

REPORT ON BOILERS.

No. 8687.

Received at London Office 10 APR 1929

Date of writing Report 2-4-1929. When handed in at Local Office

Port of Dundee.

No. in Survey held at Reg. Book.

Dundee.

Date, First Survey

28-9-28

Last Survey

26-3-

1929.

on the

T. S. S. "PERCH ROCK."

(Number of Visits 20)

Tons

Gross

Net

Master

Built at

Dundee.

By whom built

Caledon S.S. & E. Co. Ltd. Yard No. 328

When built 1929.

Engines made at

Dundee.

By whom made

The Caledon S.S. & E. Co. Ltd.

Engine No. 328

When made 1929.

Boilers made at

Dundee.

By whom made

The Caledon S.S. & E. Co. Ltd.

Boiler No. 328

When made 1929.

Nominal Horse Power

183

Owners

The Mayor, Aldermen & Burgesses

Port belonging to

Liverpool.

of the Borough of Wallasey.

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Mann. Scottish Iron & Steel Co. Ltd, Wm. Beardmore & Co. Ltd.

(Letter for Record S.)

Total Heating Surface of Boilers

3244

Is forced draught fitted

No

Coal or Oil fired

Coal

No. and Description of Boilers

Two Single ended, return tube

2. S.S.

Working Pressure

180 lb.

Tested by hydraulic pressure to

320 lb.

Date of test

20-1-29

No. of Certificate

1025

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

100

No. and Description of safety valves to each boiler

2-2" - Spring loaded, high lift. Improved.

Area of each set of valves per boiler

per Rule

5.2

as fitted

6.28

Pressure to which they are adjusted

180 lb.

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

2'-0"

Is oil fuel carried in the double bottom under boilers

No

Smallest distance between shell of boiler and tank top plating

6"

Is the bottom of the boiler insulated

No

Largest internal dia. of boilers

13'-0"

Length

10'-10"

Shell plates: Material

Steel

Tensile strength

28/32 tons

Thickness

1 5/16"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end

D.R.

long. seams

T.R.D.B.S.

Diameter of rivet holes in

circ. seams

1 1/8"

long. seams

1 1/8"

Pitch of rivets

3 1/4"

8 1/2"

Percentage of strength of circ. end seams

plate

65.3.

rivets

Percentage of strength of circ. intermediate seam

plate

46.6.

rivets

Percentage of strength of longitudinal joint

plate

86.0

rivets

88.0

combined

89.0

Working pressure of shell by Rules

181 lb.

Thickness of butt straps

outer

13/16"

inner

1 1/16"

No. and Description of Furnaces in each Boiler

3 Single Section.

Material

Steel

Tensile strength

26-30 tons

Smallest outside diameter

3'-5 1/8"

Length of plain part

top

Yes

Thickness of plates

crown

9/16"

bottom

9/16"

Description of longitudinal joint

weld

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

Yes

Working pressure of furnace by Rules

198 lb.

End plates in steam space: Material

Steel

Tensile strength

26-30 tons

Thickness

1 9/16"

Pitch of stays

19" x 16 1/2"

How are stays secured

Double nuts

Working pressure by Rules

190 lb.

Tube plates: Material

front

Steel

back

Steel

Tensile strength

26-30 tons

Thickness

1 3/16"

3/4"

Mean pitch of stay tubes in nests

9 9/32"

Pitch across wide water spaces

13 1/2"

Working pressure

front 181 lb.

back 220 lb.

Girders to combustion chamber tops: Material

Steel

Tensile strength

28-32 tons

Depth and thickness of girder

at centre

9 1/4" 2 C 3/4"

Length as per Rule

2'-9 5/8"

Distance apart

8 1/2"

No. and pitch of stays

in each

3 C 8 1/8"

Working pressure by Rules

193 lb.

Combustion chamber plates: Material

Steel

Tensile strength

26-30 lb.

Thickness: Sides

9/32"

Back

5/8"

Top

5/8"

Bottom

3/4"

Pitch of stays to ditto: Sides

8 1/8" x 7 1/2"

Back

8 1/4" x 8 1/4"

Top

8 1/8" x 8 1/2"

Are stays fitted with nuts or riveted over

Nuts

Working pressure by Rules

188 lb.

Front plate at bottom: Material

Steel

Tensile strength

26-30 tons

Thickness

1 3/16"

Lower back plate: Material

Steel

Tensile strength

26-30 tons

Thickness

3/4"

Pitch of stays at wide water space

13 3/16"

Are stays fitted with nuts or riveted over

Nuts

Working Pressure

184 lb.

Main stays: Material

Steel

Tensile strength

28-32 tons

Diameter

At body of stay,

2 3/4"

Over threads

No. of threads per inch

6

Area supported by each stay

313.5 sq. in.

Working pressure by Rules

198 lb.

Screw stays: Material

Iron

Tensile strength

24 tons

Diameter

At turned off part,

1 5/8"

Over threads

No. of threads per inch

9

Area supported by each stay

72 sq. in.

Working pressure by Rules 210 lb. Are the stays drilled at the outer ends 40 Margin stays: Diameter { At turned off part, 1 3/4" or Over threads }
No. of threads per inch 9 Area supported by each stay 80 0" Working pressure by Rules 200 lb.
Tubes: Material Iron External diameter { Plain 3" Stay 3" Thickness { 7/32" 3/8" No. of threads per inch 9
Pitch of tubes 4 1/8" Working pressure by Rules 200 lb. Manhole compensation: Size of opening in
shell plate 16" x 12" Section of compensating ring No. of rivets and diameter of rivet holes
Outer row rivet pitch at ends 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.

FOR AND ON BEHALF OF THE CALEDON SHIPBUILDING & ENGINEERING CO. LD.

The foregoing is a correct description, J. J. Bell SECRETARY Manufacturer.

1928. SEPT. 25. OCT. 5. 11. 23. 24. NOV. 13. 20. 30.
Dates of Survey { During progress of work in shops - - DEC. 13. 20. JAN. 7. 14. 18. 22. 28. 30.
while building { During erection on board vessel - - FEB. 13. MARCH. 15. 19. 26.
Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)
Total No. of visits 20.

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)
The boiler has been constructed under Special Survey in accordance with the Rules and approved plans.
The materials & workmanship are of good description.
The boiler has been fitted on board the vessel in an efficient manner, examined under steam & safety valves adjusted.

Survey Fee ... £ : : When applied for, 192
Travelling Expenses (if any) £ : : When received, 192

J. J. Bell Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 16 APR 1929

Assigned see minute on
Dun. Rpt 8687 attached