

REPORT ON BOILERS.

Received at London Office 12 OCT 1926

Date of writing Report 11th Oct 1926 When handed in at Local Office 11th Oct 1926 Port of Sunderland

No. in Reg. Book. Survey held at Sunderland Date, First Survey Last Survey 7th Oct 1926

on the new steel S.S. "NIDARNES" (Number of Visits) (Gross Tons) (Net Tons)

Master Built at Newcastle By whom built Swan Hunter & Wigham Richardson No. 1289 When built 1926

Engines made at Sunderland By whom made MacColl & Pollock Ltd Engine No. 348 When made 1926

Boilers made at Sunderland By whom made MacColl & Pollock Ltd Boiler No. 348 When made 1926

Nominal Horse Power 114 Owners Redriaktreselskapet Nidaros Port belonging to Oslo. (Manager) A.M. Embustredt.

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel The Steel Company of Scotland Limited (Letter for Record S.)

Total Heating Surface of Boilers 2081.46 sq ft Is forced draught fitted No Coal or Oil fired Coal

No. and Description of Boilers Two single ended marine type Working Pressure 180 lbs

Tested by hydraulic pressure to 320 lbs Date of test 23-4-26 No. of Certificate 3434 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler 36.89 sq ft No. and Description of safety valves to each boiler Two Direct spring loaded

Area of each set of valves per boiler (per Rule 6.44 sq ft as fitted 4.952 sq ft) Pressure to which they are adjusted 85 lbs Are they fitted with easing gear Yes

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler none fitted

Smallest distance between boilers or uptakes and bunkers or woodwork 12" Is oil fuel carried in the double bottom under boilers No

Smallest distance between shell of boiler and tank top plating 2 1/2" Is the bottom of the boiler insulated No

Largest internal dia. of boilers 10'-10 3/16" Length 10'-6" Shell plates: Material Steel Tensile strength 28-32 tons

Thickness 29/32" Are the shell plates welded or flanged No Description of riveting: circ. seams D.R. Lat

long. seams T.R.D.B.S. Diameter of rivet holes in circ. seams 1 1/2" long. seams 3/4" Pitch of rivets 3 3/16" 7/16"

Percentage of strength of circ. end seams (plate 71.04 rivets 42.5) Percentage of strength of circ. intermediate seam (plate rivets)

Percentage of strength of longitudinal joint (plate 86.28 rivets 88.45 combined 90.4) Working pressure of shell by Rules 182.4 lbs

Thickness of butt straps (outer 13/16" inner 7/8") No. and Description of Furnaces in each Boiler Two plain - with drawables

Material Steel Tensile strength 26 to 30 tons Smallest outside diameter 3'-4"

Length of plain part (top 6'-4 7/8" bottom 5'-10 3/8") Thickness of plates (crown 3/4" bottom 3/4") Description of longitudinal joint Welded

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 190 lbs

End plates in steam space: Material Steel Tensile strength 26 to 30 tons Thickness 3/32" Pitch of stays 15" x 15"

How are stays secured Double nuts Working pressure by Rules 192 lbs

Tube plates: Material (front back) Steel Tensile strength (26 to 30 tons) Thickness (27/32 13/16)

Mean pitch of stay tubes in nests 11.09" Pitch across wide water spaces 13 1/2" Working pressure (front 209.8 (in nest) back 192.8)

Girders to combustion chamber tops: Material Steel Tensile strength 26 to 30 tons Depth and thickness of girder

at centre 2 @ 4 1/2" x 27/32" Length as per Rule 2'-4 7/8" Distance apart 9" No. and pitch of stays

in each 2 @ 9" Working pressure by Rules 183 lbs Combustion chamber plates: Material Steel

Tensile strength 26 to 30 tons Thickness: Sides 5/8" Back 21/32" Top 21/32" Bottom 5/8"

Pitch of stays to ditto: Sides 8 1/4" x 9" Back 8 7/16" x 9 1/4" Top 9" x 9" Are stays fitted with nuts or riveted over Nuts in c.c.

