

## REPORT ON BOILERS.

MOB. RPT. 17965

No. 103171

15 OCT 1945

Date of writing Report

19

When handed in at Local Office

28/9/1945

Received at London Office

Port of

NEWCASTLE

No. in  
Reg. Book.Survey held at Wallsend, Newcastle on Tyne  
on the Tonnage 545 "NORTHVAL"

Date, First Survey (1944) Aug. 29

Last Survey

10/8/1945

(Number of Visits)

Gross 13830

Tons Net 7401

Built at Haverton Hill on Tyne By whom built Furness S.B. &amp; Co. Ltd

Yard No. 388 When built 1945

Engines made at Newcastle on Tyne By whom made N.E. Mar. Eng. Co. (1938) Ltd

Engine No. 3115 When made 1945

Boilers made at Newcastle on Tyne By whom made ditto

Boiler No. 3115(B) When made 1945

Nominal Horse Power

Owners Norwegian Shipping &amp; Trade Mission

Port belonging to LARVIK.

MULTITUBULAR BOILERS MAIN, 16'-3" DIAM.  
~~AUXILIARY, OR DONKEY.~~

Manufacturers of Steel The Steel Company of Scotland, and Colvilles Ltd

Total Heating Surface of Boilers 11,704 sq ft ex front tube plate

(Letter for Record S. ✓)

No. and Description of Boilers 4 Single Ended

Is forced draught fitted Yes ✓

Coal or Oil fired oil fired ✓

Tested by hydraulic pressure to 380 lbs

Date of test

N° 5. 28-5-45

N° 6. 15-6-45

N° 1160.

Working Pressure 220 lbs/sq in

Area of Firegrate in each Boiler

3.94 sq m

No. and Description of safety valves to each boiler

N° 1. 5-6-45

N° 2. 21-6-45

N° 3. 11-6-45

N° 4. 11-6-45

Can each boiler be worked separately Yes ✓

Area of each set of valves per boiler

per Rule

as fitted

4.9

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 18" ✓

Smallest distance between shell of boiler and tank top plating

Boilers are on flat 18'-9" above tank top

Is oil fuel carried in the double bottom under boilers No

Largest internal dia. of boilers 15'-11 1/8"

Length 12'-4 1/2"

Is the bottom of the boiler insulated Yes ✓

Thickness 1 1/2"

Are the shell plates welded or flanged No ✓

Shell plates: Material Stl ✓

Tensile strength 29-33 tons

Description of riveting: circ. seams end D.R. ✓

inter. ✓

Long. seams T.R. Double butt straps

Diameter of rivet holes in

circ. seams } 1 1/8"

long. seams }

Pitch of rivets 4 1/8"

10 13/16"

Percentage of strength of circ. end seams

plate 62.1

rivets 48.4

Percentage of strength of circ. intermediate seam

plate 85.5

rivets 86.

combined 88.2

Percentage of strength of longitudinal joint

plate 1 3/16"

outer 1 3/16"

inner 1 5/16"

Thickness of butt straps

Material Stl ✓

No. and Description of Furnaces in each Boiler 3 C.f. (Deighton) ✓

Tensile strength 26-30 tons ✓

Smallest outside diameter 3'-11 1/4"

Length of plain part top ✓

bottom ✓

Thickness of plates crown } 4 1/2"

bottom } 6 1/4"

Description of longitudinal joint Fireweld ✓

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

End plates in steam space: Material Stl ✓

Tensile strength 26-30 tons ✓

Thickness 1 1/2"

Pitch of stays 23 x 20 13/16

How are stays secured Nuts inside &amp; outside ✓

Tube plates: Material front Stl ✓

back Stl ✓

Tensile strength 26-30 tons ✓

Thickness 1 5/16"

Pitch across wide water spaces 14" x 8 1/4"

Pitch of stay tubes in nests 8.85"

Girders to combustion chamber tops: Material Stl ✓

Tensile strength 29-33 tons ✓

Girders to combustion chamber tops: Material Stl ✓

Tensile strength 29-33 tons ✓

Depth and thickness of girder

Distance apart 8 1/2"

No. and pitch of stays

Tensile strength 26-30 tons ✓

Thickness: Sides 5 1/64"

Back 2 5/32"

Top 5 1/64"

Bottom 2 9/32"

Are stays fitted with nuts or riveted over with nuts ✓

Pitch of stays to ditto: Sides 1 1/8 x 8 1/2"

Back 10 1/2 x 7 3/4"

Top 1 1/2 x 8 1/2"

Bottom 2 9/32"

Are stays fitted with nuts or riveted over with nuts ✓

Front plate at bottom: Material Steel ✓

Tensile strength 26-30 tons

Thickness 3 1/32"

Are stays fitted with nuts or riveted over with nuts ✓

Tensile strength 28-32 tons.

Pitch of stays at wide water space 15 3/8 x 10 1/2"

Main stays: Material Stl ✓

Tensile strength 28-32 tons.

No. of threads per inch 6.

Tensile strength 28-32 tons.

No. of threads per inch 9.

Pitch of stays at wide water space 15 3/8 x 10 1/2"

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No. of threads per inch 9.

Conts over.

004785-004788-0204

004785-004788-0206

N.N. Clarke. 28/6/45

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Lloyd's Register  
Foundation



# Rpt on 16'3" DIA BOILERS - conts.

Are the stays drilled at the outer ends No ✓ Margin stays: Diameter { At turned off part, 2 1/2" or Over threads 2 1/2"

No. of threads per inch 9 ✓

Tubes: Material S.D. Stl ✓ External diameter { Plain 3" Stay 3" Thickness { 8. W.G. 3/8", 5/16" No. of threads per inch 9 ✓

Pitch of tubes 4 1/8" x 4 7/8" ✓ Manhole compensation: Size of opening in shell plate 17" x 21" ✓ Section of compensating ring 18 1/4" x 1 1/2" No. of rivets and diameter of rivet holes 34 of 1 7/8" dia.

Outer row rivet pitch at ends 10 7/8" Depth of flange if manhole flanged 3 1/2" ✓ Steam Dome: NIL

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 \_\_\_\_\_ Thickness of crown \_\_\_\_\_ No. and diameter of stays \_\_\_\_\_ Inner radius of crown \_\_\_\_\_

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 N.E. Mar. Smoketube ✓ Manufacturers of { Tubes Tubes Ltd Steel forgings Appleby & Frodingham Steel Co. Steel castings \_\_\_\_\_

Number of elements 252 ✓ Material of tubes S.D. Stl Internal diameter and thickness of tubes 17" m, and 2 1/2" m thick

Material of headers W.R. Stl ✓ Tensile strength 26-30 tons Thickness 7/8" Can the superheater be shut off and 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 ✓

Pressure to which the safety valves are adjusted \_\_\_\_\_ Hydraulic test pressure: tubes 1,500 lb ✓ forgings and castings 660 lb ✓ and after assembly in place 440 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 Yes ✓

THE NORTH-EAST-ERN MARINE ENGINEERING CO. (1880) LTD.  
The foregoing is a correct description,

John Neill Manufacturer.

DIRECTOR.

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

Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) Yes, approved 7/Sept/44  
Total No. of visits 5th. to N.E.M. Standard Spec. Boiler Drawing No 820.

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 under special survey in accordance with the approved plans and the Society's Rules. The materials & workmanship are good, and the Boilers have been sent to Furness S. Blk Yard for installing on board.

Survey Fee ... £ See Machinery Rpt 4. When applied for, 19  
Travelling Expenses (if any) £ : : When received, 19

A Watt

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 15 FEB 1946

Assigned See F.E. machy. rpt.