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# REPORT ON BOILERS.

No. 1580

Received at London Office

20 APR 1927

Date of writing Report 25th Mar. 1927 When handed in at Local Office 25th Mar 19 27 Port of NAGASAKI.

No. in Survey held at ANNAN, SCOTLAND, & NAGASAKI. Date, First Survey 21st May 1926. Last Survey 3rd March 19 27  
Reg. Book. (Number of Visits 7) Gross 2594.  
on the Steel Screw Motor Vessel "C H O J O M A R U". Tons Net 1391.

Built at Nagasaki. By whom built Mitsubishi Zosen Kaisha, Ltd. Yard No. 424. When built 1927.  
Engines made at Nagasaki. By whom made Mitsubishi Zosen Kaisha, Ld. Engine No. 424. When made 1927.  
Boilers made at Annan, Scotland. By whom made Cochran & Co, Annan, Ltd., Boiler No. 10045 When made 1926.  
Owners Osaka Shosen Kabushiki Kaisha. Port belonging to Osaka.

## VERTICAL DONKEY BOILER.

In Donkey Boiler room at ford end of engine room.

Made at Annan By whom made Cochran & Co, (Annan) Ld Boiler No. 10045 When made 1926 Where fixed  
Manufacturers of Steel D. Colville & Sons, Ltd.,

Total Heating Surface of Boiler 600 sq.ft. Is forced draught fitted No Coal or Oil fired Coal

No. and Description of Boilers One. Cochran Type. Working pressure 100 lbs

Tested by hydraulic pressure to 200 lbs Date of test 25-6-26. No. of Certificate 17154

Area of Firegrate 26.75 sq.ft. and Description of safety valves to each boiler 2- 2 1/2" Direct Spring loaded.

Area of each set of valves per boiler per rule 6.52" sq.in. Pressure to which they are adjusted 102 lbs Are they fitted with easing gear Yes  
as fitted 9.82 "

State whether steam from main boilers can enter the donkey boiler No Smallest distance between boiler or uptake and bunkers

or woodwork 14" Is oil fuel carried in the double bottom under boiler Yes Smallest distance between base of boiler and tank top plating

2'-6" Is the base of the boiler insulated Yes ~~largest external~~ dia. of boiler 7'-0" Length 15'-0"

Shell plates: Material Steel Tensile strength 28/32 tons Thickness 1/2", 5/8", 1/2"

Rivet holes whether punched or drilled. Drilled Description of riveting: circ. seams end..... long. seams D.R.lap.

Dia. of rivet holes in circ. seams 27/32" Pitch of rivets 2.8125 Percentage of strength of circ. seams plate..... of ~~longitudinal~~ joint plate 69.1%  
long. seams 27/32" 2.681 rivets..... 65.25%  
2.732

Lap of plating 4 1/4"

Working pressure of shell by rules 105 lbs Thickness of butt straps outer.....  
inner.....

Shell Crown: Whether complete hemisphere, dished partial spherical, or flat Material.....

Tensile strength of shell crown plates 7/8" & 7/16" Radius of do. 3'-6" Working pressure by rules

Description of Furnace: Diagonal spherical or dished crown Hemisphere Material Seamless Ogee Ring.

Thickness of furnace crown plates 17/32" External diameter 6'-0" Length of furnace 3'-11 1/2" Working pressure by rules 122 lbs

Thickness of furnace plates 17/32" Pitch of support stays circumferentially f.c. plates and vertically are stays fitted with nuts or checked by Hemisphere.

Diameter of stays over thread Radius of spherical or dished furnace crown plates 3'-0" Working pressure by rule

Thickness of Ogee Ring 7/8" Diameter as per rule D..... Working pressure by rule 101.2 lbs  
d.....

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 7/8" Mean pitch of stay tubes in nests 3/4"  
back.....

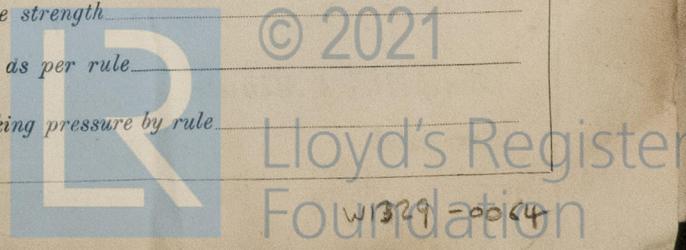
If comprising shell, Dia. as per rule front..... Pitch in outer vertical rows Di. of tube holes FRONT stay..... BACK stay.....  
back..... plain..... plain.....

Is each alternate tube in outer vertical rows a stay tube Working pressure by rules front.....  
back.....

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..... Working pressure by rule



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 \_\_\_\_\_ External diameter { plain \_\_\_\_\_ stay \_\_\_\_\_ Thickness { \_\_\_\_\_  
 No. of threads per inch \_\_\_\_\_ Pitch of tubes \_\_\_\_\_ Working pressure by rules \_\_\_\_\_

Manhole Compensation: Size of opening in shell plate \_\_\_\_\_ Section of compensating ring \_\_\_\_\_ No. of rivets and diameters \_\_\_\_\_  
 of rivet holes \_\_\_\_\_ Outer row rivet pitch at ends \_\_\_\_\_ Depth of flange if manhole flanged \_\_\_\_\_

Uptake: ~~23" x 23"~~ diameter 15" x 23" Thickness of uptake plate 9/16"

Cross Tubes: No. \_\_\_\_\_ External diameters { \_\_\_\_\_ Thickness of plates \_\_\_\_\_

Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with \_\_\_\_\_

The foregoing is a correct description,

(Signed) Cochran & Co, Annan, Ltd. Manufacturer

Dates of Survey { During progress of work in shops - - } 1926. May 21. 27. June 2. 25. (at Annan) the approved plan of boiler forwarded herewith No (If not state date of approval.)  
 while building { During erection on board vessel - - } 1927. Jan. 25. Feb. 1. Mar. 3. (Nagasaki) Total No. of visits 7.

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This boiler has been built under survey in accordance with the Rules and approved plan.  
 The Materials and workmanship good.  
 This boiler (constructed by Messrs. Cochran & Co, Annan, Ltd.,) has been satisfactory fixed in the vessel and safety valves adjusted under steam to 102 lbs per sq.in.  
 Thickness of washers., Forward 15/32", aft 11/32".

Survey Fee ... £ 50:00 : } When applied for, 2. 3. 19 27  
 Travelling Expenses (if any) £ : : } When received, 10. 3. 19 27.

George Anderson  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute Assigned See A.E. p. attached  
 FRI, 22 APR 1927

