, 18.5 kg/cm^2 Front plate at bottom: Material S.M.S. Tensile strength 41-47 kg/mm^2
Thickness 25 m/m Lower back plate: Material S.M.S. Tensile strength 41-47 kg/mm^2 Thickness 23 m/m
Pitch of stays at wide water space 450 m/m Are stays fitted with nuts or riveted over nuts
Working Pressure 16.7 $\text{kg/cm}^2 = 237 \text{ lbs}$ Main stays: Material S.M.S. Tensile strength 44-55 kg/mm^2
Diameter { At body of stay, 76 m/m No. of threads per inch 6 Area supported by each stay 450 x 375 m/m
Over threads 76 m/m Working pressure by Rules 19 $\text{kg} = 270 \text{ lbs}$ Screw stays: Material S.M.S. Tensile strength 41-47 kg/mm^2
Diameter { At turned off part, 38.1 $\text{m/m} = 1\frac{1}{2}$ No. of threads per inch 9 Area supported by each stay 196.4 x 196.4 m/m
Over threads 38.1 m/m

Working pressure by Rules $14.7 = 209$ Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, 44.4
or Over threads —

No. of threads per inch 9 Area supported by each stay $196 \times 273 \text{ mm}$ Working pressure by Rules $15.2 \text{ kg} = 215 \text{ lb}$

Tubes; Material Steel External diameter { Plain $63\frac{1}{2} = 2\frac{1}{2}$ Thickness { 4 mm No. of threads per inch 9
Stay $63\frac{1}{2} = 2\frac{1}{2}$ at ends $7.75 \times 9.75 \text{ mm}$

Pitch of ^{stay} tubes $190 \times 184 + 202 \times 184 \text{ mm}$ Working pressure by Rules $18.8 \text{ or } 19.45 \text{ kg/cm}^2$ Manhole compensation: Size of opening

shell plate 516×416 Section of compensating ring 800×700 No. of rivets and diameter of rivet holes 40 a 1/16

Outer row rivet pitch at ends 183 mm Depth of flange if manhole flanged 90 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 pitch

of rivets in outer row in dome connection to shell —

Type of Superheater none **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 23 inclusive for boilers been complied with

The foregoing is a correct description,

Manufacture

Dates of Survey while building	During progress of work in shops - - During erection on board vessel - -	1941 Sep. 17, Oct. 25, Nov. 18, 27, Dec. 3, 9, 13, 19, 22. 1942 Jan. 2, 16, 28, Feb. 18, 27, Mar. 11, 21, 26, Apr. 2, 10, 16, 24. May 2, 13, 20, 26, June 1, 2, 8, 11, 17, 20, 24. July 9, 20, Aug. 1, 9, 24, Sept. 14, Oct. 5, 13, Nov. 2, 11, 24. Dec. 10, 22, 24. 1943 Jan. 20, Feb. 1, 6, May 6.	Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)	no 10.5.40 50

GENERAL REMARKS *(State quality of workmanship, opinions as to class, &c.)*

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These Boilers have been constructed at Trieste by Messrs. Cantieri Riuniti dell'Adriatico, Fabbrica Macchine S. Andrea under special survey and with tested material. The plans have been examined by the undersigned and found to be in accordance with the Rules. The workmanship is good. The Boilers have been hydraulically tested in presence of the Society Surveyor to 22.5 kg/cm^2 but owing to the circumstance, were stamped, with the Registro Italiano stamp only, with following identification numbers: 7609 & 7628. The safety valves were adjusted to blow at 185 lbs \square ".

Survey Fee	£	:	:	} When applied for,.....	192
Travelling Expenses (if any)	£	:	:	} When received,.....	192		

Approved
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned. For minutes see H.E. weekly Rpt.

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