

## REPORT ON BOILERS.

No. 5034

Received at London Office 3 FEB 1954

Date of writing Report 27th May 1953 When handed in at Local Office 1953 Port of NAPLES

No. in Reg. Book. Survey held at Naples &amp; Castellammare Date, First Survey 5th Nov. 1949 Last Survey 26th Oct. 1950

on the Twin Screw M/V "SHAKTI". (Number of Visits 12) Gross 2900 Tons Net =

Master Built at Castellammare By whom built Navalmeccanica Yard No. 590 When built

Engines made at Legnano By whom made Messrs. FRANCO TOSI Engine No. When made

Boiler made at Naples By whom made Navalmeccanica Officine Mecc. &amp; F. Boiler No. 12 When made 1950

Nominal Horse Power Owners The Indian Government. Port belonging to

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

Manufacturers of Steel TERNI, ILVA, DALMINE, BROOMSIDE BOILER WORKS. (Letter for Record DB)

Total Heating Surface of Boilers 128.5 sq.mts. 1383.16 sq.ft. forced draught fitted yes. Coal or Oil fired Oil &amp; Exhaust fired.

No. and Description of Boilers One Scotch Boiler. Two corrugate furnaces. Working Pressure 13 Kg x cm<sup>2</sup>Tested by hydraulic pressure to 23 Kg cm<sup>2</sup> Date of test 6th June 50. of Certificate N° 12 Can each boiler be worked separately =

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

Area of each set of valves per boiler { per Rule 71 cm<sup>2</sup> 556 ✓  
as fitted 113 cm<sup>2</sup> Pressure to which they are adjusted 13 Kg. cm<sup>2</sup> Are they fitted with easing gear yes. ✓In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler only a donkey boiler fitted on board.  
main deck casing.

Smallest distance between boilers or uptakes and bunkers or woodwork D.B. fitted on Is oil fuel carried in the double bottom under boilers =

Smallest distance between shell of boiler and tank top plating = Is the bottom of the boiler insulated no

Largest internal dia. of boilers 3262 mm. ✓ Length 3300 mm. ✓ Shell plates: Material SM Steel Tensile strength 44 47 Kg mm<sup>2</sup> ✓ 12/54Thickness 25 mm. ✓ Are the shell plates welded or flanged flanged Description of riveting: circ. seams { end. double riveted. ✓  
inter. =long. seams { Treble riveted butt joint  
2 cover straps. ✓ Diameter of rivet holes in { circ. seams 33 mm. ✓  
long. seams 27 mm. ✓ Pitch of rivets { 94.8 mm. ✓  
182 mm. ✓Percentage of strength of circ. end seams { plate 0.654  
rivets 0.568 Percentage of strength of circ. intermediate seam { plate =  
rivets =Percentage of strength of longitudinal joint { plate 0.851  
rivets 0.934 Working pressure of shell by Rules as approved.Thickness of butt straps { outer 23 mm. ✓  
inner 23 mm. ✓ No. and Description of Furnaces in each Boiler Two corrugated furnaces (Morrison) ✓Material SM Mild Steel Blr Quality Tensile strength 42.5 Kg. mm<sup>2</sup> Smallest outside diameter 1130 mm. ✓Length of plain part { top =  
bottom = Thickness of plates { crown 15 mm. ✓  
bottom = Description of longitudinal joint welded. ✓

Dimensions of stiffening rings on furnace or c.c. bottom = Working pressure of furnace by Rules as approved.

End plates in steam space: Material SM mild steel Tensile strength 44 47 Kg mm<sup>2</sup> ✓ Thickness 22 mm. ✓ Pitch of stays 370 x 400 mm. ✓

How are stays secured Screwed to riveted pad and nuts. ✓ Working pressure by Rules As approved.

