. 5b.

REPORT ON BOILERS.

No. FE-11640

Received at London Office 28 JAN 1964

Date of writing Report 6th June, 1963. When handed in at Local Office DEC 13 1963 Port of KOBE

No. in Reg. Book. Survey held at Innoshima, Japan Date, First Survey 8th Feb.,1963 Last Survey 4th June, 1963 (Inn.)
" " " 1st Aug.,1963 " " 5th Nov., 1963 (Osa)
(Number of Visits 18 (Innoshima) 5 (Osaka))

on the m.v. "ORSHA" Tons { Gross / Net

Built at Osaka, Japan By whom built Hitachi Shipbuilding & Eng.Co.,Ltd., Sakurajima Shipyard Yard No. 3976 When built 11-1963

Engines made at do. By whom made do. Engine No. 2181 When made 11-1963

Boilers made at Innoshima, Japan By whom made Hitachi Shipbuilding & Eng.Co.,Ltd., ~~Innoshima Shipyard~~ Boiler No. 712 When made 6,1963

Owners Sudoimport Moscow U.S.S.R. Port belonging to Vladivostock, U.S.S.R.

VERTICAL BOILER.

Made at Innoshima By whom made Hitachi Shipbuilding & Eng.Co.,Ltd., Innoshima Shipyard Boiler No. 712 When made 5,1963 Where fixed Sakurajima

Manufacturers of Steel Plate:- Yawata Iron & Steel Co.,Ltd., Yawata. Tubes: Nippon Kokan K.K., Kawasaki Iron Works.

Total Heating Surface of each Boiler 46 M^2 Is forced draught fitted Yes Coal or Oil fired Oil

No. and Description of Boilers One (1) Fleming Patent Multitubular Vertical Boiler **Working Pressure** 7 kg/cm2

Tested by hydraulic pressure to 14 kg/cm2 Date of test 4th June, 1963 No. of Certificate I-89502

Area of fire grate in each Boiler - No. and description of safety valves to each boiler One set spring loaded high lift Duples type

Area of each set of valves per boiler { per Rule 3625 mm2 / as fitted 6640 mm2 } Pressure to which they are adjusted 7.0 kg Are they fitted with easing gear Yes

State whether steam from main boilers can enter the donkey boiler - Smallest distance between boiler or uptake and bunkers 950 mm Is oil fuel carried ~~in the double bottom~~ under boiler No Smallest distance between base of boiler and tank top plating 40 mm Is the base of the boiler insulated Yes Largest internal dia. of boiler 1700mm Height 3775mm

Shell plates: Material Boiler Steel Tensile strength 43 kg/mm2 Thickness 13mm

Are the shell plates welded or flanged Welded If fusion welded, state name of welding firm Hitachi S.B.& E.Co.,Ltd. Innoshima Shipyard

Have all the requirements of the Rules for Class I vessels been complied with Yes Description of riveting : circ. seams { end - / inter - }

Long. seams Dia. of rivet holes in { circ. seams / long. seams } Pitch of rivets { / } Thickness of butt straps { outer / inner }

Shell Crown: Whether complete hemisphere, dished partial spherical, or flat Dished partial spherical Material Boiler Steel Tensile strength 45.3 kg/mm2 Thickness 21mm

Radius 1550mm **Description of Furnace:** Plain, spherical, or dished crown Spherical Material Boiler Steel

Tensile strength 43.7 kg/mm2 Thickness 13mm External diameter { ~~top~~ / ~~bottom~~ 713mm } Length as per Rule 1426

Pitch of support stays circumferentially and vertically Are stays fitted with nuts or riveted over

