

## REPORT ON BOILERS.

No. 22432.

Received at London Office

23 SEP 1943

Date of writing Report 1<sup>ST</sup> SEPT. 1943. When handed in at Local Office 20<sup>TH</sup> SEPT. 1943. Port of Greenock.No. in Surrey held at  
Reg. Book.

Greenock.

Date, First Survey 18<sup>TH</sup> AUGUST 1942 Last Survey 17<sup>TH</sup> SEPTEMBER 1943.

on the

"MAHADEVI"

(Number of Visits)

Gross 5459.42.  
Tons Net 3005.00.

Built at Port Glasgow By whom built Lithgows Ltd. Yard No. 974 When built 1943  
Engines made at Greenock. By whom made Rankin & Blackmore Ltd. Engine No. 491 When made 1943  
Boilers made at Greenock. By whom made Rankin & Blackmore Ltd. Boiler No. 491 When made 1943  
Nominal Horse Power 517. Owners Asiatic Steam Navigation Co. Ltd. Port belonging to London.

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

Manufacturers of Steel

Colvilles Ltd.

Total Heating Surface of Boilers

7266. #

Is forced draught fitted

Yes

(Letter for Record

S.

Coal or Oil fired

Coal.

No. and Description of Boilers

3 Cylindrical multitubular

Working Pressure

230/ks

Tested by hydraulic pressure to

395/ks

Date of test

2-30/8/43

No. of Certificate

2326

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

53.5

No. and Description of safety valves to each boiler

2. Improved High Lift.

Area of each set of valves per boiler

(per Rule

5.22 sq"

as fitted

7.94 sq"

Pressure to which they are adjusted

230/ks

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

2'-6"

Is oil fuel carried in the double bottom under boilers

No.

Smallest distance between shell of boiler and tank top plating

2'-3"

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boilers

15'-1 7/16"

Length

12'-3"

Shell plates: Material

S.

Tensile strength

29/33 tons

Thickness

1 9/16"

Are the shell plates welded or flanged

No.

Description of riveting: circ. seams

(end

D.R.

long. seams

T.R.O.B.S.

Diameter of rivet holes in

(circ. seams

1 9/16"

Pitch of rivets

4 3/32"

10 7/16"

Percentage of strength of circ. end seams

(plate

63.0

(rivets

46.0

Percentage of strength of circ. intermediate seam

(plate

(rivets

Percentage of strength of longitudinal joint

(plate

85.0

(rivets

87.4

(combined

87.5

Thickness of butt straps

(outer

1 1/4"

(inner

1 3/8"

No. and Description of Furnaces in each Boiler

3 Corrugated, Reighton Section

Material

S.

Tensile strength

26/30 tons

Smallest outside diameter

3'-9 9/16"

Length of plain part

(top

(bottom

Thickness of plates

(crown

25"

(bottom

32"

Description of longitudinal joint

Weld.

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

End plates in steam space: Material

S.

Tensile strength

26/30 tons

Thickness

1 1/2"

Pitch of stays

21" x 21"

How are stays secured

Roukli Nuts and Washers.

Tube plates: Material

(front

(back

S.

Tensile strength

26/30 tons

Thickness

1"

7/8"

Mean pitch of stay tubes in nests

9 1/16"

Pitch across wide water spaces

13 3/4"

Girders to combustion chamber tops: Material

S.

Tensile strength

29/33 tons

Depth and thickness of girder

at centre

12 1/2" x 1 5/8"

Length as per Rule

41 1/32"

Distance apart

10"

No. and pitch of stays

in each

4-8 1/2"

Combustion chamber plates: Material

S.

Tensile strength

26/30 tons

Thickness: Sides

25"

Back

25 3/32"

Top

25 3/32"

Bottom

7/8"

Pitch of stays to ditto: Sides

10" x 9"

Back

9 3/4" x 9 1/4"

Top

10" x 8 1/2"

Are stays fitted with nuts or riveted over

Nuts

Front plate at bottom: Material

S.

Tensile strength

26/30 tons

Thickness

1"

Lower back plate: Material

S.

Tensile strength

26/30 tons

Thickness

1"

Pitch of stays at wide water space

14" x 9 1/4"

Are stays fitted with nuts or riveted over

Nuts

Main stays: Material

S.

Tensile strength

28/32 tons

Diameter: At body of stay,

or

Over threads

3 5/8"

No. of threads per inch

6

Screw stays: Material

S.

Tensile strength

26/30 tons

Diameter: At turned off part,

or

Over threads

2"

No. of threads per inch

9

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Are the stays drilled at the outer ends

No

Margin stays : Diameter { At turned off part, or Over threads 2 1/2 " 6 2 1/4 "

No. of threads per inch

9

Tubes : Material W. 1. External diameter { Plain 2 3/4 " Stay 2 3/4 " Thickness { 8 W.G. 5 1/16 " 3/8 " 7/16 " No. of threads per inch 9.

Pitch of tubes 4 " x 3 15/16 "

Manhole compensation: Size of opening in

shell plate 16 " x 12 " Section of compensating ring 2' 9 " x 2' 5 " x 1 9/16 " No. of rivets and diameter of rivet holes 28 - 1 9/16 "

Outer row rivet pitch at ends 10 7/16 " 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

Thickness of crown

No. and diameter of

stays

Inner radius of crown

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 forgings

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

Pressure to which the safety valves are adjusted

Hydraulic test pressure :

tubes

forgings and 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 22 inclusive for boilers been complied with

Yes.

The foregoing is a correct description,

Rankin & Blackmore Ltd.,

Managing Director. Manufacturer.

Dates of Survey { During progress of work in shops - - } while building { During erection on board vessel - - }

SEE MACHINERY REPORT.

Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)

Yes.

Total No. of visits

Is this Boiler a duplicate of a previous case

No

If so, state Vessel's name and Report No.

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

These boilers have been built under Special Survey in accordance with rules and the approved plans. The materials and workmanship are good. For recommendation please see Machinery report.

Survey Fee

Travelling Expenses (if any)

When applied for,

19

When received,

19

Committee's Minute

Assigned

M. Caldwell

Engineer Surveyor to Lloyd's Register of Shipping.



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