

# REPORT ON BOILERS.

MOB. RPT. 17965

No. 103171

Received at London Office

OCT 1945

Date of writing Report

19

When handed in at Local Office

28/9/45

Port of

NEWCASTLE-ON-TYNE

No. in Survey held at

Wallsend, Newcastle on Tyne

Date, First Survey (1944) Aug. 29th

Last Survey

10/8/45

Book.

on the Twin Sc. S/S "NORTHVAL"

(Number of Visits)

Gross 13830

Tons Net 7401

built at Haverton Hill works

By whom built Furness S.B.C. Ld.

Yard No. 388. When built 1945.

engines made at

Newcastle on Tyne

By whom made

N.E. Mar. Eng. Co. (1938) Ld

Engine No. 3115 When made 1945

boilers made at

ditto

By whom made

ditto.

Boiler No. 3115 When made 1945

nominal Horse Power

Owners Norwegian Shipping + Trade Mission

Port belonging to LARVIK

15'-3" DIAM.

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

Manufacturers of Steel

The Steel Company of Scotland, and Colvilles Ld

(Letter for Record S. ✓)

Total Heating Surface of Boilers

10,232 sq. ft.

Is forced draught fitted Yes ✓

Coal or Oil fired Oil fired. ✓

No. and Description of Boilers

4. Single Ended

Working Pressure

220 lb/sq. in. ✓

Tested by hydraulic pressure to

380 lb

Date of test

23-4-45

No. of Certificate 1150

Can each boiler be worked separately Yes ✓

Area of Firegrate in each Boiler

No. and Description of safety valves to each boiler

Two of 2 1/2" dia. Improved High Lift.

Area of each set of valves per boiler

per Rule 3.47 sq. in.

as fitted 4.9"

Pressure to which they are adjusted

220 lb/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"

Is oil fuel carried in the double bottom under boilers No ✓

Smallest distance between shell of boiler and tank top plating

Boilers on Flat 18'-9" above tank top.

Is the bottom of the boiler insulated Yes ✓

Largest internal dia. of boilers

15'-0 1/16"

Length 11'-6"

Shell plates: Material Steel

Tensile strength

29-33 tons ✓

Thickness

1 15/32"

Are the shell plates welded or flanged No ✓

Description of riveting: circ. seams

end D.R. ✓

Long. seams

T.R. D.R. butt straps

Diameter of rivet holes in

circ. seams

1 31/64"

Pitch of rivets

4.07"

Percentage of strength of circ. end seams

plate 63.5

rivets 45.8

Percentage of strength of circ. intermediate seam

plate ✓

Percentage of strength of longitudinal joint

plate 85.4

rivets 85.2

combined 87.9

Thickness of butt straps

outer 1 1/8"

inner 1 1/4"

No. and Description of Furnaces in each Boiler

3 C.F. (Deighton) ✓

Material

Stl

Tensile strength

26-30 tons ✓

Smallest outside diameter

45 1/4" ✓

Length of plain part

top ✓

bottom ✓

Thickness of plates

crown 1 1/16"

bottom ✓

Description of longitudinal joint

Fire weld ✓

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 13/32"

Pitch of stays 20" x 21" max ✓

How are stays secured

Nutted inside + outside ✓

Tube plates: Material

front } Stl ✓

back }

Tensile strength

26-30 tons ✓

Thickness

15/16"

25/32" ✓

Lean pitch of stay tubes in nests

9.75"

Pitch across wide water spaces

14" x 8 1/4" ✓

Girders to combustion chamber tops: Material

Stl ✓

Tensile strength

28-32 tons ✓

Depth and thickness of girder

at centre

10 1/2" x 1 1/16" db

Length as per Rule

33.5" ✓

Distance apart

9 1/4" ✓

No. and pitch of stays

at each

3 @ 8" ✓

Combustion chamber plates: Material

Stl. ✓

Tensile strength

26-30 tons ✓

Thickness: Sides

1 1/16" ✓

Back

25/32" ✓

Top

1 1/16" ✓

Bottom

13/16" ✓

Pitch of stays to ditto: Sides

9 1/4" x 8" ✓

Back

9 1/4" x 8" ✓

Top

9 1/4" x 8" ✓

Are stays fitted with nuts or riveted over

With nuts ✓

Front plate at bottom: Material

Stl. ✓

Tensile strength

26-30 tons ✓

Thickness

15/16" ✓

Lower back plate: Material

Stl ✓

Tensile strength

26-30 tons ✓

Thickness

27/32" ✓

Pitch of stays at wide water space

14" x 8" ✓

Are stays fitted with nuts or riveted over

With nuts ✓

Main stays: Material

Stl ✓

Tensile strength

28-32 tons ✓

Diameter

At body of stay, 3 1/4"

or 3 1/2"

No. of threads per inch

6. ✓

crew stays: Material

Stl ✓

Tensile strength

26-30 tons ✓

Diameter

At turned off part, 1 3/4"

or 1 3/4"

No. of threads per inch

9. ✓

Conts over.

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# Rpt on 15'3" DIA. BOILERS CONT<sup>d</sup>

Are the stays drilled at the outer ends NO ✓ Margin stays: Diameter { At turned off part, 1 7/8" + 2" ✓  
 No. of threads per inch 9. ✓  
 Tubes: Material S.D. Stl ✓ External diameter { Plain 3" ✓ Thickness { 8 w.g. ✓ No. of threads per inch 9. ✓  
3/8", 5/16" ✓  
 Pitch of tubes 4 1/4" x 4 1/8" ✓ Manhole compensation: Size of opening in  
 shell plate nil 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 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.M. Smoketube ✓ Manufacturers of { Tubes { In SH 920:- Talbot Stead & Co  
N.E.M. Nos SH 920 & SH 921. ✓ Steel forgings Appleby & Frodingham Steel Co. ✓  
 Steel castings  
 Number of elements 236. ✓ Material of tubes S.D. Stl ✓ Internal diameter and thickness of tubes 15 1/4" and 2 1/2" thick. ✓  
 Material of headers Wrot. Steel Tensile strength 26-30 tons Thickness 1 1/8" ✓ 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 ins ✓ Are the safety valves fitted with easing gear Yes ✓  
 Pressure to which the safety valves are adjusted Hydraulic test pressure:  
 tubes 1500 lbs ✓ forgings and castings 660 lbs ✓ and after assembly in place 440 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 Yes ✓

THE NORTH-EASTERN MARINE ENGINEERING CO. (1930) LTD.  
 The foregoing is a correct description,

John Neill DIRECTOR. Manufacturer.

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 Yes ✓  
 (If not state date of approval.)  
 Total No. of visits 1 ✓  
Superheater as N.E.M. Standard Type.

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.B. Co. yard for installing on board.

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

A. Lubatt.

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 15 FEB 1946

Assigned See F.E. machy. rpt



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