

REPORT ON WATER TUBE BOILERS.

No. 3078

23 FEB 1960

Received at London Office

Date of writing Report 18th Nov. 19 59 When handed in at Local Office 19 Port of YOKOHAMA
 No. in Survey held at Tokyo, Japan Date, First Survey 29th June, 1959 Last Survey 7th July, 19 59
 Reg. Book. S.S. "ORIENTAL GIANT" (Number of Visits 4) Tons Gross Net
 Built at By whom built Ishikawajima Heavy Industries Yard No. 200 When built
 Engines made at Tokyo, Japan By whom made Co., Ltd. Engine No. IT 2286 When made 7-59
 Boilers made at - do - By whom made - do - Boiler No. IB 590 & 591 When made 7-59
 HS for Register Book 1298m² (13972ft² x 2) Owners Port belonging to

WATER TUBE BOILERS—MAIN, ~~XXXXXXXXXXXX~~—Manufacturers of Steel Japan Steel Works Ltd., Muroran, Works.

Date of Approval of plan 23-12-58, 11-3-59, 28-4-59, 10-10-59 No. and Description or Type
 of Boilers Two(2) Ishikawajima FW "D" Type Working Pressure 51kg/cm² Tested by Hydraulic Pressure to 80kg/cm² Date of Test 29-6-59

No. of Certificate YBC139A&B Can each boiler be worked separately Total Heating Surface of Boilers 704m² x 2 Superheaters 162m² x 2
 Half Economisers 752/2m² x 2 Is forced draught fitted Area of Fire Grate (coal) in each Boiler -

No. and type of burners (oil) in each boiler Four(4) Todd "D-16" pressure atomizing type No. and description of safety valves on each boiler
 Two(2) 3" 1556 LA Consolidated full lift type per rule 5043 mm²
 One(1) 3" 1556 LC - do - Area of each set of valves per boiler as fitted drum 4374mm² Pressure to which they S.H. 1424 Total 5798mm²

are adjusted. Are they fitted with easing gear. In case of donkey boilers state whether steam from main boilers can enter the donkey boiler
 Width and length 6712 x 5376mm Smallest distance between boilers or uptakes and bunkers or woodwork Height of boiler 9020mm

Thickness of plates 103mm T. PL 56.1-56.9 kg/mm² S. PL 51.7-52.3 Range of tensile strength Are drum shell plates welded or flanged welded If fusion welded, state name of welding firm Ishikawajima Heavy Ind., Co., 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 32.45, 51.5 Percentage strength of long. joint:—Plate - Rivet - Diameter of tube holes in drum 76.9 Pitch of tube holes 48, 115mm

Percentage strength of shell in way of tubes 32.2% (Min.) Steam Drum Heads or Ends:—Range of tensile strength 49.5 - 50.9 kg/mm²
 Thickness of plates 48 Radius or how stayed 1050mm Size of manhole of handhole 305 x 406mm Water Drums:—Number in each boiler One Inside diameter (387.5 + 407)mm Thickness of plates T. PL 51.7-52.4kg/mm² S. PL 54.5 Are drum shell plates welded or flanged Welded If fusion welded, state name of welding firm Ishikawajima H. I. Co., 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 32.45, 51.5, 76.9mm Pitch of tube holes 48, 115mm
 Percentage strength of long. joint:—Plate - Rivet - Diameter of tube holes in drum 32.45, 51.5, 76.9mm Pitch of tube holes 48, 115mm

Percentage strength of drum shell in way of tubes 32.2% (Min.) Water Drum Heads or Ends:—Range of tensile strength 51.2-53.8 kg/mm²
 Thickness of plates 32mm Radius or how stayed 660mm R. dished Size of manhole or handhole 305 x 406mm

Headers of Sections Number Five(square) Material Forged steel "A" Thickness 25mm Tested by hydraulic pressure to 80 kg/cm²
 Tubes:—Diameter 1 1/2", 2", 3" Thickness 3.05, 4.2, 5.6mm Number 1377, 303, 14 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, Headers:—Number in each boiler Four (round) Inside diameter 190mm
 Thickness 41.5mm Forged Steel Drum Grade A-2P Range of tensile strength 42.7-42.9 kg/mm² 41.3-46.7
 or flanged Solid Material 0.5% Mo alloy steel - 1p. 44.0-44.1 Are drum shell plates welded for Class I vessels been complied with - 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 32.45mm Pitch of tube holes 46, 44.5mm Percentage strength of drum shell in way of tubes min. 25.2% Drum Heads or Ends:—Thickness 36mm Range of tensile strength 53.6 kg/mm²

Radius or how stayed Flat, welded Size of manhole or handhole 70.6 x 86.6mm Number, diameter, and thickness of tubes 234, 1 1/2", 3.05mm (each)
 Tested by hydraulic pressure to 80 kg/cm² Date of test 29-6-59 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 One (1) 3" 1556LC Consolidated full lift Area of each set of valves 2187mm² (Equivalent area 1424mm²) Pressure to which they are adjusted Is easing gear fitted

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

The foregoing is a correct description,
 Manufacturer.

Dates of Survey During progress of work in shops - 1959: June 29, July, 2,3,7. Is the approved plan of boiler forwarded herewith No
 while building During erection on board vessel - - - - - Total No. of visits 4

Is this boiler a duplicate of a previous case. If so, state vessel's name and report No. These Boilers have been constructed under the survey

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c. Boilers examined internally and externally and on completion of assembling were tested by hydraulic pressure as stated above and found satisfactory. It is submitted that these boilers are eligible for classification with this Society with the notation of LMC with date when satisfactorily installed in the vessel and the safety valves adjusted under steam.

Survey Fee ... ¥70,000.00 When applied for YOKOHAMA DEC. 5. 1959
 Travelling Expenses (if any) £ : : When received 19

Date FRIDAY 25 MAR 1960
 Committee's Minute See Rpt. 1

Engineer Surveyor to Lloyd's Register of Shipping.
 Lloyd's Register Foundation

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3/60

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BOILER PLATES LIST

Starboard Boiler

	<u>Size mm</u>	<u>Charge No.</u>	<u>T.S. kg/cm²</u>		<u>E %</u>		<u>Maker</u>
<u>Steam Drum</u>							
Tube Plate	105 x 2,050 x 4,490	33516 1/2 2	56.9	56.1	30.4	31.8	J.S.W.
Shell Plate	36 x 2,200 x 4,480	33E1614 2/2 1	52.3	51.7	30.7	32.6	"
End Plate	55 x 1,860 x 1,860	33E1614 1/2 1	50.9	49.5	23.7	27.1	"
" "	" "	33E1614 1/2 4	50.9	49.5	"	"	"
<u>Water Drum</u>							
Tube Plate	65 x 1,730 x 4,490	33E1644 1/1 2	52.4	51.7	29.8	31.2	J.S.W.
Shell Plate	25 x 950 x 5,210	32E1728 1/1 4	54.5	54.5	26.8	28.4	"
End Plate	36 x 1,180 x 1,180	33E1673 2/2 2	53.8	51.2	28.2		"
" "	36 x 1,180 x 1,180	33E1673 2/2 3	53.8	51.2	28.2		"

Port Boiler

<u>Steam Drum</u>							
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J.S.W.: Japan Steel Works, Ltd., Muroran Works.



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