

REPORT ON BOILERS.

No. 4520

Received at London Office

2 JUN 1930

Date of writing Report 8th May 1930 When handed in at Local Office 10/5/1930 Port of YOKOHAMA

No. in Reg. Book. Survey held at

YOKOHAMA

Date, First Survey 29th Jan. 1929 Last Survey 22nd April 1930.

(Number of Visits 22) Gross 11,622 Tons Net 6,188.

on the Steel T. Sc. M.V. "HIKAWA MARU"

Master _____ Built at Yokohama By whom built Yokohama Dock Co. Ltd. Yard No. 177 When built 1930.

Engines made at Copenhagen By whom made Burmeister & Wain Ltd. Engine No. 177 When made 1930.

Boilers made at Yokohama By whom made Yokohama Dock Co. Ltd. Boiler No. 177 When made 1930.

Nominal Horse Power _____ Owners Nippon Yusen Kaisha Port belonging to Tokio.

MULTITUBULAR BOILERS ~~MAIN, AUXILIARY, OR DONKEY.~~

Manufacturers of Steel J. Dunlop & Co. Lanarkshire (Letter for Record S.)

Total Heating Surface of Boilers 1406 sq ft Is forced draught fitted No Coal or Oil fired Oil

No. and Description of Boilers 2 Cylindrical Boilers Single ended Working Pressure 120 lbs

Tested by hydraulic pressure to 230 lbs Date of test 3/6/29 No. of Certificate 26 Can each boiler be worked separately Yes

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

Area of each set of valves per boiler {per Rule 7.8 sq" as fitted 9.8 sq" Pressure to which they are adjusted 120 lbs 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 Is oil fuel carried in the double bottom under boilers Yes

Smallest distance between shell of boiler and tank top plating 2'-8" Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers 9'-6" Length 8'-6" Shell plates: Material Steel Tensile strength 28-30 tons

Thickness 1 1/16" Are the shell plates welded or flanged Flanged Description of riveting: circ. seams {end D.R. Lap. inter. 3 1/8" long. seams D.R. DBS Diameter of rivet holes in {circ. seams 1 1/16" Pitch of rivets {3 3/16" long. seams 15/16"

Percentage of strength of circ. end seams {plate 66% rivets 60.04% Percentage of strength of circ. intermediate seam {plate rivets

Percentage of strength of longitudinal joint {plate 75.4% rivets 81.0% combined Working pressure of shell by Rules 134.6 lbs/sq"

Thickness of butt straps {outer 4 1/16" inner 9/16" No. and Description of Furnaces in each Boiler 2 Deighton Furnaces

Material Steel Tensile strength 26-30 tons Smallest outside diameter 2'-8 3/8"

Length of plain part {top Thickness of plates {crown 7/16" bottom Description of longitudinal joint Weld

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 189 lbs

End plates in steam space: Material Steel Tensile strength 26-30 tons Thickness 3/4" Pitch of stays 13 x 13"

How are stays secured Nuts & washers Working pressure by Rules 150.24 lbs

Tube plates: Material {front Steel back Steel Tensile strength {26/30 tons Thickness {1 1/16" 5/8"

Mean pitch of stay tubes in nests 9.375" Pitch across wide water spaces 13 1/2" Working pressure {front 139.6 lbs back 155.9 lbs

Girders to combustion chamber tops: Material Steel Tensile strength 28-32 tons Depth and thickness of girder

at centre 6 1/2' x 9/16" Length as per Rule 23 13/16" Distance apart 10 1/2" No. and pitch of stays

in each 20 4 1/4" Working pressure by Rules 136.2 lbs Combustion chamber plates: Material Steel

Tensile strength 26-30 Thickness: Sides 9/16" Back 9/16" Top 9/16" Bottom 9/16"

Pitch of stays to ditto: Sides 10" x 4 1/4" Back 9 1/2" x 8 1/2" Top 10 1/2" x 4 1/4" Are stays fitted with nuts or riveted over Nuts

Working pressure by Rules 133.2 lbs Front plate at bottom: Material Steel Tensile strength 26-30 tons

Thickness 1 1/16" Lower back plate: Material Steel Tensile strength 26-30 tons Thickness 1 1/16"

Pitch of stays at wide water space 13 1/2" x 8 1/2" Are stays fitted with nuts or riveted over Nuts

Working Pressure 142 lbs Main stays: Material Steel Tensile strength 28-32 tons

Diameter {At body of stay, 1 3/4" No. of threads per inch 6 Area supported by each stay 156 sq"

{Over threads Working pressure by Rules 161 lbs Screw stays: Material Steel Tensile strength 26-30 tons

Diameter {At turned off part, 1 5/8" No. of threads per inch 9 Area supported by each stay 81 sq"

{Over threads

Working pressure by Rules 154 lb Are the stays drilled at the outer ends 20 Margin stays: Diameter { At turned off part, 1 5/8" or Over threads 1 5/8"

No. of threads per inch 9 Area supported by each stay 113 sq" Working pressure by Rules 133.5

Tubes; Material Iron External diameter { Plain 3" Stay 3" Thickness { 9 LSG. 5/16" No. of threads per inch 9

Pitch of tubes 4" x 4 1/8" Working pressure by Rules 168 lbs Manhole compensation: Size of opening in shell plate 16" x 12" Section of compensating ring 6 1/2" x 7/8" No. of rivets and diameter of rivet holes 52 x 1 1/16"

Outer row rivet pitch at ends 4" Depth of flange if manhole flanged 3 1/4" Steam Dome: Material _____

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 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 _____

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 _____, 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 23 inclusive for boilers been complied with _____

The foregoing is a correct description,

J. M. Richards Manufacturer.

Dates of Survey { During progress of work in shops - - - 29/1, 9/2, 22/2, 5/3, 8/3, 11/3, 13/3, 4/4, 17/4
while building { During erection on board vessel - - - 19/4, 25/4, 7/5, 10/5, 14/5, 16/5, 27/5, 3/6/29.
Are the approved plans of boiler and superheater forwarded herewith 29/8/28 (Kob) (If not state date of approval.)

Total No. of visits 22

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

These boilers have been built under special survey in accordance with the drawing and Rules. Materials and workmanship good.

These boilers have now been securely fitted onboard the vessel and examined under steam and their safety valves adjusted to 120 lbs/sq". Accumulation trial carried out and no rise in pressure found.

Survey Fee ... £ 141.00 : When applied for, 9/5/1930
Travelling Expenses (if any) £ : : When received, 27/5/30 (when paid)

J. M. Richards
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute WED. 11 JUN 1930

Assigned See Report attached



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