

REPORT ON BOILERS.

No. 9782

Received at London Office 28 JUL 1927

Date of writing Report 27th July 1927 When handed in at Local Office 27th July 1927 Port of Belfast

No. in Survey held at

Belfast

Date, First Survey

Last Survey

See F.E. Mchys report.

(Number of Visits

Gross

Tons

Net

on the

STEEL TWIN SC. BERTA

27th Master

Built at

Belfast

By whom built

Harland & Wolff Ltd.

Yard No. 798

When built 1927

Engines made at

Belfast

By whom made

Harland & Wolff Ltd.

Engine No. 798

When made 1927

Boilers made at

Belfast

By whom made

Harland & Wolff Ltd.

Boiler No. 798

When made 1927

Nominal Horse Power

238

Owners

Anderssohn Scheepvaart Maats.

Port belonging to

Willemstad, Curacao

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

David Colville & Co. Ltd.

(Letter for Record

S. ✓

Total Heating Surface of Boilers

3958 sq ft

Is forced draught fitted

Yes ✓

Coal or Oil fired

Oil ✓

and Description of Boilers

Two single ended cylindrical

Working Pressure

180 lbs ✓

Tested by hydraulic pressure to

360 lbs

Date of test 17. 6. 27

No. of Certificate 899 ✓

Can each boiler be worked separately

Yes ✓

No. and Description of safety valves to each boiler

Two High-lift Spring-loaded

No. of each set of valves per boiler

per Rule $\frac{2}{3} \times 12.80 = 9.20$
as fitted 16.58 ✓

Pressure to which they are adjusted

180 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

7'0" ✓

Is oil fuel carried in the double bottom under boilers

No. ✓

Smallest distance between shell of boiler and tank top plating

17" ✓

Is the bottom of the boiler insulated

Yes ✓

Largest internal dia. of boilers

13'0"

Length

12'3"

Shell plates: Material

Steel

Tensile strength 29 $\frac{3}{4}$ to 33 tons

Thickness

1 $\frac{1}{2}$ "

Are the shell plates welded or flanged

No.

Description of riveting: circ. seams

end double

seams

hebble D.B.S.

Diameter of rivet holes in

circ. seams 1 $\frac{1}{8}$ "

Pitch of rivets

2.988"

Percentage of strength of circ. end seams

plate 62.3

rivets 49.6

Percentage of strength of circ. intermediate seam

plate 90.5

rivets 85.3

Percentage of strength of longitudinal joint

plate 90.5

rivets 85.3

combined 88.8

Working pressure of shell by Rules

183 lbs.

Thickness of butt straps

outer 1 $\frac{3}{16}$ "inner 1 $\frac{5}{16}$ "

No. and Description of Furnaces in each Boiler

Two Morrison

Material

Steel

Tensile strength

26-30 tons

Smallest outside diameter

44 $\frac{1}{8}$ "

Thickness of plain part

top ✓

Thickness of plates

crown 9 $\frac{1}{16}$ "bottom 9 $\frac{1}{16}$ "

Description of longitudinal joint

weld

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

✓

Working pressure of furnace by Rules

184.9 lbs.

Plates in steam space: Material

Steel

Tensile strength

26-30 tons

Thickness

1 $\frac{3}{16}$ "

Pitch of stays 18"x18"

Are stays secured

double nuts & D $\frac{3}{8}$ washers

Working pressure by Rules

184 lbs.

Plates: Material

front Steel

back Steel

Tensile strength

26-30 tons

Thickness

1 $\frac{3}{16}$ "

Pitch of stay tubes in nests

8"

Pitch across wide water spaces

14"

Working pressure

front 202 lbs.

back 197 lbs.

Plates to combustion chamber tops: Material

Steel

Tensile strength

28-32 tons

Depth and thickness of girder

Length

9' 1 $\frac{3}{4}$ "

Length as per Rule

36"

Distance apart

9"

No. and pitch of stays

Thickness

Steel 9"

Working pressure by Rules

192 lbs

Combustion chamber plates: Material

Steel

Tensile strength

26-30 tons

Thickness: Sides

3 $\frac{1}{4}$ "

Back

3 $\frac{1}{4}$ "

Top

3 $\frac{1}{4}$ "

Bottom

3 $\frac{1}{4}$ "

Pitch of stays to ditto: Sides

8 $\frac{3}{4}$ " x 7 $\frac{3}{4}$ "

Back

8 $\frac{1}{2}$ " x 7 $\frac{3}{4}$ "

Top

9" x 9"

Are stays fitted with nuts or riveted over

riveted over

Working pressure by Rules

193 lbs

Front plate at bottom: Material

Steel

Tensile strength

26-30 tons

Thickness

1 $\frac{3}{8}$ "

Lower back plate: Material

Steel

Tensile strength

26-30 tons

Thickness

3 $\frac{1}{8}$ "

Pitch of stays at wide water space

13" x 7 $\frac{3}{4}$ "

Are stays fitted with nuts or riveted over

margin stays riveted.

Working Pressure

274 lbs

Main stays: Material

Steel ✓

Tensile strength

28-32 tons

At body of stay,

or

Over threads

No. of threads per inch

Five ✓

Area supported by each stay

324 sq in

Working pressure by Rules

200 lbs

Screw stays: Material

Steel ✓

Tensile strength

26-30 tons

At turned off part,

or

Over threads

No. of threads per inch

Ten ✓

Area supported by each stay

67.8 sq in

Working pressure by Rules 18546 Are the stays drilled at the outer ends Yes Margin stays: Diameter { At turned off part, 1 3/4" x 1 7/8" or Over threads 1 3/4" x 1 7/8"
No. of threads per inch 16 Area supported by each stay 90.3 sq. in. Working pressure by Rules 200 lbs
Tubes: Material 16 External diameter { Plain 2 3/4" Stay 2 3/4" Thickness { No 8. H.G. 5/16" 7/16" No. of threads per inch 16
Pitch of tubes 4" Working pressure by Rules stay 345 lbs plain 275 lbs Manhole compensation: Size of opening
shell plate 16"x12" Section of compensating ring 36x32 x 7/8" dentle No. of rivets and diameter of rivet holes 28- 1 1/8"
Outer row rivet pitch at ends 9" 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
stays Inner radius of crown Working pressure by Rules
How connected to shell Size of doubling plate under dome Diameter of rivet holes and
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
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
Rules Pressure to which the safety valves are adjusted Hydraulic test pressure
tubes, castings and after assembly in place Are drain cocks or valves
to free the superheater from water where necessary
Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with Yes.

The foregoing is a correct description,
For HARLAND AND WOLFE, LIMITED,
J. D. Keay

Dates of Survey { During progress of work in shops - - - See FE. machinery reft Are the approved plans of boiler and superheater forwarded herewith 76.2
while building { During erection on board vessel - - -
Total No. of visits

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)

These Boilers have been constructed under special survey. The materials & workmanship sound & good. They have been satisfactorily tested by hydraulic pressure in accordance with the rules, efficiently installed & fastened on the vessel. The safety valves have been adjusted under steam. In our opinion the vessel is eligible for notation - L.M.C. 7.27.

Survey Fee ... £ See machinery reft When applied for, 192
Travelling Expenses (if any) £ See Report When received, 192

Ree Ames & H. Southwell
Engineer-Surveyors to Lloyd's Register of Shipping

Committee's Minute WED. 3 AUG 1927

Assigned

See FE. rpt attached



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Foundation