

## REPORT ON WATER TUBE BOILERS.

No. 2786 C

Received at London Office

Date of writing Report 7<sup>th</sup> JAN, 1959 When handed in at Local Office 19 Port of YOKOHAMA  
 No. in Survey held at YOKOHAMA Date, First Survey 2ND OCT. 1957 Last Survey 9TH SEPTEMBER 1958  
 Reg. Book. (Number of Visits) 24, 257  
 on the S.S. "ALTHEA" Tons Gross 24, 257 Net 15, 244  
 Built at YOKOHAMA By whom built MITSUBISHI NIPPON HEAVY IND. LTD. Yard No. 823 When built 10-1958  
 Engines made at KOBE By whom made KOBE SHIPYARD & ENGINE WORKS Engine No. 153 When made 5-1958  
 Boilers made at YOKOHAMA By whom made MITSUBISHI NIPPON HEAVY IND. LTD. Boiler No. 4239-4240 When made 9-1958  
 HS for Register Book 24,100 sq. ft. Owners VEGA STEAM SHIP CO. Port belonging to MONROVIA

WATER TUBE BOILERS—MAIN, AUXILIARY, OR DONKEY.—Manufacturers of Steel JAPAN STEEL WORKS LTD, MIYOKAWA AND KAWASAKI IRON WORKS, K.K.

Date of Approval of plan 11-5-56 No. and Description or Type PORT 31-3-58  
 of Boilers 2-YOKOHAMA CE TWO DRUM (MODEL Y2M) Working Pressure 100 lb./sq. in. Tested by Hydraulic Pressure to 1100 lb./sq. in. Date of Test 25-3-58  
 No. of Certificate 126A+B Can each boiler be worked separately YES Total Heating Surface of Boilers 15,170 sq. ft. Superheaters 2880 sq. ft.  
 Half Economisers 6050 sq. ft. Is forced draught fitted YES Area of Fire Grate (coal) in each Boiler — 24,100 sq. ft.  
 No. and type of burners (oil) in each boiler 4-PRESSURE JET TYPE No. and description of safety valves on each boiler 2-IMPROVED HIGH LIFT TYPE Area of each set of valves per boiler per rule 9.66 sq. in. Pressure to which they are adjusted as fitted 9.66 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 2500 mm Height of boiler 8500 mm  
 Width and length 6290 x 4276 mm Steam Drums:—Number in each boiler ONE Inside diameter 610 mm Radius of tube plate 610 mm  
 Thickness of plates TUBE PLATE 85 mm SHELL PLATE 34 mm Range of tensile strength 46.5 to 53.9 kg./mm<sup>2</sup> Are drum shell plates welded or flanged WELDED If fusion welded, state name of welding firm MITSUBISHI NIPPON HEAVY INDUSTRIES LTD. 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 514 x 324 mm Pitch of tube holes 108 x 54 mm  
 Percentage strength of shell in way of tubes 39% Steam Drum Heads or Ends:—Range of tensile strength 43.1 to 44.5 kg./mm<sup>2</sup> Water Drums:—Number in each boiler ONE Inside diameter 380 mm Thickness of plates 35 x 53 mm Range of tensile strength 47.3 to 49.1 kg./mm<sup>2</sup> Are drum shell plates welded or flanged WELDED If fusion welded, state name of welding firm SAME AS STEAM DRUMS 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 514 x 324 mm Pitch of tube holes 108 x 54 mm  
 Percentage strength of drum shell in way of tubes 39.9% Water Drum Heads or Ends:—Range of tensile strength 44.9 to 46.4 kg./mm<sup>2</sup> Headers or Sections:—Number 4 Material OH STEEL Thickness 24 x 26 mm Tested by hydraulic pressure to 1100 lb./sq. in.  
 Tubes:—Diameter 508, 32 x 101.6 mm Thickness 5.1 mm, 3.2 x 6.5 mm Number 1691 PER BOILER 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 TWO Inside diameter 178 mm SQUARE Thickness 36 mm Material 0.5% Mn STEEL PIPE Range of tensile strength 46.6 to 48.2 kg./mm<sup>2</sup> Are drum shell plates welded or flanged HOT FINISHED 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 387 mm Pitch of tube holes 56 x 58 mm Percentage strength of drum shell in way of tubes 32.9% Drum Heads or Ends:—Thickness 36 mm Range of tensile strength 49.1 to 50.3 kg./mm<sup>2</sup>  
 Radius or how stayed FLAT Size of manhole or handhole 108 x 36 mm Number, diameter, and thickness of tubes 44-38.1 mm x 3.5 mm  
 Tested by hydraulic pressure to 1100 lb./sq. in. Date of test P.S. 16-6-58 Is a safety valve fitted to each section of the superheater which can be shut off from the boiler YES No. and description of safety valves ONE (1) IMPROVED HIGH LIFT TYPE Area of each set of valves 3.16 sq. in. Pressure to which they are adjusted 6.8 lb./sq. in. 850°F Is easing gear fitted YES  
 Spare Gear. Has the spare gear required by the Rules been supplied YES

