

REPORT ON BOILERS.

No. 1225

Received at London Office 27 JAN 1947

Date of writing Report **Dec. 28th 1946** When handed in at Local Office 19 **Port of TORONTO, CANADA**

No. in Survey held at **Port Arthur, Ont.** Date, First Survey **October 8th/46** Last Survey **October 26th, 1946**

eg. Book. **0041** on the **S.S. "TAI HANG 4" ex "OTTAWA MAYCOVE"** (Number of Visits **4**)

10, 945. Built at **Port Arthur, Ont.** By whom built **Port Arthur S.B. Co. Ltd.** Yard No. **98** When built **1946**

Engines made at **Montreal, Que.** By whom made **Canadian Vickers Ltd.** Engine No. **35100-5** When made **1945**

Boilers made at **Port Arthur, Ont.** By whom made **Port Arthur S.B. Co. Ltd.** Boiler No. **-** When made **1945**

Nominal Horse Power **73** Owners **Chinese Government Supply Agency** Port belonging to **Shanghai**

MULTITUBULAR BOILERS—MAIN, ~~WATER TUBE BOILER~~

Manufacturers of Steel **Steel Co. of Canada, Lukens, Etc.** (Letter for Record)

Total Heating Surface of Boilers **1331 square feet** Is forced draught fitted **Yes** Coal or Oil fired **Oil**

No. and Description of Boilers **1 Single Ended Multitubular** Brit. Corp. Working Pressure **200 lbs./sq.in.**

Tested by hydraulic pressure to **350 lbs.** Date of test **17.1.46** No. of Certificate **C-307** Can each boiler be worked separately **-**

Area of Firegrate in each Boiler **--** No. and Description of safety valves to each boiler **Double Spring loaded. 1 H.L. as per anti vacuum.**

Area of each set of valves per boiler { per Rule **--** as fitted **2" dia.** Pressure to which they are adjusted **200 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 **--**

Smallest distance between shell of boiler and tank top plating **2'-6"** Is the bottom of the boiler insulated **Yes**

Largest internal dia. of boilers **11'-6 15/16"** Length **7'-1 1/2"** Shell plates: Material **O.H. Steel** Tensile strength **29-33 tons**

Thickness **1-1/32"** Are the shell plates welded or flanged **Riveted** Description of riveting: circ. seams { end **Double** inter **--**

Long. seams **Treble T.R.B.S.** Diameter of rivet holes in { circ. seams **1-1/8"** Pitch of rivets { **3-1/4"** long. seams **1-1/8"** **7-13/16"**

Percentage of strength of circ. end seams { plate **65.0** rivets **54.1** Percentage of strength of circ. intermediate seam { plate **--** rivets **--**

Percentage of strength of longitudinal joint { plate **85.6** rivets **91.7** combined **89.5** Working pressure of shell by Rules **201.5 lbs./sq.in.**

Thickness of butt straps { outer **25/32"** inner **29/32"** No. and Description of Furnaces in each Boiler **3 - Deighton Section Corrugated**

Material **O.H. Steel** Tensile strength **26-30 tons** Smallest outside diameter **2'-9 3/4"**

Length of plain part { top **--** bottom **--** Thickness of plates { crown **1/2"** bottom **1/2"** Description of longitudinal joint **Lap Weld**

Dimensions of stiffening rings on furnace or c.c. bottom **--** Working pressure of furnace by Rules **213.0 lbs./sq.in.**

End plates in steam space: Material **O.H. Steel** Tensile strength **26-30 tons** Thickness **1"** Pitch of stays **15" x 15"**

How are stays secured **Inside and Outside Nuts, Stays Welded to End Plates** Working pressure by Rules **205 lbs./sq. in.**

Tube plates: Material { front **O.H. Steel** back **O.H. Steel** Tensile strength { **26-30 tons** Thickness { **1"** **25/32"**

Lean pitch of stay tubes in nests **10 1/4"** Pitch across wide water spaces **14"** Working Pressure { front **266** back **208**

Girders to combustion chamber tops: Material **O.H. Steel** Tensile strength **26-30** **29/33. as per girder** Depth and thickness of girder

At centre **2 @ 9 1/2" x 15/16"** Length as per Rule **2'-10"** Distance apart **10"** No. and pitch of stays

