

REPORT ON BOILERS.

No. 46631

Received at London Office 11 MAY 1927

Date of writing Report 5-5-1927 When handed in at Local Office 7-5-1927 Port of Glasgow

No. in Survey held at Reg. Book. Clydebank.

Date, First Survey 16-9-25 Last Survey 6-5-1927

on the Steel Twin Screw "Avelona"

(Number of Visits 141)

Gross 12857

Net 7857

Master Built at Clydebank By whom built John Brown & Co. Yard No. 515 When built 1927.

Engines made at Clydebank By whom made John Brown & Co. Engine No. 515 When made 1927.

Boilers made at Clydebank By whom made John Brown & Co. Boiler No. 515 When made 1927.

Nominal Horse Power Owners Blue Star Line L^d Port belonging to London.

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel D. Colville & Sons L^d ✓

(Letter for Record S. ✓)

Heating Surface of Boilers 22935.42 sq ft ✓

Is forced draught fitted Yes ✓

Coal or Oil fired Oil ✓

and Description of Boilers 3- Double ended. ✓

Working Pressure 200 ✓

Tested by hydraulic pressure to 350

Date of test 24-9-26

No. of Certificate 17201

17124

Can each boiler be worked separately Yes ✓

Area of Firegrate in each Boiler 143.2 sq ft

No. and Description of safety valves to each boiler 3- High lift. ✓

Pressure of each set of valves per boiler { per Rule 8.9" as fitted 8.3" ✓

Pressure to which they are adjusted 205 ✓

Are they fitted with easing gear Yes ✓

Use of donkey boilers, state whether steam from main boilers can enter the donkey boiler ✓

Least distance between boilers or uptakes and bunkers or woodwork 28" ✓

Is oil fuel carried in the double bottom under boilers Yes ✓

Least distance between shell of boiler and tank top plating 33" ✓

Is the bottom of the boiler insulated Yes ✓

Least internal dia. of boilers 17'-6" Length 22'-10" ✓

Shell plates: Material S ✓

Tensile strength 28-32 ✓

Thickness 1 37/64" Are the shell plates welded or flanged No ✓

Description of riveting: circ. seams { end A.R. ✓ inter. T.R. ✓

Seams T.R. A.B.S. ✓

Diameter of rivet holes in { circ. seams 1.593" long. seams 1.593" ✓

Pitch of rivets { 4.747" 3.776" 10.6875" ✓

Percentage of strength of circ. end seams { plate 57.8 rivets 55.0 ✓

Percentage of strength of circ. intermediate seam { plate 66.17 rivets 66.1 ✓

Percentage of strength of longitudinal joint { plate 85.05 rivets 91.2 combined 88.3 ✓

