

Rpt. 5a.

REPORT ON BOILERS.

No. 46633

Received at London Office

Date of writing Report

192

When handed in at Local Office

5.5.27 1927

Port of

Glasgow

No. in
Reg. Book

Survey held at

Glasgow

Date, First Survey

26.10.26

Last Survey

5.5.1927

on the

new steel S/S "CALEDON".

(Number of Visits 48)

Gross
Tons
Net

Master

Built at

Bumtisdland

By whom built

Bumtisdland S/B Co

Yard No. 140

When built 1927

Engines made at

Glasgow

By whom made

W. Rowan & Co Ltd

Engine No. 849

When made 1927

Boilers made at

Glasgow

By whom made

W. Rowan & Co Ltd

Boiler No. 849

When made 1927

Nominal Horse Power

154

Owners

Howard Smith Ltd

Port belonging to

Sydney N.S.W.

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

The Steel Company of Scotland, Glasgow (Letter for Record 15)

Total Heating Surface of Boilers

2904 sq ft

Is forced draught fitted

Coal or Oil fired

coal

No. and Description of Boilers

Two single ended main

Working Pressure

180

Tested by hydraulic pressure to

320

Date of test

20.4.27

No. of Certificate

17385

Can each boiler be worked separately

yes

Area of Firegrate in each Boiler

33.3 sq ft

No. and Description of safety valves to each boiler

Two direct spring

Area of each set of valves per boiler

per Rule

9.307 sq ft

as fitted

9.8 sq ft

Pressure to which they are adjusted

185 lb.

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

8'-0"

Is oil fuel carried in the double bottom under boilers

no

Smallest distance between shell of boiler and tank top plating

2 feet

Is the bottom of the boiler insulated

yes

Largest internal dia. of boilers

12'-4"

Length

10'-8"

Shell plates: Material

steel

Tensile strength

28.32 tons

Thickness

1 1/4"

Are the shell plates welded or flanged

no

Description of riveting: circ. seams

end DR

long. seams

DBS. TR

Diameter of rivet holes in

circ. seams

1 1/16"

Pitch of rivets

2.93"

7 2/32"

Percentage of strength of circ. end seams

plate

63.7

rivets

48.8

Percentage of strength of circ. intermediate seam

plate

✓

Percentage of strength of longitudinal joint

plate

86.2

rivets

86.6

combined

89.7

Working pressure of shell by Rules

181 lb. absolute

Thickness of butt straps

outer 3/4"

inner 1/8"

No. and Description of Furnaces in each Boiler

Two Beighton

Material

steel

Tensile strength

26.30 tons

Smallest outside diameter

41.03"

Length of plain part

top

bottom

Thickness of plates

crown

3/32"

bottom

64

Description of longitudinal joint

welded

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

Working pressure of furnace by Rules

181

End plates in steam space: Material

steel

Tensile strength

26.30 tons

Thickness

1 1/2"

Pitch of stays

16" x 16 3/4"

How are stays secured

DN.

Working pressure by Rules

183

Tube plates: Material

front steel

back "

Tensile strength

26.30 tons

Thickness

7/8"

Mean pitch of stay tubes in nests

10.219"

Pitch across wide water spaces

13 7/8"

Working pressure

front 180

back 180

Girders to combustion chamber tops: Material

steel

Tensile strength

28-32 tons

Depth and thickness of girder

at centre

2 @ 7 5/8" x 7/8"

Length as per Rule

31.625

Distance apart

8 1/2"

No. and pitch of stays

in each

2 @ 10 3/4"

Working pressure by Rules

181

Combustion chamber plates: Material

steel

Tensile strength

26.30 tons

Thickness: Sides

45/64"

Back

21/32"

Top

45/64"

Bottom

45/64"

Pitch of stays to ditto: Sides

10 3/4" x 8 1/2"

Back

9 1/2" x 8 1/2"

Top

10 3/4" x 8 1/2"

Are stays fitted with nuts or riveted over

nuts

Working pressure by Rules

180

Front plate at bottom: Material

steel

Tensile strength

26.30 tons

Thickness

7/8"

Lower back plate: Material

steel

Tensile strength

26.30 tons

Thickness

3/4"

Pitch of stays at wide water space

13 1/8" x 8 1/2"

Are stays fitted with nuts or riveted over

nuts

Working Pressure

198

Main stays: Material

steel

Tensile strength

28.32 tons

Diameter

At body of stay,

2 1/2"

Over threads

No. of threads per inch

6

Area supported by each stay

254 sq in

Working pressure by Rules

210

Screw stays: Material

steel

Tensile strength

26.30 tons

Diameter

At turned off part,

1 5/8"

Over threads

No. of threads per inch

9

Area supported by each stay

83 sq in

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Working pressure by Rules 183 Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, or Over threads } 1 3/4

No. of threads per inch 9 Area supported by each stay 99 sq Working pressure by Rules 183

Tubes: Material Iron External diameter { Plain 3 1/4 Stay 3 1/4 } Thickness { 8 W.S. 4 5/16 3/8 } No. of threads per inch 9

Pitch of tubes 4 1/2 x 4 1/2 Working pressure by Rules 230 Manhole compensation: Size of opening in shell plate 15 1/2 x 19 1/2 Section of compensating ring 6 1/2 x 1 1/4 No. of rivets and diameter of rivet holes 34 @ 1 1/8

Outer row rivet pitch at ends 7 1/8 Depth of flange if manhole flanged 3 Steam Dome: Material none

Tensile strength 201 Thickness of shell 1 1/2 Description of longitudinal joint 1

Diameter of rivet holes 1 1/8 Pitch of rivets 2 Percentage of strength of joint { Plate 100 Rivets 100 }

Internal diameter PA8 Working pressure by Rules 230 Thickness of crown 1 1/2 No. and diameter of stays PA8 Inner radius of crown 1 1/2 Working pressure by Rules 230

How connected to shell 1 1/2 Size of doubling plate under dome 1 1/2 Diameter of rivet holes and pitch of rivets in outer row in dome connection to shell 1 1/2

Type of Superheater none Manufacturers of { Tubes 1 Steel castings 1 }

Number of elements 1 Material of tubes 1 Internal diameter and thickness of tubes 1

Material of headers 1 Tensile strength 1 Thickness 1 Can the superheater be shut off and the boiler be worked separately 1

Area of each safety valve 1 Are the safety valves fitted with easing gear 1 Working pressure as per Rules 1

Pressure to which the safety valves are adjusted 1 Hydraulic test pressure: tubes 1 castings 1 and after assembly in place 1 Are drain cocks or valves fitted to free the superheater from water where necessary 1

Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with yes

The foregoing is a correct description,
for David Rowan & Co. Ltd.
Arch. W. Grierson Manufacturer.

Dates { During progress of work in shops - - } See Accompanying Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval) 1

while building { During erection on board vessel - - } Machinery report Total No. of visits 48

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

The materials and workmanship are good.

The boilers have been constructed under special survey in accordance with the Rules and have been sent to Burntisland to be fitted in the vessel.

The boilers have now been satisfactorily fitted and secured in the vessel, steam raised and the safety valves adjusted to 185 lbs. per sq. inch

Survey Fee See Rpt. 4 £ 192 When applied for, 192

Travelling Expenses (if any) £ 192 When received, 192

L. C. Davis. A. W. Morrison
Engineer Surveyor to Lloyd's Register of Shipping,

Committee's Minute GLASGOW 10 MAY 1927

Assigned Deferred for compl.

TUES. 19 JUL 1927



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