

REPORT ON BOILERS.

No. 48782

Received at London Office

30 JAN 1929

Date of writing Report

192

When handed in at Local Office

18-1-1929

Port of

Glasgow

No. in Survey held at
Reg. Book.

Glasgow

Date, First Survey

28-5-28

Last Survey

17-1-

1929

(Number of Visits

77)

Gross

8670

Tons

Net

5223

on the

new steel S/S "VACUOLINE"

Master

Built at

Port Glasgow

By whom built

Lithgow Ltd

Yard No. 820

When built

1929

Engines made at

Glasgow

By whom made

David Rowan & Co Ltd

Engine No. 889

When made

1929

Boilers made at

Glasgow

By whom made

David Rowan & Co Ltd

Boiler No. 889

When made

1929

Nominal Horse Power

630

Owners

Vacuum Oil Co Ltd

Port belonging to

London

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel *James Dunlop & Co Ltd Glasgow. Wm Beaudouin & Co Ltd Parkhead. Witkowitz Bergbau und Eisenhütten Gewerkschaft in Witkowitz.*
(Letter for Record)

Total Heating Surface of Boilers

9276 sq ft

Is forced draught fitted

yes

Coal or Oil fired

oil

No. and Description of Boilers

Three single ended / 3 SB

Working Pressure

230

Tested by hydraulic pressure to

395

Date of test

21-9-28

No. of Certificate

18045

Can each boiler be worked separately

yes

Area of Firegrate in each Boiler

No. and Description of safety valves to each boiler

Two Improved high lift

Area of each set of valves per boiler

per Rule

9.46 sq ft

as fitted

9.80 sq ft

Pressure to which they are adjusted

230

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'-11"

Is oil fuel carried in the double bottom under boilers

no

Smallest distance between shell of boiler and tank top plating

3'-0"

Is the bottom of the boiler insulated

yes

Largest internal dia. of boilers

15'-10 1/2"

Length

12'-1 1/8"

Shell plates: Material

steel

Tensile strength

30-34 tons

Thickness

1 1/2"

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

F 1 1/2"

B 1 1/2"

Pitch of rivets

F 3.5"

B 4.368"

Percentage of strength of circ. end seams

plate

F 58.9

B 64.2

Percentage of strength of circ. intermediate seam

plate

F 46.4

B 44.2

Percentage of strength of longitudinal joint

plate

84.9

rivets

89.5

Working pressure of shell by Rules

230

Thickness of butt straps

outer

1 5/8"

inner

1 3/4"

No. and Description of Furnaces in each Boiler

Three Deighton 3 c.f.

Material

steel

Tensile strength

26-30 tons

Smallest outside diameter

43.75"

Length of plain part

top

bottom

Thickness of plates

crown

1 1/2"

Description of longitudinal joint

welded

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

Working pressure of furnace by Rules

23.1

End plates in steam space: Material

steel

Tensile strength

26-30 tons

Thickness

1 1/2"

Pitch of stays

16 1/2" x 23"

How are stays secured

DN

Working pressure by Rules

230

Tube plates: Material

front steel

back "

Tensile strength

26-30 tons

Thickness

29/32"

3/4"

Mean pitch of stay tubes in nests

9.2"

Pitch across wide water spaces

13 1/2"

Working pressure

front

240

back

236

Girders to combustion chamber tops: Material

steel

Tensile strength

28-32 tons

Depth and thickness of girder

at centre

2 @ 10 3/8" x 7/8"

Length as per Rule

37.47"

Distance apart

8 3/4"

No. and pitch of stays

in each

4 @ 7 1/4"

Working pressure by Rules

250

Combustion chamber plates: Material

steel

Tensile strength

26-30 tons

Thickness: Sides

2 1/2"

Back

2 1/2"

Top

2 1/2"

Bottom

1 1/8"

Pitch of stays to ditto: Sides

7 1/2" x 8"

Back

7 3/8" x 8 1/2"

Top

7 1/4" x 8 3/4"

Are stays fitted with nuts or riveted over

nuts

Working pressure by Rules

232

Front plate at bottom: Material

steel

Tensile strength

26-30 tons

Thickness

29/32"

Lower back plate: Material

steel

Tensile strength

26-30 tons

Thickness

5 3/4"

Pitch of stays at wide water space

13 1/2"

Are stays fitted with nuts or riveted over

nuts

Working Pressure

243

Main stays: Material

steel

Tensile strength

28-32 tons

Diameter

At body of stay,

3 1/4" & 3"

No. of threads per inch

6

Area supported by each stay

388 & 337 sq in

Working pressure by Rules

239 & 233

Screw stays: Material

steel

Tensile strength

26-30 tons

Diameter

At turned off part,

1 5/8"

No. of threads per inch

9

Area supported by each stay

63.5 sq in

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Working pressure by Rules 240 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 77.80" Working pressure by Rules 233

Tubes: Material Iron External diameter { Plain 2 1/2" Thickness { 9 w.g. No. of threads per inch 9

Pitch of tubes 3 5/8" x 3 23/32" Working pressure by Rules 230 Manhole compensation: Size of opening in shell plate 15 1/2" x 19 1/2" Section of compensating ring 11" x 1 1/2" No. of rivets and diameter of rivet holes 32 @ 1 7/8"

Outer row rivet pitch at ends 10 13/16" Depth of flange if manhole flanged 3" Steam Dome: Material none

Tensile strength 058 Thickness of shell 1 1/2" Description of longitudinal joint

Diameter of rivet holes 088 Pitch of rivets 1 1/2" Percentage of strength of joint { Plate Rivets 058

Internal diameter 088 Working pressure by Rules 088 Thickness of crown 088 No. and diameter of stays 088 Inner radius of crown 088 Working pressure by Rules 088

How connected to shell 088 Size of doubling plate under dome 088 Diameter of rivet holes and pitch of rivets in outer row in dome connection to shell 088

Type of Superheater none Manufacturers of { Tubes Steel castings

Number of elements 088 Material of tubes 088 Internal diameter and thickness of tubes 088

Material of headers 088 Tensile strength 088 Thickness 088 Can the superheater be shut off and the boiler be worked separately 088 Is a safety valve fitted to every part of the superheater which can be shut off from the boiler 088

Area of each safety valve 088 Are the safety valves fitted with easing gear 088 Working pressure as per Rules 088 Pressure to which the safety valves are adjusted 088 Hydraulic test pressure: tubes 088, castings 088 and after assembly in place 088 Are drain cocks or valves fitted to free the superheater from water where necessary 088

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with 088

The foregoing is a correct description, DAVID ROWAN & CO. LIMITED Manufacturer.

Dates of Survey { During progress of work in shops - - See Accompanying Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) 088

while building { During erection on board vessel - - Machy Report Total No. of visits 77

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

The materials and workmanship are good.

The boiler has been constructed under Special Survey in accordance with the Rules, satisfactorily fitted in the vessel and their safety valves adjusted under steam.

A.S.
18/1/29.

Survey Fee £ When applied for, 192

Travelling Expenses (if any) £ When received, 192

S. C. D. and
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 29 JAN 1929

Assigned See Accompanying Machy. Report