

REPORT ON BOILERS.

No. 1656

Received at London Office 20 SEP 1928

Date of writing Report 23rd Aug. 19 28 When handed in at Local Office 23rd Aug. 19 28 Port of NAGASAKI.

No. in Survey held at Annan, Scotland and Nagasaki. Date, First Survey 11th Oct. 1927 Last Survey 4th August, 19 28. Reg. Book (Number of Visits 8.) Gross 5,623.35

on the Steel Screw Motor Vessel "SHUNTEN MARU". Tons Net 3,508.

built at Nagasaki. By whom built Mitsubishi Zosen Kaisha, Ltd., Yard No. 448. When built 1928.

engines made at Nagasaki. By whom made Mitsubishi Zosen Kaisha, Ltd., Engine No. 448. When made 1928.

boilers made at Annan, Scotland. By whom made Cochran & Co. (Annan) Ltd., Boiler No. 10661. When made 1927.

owners Yamamoto Shoji Kaisha, Ltd., Port belonging to Fuchu.

VERTICAL DONKEY BOILER.

Made at Annan. By whom made Cochran & Co (Annan) Ltd. Boiler No. 10661. When made 1927 Where fixed In Engine Rm.

Manufacturers of Steel D. Colville & Sons, Ltd.,

Total Heating Surface of Boiler Is forced draught fitted No. Coal or Oil fired Oil.

No. and Description of Boilers One, Vertical. Working pressure 100 lbs.

Tested by hydraulic pressure to 200 lbs. Date of test 11-11-27. No. of Certificate 17676.

Area of Firegrate 9 1/2 sq. ft. No. and Description of safety valves to each boiler Two, - Direct spring loaded.

Area of each set of valves per boiler { per rule 3.53 sq. in. Pressure to which they are adjusted 102 lbs per sq. in. Are they fitted with easing gear Yes

State whether steam from main boilers can enter the donkey boiler Is oil fuel carried in the double bottom under boiler Yes Smallest distance between boiler or uptake and bunkers

Is the base of the boiler insulated Is the base of the boiler insulated / ~~Yes~~ dia. of boiler 4'-6" Length 11'-9"

Shell plates: Material Steel. Tensile strength 28/32 tons. Thickness 3/8", 7/16", 3/8".

Are the shell plates welded or flanged Description of riveting: circ. seams { end long seams D.R. Lap. inter. rivets

Whether punched or drilled----- Drilled. Lap of plating--3 1/4". Percentage of strength of circ. seams { plate 66.8 rivets 75.1

Dia. of rivet holes in { circ. seams 23/32" Pitch of rivets 2.156", 2.383", 2.364" rivets

Working pressure of shell by rules 119.2 lbs Thickness of butt straps { outer inner

Shell Crown: Whether complete hemisphere, dished partial spherical, or flat Material Shell crown plate 1/2" Radius of Do. 2'-3" Working pressure by rules

Description of Furnace: Plain, spherical, or dished crown Material Tensile strength of furnace Hemispherical of furnace 2'-8 1/2" Working pressure by rules 183.2 lbs.

Thickness of side plates 1" diameter { top 45" Length of furnace 2'-8 1/2" Working pressure by rules 183.2 lbs. bottom 45"

furnace crown 1/2" Radius of Do. 22 1/2" Are stays fitted with nuts or riveted over

Stays are fitted with nuts or riveted over by Hemisphere. Diameter of stays over thread Radius of spherical or dished furnace crown Working pressure by rule

Description of joint: Seamless & Ogee. Thickness of Ogee Ring 5/8" Diameter as per rule D of Ogee ring Working pressure by rule 104 lbs

Combustion Chamber: Material Tensile strength Thickness of top plate Radius if dished Working pressure by rule 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 Working pressure of back plate by rules

Tube Plates: Material { front Tensile strength Thickness { 19/32" Mean pitch of stay tubes in nests 9 1/2" back 1/2"

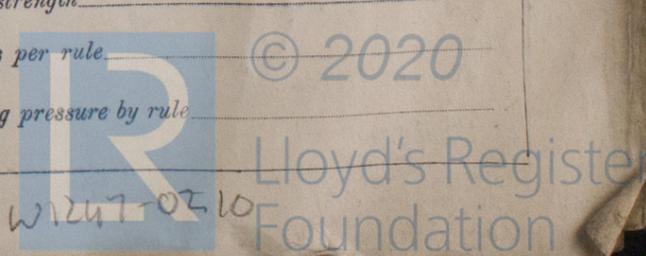
of comprising shell, Dia. as per rule { front Pitch in outer vertical rows 8" Dia. of tube holes FRONT { stay 2 11/16" BACK { stay 2 1/2" plain 2 9/16" plain 2 1/2"

Working pressure by rules { front 107.4 lbs back 119.8 lbs

Stays 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 Working pressure by rule



W1247-0310

Crown stays: Material _____ Tensile strength _____ Diameter { at body of stay, _____ or over threads _____
 No. of threads per inch _____ Area supported by each stay _____ Working pressure by rules _____

Screw stays: Material _____ Tensile strength _____ Diameter { at turned off part, _____ or over threads _____ No. of threads per inch _____
 Area supported by each stay _____ Working pressure by rules _____ Are the stays drilled at the outer ends _____

Tubes: Material **Wrot Iron.** External diameter { plain **2 1/2"** or stay **2 1/2"** Thickness { **11 L.S.** or **11/32"**
 No. of threads per inch **9** Pitch of tubes **4" x 3 1/2"** Working pressure by rules **125 lbs**

Manhole Compensation: Size of opening in shell plate **16" x 12"** Section of compensating ring **12" x 7/8"** No. of rivets at
 of rivet holes **32 @ 23/32"** Outer row rivet pitch at ends **4 5/8"** Depth of flange if manhole flanged _____

Uptake: External diameter **10 1/2" x 17"** Thickness of uptake plate **1/2"**

Cross Tubes: No. _____ External diameters { _____ Thickness of plates _____

Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with **Yes**

The foregoing is a correct description

(Sign) **Cochran & Co, (Annan) Ltd.,** Ma

Dates of Survey { During progress of work in shops - - **Oct 11, 14, 21 Nov. 4, 11. (At Annan)** Is the approved plan of boiler forwarded herewith **No. S**
 while building { During erection on board vessel - - **May 31, July 31, Aug. 4 (At Nagasaki)** Total No. of visits **8.** report No _____

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) **This boiler has been built under
 in accordance with the Rules and approved plan.**

Materials and workmanship good.
**The above boiler (constructed by Messrs. Cochran & Co (Annan) Ltd.,) has been satisfactory for
 the vessel and safety valves adjusted under steam to 102 lbs, per sq.in.**

Survey Fee £ **See Machinery** When applied for, 10
 Travelling Expenses (if any) £ **Report.** When received, 10

George Anderson
 Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute **TUE. 2 OCT 1928**
 Assigned *See Report attached*



Certificate (if required) to be sent to the Surveyors required not to write on or below the space for Committee's Minute.