The foregoing is a correct description,

M. Isogai  
YOKOHAMA SHIPYARD & ENGINE WORKS, Manufacturer.

Dates of Survey 1957 Oct-2, 28, Nov-27, 28, Dec-5, 9, 11, 16, 20, 23, 28, 1958 Jan-8, 13, 17, 21, 23, 27, 30, Feb-4, 13, 17, 18, 20, 21, 24, 25, Mar-3, 4, 5, 6, 7, 11, 17, 18, 20, 24 Is the approved plan of boiler forwarded herewith YES  
 while building JUNE-2, 4, 6, 11, 12, 16, 17, 20, 23, 27, 30 Total No. of visits 84  
 board vessel AUG-16, 18, SEP-9

Is this boiler a duplicate of a previous case YES If so, state vessel's name and report No. S.S. "NEFELI" YOKOHAMA RPT No. 3702 C

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These boilers have been constructed under Special Survey in accordance with the Society's Rules, approved plans & Secretary's letter. The materials & workmanship were found good. These boilers have been satisfactorily installed in the vessel, examined under working conditions & safety valves adjusted under steam. Accumulation tests carried out as per Rules. It is submitted that these boilers are eligible to be classed with this Society and have the notation +LMC 10.58

Survey Fee ... £323.600 : When applied for 19  
 Travelling Expenses (if any) £ — : When received 19

Date

FRIDAY 27 FEB 1959

Committee's Minute

See Rpt. 1.

Engineer Surveyor to Lloyd's Register of Shipping.

011544-011554-0246



S.823 BOILER PLATES  
The Japan Steel Works, Ltd., Muroran Works

Port Boiler

Steam drum (52027)

<u>Where used</u>	<u>Size in mm</u>	<u>Charge No.</u>	<u>Tensile Strength</u>	<u>Mill Sheet No.</u>
Tube Plate	85 x 2,400 x 4,450	3201956 2/6 1	48.4 - 48.1 kg/mm <sup>2</sup>	L32-1662
Shell Plate	35 x 2,250 x 10,100=1/2	32E 994 1/2 1	46.5 - 46.6 "	L32-1536
End Plate	55 x 1,900 x 7,600 =1/2	3201680 6/10 1	44.5 - 43.1 "	L32-1539

Water drum

Tube Plate	55 x 1,700 x 7,600 =1/2	320766 8/8 1	49.1 - 48.4 "	L32-1198
Shell Plate	35 x 1,500 x 9,000 =1/2	3101554 1/9 2	48.1 - 47.3 "	L31-1287
End Plate	35 x 1,500 x 5,200	3201331 1/2 1	46.4 - 44.9 "	L32-1198

Starboard Boiler

Steam drum (52028)

Tube Plate	85 x 2,400 x 4,450	3201964 5/8 1	54.9 - 52.1 "	L32-1662
Shell Plate	35 x 2,250 x 10,100=1/2	32E 994 1/2 1	46.5 - 46.6 "	L32-1536
End Plate	55 x 1,900 x 7,600= 1/2	3201680 6/10 1	44.5 - 43.1 "	L32-1539

Water drum

Tube Plate	55 x 1,700 x 7,600 =1/2	320766 8/8 1	49.1 - 48.4 "	L32-1198
Shell Plate	35 x 1,500 x 9,000 =1/2	3101554 1/9 2	48.1 - 47.3 "	L31-1287
End Plate	35 x 1,500 x 5,200	3201331 1/2 2	46.4 - 44.9 "	L32-1198



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