

# REPORT ON MACHINERY.

No. 3470

Port of NEWCASTLE-ON-TYNE

SAT 17 APL 1897

No. in Survey held at Newcastle

Received at London Office

Reg. Book.

Date, first Survey 7 October 1896

Last Survey 30th March 1897

on the S/s "Ashanti"

(Number of Visits)

Master F. J. Symons Built at Newcastle

By whom built C. S. Swan & Hunter Ltd

Tons { Gross 3388.7

Net 2185.7

Engines made at Newcastle

By whom made North Eastern Marine Eng Co Ltd

When built 1897

Boilers made at Newcastle

By whom made North Eastern Marine Eng Co Ltd

when made 1897

Registered Horse Power

Owners G. A. Hunter & W. J. Davey  
(managers Elder Dempster & Co)

Port belonging to Liverpool

Nom. Horse Power as per Section 28 293

Is Electric Light fitted No

## ENGINES, &c.—Description of Engines Triple expansion

No. of Cylinders Three No. of Cranks 3

Diameter of Cylinders 24" - 40" - 64"

Length of Stroke 4.2" Revolutions per minute

Diameter of Screw shaft as per rule 11.59"

Diameter of Tunnel shaft as per rule 11"

as fitted 11.75"

Diameter of Crank shaft journals 12"

Diameter of Crank pin 12"

Size of Crank webs 21.5" x 8.75"

Diameter of screw 17.0"

Pitch of screw 16.0"

No. of blades 4

State whether moveable no

Total surface 85 sq ft

No. of Feed pumps 2

Diameter of ditto 3.75"

Stroke 24"

Can one be overhauled while the other is at work yes

No. of Bilge pumps 2

Diameter of ditto 3.5"

Stroke 24"

Can one be overhauled while the other is at work yes

No. of Donkey Engines two

Sizes of Pumps 9" x 12" single  
6" x 6" duplex

No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 4 of 3.5" dia

after hold 3 of 3.5" Tunnel well 1 of 2.5"

In Holds, &c. Fore hold 2 of 3.5" Main hold 2 of 3.5"

No. of bilge injections 1 sizes 4"

Connected to condenser, or to circulating pump yes

Is a separate donkey suction fitted in Engine room & size two of 3.5"

Are all the bilge suction pipes fitted with roses yes

Are the roses in Engine room always accessible yes

Are the sluices on Engine room bulkheads always accessible none

Are all connections with the sea direct on the skin of the ship yes

Are they Valves or Cocks both

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates yes

Are the discharge pipes above or below the deep water line above

Are they each fitted with a discharge valve always accessible on the plating of the vessel yes

Are the blow off cocks fitted with a spigot and brass covering plate yes

What pipes are carried through the bunkers none

How are they protected yes

Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times yes

Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges yes

When were stern tube, propeller, screw shaft, and all connections examined in dry dock before launch

Is the screw shaft tunnel watertight yes

Is it fitted with a watertight door yes

worked from upper platform

## BOILERS, &c.—

(Letter for record S)

Total Heating Surface of Boilers 4700 sq ft

Is forced draft fitted no

No. and Description of Boilers Two single ended

Working Pressure 170 lbs

Tested by hydraulic pressure to 340 lbs

Date of test 20-11-96 Can each boiler be worked separately yes

Area of fire grate in each boiler 63 sq ft

No. and Description of safety valves to

each boiler 2 spring loaded

Area of each valve 2.07 sq ft

Pressure to which they are adjusted 175 lbs

Are they fitted

with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 24"

Mean diameter of boilers 15.0"

Length 10.6" Material of shell plates steel

Thickness 1.5"

Description of riveting: circum. seams lap DR

long. seams Double straps DR

Diameter of rivet holes in long. seams 1.75"

Pitch of rivets 8.75"

Lap of plates or width of butt straps 16.5"

Per centages of strength of longitudinal joint rivets 80.8

plate 80.6

Working pressure of shell by rules 170 lbs

Size of manhole in shell 16 x 12 in end plate

Size of compensating ring flanged

No. and Description of Furnaces in each boiler 4 plain

Material steel Outside diameter 36"

Length of plain part top 6.0"

bottom 5.9"

Thickness of plates crown 2.3"

bottom 3.2"

Description of longitudinal joint Double straps SR

No. of strengthening rings 1 on bottom

Working pressure of furnace by the rules 175 lbs

Combustion chamber plates: Material steel Thickness: Sides 2.1"

