

# REPORT ON BOILERS.

No. 35403

- 3 AUG 1950

Received at London Office.....

Port of Sunderland

Date of writing Report.....19..... When handed in at Local Office.....19.....

No. in Survey held at Sunderland Date, First Survey see Rpt 4 Last Survey.....19.....  
Reg. Book.....

(Number of Visits.....)  
Tons { Gross 1362  
Net 660

on the "BRENT. KNOLL"

Master..... Built at Sunderland By whom built S.P. Austin & Sons Ltd Yard No. 4041 When built 1950

Engines made at Sunderland By whom made W.E. Marine Eng'g (1938) Ltd Engine No. 4200 When made 1950

Boilers made at Sunderland By whom made W.E. Marine Eng'g (1938) Ltd Boiler No. 4200 When made 1950

Nominal Horse Power NN. 247 Owners British Electricity Authority Port belonging to London

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

Manufacturers of Steel Colvilles (Letter for Record.....)

Total Heating Surface of Boilers 2950  $\text{sq ft} = 2$  boilers Is forced draught fitted yes Coal or Oil fired Coal

No. and Description of Boilers 2 S.E. Multitubular Working Pressure 220 lb/sq in

Tested by hydraulic pressure to 380 lb/sq in Date of test Nº 1 (P) 2-5-50 No. of Certificate 4460 Can each boiler be worked separately yes

Area of Firegrate in each Boiler 33  $\text{sq ft}$  No. and Description of safety valves to each boiler 2 - 2 1/2" dia ordinary end-on spring

Area of each set of valves per boiler per Rule 7.94 as fitted 9.80 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 no

Smallest distance between boilers or uptakes and bunkers or woodwork 2'-9" Is oil fuel carried in the double bottom under boilers no

Smallest distance between shell of boiler and tank top plating 2'-0" Is the bottom of the boiler insulated yes

Largest internal dia. of boilers 12'-3 5/8" Length 11'-0" Shell plates: Material Steel Tensile strength 29-33 T.T.

Thickness 1 3/8" Are the shell plates welded or flanged no Description of riveting: circ. seams end OR lap

long. seams T.R.D.B.S. Diameter of rivet holes in 1 1/2" Pitch of rivets 3.895"

Percentage of strength of circ. end seams plate 64.80% rivets 42.00% Percentage of strength of circ. intermediate seam plate 85.64% rivets 88.20%

Percentage of strength of longitudinal joint combined 89.00% Working pressure of shell by Rules 220.1

Thickness of butt straps outer 29" inner 1 1/2" No. and Description of Furnaces in each Boiler 2 Beighton Section

Material Steel Tensile strength 26/30 T.T. Smallest outside diameter 3'-8 5/8"

Length of plain part top 10 1/2" bottom 10 1/2" Thickness of plates crown 1 1/8" bottom 1 1/8" Description of longitudinal joint Fireweld

Dimensions of stiffening rings on furnace or c.c. bottom no Working pressure of furnace by Rules 226 lb/sq in

End plates in steam space: Material Steel Tensile strength 26/30 T.T. Thickness 1 3/32" Pitch of stays 1'-3" x 1'-4"

How are stays secured nuts on both sides Working pressure by Rules 231.0 lb/sq in

Tube plates: Material front Steel back Steel Tensile strength 26/30 T.T. Thickness 31/32" 24/32"

Mean pitch of stay tubes in nests 10.625" Pitch across wide water spaces 14 1/4" x 8 1/2" Working pressure front 303 T.T. back 228 T.T.

Girders to combustion chamber tops: Material Steel Tensile strength 28-32 T.T. Depth and thickness of girder 2'-8 3/8"

at centre 2 @ 9' x 7/8" Length as per Rule 2'-8 3/8" Distance apart 10" No. and pitch of stays Steel

in each 2 @ 10 1/4" Working pressure by Rules 226 lb/sq in Combustion chamber plates: Material Steel

Tensile strength 26/30 T.T. Thickness: Sides 13/16" Back 25/32" Top 13/16" Bottom 13/16"

Pitch of stays to ditto: Sides 10 1/4" x 10" Back 10 3/8" x 9" Top 10 1/4" x 10" Are stays fitted with nuts or riveted over yes

Working pressure by Rules 228 lb/sq in Front plate at bottom: Material Steel Tensile strength 26/30 T.T. Thickness 31/32"

Lower back plate: Material Steel Tensile strength 26/30 T.T. Thickness 24/32"

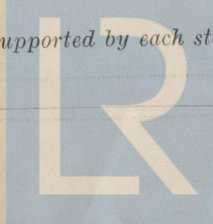
Pitch of stays at wide water space 15' x 9" Are stays fitted with nuts or riveted over nuts

Working pressure 224 lb/sq in Main stays: Material Steel Tensile strength 28-32 T.T.

Diameter At body of stay 2 3/4" Over threads 3 1/4" No. of threads per inch 6 Area supported by each stay 288 sq in

Working pressure by Rules 224 lb/sq in Screw stays: Material Steel Tensile strength 26-30 T.T.

Diameter At turned off part 2 1/4" Over threads 2 1/2" No. of threads per inch 9 Area supported by each stay 102.5 sq in



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Working pressure by Rules. 242 Are the stays drilled at the outer ends. no Margin stays: Diameter 2 1/2" (At turned off part or Over threads.)  
 No. of threads per inch. 9 Area supported by each stay. 136 sq" Working pressure by Rules. 239 lbs.  
 Tubes: Material. Steel External diameter 3 1/2" Thickness 8 WG No. of threads per inch. 9  
 Pitch of tubes. 4 1/2" x 4 1/2" Working pressure by Rules. 220 lbs. Manhole compensation: Size of opening 13"  
 shell plate. 20" x 16" Section of compensating ring. 8 1/2" x 1 1/2" x 2" No. of rivets and diameter of rivet holes. 32 1 3/32"  
 Outer row rivet pitch at ends. 9 1/2" Depth of flange if manhole flanged. 3 7/8" 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 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. Smoke tube Manufacturers of Tube Rd.  
 Number of elements. 56 Material of tubes. SD Steel Internal diameter and thickness of tubes. 1 1/2" x 2 1/2" thick  
 Material of headers. 4. forged Steel Tensile strength. 26-30 T. Thickness. 7/8" Can the superheater be shut off 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. 3.4 sq" Are the safety valves fitted with easing gear. yes. Working pressure as Rules. 220 lbs.  
 Pressure to which the safety valves are adjusted. 225 lbs. Hydraulic test pressure tubes. 1500 lbs. forgings and castings. 660 lbs. and after assembly in place. 440 lbs. 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. (1938) LTD.

The foregoing is a correct description,

RESIDENT MANAGER

Dates of Survey while building { During progress of work in shops - - } see Rpt Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) Boiler plan.  
 { During erection on board vessel - - - } Total No. of visits ---

Is this Boiler a duplicate of a previous case. yes If so, state Vessel's name and Report No. 'Poole Harbour.'

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These boilers have been

constructed in accordance with the approved plans, Secretary's letter, and requirements of the rules.

The workmanship & materials are good.

These boilers have been efficiently fitted on board the vessel, examined under steam, & the safety valves adjusted at the working pressure of 220 lbs.

NOTE. These boilers have been seal welded in lieu of caulking.

A Satisfactory Sea trial was carried out on 26<sup>th</sup> July 1950.

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

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute. FRI. 1 SEP 1950

Assigned. See F.E. mchly rpt.



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