Working pressure of shell by Rules 200

Thickness of butt straps { outer 1.203" inner 1.328" ✓

No. and Description of Furnaces in each Boiler 8- Deighton ✓

Material S. ✓

Tensile strength 26-30 ✓

Smallest outside diameter 43.25" ✓

Thickness of plain part { top ✓ bottom ✓

Thickness of plates { crown 5/8" bottom 5/8" ✓

Description of longitudinal joint weld ✓

Dimensions of stiffening rings on furnace or c.c. bottom ✓

Working pressure of furnace by Rules 210

Plates in steam space: Material S ✓

Tensile strength 26-30 ✓

Thickness 1.296" Pitch of stays 22 1/4" x 17" ✓

Are stays secured A.N. ✓

Working pressure by Rules 200

Plates: Material { front S. ✓ back S. ✓

Tensile strength { 26-30 ✓ 26-30 ✓

Thickness { 13/16" ✓ 3/4" ✓

Pitch of stay tubes in nests 9.375" Pitch across wide water spaces 13 1/2" ✓

Working pressure { front 253 back 253 ✓

Boilers to combustion chamber tops: Material S ✓

Tensile strength 28-32 ✓

Depth and thickness of girder

Centre 9" x 1 1/2" ✓

Length as per Rule 32 1/2" ✓

Distance apart 9" ✓

No. and pitch of stays

Ch 3- 8 1/4" x 9" ✓

Working pressure by Rules 200

Combustion chamber plates: Material S. ✓

Tensile strength 26-30 ✓

Thickness: Sides 2 1/32" ✓

Back 2 1/32" ✓

Top 2 1/32" ✓

Bottom 2 5/32" ✓

Pitch of stays to ditto: Sides 9" x 8 1/4" ✓

Back 8 3/4" x 8 1/2" ✓

Top 9" x 8 1/4" ✓

Are stays fitted with nuts or riveted over nuts ✓

Working pressure by Rules 200

Front plate at bottom: Material S ✓

Tensile strength 26-30 ✓

Thickness 13/16" ✓

Lower back plate: Material ✓

Tensile strength ✓

Thickness ✓

Pitch of stays at wide water space ✓

Are stays fitted with nuts or riveted over ✓

Working Pressure ✓

Main stays: Material S ✓

Tensile strength 28-32 ✓

Pitch { At body of stay, 3" ✓ Over threads

No. of threads per inch 6 ✓

Area supported by each stay 378.25 sq in

Working pressure by Rules 229

Screw stays: Material S. ✓

Tensile strength 26-30

Pitch { At turned off part, 1 5/8" ✓ Over threads

No. of threads per inch 9. ✓

Area supported by each stay 74.23 sq in

Working pressure by Rules 20.5 Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, or Over threads. 1 13/16"
 No. of threads per inch 9 Area supported by each stay ✓ Working pressure by Rules ✓
 Tubes: Material 3 3/4" x 3 3/4" External diameter { Plain 2 1/2" Stay 2 1/2" Thickness { 8 w.g. No. of threads per inch 9
 Pitch of tubes 3 3/4" x 3 3/4" Working pressure by Rules 238 Manhole compensation: Size of opening in shell plate 21" x 17" Section of compensating ring 37" x 36" x 1 3/4" No. of rivets and diameter of rivet holes 38 - 1 1/32"
 Outer row rivet pitch at ends 10 1/16" Depth of flange if manhole flanged ✓ Steam Dome: Material none
 Tensile strength ✓ Thickness of shell ✓ Description of longitudinal joint ✓ Plate Rivets
 Diameter of rivet holes ✓ Pitch of rivets ✓ Percentage of strength of joint ✓ Thickness of crown ✓ No. and diameter of Boilers made at
 Internal diameter ✓ Working pressure by Rules ✓ Working pressure by Rules ✓ Diameter of rivet holes and pitch
 stays ✓ Inner radius of crown ✓ Size of doubling plate under dome ✓
 How connected to shell ✓
 of rivets in outer row in dome connection to shell ✓

Type of Superheater none Manufacturers of { Tubes ✓ Steel castings ✓
 Number of elements ✓ Material of tubes ✓ Internal diameter and thickness of tubes ✓ Can the superheater be shut off and
 Material of headers ✓ Tensile strength ✓ Thickness ✓ Working pressure as per ✓
 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 ✓ Hydraulic test pressure ✓
 Rules ✓ Pressure to which the safety valves are adjusted ✓ Are drain cocks or valves fitted ✓
 tubes ✓ and after assembly in place ✓
 to free the superheater from water where necessary ✓

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

John Brown & Company, Limited
 The foregoing is a correct description,
W. Henderson
 Clydebank Secretary

Dates of Survey { During progress of work in shops - - - See Accompanying
 while building { During erection on board vessel - - - machinery report

Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) no
 Total No. of visits 141

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These boilers have been built under special survey in accordance with the approved plans, and the Society's Rules and requirements. The materials and workmanship are good, they have been securely fitted on board the vessel.

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

Jas. Cairns
 Engineer Surveyor to Lloyd's Register of Ships

Committee's Minute GLASGOW 10 MAY 1927

Assigned See accompanying mach. report.