

## REPORT ON BOILERS.

No. 35885

Received at London Office.

SUNDERLAND

OCT - 2 1952

of writing Report.

19

When handed in at Local Office

Port of

Survey held at

Sunderland

Date, First Survey

122 Rpt 4

Last Survey

19

Book.

on the

ISAAC CARTER

(Number of Visits.....)

Tons

Gross 4531

Net 2987

Built at

Blyth

By whom built

Blyth DD &amp; Shroo Ltd

Yard No.

352

When built

1952

Engines made at

Sunderland

By whom made

North Eastern Marine Eng Co (1938) Ltd

Engine No.

4232

When made

1952

Boilers made at

Sunderland

By whom made

North Eastern Marine Eng Co (1938) Ltd

Boiler No.

4232

When made

1952

Nominal Horse Power

659

Owners

Barber's Shroo Ltd

Port belonging to

London

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

Manufacturers of Steel

Bolwell's Ltd

(Letter for Record.....)

Total Heating Surface of Boilers

8694 sq ft (Ex FTP 8568) (SUPERHEAT) 1650 sq ft

Is forced draught fitted

Yes

Coal or Oil fired

oil

No. and Description of Boilers

3 - Multitubular Single Ended

Working Pressure

220 lbs/sq in

Tested by hydraulic pressure to

380 lbs/sq in

Date of test

24.12.52

No. of Certificate

4803

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

3.84 sq ft

No. and Description of safety valves to each boiler

2 - 2 1/4" High Lift

Area of each set of valves per boiler

3.97 sq ft

Pressure to which they are adjusted

220 lbs/sq in

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

No

Smallest distance between shell of boiler and tank top plating

2' 3"

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boilers

15' 8 1/2"

Length

11' 6"

Shell plates: Material

Steel

Tensile strength

29-33 tons

Thickness

1 7/32"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end DR lap

Long. seams

T.R.D.B.S.

Diameter of rivet holes in

circ. seams

1 7/32"

long. seams

Pitch of rivets

4.33"

Percentage of strength of circ. end seams

plate

64.6

rivets

44.0

Percentage of strength of circ. intermediate seam

plate

85.2

rivets

Percentage of strength of longitudinal joint

plate

85.4

rivets

87.6

Working pressure of shell by Rules

223 lbs/sq in

Thickness of butt straps

outer 1 3/16"

inner 1 7/16"

No. and Description of Furnaces in each Boiler

3 - Saighton section

Material

Steel

Tensile strength

26-30 tons

Smallest outside diameter

3' 10 3/32"

Length of plain part

top 5 1/4"

bottom 5 1/4"

Thickness of plates

crown 4 9/64"

bottom 4 7/64"

Description of longitudinal joint

welded

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

none

Working pressure of furnace by Rules

224 lbs/sq in

End plates in steam space: Material

Steel

Tensile strength

26-30 tons

Thickness

1 1/2"

Pitch of stays

24" x 20 3/4"

How are stays secured

welded to washers and end plates

Working pressure by Rules

240 lbs/sq in

Tube plates: Material

front Steel

back Steel

Tensile strength

26-30 tons

Thickness

7/8"

Mean pitch of stay tubes in nests

8 1/16"

Pitch across wide water spaces

13 3/4"

Working pressure

front 222 lbs/sq in

back 373 lbs/sq in

Girders to combustion chamber tops: Material

Steel

Tensile strength

29-33 tons

Depth and thickness of girder

at centre

10 1/2" x 1 1/8"

Length as per Rule

4' 0 1/2"

Distance apart

centre 6' wings 7 1/2"

No. and pitch of stays

in each

No welded

Tensile strength

26-30 tons

Thickness: Sides

7/8"

Back

WINGS 23/32"

Top

7/8"

Bottom

7/8"

Pitch of stays to ditto: Sides

12 1/8" x 9 1/4"

Back

9" x 8 3/8"

Top

Are stays fitted with nuts or riveted over

welded

Working pressure by Rules

231 lbs/sq in

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 1/32"

Pitch of stays at wide water space

13 1/4"

Are stays fitted with nuts or riveted over

welded

Working pressure

312 lbs/sq in

Main stays: Material

Steel

Tensile strength

28-32 tons

Diameter

At body of stay 3 3/8" - 2 1/2" - 2 1/4"

Over threads

No. of threads per inch

welded

Area supported by each stay

498 sq in

Working pressure by Rules

233 lbs/sq in

Screw stays: Material

Steel

Tensile strength

26-30 tons

Diameter

At turned off part 2 1/8" - 1 1/4" - 1 1/8"

Over threads

No. of threads per inch

9

Area supported by each stay

112 sq in



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Working pressure by Rules 220 lbs/sq in Are the stays drilled at the outer ends No ✓ Margin stays: Diameter { At turned off part 1 3/4"  
 No. of threads per inch 14 ✓ Area supported by each stay 94.5 sq in ✓ Working pressure by Rules 230 lbs/sq in  
 Tubes: Material steel External diameter { Plain 2 1/4" ✓ Thickness { 3/32" ✓ No. of threads per inch 9  
 Pitch of tubes 3 1/2" x 3 7/16" ✓ Working pressure by Rules 220 lbs/sq in ✓ Manhole compensation: Size of open  
 shell plate ✓ Section of compensating ring ✓ No. of rivets and diameter of rivet holes ✓  
 Outer row rivet pitch at ends ✓ Depth of flange if manhole flanged ✓ Steam Dome: Material ✓  
 Tensile strength ✓ Thickness of shell ✓ Description of longitudinal joint ✓  
 Diameter of rivet holes ✓ Pitch of rivets ✓ Percentage of strength of joint { Plate ✓  
 Internal diameter ✓ Working pressure by Rules ✓ Rivets ✓  
 stays ✓ Inner radius of crown ✓ Thickness of crown ✓ No. and diameter  
 How connected to shell ✓ Working pressure by Rules ✓  
 of rivets in outer row in dome connection to shell ✓ Size of doubling plate under dome ✓ Diameter of rivet holes and

Type of Superheater NEM "NEMENCO" Manufacturers of { Tubes ✓  
 Number of elements 36 working Material of tubes S.D. steel Steel forgings HEADERS The Nudans Steel Co  
 Material of headers S.D. steel Tensile strength 26-28 tons Internal diameter and thickness of tubes 1.273" x 7 WG  
 the boiler be worked separately Yes ✓ 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 3.14 sq in ✓ Are the safety valves fitted with easing gear Yes ✓ Working pressure at  
 Rules 220 lbs/sq in Pressure to which the safety valves are adjusted 220 lbs/sq in ✓ Hydraulic test press  
 tubes 1500 lbs/sq in forgings and castings HEADERS 660 lbs/sq in and after assembly in place 440 lbs/sq in Are drain cocks  
 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 NORTH EASTERN MARINE ENGINEERING CO. (1888) LTD.

The foregoing is a correct description.

W. H. W. W.  
RESIDENT MANAGER

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

See App 1

Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)

Total No. of visits

Is this Boiler a duplicate of a previous case

If so, state Vessel's name and Report No.

# GENERAL REMARKS

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

These Boilers have been constructed in accordance with the approved plans, Secretaries letters and the requirements of the Rules  
The materials and workmanship are good  
These Boilers have been efficiently fitted on board the vessel, examined under steam and the safety valves adjusted to the working pressure of 220 lbs/sq in

Survey Fee

£ 117 : - : -

When applied for OCT - 2 1952

Travelling Expenses (if any) £

When received

R. J. Dunn

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 24 OCT 1952

Assigned

See F.E. Mch. App.



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