Working pressure by Rules Sides 181 lbs Back 191 lbs Front plate at bottom: Material Steel Tensile strength 26 to 30 tons

Thickness 27/32" Lower back plate: Material Steel Tensile strength 26 to 30 tons Thickness 13/16"

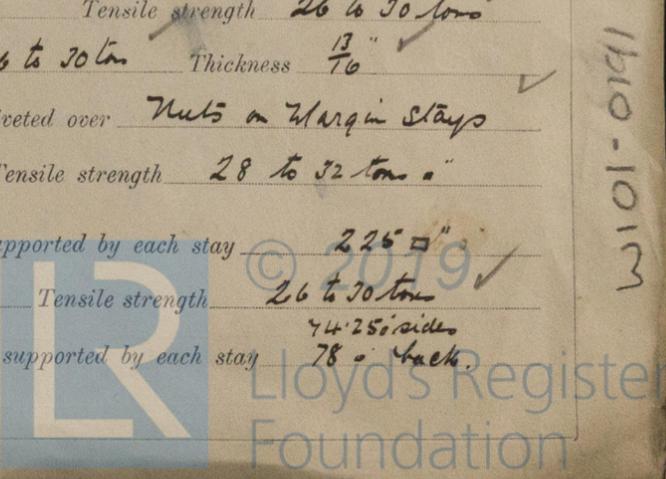
Pitch of stays at wide water space 8 7/16" x 12 1/2" Are stays fitted with nuts or riveted over Nuts on Margin Stays

Working Pressure 236 lbs Main stays: Material Steel Tensile strength 28 to 32 tons

Diameter (At body of stay or Over threads) 2 1/2" No. of threads per inch 6 Area supported by each stay 225 sq in

Working pressure by Rules 197 lbs Screw stays: Material Steel Tensile strength 26 to 30 tons

Diameter (At turned off part or Over threads) 1 5/8" No. of threads per inch 9 Area supported by each stay 74.25 sq in sides 78 sq in back



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195 lb. side

Working pressure by Rules 205... *Yack*. Are the stays drilled at the outer ends Margin stays: Diameter At turned off part, Over threads $1\frac{3}{4}$ "

No. of threads per inch 9 Area supported by each stay $9 \cdot 8 \text{ sq. in.}$ Working pressure by Rules 198 lb. sq. in.

Tubes: Material *Walt Ern* External diameter Plain $3\frac{1}{2}$ " Thickness 9 W.G. No. of threads per inch 9

Pitch of tubes $4\frac{7}{16} \times 4\frac{7}{16}$ Working pressure by Rules *Main 180 lb. Stay 200 lb.* Manhole compensation: Size of opening in shell plate 16×12 Section of compensating ring $2 @ 4 \times \frac{27}{12}$ No. of rivets and diameter of rivet holes $32 @ \frac{3}{4}$ dia

Outer row rivet pitch at ends $4\frac{7}{16}$ 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 Rivets

Internal diameter Working pressure by Rules Thickness of crown No. and diameter of stays

How connected to shell Inner radius of crown Working pressure by Rules

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 Manufacturers of Tubes Steel castings

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

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 casing 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 23 inclusive for boilers been complied with *Yes*

The foregoing is a correct description,
PER PRO MACCOLL & POLLOCK LTD
J. H. Pillius Manufacturer.

Dates of Survey During progress of work in shops - - - *Please see Machy. Rpt.* Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)

During erection on board vessel - - - Total No. of visits

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 and satisfactorily fitted in the vessel.*

Survey Fee ... £ *See Machinery Report* When applied for, 192

Travelling Expenses (if any) £ When received, 192

George Anderson
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **FRI. 5 NOV 1926**

Assigned *See F.E. rpt. on mach attached*

