

REPORT ON WATER TUBE BOILERS.

No.

300701

Date of writing Report 18/5/ 19 65 When handed in at Local Office 19 Port of GENOA
 No. in Survey held at GENOA Date, First Survey 7/1/1964 Last Survey 15/5/ 1965
 Reg. Book. on the m.s. "RAPHAEL" (Number of Visits 12) Gross 31.133... Tons Net...
 Built at GENOA SESTRI By whom built ANSALDO S.A. CANTIERE NAVA-Yard No. 1598 When built 1964/1965
 Engines made at GENOA SAMPIERDARENA By whom made ANSALDO S.A. STAB. MECCANICO Engine No. 909003 When made 1965
 Boilers made at GENOA SAMPIERDARENA By whom made ANSALDO S.A. STAB. MECCANICO Boiler No. 505, 506 When made 1964
 HS for Register Book 8285 sq. ft. Owners BLACK SEA STATE STEAMSHIP LINES Port belonging to NOVOROSSISK U.S.S.R.

WATER TUBE BOILERS—MAIN, AUXILIARY, OR DONKEY.—Manufacturers of Steel FAICK, MILANO — DALMINE, MILANO.

Date of Approval of plan 16th April, 1962 — 26th February, 1964. No. and Description or Type of Boilers two ANSALDO F.W. type two drum boilers Working Pressure 12 Kg/cm² Tested by Hydraulic Pressure to 21.5 Kg/cm² Date of Test 27.7.1964

No. of Certificate 505, 506 Can each boiler be worked separately. yes Total Heating Surface of Boilers 770m² Superheaters none

Half Economisers none Is forced draught fitted. yes Area of Fire Grate (coal) in each Boiler —

No. and type of burners (oil) in each boiler one — oil No. and description of safety valves on each boiler one double cockburn type full bore pilot operated Area of each set of valves per boiler { per rule as approved as fitted 6636mm² Pressure to which they are adjusted 12 Kg/cm² 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 burners or woodwork sett. tanks 750mm Height of boiler 5000mm.

Width and length 4750mm. 3750mm. Steam Drums:—Number in each boiler one Inside diameter 1082mm.

Thickness of plates 18/30mm. Range of tensile strength 42-48Kg/cm² Are drum shell plates welded or flanged fusion welded If fusion welded, state name of welding firm ANSALDO S.A. STAB. MECCANICO Have all the requirements of the Rules for Class I vessels been complied with. yes Description of riveting:—Circ. seams — long. seams —

Diameter of rivet holes in long. seams — Pitch of rivets — Thickness of straps — Percentage strength of long. joint:—Plate — Rivet — Diameter of tube holes in drum 38.35mm. Pitch of tube holes 60mm. long. 46mm. circ.

Percentage strength of shell in way of tubes as approved Steam Drum Heads or Ends:—Range of tensile strength 42-48Kg/cm² Water Drums:—Number in each boiler one Inside diameter 760mm. Thickness of plates 28mm. Range of tensile strength 42-48Kg/mm² Are drum shell plates welded or flanged fusion welded If fusion welded, state name of welding firm ANSALDO S.A. STAB. MECCA Have all the requirements of the Rules for Class I vessels been complied with. yes Description of riveting:—Circ. seams NICO long. seams —

Diameter of rivet holes in long. seams — Pitch of rivets — Thickness of straps — Percentage strength of long. joint:—Plate — Rivet — Diameter of tube holes in drum 38.35mm. Pitch of tube holes 60mm. long. 46mm. circ.

Percentage strength of drum shell in way of tubes as approved Water Drum Heads or Ends:—Range of tensile strength 42-48Kg/mm² Headers or Sections:—Number one Material seamless steel tube Thickness 24mm. Size of manhole or handhole one 300x400mm. Tested by hydraulic pressure to 21.5Kg/cm²

Thickness of plates 15mm. Radius or how stayed 700mm. Tubes:—Diameter 38mm. Thickness 3mm. Number 956 Steam Dome or Collector:—Description of joint to shell — Inside diameter — Thickness of shell plates — Range of tensile strength — Description of longitudinal joint — If fusion welded, state name of welding firm — Have all the requirements for the Rules for Class I vessels been complied with. — Diameter of rivet holes —

Pitch of rivets — Thickness of straps — Percentage strength of long. joint — plate — rivet —

Crown or End Plates:—Range of tensile strength — Thickness — Radius or how stayed —

SUPERHEATER, Drums or Headers:—Number in each boiler — Inside diameter — Thickness — Material — Range of tensile strength — Are drum shell plates welded or flanged — If fusion welded, state name of welding firm — Have all the requirements of the Rules for Class I vessels been complied with — Description of riveting:—Circ. seams — long. seams —

Diameter of rivet holes in long. seams — Pitch of rivets — Thickness of straps — Percentage strength of long. joint:—Plate — Rivet — Diameter of tube holes in drum — Pitch of tube holes — Percentage strength of drum shell in way of tubes — Drum Heads or Ends:—Thickness — Range of tensile strength — Radius or how stayed — Size of manhole or handhole — Number, diameter, and thickness of tubes —

Tested by hydraulic pressure to — Date of test — Is a safety valve fitted to each section of the superheater which can be shut off from the boiler. — No. and description of safety valves — Area of each set of valves — Pressure to which they are adjusted — Is easing gear fitted. —

Spare Gear. Has the spare gear required by the Rules been supplied. yes

Is a Report also sent on the Hull of the Ship? —

Is not, state whether, and when, one was sent? —

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Dates of Survey During progress of work in shops - - 7/1/1964 27/8/1964 Is the approved plan of boiler forwarded herewith no
 while During erection on board vessel - - 14/12/1964 last 15/5/1965 Total No. of visits 12

Is this boiler a duplicate of a previous case. yes If so, state vessel's name and report No. m.s. "GALILEO GALILEI" - GENOA Rpt. No. 29410.

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c. These boilers have been constructed under special survey of tested materials and are in accordance with the approved plans, Rule requirements and Secretary's letters.

The materials, workmanship and welding technique are good. The boiler drums have been manufactured in accordance with Rule requirements for Class I, fusion welded pressure vessels. Full radiographic examination of the drum longitudinal and circumferential seams has been carried out with satisfactory results.

Survey Fee ... £ 439.260 When applied for 5/8/ 1965

Travelling Expenses (if any) £ 1.500 When received 5/8/65

R.T. (See am No. 8390 dd 5/8/65)

Date FRIDAY - 3 SEP 1965

Committee's Minute See Rpt. 1.

(B.S. THOMPSON, J. GENTILE, S. DINTEN)

Engineer Surveyor to Lloyd's Register of Shipping.