

## REPORT ON BOILERS.

No. 46631

Date of writing Report 5-5-1927

Received at London Office

11 MAY 1927

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

No. in Survey held at Blydebank.

Date, First Survey 16-9-25

Last Survey 6-5-1927

on the Steel Twin Screw "Avelona"

(Number of Visits 141)

Gross 12857  
Tons Net 7851

Master

Built at Blydebank

By whom built John Brown &amp; Co

Yard No. 515

When built 1927.

Engines made at Blydebank

By whom made John Brown &amp; Co

Engine No. 515

When made 1927.

Boilers made at Blydebank

By whom made John Brown &amp; Co

Boiler No. 515

When made 1927.

Nominal Horse Power

Owners

Blue Star Line Ltd

Port belonging to London

## MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel D. Colville &amp; Sons Ltd

Total Heating Surface of Boilers 7645.14 sq ft

Is forced draught fitted Yes

(Letter for Record S.)

No. and Description of Boilers 2- Single ended

Coal or Oil fired Oil

Working Pressure 200

Tested by hydraulic pressure to 350

Date of test 25-2-26

No. of Certificate 17055

Can each boiler be worked separately Yes

Area of Firegrate in each Boiler 71.6 sq ft

No. and Description of safety valves to each boiler 2- High lift

Area of each set of valves per boiler

per Rule 6.7 sq ft

as fitted 7.068 sq ft

Pressure to which they are adjusted 205

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 28"

Is oil fuel carried in the double bottom under boilers Yes

Smallest distance between shell of boiler and tank top plating 33"

Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers 17'-6"

Length 11'-9"

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

Type of seams T.R.A.B.S.

Diameter of rivet holes in

circ. seams 1.593"

long. seams 1.593"

Pitch of rivets

3.776"

Percentage of strength of circ. end seams

plate 57.8

rivets 55.0

Percentage of strength of circ. intermediate seam

plate 86.05

rivets 92.0

Percentage of strength of longitudinal joint

plate 86.05

rivets 92.0

combined 88.8

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 4- Deighton.

Tensile strength 26-30

Smallest outside diameter 43.25"

Length of plain part

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 200

Plates in steam space: Material S

Tensile strength 26-30

Thickness 1.296"

Pitch of stays 22 1/4" x 17"

Are stays secured D.N.

Working pressure by Rules 200

Front plates: Material

front S

back S

Tensile strength

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 200

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 5/8" 33"

Distance apart 9"

No. and pitch of stays

Each 3 x 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 S

Tensile strength 26-30

Thickness 5/16"

Pitch of stays at wide water space 13 1/2" x 8 1/2"

Are stays fitted with nuts or riveted over nuts

Working Pressure 203

Main stays: Material S

Tensile strength 28-32

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

At turned off part,

1 5/8"

No. of threads per inch 9

Area supported by each stay 74.25 sq in

Over threads

Working pressure by Rules **205** 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 **94.5"** Working pressure by Rules **207.**  
Tubes: Material External diameter { Plain **2 1/2"** Stay **2 1/2"** Thickness { **8 W.G.** **3/8"** 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 **36" x 37" x 1 37/64"** No. of rivets and diameter of rivet holes **38 x 1 19/32"**  
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  
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

**John Brown & Company, Limited**  
The foregoing is a correct description,

*[Signature]* Manufacturer  
Divisional 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.)

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

*[Signature]*  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **GLASGOW 10 MAY 1927**

Assigned **See accompanying mach. report.**



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