

## REPORT ON BOILERS.

No. 16205

Received at London Office

Date of writing Report 29-3-1924 When handed in at Local Office

192

Port of

Rotterdam

No. in  
Sg. Book.

Survey held at

Rotterdam

Date, First Survey

11-6-10

Last Survey

23-3-

1924

on the

steel screw steamer "FORELAND"

(Number of Visits 21)

Tons

Gross 522.03

Net 285.77

Master

Built at

Rotterdam

By whom built

Wiltons Eng. Shipw. Co. No. 294

When built

1924

Engines made at

Rotterdam

By whom made

Wiltons Eng. Shipw. Co.

Engine No. 415

When made

1924

Boilers made at

do

By whom made

do

Boiler No. 713

When made

1924

Nominal Horse Power

79

Owners

Shipping &amp; Coal Co.

Port belonging to

London

## MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY

Manufacturers of Steel

Mannesmann Werke Akt. Schulz Krauss

(Letter for Record

S)

Total Heating Surface of Boilers

1490 ft<sup>2</sup>

Is forced draught fitted

no

Coal or Oil fired

Coal

No. and Description of Boilers

One multitubular

Working Pressure

100 lbs.

Tested by hydraulic pressure to

320 lbs.

Date of test

21-2-24

No. of Certificate

059

Can each boiler be worked separately

yes

Area of Firegrate in each Boiler

415 ft<sup>2</sup>

No. and Description of safety valves to each boiler

2 spring loaded

Area of each set of valves per boiler

per Rule

as fitted 22.090

Pressure to which they are adjusted

100 lbs.

Are they fitted with easing gear

Yes

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler

yes

Smallest distance between boilers or uptakes and bunkers or woodwork

20"

Is oil fuel carried in the double bottom under boilers

yes

Smallest distance between shell of boiler and tank top plating

10"

Is the bottom of the boiler insulated

no

Largest internal dia. of boilers

12'-11"

Length

10'-4"

Shell plates: Material

S.M. steel

Tensile strength

20-32 tons

Thickness

1 1/8"

Are the shell plates welded or flanged

no

Description of riveting: circ. seams

end 2 x riv.

long. seams double butt. 3 x riv.

Diameter of rivet holes in

circ. seams 1 3/16"

long. seams 1 3/16"

Pitch of rivets

3 7/8"

Percentage of strength of circ. end seams

plate 69.3 %  
rivets 43.5 %

Percentage of strength of circ. intermediate seam

plate 84.7 %  
rivets 94.5 %

Percentage of strength of longitudinal joint

plate 84.7 %  
rivets 94.5 %  
combined 80 %

Working pressure of shell by Rules

192 lbs.

Thickness of butt straps

outer 1 1/8"  
inner 1 1/8"

No. and Description of Furnaces in each Boiler

2 Morison's furnaces

Material

S.M. steel

Tensile strength

23-24 tons

Smallest outside diameter

40"

Length of plain part

top  
bottom

Thickness of plates

crown 3 5/8"  
bottom 3 5/8"

Description of longitudinal joint

welded

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

yes

Working pressure of furnace by Rules

210 lbs.

End plates in steam space: Material

S.M. steel

Tensile strength

26-30 tons

Thickness

1 3/4"

Pitch of stays

19" x 10"

How are stays secured

Screwed in plates and outside nuts

Working pressure by Rules

240 lbs.

Tube plates: Material

front S.M. steel  
back S.M. steel

Tensile strength

26-30 tons

Thickness

1 3/16"

Mean pitch of stay tubes in nests

10.70"

Pitch across wide water spaces

15 1/2"

Working pressure

front 203 lbs.  
back 203 lbs.

Girders to combustion chamber tops: Material

S.M. steel

Tensile strength

20-32 tons

Depth and thickness of girder

at centre

8 3/4" x 7/8" x 2

Length as per Rule

31"

Distance apart

8 3/4"

No. and pitch of stays

in each

3 x 7 7/8"

Working pressure by Rules

220 lbs.

Combustion chamber plates: Material

S.M. steel

Tensile strength

26-30 tons

Thickness: Sides

1 1/8"

Back

1 1/8"

Top

1 1/8"

Bottom

7/8"

Pitch of stays to ditto: Sides

7 7/8" x 8"

Back

7 3/4" x 7 3/4"

Top

8 3/4" x 7 7/8"

Are stays fitted with nuts or riveted over

margin nuts

Working pressure by Rules

192 lbs.

Front plate at bottom: Material

S.M. steel

Tensile strength

26-30 tons

Thickness

3/4"

Lower back plate: Material

S.M. steel

Tensile strength

26-30 tons

Thickness

3/4"

Pitch of stays at wide water space

15" x 7 3/4"

Are stays fitted with nuts or riveted over

nuts

Working Pressure

240 lbs.

Main stays: Material

S.M. steel

Tensile strength

20-32 tons

Diameter

At body of stay, 2 3/4"  
Over threads 3" - 3 1/4"

No. of threads per inch

7

Area supported by each stay

330 sq. in.

Working pressure by Rules

103 lbs.

Screw stays: Material

S.M. steel

Tensile strength

26-30 tons

Diameter

At turned off part, 1 1/2"  
Over threads 1 1/2"

No. of threads per inch

10

Area supported by each stay

63 sq. in. sides  
60 sq. in. back  
68.9 sq. in. top

W666-0086



Working pressure by Rules 193 Are the stays drilled at the outer ends ☒ Margin stays: Diameter { At turned off part, 1 3/4" or Over threads. 1 3/4"  
No. of threads per inch 10 Area supported by each stay 80.157 Working pressure by Rules 212 lbs  
Tubes: Material S.M. steel External diameter { Plain 3 1/2" Stay 3" Thickness { 1/8" No. of threads per inch 9  
Pitch of tubes 9 3/8" x 11 3/4" Working pressure by Rules 216 lbs Manhole compensation: Size of opening in shell plate 12" x 16" Section of compensating ring 34 1/2" x 30" x 1 1/8" No. of rivets and diameter of rivet holes 36 x 1 3/16"  
Outer row rivet pitch at ends 5 3/4" 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 ☒ 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 Yes  
The foregoing is a correct description,  
J. W. Bennett Manufacturer.

Dates of Survey { During progress of work in shops - - - 11-17-19 10-17 6-13-19 25-27-19 14-10 Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) 17-5-19  
while building { During erection on board vessel - - - 9-11-19 12-10 11-12 29-12 13-15 17-19  
Total No. of visits 21

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This boiler has been made under special survey in accordance with the approved plan, Secretary's letters and the Society's Rules, tested by hydraulic pressure and found sound and tight.

Survey Fee ... .. £ Please see machinery report When applied for, 192  
Travelling Expenses (if any) £ When received, 192

T. W. Bennett  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 8 APR 1927  
Assigned See P. 6. 4th attached