

REPORT ON BOILERS.

No. 88674

Received at London Office

31 MAY 1932

Date of writing Report

19

When handed in at Local Office

30 MAY 1932

Port of

Newcastle-on-Tyne

No. in Survey held at

eg. Book.

Wallsend-on-Tyne

Date, First Survey

13 Nov/31

Last Survey

27 May 1932

on the

New Steel S.S. "Harpalion"

(Number of Visits)

Gross

Tons

Net

Builder

Built at

Hebburn

By whom built

Hawthornes Leslie & Co Ltd

Yard No.

585

When built

1932

Engines made at

Wallsend

By whom made

North Eastern Marine Eng Co Ltd

Engine No.

2784

When made

1932

Boilers made at

Wallsend

By whom made

North Eastern Marine Eng Co Ltd

Boiler No.

2784

When made

1932

Nominal Horse Power

482

Owners

National S.S. Co Ltd

Port belonging to

London

MULTITUBULAR BOILER, MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

The Steel Company of Scotland Ltd

(Letter for Record)

10 (7)

Total Heating Surface of Boilers

1924 sq ft

Is forced draught fitted

yes

Coal or Oil fired

coal

No. and Description of Boilers

one single ended

Working Pressure

220 lbs

Tested by hydraulic pressure to

380 lbs

Date of test

4-4-32

No. of Certificate

544

Can each boiler be worked separately

yes

Area of Firegrate in each Boiler

45.6 sq ft

No. and Description of safety valves to each boiler

Two spring loaded

Area of each set of valves per boiler

per Rule 10.3

as fitted 11.88

Pressure to which they are adjusted

225 lbs

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'-8"

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

13'-3 1/2"

Length

11'-6"

Shell plates: Material

Steel

Tensile strength

29 to 33 tons

Thickness

1 1/2"

Are the shell plates welded or flanged

no

Description of riveting: circ. seams

end D.R

Long. seams

T.R.D.B.S.

Diameter of rivet holes in

circ. seams 1 5/16"

long. seams 1 5/16"

Pitch of rivets

3 3/4"

9 3/16"

Percentage of strength of circ. end seams

plate 62.3

rivets 44.6

Percentage of strength of circ. intermediate seam

plate 85.4

rivets 85.4

Percentage of strength of longitudinal joint

plate 85.4

rivets 85.4

combined 88.6

Working pressure of shell by Rules

220.6 lbs

Thickness of butt straps

outer 1"

inner 1 1/8"

No. and Description of Furnaces in each Boiler

Three corrugated

Material

Steel

Tensile strength

26 to 30 tons

Smallest outside diameter

3'-1"

Length of plain part

top

bottom

Thickness of plates

crown 5/8"

bottom 5/8"

Description of longitudinal joint

weld

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

none

Working pressure of furnace by Rules

259 lbs

End plates in steam space: Material

Steel

Tensile strength

26 to 30 tons

Thickness

1 1/2"

Pitch of stays

1'-6 3/4" x 1'-4 1/2"

How are stays secured

Double nuts

Working pressure by Rules

222 lbs

Tube plates: Material

front Steel

back Steel

Tensile strength

26 to 30 tons

Thickness

3/4"

Mean pitch of stay tubes in nests

9 3/8"

Pitch across wide water spaces

14" x 1 1/2"

Working pressure

front 240 lbs

back 228.5 lbs

Girders to combustion chamber tops: Material

Steel

Tensile strength

29 to 33 tons

Depth and thickness of girder

at centre 2 @ 9 1/2" x 3/4"

Length as per Rule

2'-9"

Distance apart

9 1/2"

No. and pitch of stays

in each

2 @ 9 1/2"

Working pressure by Rules

229 lbs

Combustion chamber plates: Material

Steel

Tensile strength

26 to 30 tons

Thickness: Sides

25/32"

Back

25/32"

Top

25/32"

Bottom

25/32"

Pitch of stays to ditto: Sides

9 1/2" x 9 1/2"

Back

11 1/4" x 8 1/4"

Top

9 1/2" x 9 1/2"

Are stays fitted with nuts or riveted over

nuts

Working pressure by Rules

222 lbs

Front plate at bottom: Material

Steel

Tensile strength

26 to 30 tons

Thickness

15/16"

Lower back plate: Material

Steel

Tensile strength

26 to 30 tons

Thickness

29/32"

Pitch of stays at wide water space

15 1/2" x 8 1/4"

Are stays fitted with nuts or riveted over

nuts

Working Pressure

230 lbs

Main stays: Material

Steel

Tensile strength

28 to 32 tons

Diameter

At body of stay, 3"

Over threads, 3 1/4"

No. of threads per inch

6

Area supported by each stay

310 sq in

Working pressure by Rules

254 lbs

Screw stays: Material

Wrought iron

Tensile strength

21 1/2 tons min

Diameter

At turned off part, 2"

Over threads, 2"

No. of threads per inch

9

Area supported by each stay

93 sq in

Diameter

At body of stay, 3"

Over threads, 3 1/4"

No. of threads per inch

9

Area supported by each stay

93 sq in

Diameter

At body of stay, 3"

Over threads, 3 1/4"

No. of threads per inch

9

Area supported by each stay

93 sq in

Diameter

At body of stay, 3"

Over threads, 3 1/4"

No. of threads per inch

9

Area supported by each stay

93 sq in

Diameter

At body of stay, 3"

Over threads, 3 1/4"

No. of threads per inch

9

Area supported by each stay

93 sq in

Diameter

At body of stay, 3"

Over threads, 3 1/4"

No. of threads per inch

9

Area supported by each stay

93 sq in

Diameter

At body of stay, 3"

966
Working pressure by Rules 2 lbs. Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, 2 3/8"
No. of threads per inch 9 Area supported by each stay 104 sq" Working pressure by Rules 2 lbs.
Tubes: Material SD Steel External diameter { Plain 2 7/8" Thickness { 9 L 5 G
Pitch of tubes 3 3/4" x 3 3/4" Working pressure by Rules 230 lbs. No. of threads per inch 9
shell plate 1-8 5/8" x 1-4 5/8" Section of compensating ring 24" x 1 5/16" No. of rivets and diameter of rivet holes 34 @ 1 1/2"
Outer row rivet pitch at ends 10 1/2" 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 _____
Internal diameter _____ Working pressure by Rules _____ Thickness of crown _____ Rivets _____
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 none Manufacturers of { Tubes _____
Number of elements _____ Material of tubes _____ Steel castings _____
Internal diameter and thickness of tubes _____
Material of headers _____ Tensile strength _____ Thickness _____ Can the superheater be shut off and
the boiler be worked separately _____ Is a safety valve fitted to every part of the superheater which can be shut off from the boiler _____
Area of each safety valve _____ Are the safety valves fitted with easing gear _____ Working pressure as per
Rules _____ Pressure to which the safety valves are adjusted _____ Hydraulic test pressure:
tubes _____, castings _____ and after assembly in place _____ Are drain cocks or valves fitted
to free the superheater from water where necessary _____

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

The foregoing is a correct description,

THE NORTH EASTERN MARINE ENGINEERING CO., LTD.

Manufacturer.

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

See main Report

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

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.)

This Boiler has been built under Special Survey.
Materials & Workmanship good. Hydraulic tests satisfactory.

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

William Butler

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 3 JUN 1932

Assigned

See F.E. Rep.



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Foundation