

## REPORT ON BOILERS.

No. 77086

REMARKS.

Received at London Office THU. 25 OCT. 1923

NEWCASTLE-ON-TYNE.

Writing Report 192 When handed in at Local Office 19/10/1923 Port of

Survey held at WALKER Date, First Survey 15 June 1920 Last Survey 23<sup>rd</sup> October 1923

on the TWIN SCREW MOTOR SHIP ARNUS OIL ENGINES (Number of Visits = ) Gross 4200 Tons Net 2560

Built at WALKER By whom built S.H.W. RICHARDSON Yard No. 1122 When built 1923

Engines made at WALKER By whom made S.H.W. R.L. Engine No. 1122 When made 1923

Boilers made at WALKER By whom made S.H.W. R.L. Boiler No. 1122 When made 1923

Horse Power Owners PHILIPPINE TOBACCO CO Port belonging to

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

Manufacturers of Steel Spencer &amp; Sons, of Newburn (Letter for Record S)

Heating Surface of Boilers 1165  $\text{sq ft}$  Is forced draught fitted YES Coal or Oil fired OILDescription of Boilers ONE S.E. CYL. MULTITUBULAR Working Pressure 120  $\text{lb}$ Tested by hydraulic pressure to 230  $\text{lb}$  Date of test 24.8.22 No. of Certificate 9686 Can each boiler be worked separatelyArea of Firegrate in each Boiler 0  $\text{sq ft}$  No. and Description of safety valves to each boiler TWO DIRECT SPRING LOADEDArea of each set of valves per boiler { per Rule 13  $\text{sq ft}$  as fitted 14  $\text{sq ft}$  Pressure to which they are adjusted 125  $\text{lb}$  Are they fitted with easing gear YES

If of donkey boilers, state whether steam from main boilers can enter the donkey boiler

Least distance between boilers or uptakes and bunkers or woodwork Is oil fuel carried in the double bottom under boilers

Least distance between shell of boiler and tank top plating Is the bottom of the boiler insulated

Internal dia. of boilers 10' 4 5/8" Length 11'-6" Shell plates: Material STEEL Tensile strength 26/30 TONS

Thickness 1 1/8" Are the shell plates welded or flanged NO Description of riveting: circ. seams { end DRL inter. - - - - -

Seams LTR Diameter of rivet holes in { circ. seams 7/8" long. seams 1 1/16" Pitch of rivets { 3 3/4" 4"

Percentage of strength of circ. end seams { plate 72.2% rivets 42.15% Percentage of strength of circ. intermediate seam { plate - - - rivets - - -

Percentage of strength of longitudinal joint { plate 73.43% rivets 74.15% combined - - - Working pressure of shell by Rules 124  $\text{lb}$ 

No. and Description of Furnaces in each Boiler 2 DEIGHTON

Material STEEL Tensile strength 26/30 TONS Smallest outside diameter 2'-10 5/8"

Thickness of plates { crown 3/8" bottom 3/8" Description of longitudinal joint WELD

Working pressure of furnace by Rules 152  $\text{lb}$ 

Plates in steam space: Material STEEL Tensile strength 26/30 TONS Thickness 7/8" Pitch of stays 20" x 13 1/2"

Are stays secured D.N.-W. Working pressure by Rules 120  $\text{lb}$ 

Plates: Material { front STEEL back " " Tensile strength { 26/30 TONS Thickness { 7/8" 7/8"

Pitch of stay tubes in nests 8 3/4" Pitch across wide water spaces 13 1/2" Working pressure { front 164  $\text{lb}$  back 179  $\text{lb}$ 

Plates to combustion chamber tops: Material STEEL Tensile strength 28/32 TONS Depth and thickness of girder

Length as per Rule 33 27/32 Distance apart 9" No. and pitch of stays

Working pressure by Rules 124  $\text{lb}$  Combustion chamber plates: Material STEEL

Strength 26/30 TONS Thickness: Sides 12/32 Back 12/32 Top 12/32 Bottom 12/32

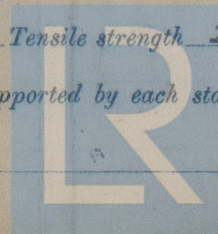
Stays to ditto: Sides 8 3/4" x 9" Back 8 3/4" x 9 1/2" Top 8 3/4" x 9" Are stays fitted with nuts or riveted over NUTS

Working pressure by Rules 121  $\text{lb}$  Front plate at bottom: Material STEEL Tensile strength 26/30 TONS

Lower back plate: Material STEEL Tensile strength 26/30 TONS Thickness 7/8"

Stays at wide water space 13 1/2" x 9 1/2" Are stays fitted with nuts or riveted over NUTS

Main stays: Material STEEL Tensile strength 28/32 TONS

At body of stay, 2 1/4" No. of threads per inch 6" Area supported by each stay 286  $\text{sq in}$ Over threads pressure by Rules 121  $\text{lb}$  Screw stays: Material STEEL Tensile strength 26/30 TONSAt turned off part, 1 3/8" No. of threads per inch 9" Area supported by each stay 78 3/4  $\text{sq in}$ Lloyd's Register  
Foundation



Working pressure by Rules 128 lb Are the stays drilled at the outer ends NO Margin stays: Diameter { At turned off part, 1 5/8" or Over threads. 1 5/8"  
No. of threads per inch 9 Area supported by each stay 115" Working pressure by Rules 131 lb  
Tubes: Material IRON External diameter { Plain 2 1/2" Thickness { 9/16 No. of threads per inch 9  
Pitch of tubes 3 1/2" x 3 1/2" Working pressure by Rules 159 lb Manhole compensation: Size of opening 20" x 16"  
shell plate 20" x 16" Section of compensating ring 21" x 1 1/16" No. of rivets and diameter of rivet holes 32 - 1 1/8"  
Outer row rivet pitch at ends 5 1/2" Depth of flange if manhole flanged 2 Steam Dome: Material NONE  
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 rivets ---  
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 NONE 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 from the boiler?  
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 fitted to free the superheater from water where necessary?  
Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with ---

The foregoing is a correct description,  
G. F. Jewell Manager

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

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

The Donkey Boiler built under Special Survey the material and workmanship found good & efficient.  
The Boiler tested under 230 lbs hydraulic pressure at works and found satisfactory.  
The Boiler fitted up as found the vessel in deck house, off Engine Room.  
The Boiler fitted to burn oil fuel. flash point above 150° F. Forced draught fitted.  
The Boiler tested under steam, and found satisfactory. The two Safety Valves adjusted under 125. APR 1932. FEB 1938, fitted with  
The oil fuel installation was tested under hydraulic pressure as required by the Rules found satisfactory.

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

Committee's Minute FRI. 26 OCT. 1923

Assigned

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



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