

## REPORT ON BOILERS.

No. 60212

Received at London Office SEP 21 1938

Date of writing Report

19

When handed in at Local Office

20.9.1938

Port of

Glasgow

No. in Survey held at  
Reg. Book.

Glasgow

Date, First Survey

25.5.37

Last Survey

17-9-1938

(Number of Visits 114)

Gross 5620

Tons Net 3343

on the new steel 9/5 "MANCHESTER PROGRESS".

Master

Built at

Glasgow

By whom built

Blythswood S.B.C.

Yard No. 51

When built 1938

Engines made at

Glasgow

By whom made

David Rowan &amp; Co Ltd

Engine No. 1022

When made 1938

Boilers made at

Glasgow

By whom made

David Rowan &amp; Co Ltd

Boiler No. 1022

When made 1938

Nominal Horse Power

796

Owners

Manchester Siners Ltd

Port belonging to Manchester

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

Manufacturers of Steel

Bolton &amp; Co Ltd

(Letter for Record (S) ✓)

Total Heating Surface of Boilers

9195 sq ft

Is forced draught fitted yes

Coal or Oil fired coal

No. and Description of Boilers

Three single ended

Working Pressure 225 lb

Tested by hydraulic pressure to

388

Date of test

5-4-38

No. of Certificate

20155

Can each boiler be worked separately yes

Area of Firegrate in each Boiler

44.5 sq ft

No. and Description of safety valves to each boiler

2 Improved high lift

Area of each set of valves per boiler

{ per Rule 8.054 sq ft  
as fitted 9.8 sq ft

Pressure to which they are adjusted

225

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

5'-0"

Is oil fuel carried in the double bottom under boilers no

Smallest distance between shell of boiler and tank top plating

2'-8"

Is the bottom of the boiler insulated

yes

Largest internal dia. of boilers

10'-0"

Length

12'-0"

Shell plates: Material

steel

Tensile strength 30-34 tons

Thickness

1 3/4"

Are the shell plates welded or flanged

no

Description of riveting: circ. seams

{ end DR  
inter. -

long. seams

WBS. TR.

Diameter of rivet holes in

{ circ. seams F 1 3/8" B 1 9/16"  
long. seams 1 9/16"

Pitch of rivets

{ F 3.377" B 4.164"  
10 1/16"

Percentage of strength of circ. end seams

{ plate F.60 B623  
rivets F44.5 B46.8

Percentage of strength of circ. intermediate seam

{ plate  
rivets

Percentage of strength of longitudinal joint

{ plate 85.38  
rivets 85.1  
combined 87.8

Working pressure of shell by Rules

225

Thickness of butt straps

{ outer 1 7/8"  
inner 1 5/8"

No. and Description of Furnaces in each Boiler

Three Deighton

Material

steel

Tensile strength

26-30 tons

Smallest outside diameter

3'-10 1/16"

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

none

Working pressure of furnace by Rules

227

End plates in steam space: Material

steel

Tensile strength

26-30 tons

Thickness

1 5/32"

Pitch of stays 20 1/4" x 22"

How are stays secured

DN

Working pressure by Rules

225

Tube plates: Material

{ front steel  
back "

Tensile strength

26-30 tons

Thickness

{ 15/16" 27/32"

Mean pitch of stay tubes in nests

10 1/2"

Pitch across wide water spaces

14"

Working pressure { front 229  
back 232

Girders to combustion chamber tops: Material

steel

Tensile strength

28-32 tons

Depth and thickness of girder

at centre

2 @ 9 3/8" x 7/8"

Length as per Rule

34 15/32"

Distance apart

8 7/8"

No. and pitch of stays

in each

3 @ 8 1/4"

Working pressure by Rules

228

Combustion chamber plates: Material

steel

Tensile strength

26-30 tons

Thickness: Sides

1 1/16"

Back

1 1/16"

Top

1 1/16"

Bottom

27 1/32" 13 1/16"

Pitch of stays to ditto: Sides

8 1/4" x 8 1/8"

Back

8 1/2" x 8"

Top

8 1/4" x 8 1/8"

Are stays fitted with nuts or riveted over

nuts

Working pressure by Rules

226

Front plate at bottom: Material

steel

Tensile strength

26-30 tons

Thickness

1 5/16"

Lower back plate: Material

steel

Tensile strength

26-30 tons

Thickness

27 1/32"

Pitch of stays at wide water space

13 7/8"

Are stays fitted with nuts or riveted over

nuts

Working Pressure

227

Main stays: Material

steel

Tensile strength

28-32 tons

Diameter

{ At body of stay, 3 1/2" & 3 1/4"  
or  
Over threads

No. of threads per inch

6

Area supported by each stay

480 sq in &amp; 388 sq in

Working pressure by Rules

226 &amp; 240

Screw stays: Material

steel

Tensile strength

26-30 tons

Diameter

{ At turned off part, 1 5/8" & 1 3/4"  
or  
Over threads

No. of threads per inch

9

Area supported by each stay

68 sq in &amp; 73.2 sq in



Working pressure by Rules 225 & 247 Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, 1 7/8" or Over threads. 1 7/8"  
No. of threads per inch 9 Area supported by each stay 89.3 sq" Working pressure by Rules 238  
Tubes: Material Iron External diameter { Plain 3" Stay 3" Thickness { 5/16" 3/8" No. of threads per inch 9  
Pitch of tubes 4 1/4" x 4 1/8" Working pressure by Rules 250 Manhole compensation: Size of opening in shell plate 19 1/2" x 15 1/2" Section of compensating ring 10 3/4" x 1 3/4" No. of rivets and diameter of rivet holes 36 @ 1 9/16"  
Outer row rivet pitch at ends 10 1/16" 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 Smoke tube

Manufacturers of NE Marine Eng Co Ltd Wallsend-on-Tyne  
For particulars see NWE Rpt. No 7018  
copy 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 176 sq" Are the safety valves fitted with easing gear yes Working pressure as per Rules 225 Hydraulic test pressure: tubes forgings and castings and after assembly in place 450 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 yes

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

Dates of Survey { During progress of work in shops - - }  
while building { During erection on board vessel - - - }  
Are the approved plans of boiler and superheater forwarded herewith yes  
(If not state date of approval.)  
SEE ACCOMPANYING MACHINERY REPORT  
Total No. of visits

\* Except that this boiler has Ashlin back end to furnaces and two less wing tubes in consequence of this.  
Is this Boiler a duplicate of a previous case yes If so, state Vessel's name and Report No. Manchester City, Gls Rpt. No 58730

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

These boilers have been fitted with the Bennis System of mechanical stokers  
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

20/9/38

Survey Fee ... £  
Travelling Expenses (if any) £  
When applied for, 10  
When received, 10

Sh. Davis  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 20 SEP 1938

Assigned SEE ACCOMPANYING MACHINERY REPORT.