

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 Reg. Book.

Survey held at

Glasgow

Date, First Survey

Last Survey 29.3.1938

1938

on the new steel S/S "MACHARDA".

(Number of Visits

Gross 7998

Net 4762

Master

Built at

Port Glasgow

By whom built

Wm Hamilton & Co Ltd

Yard No.

430

When built

1938

Engines made at

Glasgow

By whom made

David Rowan & Co Ltd

Engine No.

1002

When made

1938

Boilers made at

Glasgow

By whom made

David Rowan & Co Ltd

Boiler No.

1002

When made

1938

Nominal Horse Power

1157

Owners

T. & J. Brocklebank Ltd

Port belonging to

Singapore

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Steel Co 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

29-10-37

No. of Certificate

2 FOR 20048

Can each boiler be worked separately

yes

Area of Firegrate in each Boiler

8.30"

per Rule

as fitted 9.820"

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" & 1 5/8"

Are the shell plates welded or flanged

no

Description of riveting: circ. seams

end DR

inter. DR

T.R.

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.

rivets

Percentage of strength of longitudinal joint

plate

84.2

rivets

84.2

combined

85.3

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

crowns

2 3/32"

bottom

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 252

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" & 3 3/4"

or

Over threads

No. of threads per inch

6

Area supported by each stay

393 & 370 sq"

Working pressure by Rules

273 & 250

Screw stays: Material

iron

Tensile strength

21 1/2 tons

Diameter

At turned off part,

1 3/4" & 1 7/8"

or

Over threads

No. of threads per inch

9

Area supported by each stay

72 & 78.7 sq"



Lloyd's Register Foundation

Working pressure by Rules 251 & 2710 Are the stays drilled at the outer ends no Margin stays: Diameter ^{At turned off part,} 2" 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" ^{Stay} 2 1/2" Thickness ^{8 SWG} 7/8" ^{7/16"} 1/2" 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 _____
 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 Sugden Manufacturers of see also special built plate N° 34990 for particulars of superheaters 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 1.770" 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 lbs 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 - -} _____ Are the approved plans of boiler and superheater forwarded herewith yes (If not state date of approval.)
^{while building} ^{During erection on board vessel - - -} _____
SEE ACCOMPANYING MACHINERY REPORT
 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 Machinery Rpt } When applied for, 19
 Travelling Expenses (if any) £ _____ : _____ : _____ } When received, 19

S. L. Davis.
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 5 - APR 1938

Assigned SEE ACCOMPANYING MACHINERY REPORT