Diameter of stays over thread Radius of spherical or dished furnace crown 700mm

Thickness of Ogee Ring 27mm Diameter as per Rule { D / d }

Combustion Chamber: Material Tensile strength Thickness of top plate

Radius if dished Thickness of back plate Diameter if circular

Length as per Rule Pitch of stays

Are stays fitted with nuts or riveted over Diameter of stays over thread

Tube Plates: Material { Top ~~xxx~~ / Bottom ~~xxx~~ } Boiler Steel Tensile strength { 46.3 kg/mm2 / 46.3 kg/mm2 } Thickness { 21mm / 21mm } Mean pitch of stay tubes in nests 198.6mm

If comprising shell, dia. as per Rule { front / back } Pitch in outer vertical rows { / } Dia. of tube holes ~~FRONT~~ Top { stay 51.8mm / plain 51.8mm } ~~BACK~~ Bottom { stay 51.3mm / plain 51.3mm }

Is each alternate tube in outer vertical rows a stay tube

Girders to Combustion Chamber Tops: Material Tensile strength

Depth and thickness of girder at centre Length as per Rule

Distance apart No. and pitch of stays in each

Crown Stays: *Material* ..... *Tensile strength* ..... *Diameter* { *at body of stay,* ..... *or over threads* ..... }

No. of threads per inch ..... **Screw Stays :** *Material* ..... *Tensile strength* .....

Diameter { *at turned off part,* ..... *or over threads* ..... } *No. of threads per inch* ..... *Are the stays drilled at the outer ends* .....

Tubes: *Material* O.H. Steel *External diameter* { *plain* 51.3mm / *stay* 51.3mm } *Thickness* { 4mm / 8mm }

No. of threads per inch None (Welded) *Pitch of tubes* 75 mm x 75 mm

Manhole Compensation: *Size of opening in shell plate* 405mm x 305mm *Section of compensating ring* 6815mm^2 *No. of rivets and diameter of rivet holes* ..... *Outer row rivet pitch at ends* ..... *Depth of flange if manhole flanged* 115mm

Uptake: *External diameter* ..... *Thickness of uptake plate* .....

Cross Tubes: *No.* ..... *External diameters* { ..... } *Thickness of plates* .....

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with Yes

The foregoing is a correct description,

Hitachi Shipbuilding & Engineering Co.,Ltd., *Manufacturer.*
Innoshima Shipyard, Innoshima.

Dates of Survey while building — *During progress of work in shops* - - 1963:-Feb.8,14,27,Mar.1,5,8,12,20,26, Apr. 9,11,12,24,26, May 14,17,28, June 4.

Is the approved plan of boiler forwarded herewith 31-1-63 (If not state date of approval.)

During erection on board vessel - - - 1st Aug. 23rd Sept. 2nd,8th Oct. 5th Nov.

Total No. of visits 18 (Innoshima) 5 (Osaka)

Is this Boiler a duplicate of a previous case Yes *If so, state Vessel's name and Report No.* Ship No.3975, "OREKHOV" Kobe FE-11[illegible]

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

The boiler has been constructed under Special Survey in accordance with the Rules, the approved plans and the Secretary's letters.

The materials and workmanship are sound and good.

The boiler has been efficiently installed in this vessel, seen under steam, safety valves adjusted to 7 kg/cm2 and an accumulation test as per Rules carried out to satisfaction.

Identification of Steel Plates:-

Where used	Inspection No.	Charge No.	Maker
Shell Crown	R 823	T-85241	Yawata Iron & Steel Co.,Ltd., Yawata Work
Tube plates (Upper and Lower)	R 1261	T-85229	- " -
Furnace (Side)	R 1831	T-85905	- " -
U ring, manhole cover	R 820	T-85241	- " -
Upper, Lower shell & Centre drum	R 5588	T-85905	- " -
Furnace (Top) and Flue tube	R 5591	T-85905	- " -

+ RMS 10 FEB 1964

Survey Fee ... ... £21,000 *When applied for* ..... 19....

Travelling Expenses (if any) £ — : *When received* ..... 19....

Engineer Surveyor to Lloyd's Register of Shipping.
M. Hayashibara & L.O. Christensen

Date FRIDAY 28 FEB 1964

Committee's Minute Sat Rpt1