

## REPORT ON BOILERS.

No. 76839

TUE. JUN. 26 1923

Received at London Office

Date of writing Report 19 June 1923 When handed in at Local Office 25 June 1923 Port of NEWCASTLE-ON-TYNE

No. in Survey held at WALKER  
Reg. Book.

Date, First Survey 17 January 1923 Last Survey 20 June 1923

on the STEEL SCREW STEAMER HADRIAN

(Number of Visits —) Gross Tons Net

Master Built at WALKER By whom built S. H. W. R. L. D. Yard No. 1146 When built 1923. 6

Engines made at WALKER By whom made SWAN HUNTER WIGHAM RICHARDSON Engine No. 1146 When made 1923-6

Boilers made at WALKER By whom made SWAN HUNTER W. RICHARDSON L. D. Boiler No. 1146 When made 1923-6

Nominal Horse Power 534 Owners TYNE-TEES STEAMSHIPPING CO. L. D. Port belonging to NEWCASTLE

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

Manufacturers of Steel J. Spence &amp; Son, Newcastle (Letter for Record S)

Total Heating Surface of Boilers 7953 sq. ft. Is forced draught fitted YES Coal or Oil fired COAL

No. and Description of Boilers 3. S. E. CYL. MULTITUBULAR Working Pressure 210 lb

Tested by hydraulic pressure to 365 lb Date of test 11 May 1923 No. of Certificate 9759. (2 AFT. B) Can each boiler be worked separately YES

Area of Firegrate in each Boiler 629 sq. ft. No. and Description of safety valves to each boiler two direct spring loaded

Area of each valve per boiler {per Rule 8.839 as fitted 9.624 Pressure to which they are adjusted 215 lb Are they fitted with easing gear yes

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

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 16" to top of Centre Kicker Is the bottom of the boiler insulated no

Largest internal dia. of boilers 15.3 1/4 Length 11-6 Shell plates: Material STEEL Tensile strength 30/34 Tons

Thickness 1 3/8 Are the shell plates welded or flanged no Description of riveting: circ. seams end D R L

long. seams TR DBS Diameter of rivet holes in {circ. seams 17/16 long. seams 13/8 Pitch of rivets {4.264" 9 1/2"

Percentage of strength of circ. end seams {plate 67.7% rivets 42.45% Percentage of strength of circ. intermediate seam {plate NONE rivets ...

Percentage of strength of longitudinal joint {plate 84.93% rivets 85.09% combined 86.9% Working pressure of shell by Rules 212 lb

Thickness of butt straps {outer 1 1/8 inner 1 3/16 No. and Description of Furnaces in each Boiler 3. DEIGHTONS CORRUGATED

Material STEEL Tensile strength 26/30 Tons Smallest outside diameter 3.9 9/16

Length of plain part {top Thickness of plates {crown 21 bottom 32 Description of longitudinal joint WELD

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 211 lb

End plates in steam space: Material STEEL Tensile strength 26/30 Tons Thickness 1 1/4 Pitch of stays 18 1/4 x 19

How are stays secured D. N. W Working pressure by Rules 210 lb

Tube plates: Material {front Steel back Steel Tensile strength {26/30 Tons Thickness {1 3/2 1 3/16

Mean pitch of stay tubes in nests 9 3/8 Pitch across wide water spaces 13 1/2 Working pressure {front 223 lb back 270 lb

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

at centre 8 7/8 x 1 1/2 Length as per Rule 30 1/2 Distance apart 8 1/2 No. and pitch of stays

in each 27 9 1/2 pitch Working pressure by Rules 214 lb Combustion chamber plates: Material STEEL

Tensile strength 26/30 Tons Thickness: Sides 3 3/2 x 7/8 Back 2 3/2 x 7/8 Top 2 3/2 x 7/8 Bottom 7/8

Pitch of stays to ditto: Sides 9 x 7 3/4 Back 9 1/2 x 8 Top 9 1/2 x 8 1/2 Are stays fitted with nuts or riveted over NUTS

Working pressure by Rules 214 lb Front plate at bottom: Material STEEL Tensile strength 26-30 Tons

Thickness 1 3/2 Lower back plate: Material STEEL Tensile strength 26-30 Tons Thickness 7/8

Pitch of stays at wide water space 13 1/2 Are stays fitted with nuts or riveted over NUTS

Working Pressure 242 lb Main stays: Material STEEL Tensile strength 28-32 TONS

Diameter {At body of stay, 3 7/8 - 3 3/8 No. of threads per inch 6 T. P. INCH Area supported by each stay 19 1/2 x 18 1/4

Over threads 3 1/8 3 3/8 Screw stays: Material STEEL Tensile strength 26/30 Tons

Working pressure by Rules 212 lb No. of threads per inch 9 Area supported by each stay 9 1/2 x 8 1/2

Diameter {At turned off part, 1 3/4 - 1 5/8

Over threads 1 3/4 1 5/8



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Working pressure by Rules 224 lb Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, or Over threads 1 7/8 ✓

No. of threads per inch 9 Area supported by each stay 1 1/2 x 8 3/4 Working pressure by Rules 201 lb

Tubes: Material IRON ✓ External diameter { Plain 2 1/2 00 ✓ Stay 2 1/2 ✓ Thickness { 7/16 ✓ 3/8 ✓ 7/16 ✓ No. of threads per inch 9 ✓

Pitch of tubes 3 3/4 ✓ Working pressure by Rules Plain 230 lb Stay 218 lb Manhole compensation: Size of opening in shell plate 20 x 10 Section of compensating ring 10 7/8 x 1 3/8 No. of rivets and diameter of rivet holes 32 - 1 5/8 dia ✓

Outer row rivet pitch at ends 11 ✓ Depth of flange if manhole flanged 2 3/4 ✓ 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 stays Inner radius of crown Working pressure by Rules

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 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 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 easing 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

FOR SWAN HUNTER & WIGHAM RICHARDSON, LTD.  
The foregoing is a correct description,  
Manufacturer.

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 Boilers built under Special Survey the material and workmanship found good and efficient.

The Boilers fitted Satisfactorily on board the Vessel. tested under steam and found Satisfactorily. New Safety Valves adjusted 215 lbs.

For recommendations please see Machinery Plant Report appended.

See Machinery Plant Report.

Survey Fee ... £ : : When applied for, 192

Travelling Expenses (if any) £ : : When received, 192

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

Committee's Minute

FRI 29 JUN 1923

Assigned



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