

REPORT ON BOILERS.

No. 2331

Received at London Office -6 AUG 1929

Date of writing Report *25 July 1929* When handed in at Local Office *2nd August 1929* Port of *Barrow*

No. in Reg. Book. *30348* Survey held at *Barrow* Date, First Survey *Dec 5th 1927* Last Survey *July 9th 1929*

on the *Wm. Screw steamer "Orontes"* (Number of Visits *44*) Gross *19940* Tons *12009.81*

Master *✓* Built at *Barrow* By whom built *Wickers-Armstrongs Ltd.* Yard No. *634* When built *1929*

Engines made at *Barrow* By whom made *Wickers-Armstrongs Ltd.* Engine No. *634* When made *1929*

Boilers made at *✓* By whom made *✓* Boiler No. *634* When made *1929*

Nominal Horse Power *3825* Owners *Orient Steam Navigation Co. Ltd.* Port belonging to *Barrow*

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel *Wm. Beardmore & Co. Ltd. & Consett Iron Co. Ltd.* (Letter for Record *S*)

Total Heating Surface of Boilers *6654 sq ft* Is forced draught fitted *Yes* Coal or Oil fired *Oil*

No. and Description of Boilers *Two single ended cylindrical multitubular* Working Pressure *215 lb*

Tested by hydraulic pressure to *343 lb* Date of test *16.23.10/28* No. of Certificate *414 & 418* Can each boiler be worked separately *Yes*

Area of Firegrate in each Boiler *145 sq ft* No. and Description of safety valves to each boiler *Two direct spring loaded (high lift)*

Area of each set of valves per boiler *per Rule 14.46* Pressure to which they are adjusted *220 lb* 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 *on plates and bunkers* *18"* Is oil fuel carried in the double bottom under boilers *No*

Smallest distance between shell of boiler and tank top plating *22 1/2"* Is the bottom of the boiler insulated *Yes*

Largest internal dia. of boilers *16' - 6"* Length *11' - 2"* Shell plates: Material *Steel* Tensile strength *30/34 tons*

Thickness *1 1/2"* Are the shell plates welded or flanged *No* Description of riveting: circ. seams *end double lap*

Long. seams *Yulk (drift butt straps)* Diameter of rivet holes in *circ. seams 1 9/16"* Pitch of rivets *4.01 x 62*

Percentage of strength of circ. end seams *plate 61* rivets *48.4* Percentage of strength of circ. intermediate seam *plate* rivets *✓*

Percentage of strength of longitudinal joint *plate 85* rivets *84.5* combined *84.4* Working pressure of shell by Rules *215.6 lb*

Thickness of butt straps *outer 1 5/32"* inner *1 9/32"* No. and Description of Furnaces in each Boiler *3 Morrison* *201*

Material *Steel* Tensile strength *26/30 tons* Smallest outside diameter *44.4375*

Length of plain part *top* Thickness of plates *bottom 23/32"* Description of longitudinal joint *Weld*

Dimensions of stiffening rings on furnace or c.c. bottom *✓* Working pressure of furnace by Rules *222 lb*

End plates in steam space: Material *Steel* Tensile strength *26/30 tons* Thickness *1 3/16"* Pitch of stays *16 1/2" x 18"*

How are stays secured *Double nuts* Working pressure by Rules *224 lb*

Tube plates: Material *front Steel* back *Steel* Tensile strength *26/30 tons* Thickness *15/16"*

Mean pitch of stay tubes in nests *11 1/4" x 4 1/2"* Pitch across wide water spaces *13 1/2"* Working pressure *front 221 lb* back *214 lb*

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

at centre *8" x 1 1/2"* Length as per Rule *30 2 1/2"* Distance apart *8 1/4"* No. and pitch of stays

in each *2 @ 10"* Working pressure by Rules *216 lb* Combustion chamber plates: Material *Steel*

Tensile strength *26/30 tons* Thickness: Sides *23/32"* Back *23/32"* Top *23/32"* Bottom *15/16"*

Pitch of stays to ditto: Sides *4 3/4" x 10 3/8"* Back *8" x 10 3/4"* Top *8 1/4" x 10"* Are stays fitted with nuts or riveted over *Nuts*

Working pressure by Rules *216 lb* Front plate at bottom: Material *Steel* Tensile strength *26/30 tons*

Thickness *15/16"* Lower back plate: Material *Steel* Tensile strength *26/30 tons* Thickness *15/16"*

Pitch of stays at wide water space *15" x 10 3/4"* Are stays fitted with nuts or riveted over *Nuts*

Working Pressure *219 lb* Main stays: Material *Steel* Tensile strength *28/32 tons*

Diameter: At body of stay, *2 3/4"* No. of threads per inch *6* Area supported by each stay *294 sq in*

Over threads *✓* Working pressure by Rules *220 lb* Screw stays: Material *Steel* Tensile strength *26/30 tons*

Diameter: At turned off part, *1 3/4"* No. of threads per inch *9* Area supported by each stay *82.5 sq in*

Over threads *✓*

Working pressure by Rules 220 lb. Are the stays drilled at the outer ends No. Margin stays: Diameter { At turned off part, ✓
or Over threads 2 1/8
No. of threads per inch 9 Area supported by each stay 114.156 sq. Working pressure by Rules 248 lb.
Tubes: Material Iron. External diameter { Plain 2 1/2 Thickness { 8 L.S.G. No. of threads per inch 9
Stay 2 1/2 1/4, 5/16 + 3/8
Pitch of tubes 3 3/4 x 3 3/4 Working pressure by Rules 300 lb. Manhole compensation: Size of opening in
shell plate 21 1/2 x 14 Section of compensating ring 4 3/8 x 1 1/2 flanged. No. of rivets and diameter of rivet holes 36 — 1 9/16 ✓
Outer row rivet pitch at ends 10 1/2 Depth of flange if manhole flanged ✓ 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 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 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 1/2

FOR VICKERS-ARMSTRONGS LIMITED

The foregoing is a correct description,

A. Mitchell

Manufacturer.

Dates of Survey { During progress of work in shops - - - 1927 Dec 5, 1925 Jan 6, 12, Feb 7, 20, 27
while building { During erection on board vessel - - - May 12, 20, 26, Apr 14, 15, 16, 24, May 7, 31, Jun 1, 27
Are the approved plans of boiler and superheater forwarded herewith Yes
(If not state date of approval.)
Total No. of visits 44

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These boilers have been built in accordance with the approved plans and the Rules. The workmanship and materials are good. They have been efficiently fitted on board the vessel and their safety valves adjusted under steam.

Survey Fee ... £ See Mely report When applied for, 192
Travelling Expenses (if any) £ When received, 192

W. C. C. C. C.
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FMC 8 AUG 1929

Assigned See Mely report attached



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Foundation