Each **3 @ 8 1/2"** Working pressure by Rules **207** Combustion chamber plates: Material **O.H. Steel**

Tensile strength **26-30 tons** Thickness: Sides **23/32"** Back **23/32"** Top **23/32"** Bottom **23/32"** **Welded Ring Nuts & Welded Over.**

Pitch of stays to ditto: Sides **10" x 8 1/2"** Back **10" x 8 1/2"** Top **10" x 8 1/2"** Are stays fitted with nuts or riveted over **Welded Ring Nuts & Welded Over.**

Working pressure by Rules **212** Front plate at bottom: Material **O.H. Steel** Tensile strength **26-30 tons**

Thickness **1"** Lower back plate: Material **O.H. Steel** Tensile strength **26-30 tons** Thickness **1"**

Pitch of stays at wide water space **14 1/2" x 10"** Are stays fitted with nuts or riveted over **Welded Ring Nuts & Welded Over.**

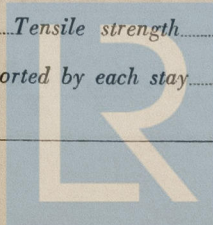
Working pressure **266 lbs./sq.in.** Main stays: Material **O.H. Steel** Tensile strength **28-32 tons**

Diameter { At body of stay **2 1/2"** No. of threads per inch **6** Area supported by each stay **15" x 15" - 225 sq.in.**

Working pressure by Rules **238 lbs./sq.in.** Screw stays: Material **O.H. Steel** Tensile strength **26-30 tons**

Diameter { At turned off part **1 1/2"** No. of threads per inch **9** Area supported by each stay **8 1/2" x 10"**

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Working pressure by Rules **213 lbs./sq. in.** Are the stays drilled at the outer ends **No** Margin stays: Diameter ~~XXXXXX~~ or **2"**
No. of threads per inch **9** Area supported by each stay **10" x 11 1/2"** Working pressure by Rules **215**
Tubes: Material **Steel** External diameter { Plain **3"** Thickness **8 LSG** No. of threads per inch **9**
Pitch of tubes **4" x 4 1/2"** Working pressure by Rules **250** Manhole compensation: Size of opening
shell plate **1' 5-1/8" x 1'-9 1/8"** Section of compensating ring **10 1/2" x 1-1/16"** No. of rivets and diameter of rivet holes **32 - 1-3/8"**
Outer row rivet pitch at ends **10"** Depth of flange if manhole flanged **3-3/4"** 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 **--**
Internal diameter **--** Working pressure by Rules **--** Thickness of crown **--** Rivets **--**
stays **--** Inner radius of crown **--** Working pressure by Rules **--** No. and diameter
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 forgings **--**
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
the boiler be worked separately **--** Is a safety valve fitted to every part of the superheater which can be shut off from the boiler **--**
Area of each safety valve **--** Are the safety valves fitted with easing gear **--** Working pressure as
Rules **--** Pressure to which the safety valves are adjusted **--** Hydraulic test pressure
tubes **--** forgings and castings **--** and after assembly in place **--** Are drain cocks
valves fitted to free the superheater from water where necessary **--**
Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with **--**

The foregoing is a correct description,

Continuous Survey by
Dates of Survey { During progress of work in shops - - } British Corporation Surveyors Are the approved plans of boiler and superheater forwarded herewith -
while building { During erection on board vessel - - } (If not state date of approval.)
Total No. of visits -

Is this Boiler a duplicate of a previous case **Yes** If so, state Vessel's name and Report No. **Montreal Report No. 6900**

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) **This Boiler was constructed under the Special Survey of the British Corporation Surveyors to plans identical with those approved by this Society and with materials tested by the British Corporation Surveyors.**

Each end plate is made of two plates butt welded together by Union Melt Process and stress relieved. The Boiler was hydrostatically tested to 350 lbs. per square inch, with satisfactory results, and was fitted aboard the Vessel under British Corporation Survey.

The Boiler was now examined internally and externally and was afterwards seen under steam, the safety valves adjusted, tested for accumulation, and thickness of washers noted, and all found in good order.

This Vessel is eligible in my opinion for a record of LMC 10,46.

Survey Fee ... See Rpt. 4. } When applied for 19
Travelling Expenses (if any) : : } When received 19

John Stephen
Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute **FRI. 21 MAR 1947**

Assigned *Su F.E. ncky. rpt.*



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