

## REPORT ON BOILERS.

No. 59569

APR -6 1938

Received at London Office

Date of writing Report

19

When handed in at Local Office

2. 4. 1938

Port of

Glasgow

No. in Survey held at

Reg. Book.

Glasgow

Date, First Survey

Last Survey 29.3.1938

on the new steel S/S "MACHARDA".

(Number of Visits

Gross

7998

Tons

Net

4762

Master

Built at

Port Glasgow

By whom built

Wm Hamilton &amp; Co Ltd

Yard No. 430

When built 1938

Engines made at

Glasgow

By whom made

David Rowan &amp; Co Ltd

Engine No. 1002 When made 1938

Boilers made at

Glasgow

By whom made

David Rowan &amp; Co Ltd

Boiler No. 1002 When made 1938

Nominal Horse Power

1157

Owners

T. &amp; J. Brocklebank Ltd

Port belonging to

Liverpool

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

Manufacturers of Steel

Steel B. of Scotland Ltd.

(Letter for Record

r

Total Heating Surface of Boilers

14060 sq ft

Is forced draught fitted

yes

Coal or Oil fired

oil

No. and Description of Boilers

Four single ended

Working Pressure 250

Tested by hydraulic pressure to

425 lb

Date of test

24.10.37

No. of Certificate

24.10.37

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 8.30"

as fitted 9.820"

Pressure to which they are adjusted

255

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

2'0"

Is oil fuel carried in the double bottom under boilers

yes

Smallest distance between shell of boiler and tank top plating

2'0"

Is the bottom of the boiler insulated

yes

Largest internal dia. of boilers

17'0"

Length

12'6"

Shell plates: Material

steel

Tensile strength

34-38 tons

Thickness

1 3/4" &amp; 1 5/8"

Are the shell plates welded or flanged

no

Description of riveting: circ. seams

end DR

inter. DR

long. seams

DRS. TR

Diameter of rivet holes in

circ. seams

F 1 9/16" C 1 3/4" B 1 3/4"

Pitch of rivets

F 3.707" C 4.755" B 4.6"

Percentage of strength of circ. end seams

plate F 57.8. C 63.2. B 62

rivets F 43.1 C 63.2 B 43.8

Percentage of strength of circ. intermediate seam

plate

T.R.

Percentage of strength of longitudinal joint

plate 84.2

rivets 84.2

Working pressure of shell by Rules

251

Thickness of butt straps

outer 1 1/4"

inner 1 3/8"

No. and Description of Furnaces in each Boiler

Four Doughton corrugated

Material

steel

Tensile strength

26-30 tons

Smallest outside diameter

3-6 3/16"

Length of plain part

top

bottom

Thickness of plates

crown 2 3/32"

bottom 2 3/32"

Description of longitudinal joint

welded

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

Working pressure of furnace by Rules

250

End plates in steam space: Material

steel

Tensile strength

26-30 tons

Thickness

1 7/16"

Pitch of stays

17 3/4" - 21 1/2"

How are stays secured

D.N.

Working pressure by Rules

250

Tube plates: Material

front steel

back "

Tensile strength

26-30 tons

Thickness

1 5/16"

C 2 3/32" W 1 7/16"

Mean pitch of stay tubes in nests

9 1/4"

Pitch across wide water spaces

13 1/2"

Working pressure

front 287

back 282

Girders to combustion chamber tops: Material

steel

Tensile strength

29-33 tons

Depth and thickness of girder

at centre

2 @ 10 1/2" x 7/8"

Length as per Rule

37 3/8"

Distance apart

8 3/4"

No. and pitch of stays

in each

3 @ 9"

Working pressure by Rules

253

Combustion chamber plates: Material

steel

Tensile strength

26-30 tons

Thickness: Sides

3/4"

Back

2 3/32"

Top

3/4"

Bottom

7/8"

Pitch of stays to ditto: Sides

9" x 8 3/4"

Back

8 1/4" x 8 3/4"

Top

9" x 8 3/4"

Are stays fitted with nuts or riveted over

nuts

Working pressure by Rules

251

Front plate at bottom: Material

steel

Tensile strength

26-30 tons

Thickness

15/16"

Lower back plate: Material

steel

Tensile strength

26-30 tons

Thickness

15/16"

Pitch of stays at wide water space

13 1/2"

Are stays fitted with nuts or riveted over

nuts

Working Pressure

250

Main stays: Material

steel

Tensile strength

28-32 tons

Diameter

At body of stay, 3 1/2" &amp; 3 3/4"

Over threads

No. of threads per inch

6

Area supported by each stay

393 &amp; 370 sq"

Working pressure by Rules

273 &amp; 250

Screw stays: Material

2 in

Tensile strength

21 1/2 tons

Diameter

At turned off part, 1 3/4" &amp; 1 7/8"

Over threads

No. of threads per inch

9

Area supported by each stay

72 &amp; 78.7 sq"



Working pressure by Rules 251 1/2 Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, or Over threads 2"  
No. of threads per inch 9 Area supported by each stay 9.5 sq" Working pressure by Rules 269  
Tubes: Material Iron External diameter { Plain 2 1/2" Thickness { 8 SWG No. of threads per inch 9  
Pitch of tubes 3 3/4" x 3 7/8" Working pressure by Rules 300 Manhole compensation: Size of opening in shell plate 19 1/2" x 15 1/2" Section of compensating ring 11 3/4" x 1 5/8" No. of rivets and diameter of rivet holes 36 @ 1 3/4"  
Outer row rivet pitch at ends 1 1/8" Depth of flange if manhole flanged 3" Steam Dome: Material none  
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  
How connected to shell Inner radius of crown Working pressure by Rules  
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 Sugden Manufacturers of { Tubes see also special certificate N° 34990  
Steel forgings for particulars of superheaters  
Steel castings copies herewith  
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 no Is a safety valve fitted to every part of the superheater which can be shut off from the boiler yes  
Area of each safety valve 1.77 sq" Are the safety valves fitted with easing gear yes Working pressure as per Rules Pressure to which the safety valves are adjusted 257 Hydraulic test pressure: tubes forgings and castings and after assembly in place 500 lb Are drain cocks or valves fitted to free the superheater from water where necessary yes  
Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with

The foregoing is a correct description,  
For David Rowan & Co. Ltd. Manufacturer.  
Arch. H. Strickland

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

SEE ACCOMPANYING MACHINERY REPORT

Are the approved plans of boiler and superheater forwarded herewith yes  
(If not state date of approval.)  
Total No. of visits

Is this Boiler a duplicate of a previous case yes If so, state Vessel's name and Report No. "Malancha". G.R. No. 58575.

#### 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, satisfactorily fitted in the vessel and their safety valves adjusted under steam.

2/4/38.

Survey Fee ... .. £ see under Rm When applied for, 19  
Travelling Expenses (if any) £ : : When received, 19

S. E. Davis.

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 5 - APR 1938

Assigned SEE ACCOMPANYING MACHINERY REPORT



© 2020

Lloyd's Register  
Foundation