Tube plates: Material { front SM mild steel. ✓  
back do Tensile strength { 42 47 Kg mm<sup>2</sup> ✓  
do Thickness { 22 mm. ✓  
18 mm. ✓Mean pitch of stay tubes in nests 176 mm. ✓ Pitch across wide water spaces 310 mm. ✓ Working pressure { front as approved.  
back doGirders to combustion chamber tops: Material SM mild steel ✓ Tensile strength 42 47 Kg. mm<sup>2</sup> ✓ Depth and thickness of girder

at centre 30 x 250 mm. ✓ Length as per Rule 750 mm. ✓ Distance apart 200 mm. ✓ No. and pitch of stays

in each welded to the comb. chamber top. Working pressure by Rules as approved. Combustion chamber plates: Material SM mild steel

Tensile strength 42 47 Kg mm<sup>2</sup> ✓ Thickness: Sides 18 mm. ✓ Back 18 mm. ✓ Top 18 mm. ✓ Bottom 20 mm. ✓

Pitch of stays to ditto: Sides 200 180 mm. ✓ Back 200 200 mm. ✓ Top = Are stays fitted with nuts or riveted over riveted over. ✓

Working pressure by Rules as approved Front plate at bottom: Material SM mild steel Tensile strength 42 47 Kg mm<sup>2</sup> ✓Thickness 22 mm. ✓ Lower back plate: Material SM mild steel Tensile strength 42 47 Kg mm<sup>2</sup> ✓ Thickness 22 mm. ✓

Pitch of stays at wide water space 310 mm. ✓ Are stays fitted with nuts or riveted over riveted over &amp; margins ✓

Working pressure as approved Main stays: Material SM mild steel Tensile strength 44 56 Kg mm<sup>2</sup> ✓Diameter { At body of stay 62 mm. ✓  
or 68 mm. ✓ No. of threads per inch 6 ✓ Area supported by each stay 370 x 400 mm. ✓Working pressure by Rules as approved Screw stays: Material SM mild steel Tensile strength 41 47 Kg mm<sup>2</sup> ✓Diameter { At turned off part 34 mm. ✓  
or 38 mm. ✓ No. of threads per inch 10 ✓ Area supported by each stay 200 x 200 mm. ✓



Working pressure by Rules. as approved the stays drilled at the outer ends. no ✓ Margin stays: Diameter (At turned off part, 44 mm. ✓  
or Over threads. 48 mm. ✓  
No. of threads per inch. 10 ✓ Area supported by each stay. 200 x 85 & 165 x 85 Working pressure by Rules. as approved.  
Tubes: Material SM mild steel ✓ External diameter (Plain. 63.5 mm. ✓ Thickness 3.5 mm. ✓ No. of threads per inch. 10 ✓  
(Stay. 63.5 mm. ✓  
Pitch of tubes. 88 mm. ✓ Working pressure by Rules. as approved. Manhole compensation: Size of opening in  
shell plate. 400 x 550 ✓ Section of compensating ring. 11200 mm<sup>2</sup> No. of rivets and diameter of rivet holes. 42 ✓ 27 mm. ✓  
Outer row rivet pitch at ends. 182 mm. ✓ Depth of flange if manhole flanged. 100 mm. ✓ Steam Dome: Material. none. ✓  
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 of  
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. Manufacturers of Tubes. Steel forgings. 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. forgings and 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.

S.A. NAVALMECCANICA  
OFFICINE MECCANICHE E FONDERIE  
The foregoing is a correct description,  
Manufacturer.

Dates of Survey while building { During progress of work in shops - - } From 5th Nov. 49 to June 6th 50 the approved plans of boiler and superheater forwarded herewith. yes.  
(If not state date of approval.)  
{ During erection on board vessel - - } From 27th July 50 to 26th Oct 50 Total No. of visits. 12.

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

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

The boiler has been built under special survey in accordance with approved plans and the Rule of the Society and has been securely fitted on board the vessel, tried under full working condition and found satisfactory.

The workmanship and material are of good quality throughout.

The safety valves have been adjusted, under steam, to working pressure.

An accumulation of pressure test in accordance with the Rules carried out with satisfactory results.

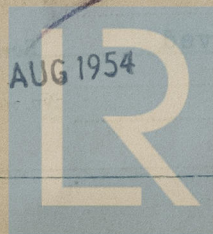
Survey Fee ... Lit. 55.000.=  
Office & Car " 11.000.=  
Travelling Expenses (if any) £ :  
I.G.E. 3% " 1.980.=  
When applied for. 6th July. 19.50  
When received. 10th Oct. 19.50

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute. FRIDAY 30 JUL 1954

Assigned. See Rpt. 46.

FRIDAY - 6 AUG 1954



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Foundation