

## REPORT ON BOILERS.

No. 80084

-9 FEB 1926

Date of writing Report 18 Jan 1926

When handed in at Local Office 4/2/1926

Received at London Office

No. in  
Reg. Book.

Survey held at Walker and Wallsend

Port of Newcastle on Tyne

Date, First Survey 8 May 1925

Last Survey 27 Jan 1926

40469 on the steel screw steamer "PATRIS II"

(Number of Visits)

Gross 3854  
Net 2361

Master

Built at Wallsend

By whom built S H &amp; W R Ltd

Yard No. 1283 When built 1926

Engines made at Walker

By whom made Swan Hunter, Glasgow, Richardson &amp; Co Ltd

Engine No. 1210 When made 1926

Boilers made at Walker

By whom made Swan Hunter, Glasgow, Richardson &amp; Co Ltd

Boiler No. 1210 When made 1926

Nominal Horse Power

Owners Byrom &amp; Co Ltd

Port belonging to London

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

Manufacturers of Steel David Colville &amp; Son Ltd. plates

Beardmore &amp; Co Ltd. furnaces (Letter for Record S)

Total Heating Surface of Boilers 1663 sq ft

No. and Description of Boilers one single ended cylindrical multitubular

Tested by hydraulic pressure to 365 lbs Date of test 9.10.25 No. of Certificate 9950

Working Pressure 210 lbs

Area of Firegrate in each Boiler 41 3/4 sq ft

Area of each set of valves per boiler per Rule 3.75 sq in as fitted 3.97 sq in

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 2' 6"

Smallest distance between shell of boiler and tank top plating 18"

Largest internal dia. of boilers 12' 6" Length 11' 0" INT

Thickness 1 1/8" Are the shell plates welded or flanged No

long. seams TR. D.B.S.

Percentage of strength of circ. end seams plate 68.40 rivets 42.27

Percentage of strength of longitudinal joint plate 85.71 rivets 85.12 combined 88.44

Thickness of butt straps outer 27/32 inner 31/32

Material Steel

Length of plain part top bottom

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

End plates in steam space: Material Steel

How are stays secured double nuts

Tube plates: Material front steel back steel

Mean pitch of stay tubes in nests 11 1/16"

Girders to combustion chamber tops: Material Steel

at centre 9 1/8" x 1 1/4"

in each 2 - 9 3/4"

Tensile strength 26 to 30 tons Thickness: Sides 23/32 Back 23/32 Top 23/32 Bottom 1 1/4"

Pitch of stays to ditto: Sides 8" x 9" Back 9 1/4" x 9" Top 9 3/4" x 8 1/2"

Working pressure by Rules 216 lbs

Thickness 1 3/32"

Pitch of stays at wide water space 14 1/4" x 9 1/4"

Working Pressure 304 lbs

At body of stay, or over threads 2 7/8"

Working pressure by Rules 214 lbs

At turned off part, or over threads 1 5/8" and 1 3/4"

No. of threads per inch 6

Screw stays: Material Steel

No. of threads per inch 9

Tensile strength 26/30 tons

Smallest outside diameter 44 1/16"

Description of longitudinal joint weld

Working pressure of furnace by Rules 214 lbs

Tensile strength 26/30 tons Thickness 1 5/32"

Pitch of stays 18 x 16 1/4"

Working pressure by Rules 211 lbs

Tensile strength 26 to 30 tons Thickness 7/8"

Pitch across wide water spaces 14 1/4" x 8 3/4"

Working pressure front 215 lbs back 226 lbs

Tensile strength 28/32 tons Distance apart 8 1/2"

Combustion chamber plates: Material Steel

Tensile strength 26 to 30 tons Thickness 1 1/32"

Are stays fitted with nuts or riveted over Nuts

Front plate at bottom: Material Steel

Tensile strength 26/30 tons

Are stays fitted with nuts or riveted over Nuts

Main stays: Material Steel

Tensile strength 28/32 tons

Area supported by each stay 284.5 sq in

Tensile strength 26 to 30 tons

Area supported by each stay 70.3 x 81.3



Working pressure by Rules <sup>160</sup>216+223 Are the stays drilled at the outer ends <sup>110</sup>110 Margin stays: Diameter { At turned off part, 2" ✓ Over threads 2" ✓ 13.  
No. of threads per inch 9 ✓ Area supported by each stay 105" ✓ Working pressure by Rules 236 lb ✓  
Tubes: Material <sup>Iron</sup>Iron ✓ External diameter { Plain 3 3/4" ✓ Stay 3 3/4" ✓ Thickness { 4.40 9. 3/8" ~ 5/16" ✓ No. of threads per inch 9 ✓  
Pitch of tubes 4 1/2" x 4 3/8" ✓ Working pressure by Rules 269 lb ✓ Manhole compensation: Size of  
shell plate 20" x 16" ✓ Section of compensating ring flanged 10 7/16" x 1 1/8" ✓ No. of rivets and diameter of rivet holes 32 - 1 7/16" ✓  
Outer row rivet pitch at ends 9 3/4" ✓ Depth of flange if manhole flanged 2 3/4" ✓ 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  
stays \_\_\_\_\_ Inner radius of crown \_\_\_\_\_ Working pressure by Rules \_\_\_\_\_  
How connected to shell \_\_\_\_\_ Size of doubling plate under dome \_\_\_\_\_ Diameter of rivet holes \_\_\_\_\_  
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  
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 \_\_\_\_\_  
Rules \_\_\_\_\_ Pressure to which the safety valves are adjusted \_\_\_\_\_ Hydraulic test pressure \_\_\_\_\_  
tubes \_\_\_\_\_, castings \_\_\_\_\_ and after assembly in place \_\_\_\_\_ Are drain cocks or valves \_\_\_\_\_  
to free the superheater from water where necessary \_\_\_\_\_  
Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with \_\_\_\_\_

FOR THE FOREGOING, I HEREBY CERTIFY THAT THE ABOVE IS A CORRECT DESCRIPTION,  
E. P. Dwyer  
DIRECTOR

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

Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)  
Total No. of visits

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

The Auxiliary boiler built under Special Survey the material and workmanship found good and efficient.  
The boiler tested under hydraulic pressure at the makers works and found satisfactory. Subsequently fitted up on board the vessel, the safety valves adjusted under steam for their working pressures.  
The boiler is fitted for burning oil fuel under natural draught, flash point of oil color 150° F.

Survey Fee ... £  
Travelling Expenses (if any) £  
When applied for, 192  
When received, 192

L. G. Shallerross  
Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute  
Assigned See attached F. E. rpt on machinery  
FRI. 12 FEB 1926