

Rpt. 5a.

REPORT ON BOILERS.

No. 16580
WED. DEC. 17, 1913

Received at London Office

Date of writing Report

191

When handed in at Local Office

12/12/1913

Port of Greenock.

No. in Survey held at

Greenock

Date, First Survey

10th Aug. 1912

Last Survey

5th Dec. 1913

Reg. Book.

on the TWIN SCREW STEAMER

"BERRIMA."

(Number of Visits

91)

Gross

11,137

Tons

Net

7,037

Master

Hine

Built at

Greenock

By whom built

Caird & Co. Ltd.

When built

1913.

Engines made at

Greenock

By whom made

Caird & Co. Ltd.

When made

1913.

Boilers made at

Greenock.

By whom made

Caird & Co. Ltd.

When made

1913.

Registered Horse Power

Owners

Peninsular & Oriental S.S. Co.

Port belonging to

Greenock.

MULTITUBULAR BOILERS—MAIN, AUXILIARY OR DONKEY.

Manufacturers of Steel

J. Colvile & Sons Ltd.

(Letter for record

5)

Total Heating Surface of Boilers

6264 sq. ft.

Is forced draft fitted

Yes.

No. and Description of

Boilers 2: Cylindrical Multitubular 2 Double & 2 Single Working Pressure 215 lbs. Tested by hydraulic pressure to 430 lbs. Date of test 5/9/13.

No. of Certificate

1139.

Can each boiler be worked separately

Yes.

Area of fire grate in each boiler

73 sq. ft.

No. and Description of

safety valves to each boiler 2: Direct Spring Loaded. Area of each valve 8.29 sq. in. Pressure to which they are adjusted 220 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

About 12".

Mean dia. of boilers

16' 6".

Length

11' 8".

Material of shell plates

Steel

Thickness

1 3/32"

Range of tensile strength

30 tons per sq. in.

Are the shell plates welded or flanged

No.

Descrip. of riveting: cir. seams Lap. Double long. seams Side Butt Shape.

Diameter of rivet holes in long. seams

1 3/32"

Pitch of rivets

10 1/2" 5 1/4"

Lap of plates or width of butt straps

2 1/4"

Per centages of strength of longitudinal joint

rivets 95.2

plate 83.6.

Working pressure of shell by

rules 253 lbs. Size of manhole in shell

16" x 12".

Size of compensating ring

8 1/2" x 1 3/32"

No. and Description of Furnaces in each

boiler 4: Morrison's

Material

Steel

Outside diameter

43 1/4"

Length of plain part

top 8' 2"

bottom 8' 2"

Thickness of plates

crown 5"

bottom 8"

Description of longitudinal joint

Weld

No. of strengthening rings

None

Working pressure of furnace by the rules

233 lbs. Combustion chamber

plates: Material

Steel

Thickness: Sides

5"

Back

5"

Top

4 3/4"

Bottom

1"

Pitch of stays to ditto: Sides 7 1/4" x 8" Back 7 1/4" x 8"

Top 8" x 8 1/2" If stays are fitted with nuts or riveted heads

Auto.

Working pressure by rules

218 lbs.

Material of stays

Steel

Diameter at

smallest part

1 1/2"

Area supported by each stay

68 sq. in.

Working pressure by rules

237 lbs.

End plates in steam space: Material

Steel

Thickness

Pitch of stays

18 3/4" x 16 1/2"

How are stays secured

Rivets

Working pressure by rules

237 lbs.

Material of stays

Steel

Diameter at smallest part

3 3/16"

Area supported by each stay

309 sq. in.

Working pressure by rules

264 lbs.

Material of Front plates at bottom

Steel

Thickness

1 3/16"

Material of

Lower back plate

Steel

Thickness

1 3/16"

Greatest pitch of stays

12"

Working pressure of plate by rules

228 lbs.

Diameter of tubes

Pitch of tubes

3 3/4" x 3 3/4"

Material of tube plates

Steel

Thickness: Front

1 1/4" 1 1/16"

Back

3/4"

Mean pitch of stays

8' 3"

Pitch across wide

water spaces

13 1/2"

Working pressures by rules

292 lbs.

293 lbs.

Girders to Chamber tops: Material

Steel

Depth and thickness of

girder at centre

10 1/2" x 1 1/2"

Length as per rule

22' 8"

Distance apart

8 1/2"

Number and pitch of Stays in each

3: 8"

Working pressure by rules 257 lbs. Superheater or Steam chest; how connected to boiler

None

Can the superheater be shut off and the boiler worked

separately

Diameter

Length

Thickness of shell plates

Material

Description of longitudinal joint

Diam. of rivet

holes

Pitch of rivets

Working pressure of shell by rules

Diameter of flue

Material of flue plates

Thickness

If stiffened with rings

Distance between rings

Working pressure by rules

End plates: Thickness

How stayed

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

The foregoing is a correct description,

FOR CAIRD AND COMPANY, LIMITED

Malcolm Fisher

Manufacturer.

Dates of Survey

During progress of

work in shops - -

while

During erection on

building

board vessel - - -

See accompanying report.

Is the approved plan of boiler forwarded herewith

Yes.

Total No. of visits

91

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

These Boilers were built under special survey and the materials and workmanship are good.

For recommendations, see accompanying report.

Survey Fee £

When applied for,

191

Travelling Expenses (if any) £

When received,

191

Wm. R. Austin

Engineer Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute

GLASGOW

16 DEC. 1913

Assigned See accompanying machinery report.

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Foundation