Back 1.9" Top 2.1" Bottom 3.4"

Pitch of stays to ditto: Sides 9.5" x 9.5"

Back 8.5" x 8.5"

Top 9.5" x 9.5"

If stays are fitted with nuts or riveted heads nuts

Working pressure by rules 173 lbs

Material of stays steel Diameter at smallest part 1.38"

Area supported by each stay 70 sq ft

Working pressure by rules 171 lbs

End plates in steam space:

Material steel Thickness 1.5"

Pitch of stays 22.5" x 22.5"

How are stays secured DN + W

Working pressure by rules 173 lbs

Material of stays steel

Material of Front plates at bottom steel

Diameter at smallest part 3.54"

Area supported by each stay 517 sq ft

Working pressure by rules 171 lbs

Material of Front plates at bottom steel

Thickness 7/8"

Material of Lower back plate steel Thickness 3/4"

Greatest pitch of stays 14.5"

Working pressure of plate by rules 175 lbs

Diameter of tubes 3.75"

Pitch of tubes 4.5" x 4.5"

Material of tube plates steel Thickness: Front 3/4"

Back 3/4" Mean pitch of stays 11.75"

Pitch across wide water spaces 14.5" dbd

Working pressures by rules 235 lbs

Girders to Chamber tops: Material steel

Depth and

thickness of girder at centre 2 of 8.5" x 4"

Length as per rule 30.5" Distance apart 9.5"

Working pressure by rules 178 lbs

Superheater or Steam chest; how connected to boiler none

Can the superheater be shut off and the boiler worked

separately

Diameter

Length

Thickness of shell plates

Material

Description of longitudinal joint

Diam. of rivet

Pitch of rivets

Working pressure of shell by rules

Diameter of flue

Material of flue plates

Thickness

If stiffened with rings

Distance between rings

Working pressure by rules

End plates: Thickness

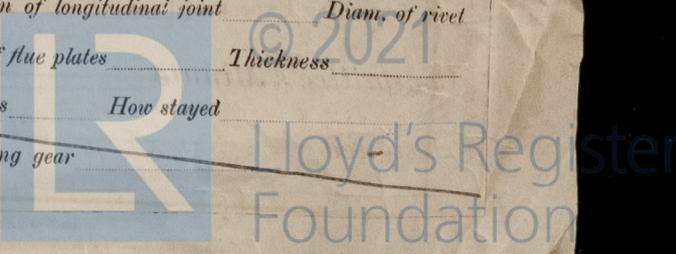
How stayed

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with casing gear

7910-1587M



**DONKEY BOILER**— Description *Multitubular 2 plain furnaces.*  
 Made at *Stockton* By whom made *Riley Bros* When made *15.2.97* Where fixed *upper deck*  
 Working pressure *80* tested by hydraulic pressure to *160* No. of Certificate *1433* Fire grate area Description of safety valves *spring loaded*  
 No. of safety valves *2* Area of each *4.91* Pressure to which they are adjusted *85 lbs* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no* Diameter of donkey boiler *9.3* Length *9.0* Material of shell plates *steel* Thickness *5/16*  
 Description of riveting long seams *double rivetted lap* Diameter of rivet holes *5/16* Whether punched or drilled *drilled* Pitch of rivets *4*  
 Lap of plating *6 1/2* Per centage of strength of joint Rivets *83* Thickness of shell <sup>end</sup> plates *3/4* Radius of do. *✓* No. of Stays to do. *4*  
 Dia. of stays. *2 1/8* Diameter of furnace Top *32* Bottom Length of furnace *6.0* Thickness of furnace plates *7/16* Description of joint *welded* Thickness of <sup>combustion</sup> furnace crown plates *5/16* Stayed by *1 1/2* stays *7 1/2* to *8 1/2* pitch Working pressure of shell by rules *83 lbs.*  
 Working pressure of furnace by rules *89 lbs* Diameter of <sup>tubes</sup> plates *3 1/2* Thickness of <sup>tube</sup> plates *F 3/4. B 7/16* Thickness of <sup>stay</sup> tubes *5/16*

**SPARE GEAR.** State the articles supplied:— *2 connecting rod top end bolts; 2 bottom end bolts; 2 main bearing bolts; set coupling bolts; 2 feed pump valves; 2 bilge pump valves*

The foregoing is a correct description.  
 FOR AND ON BEHALF OF THE NORTH EASTERN MARINE ENGINEERING COMPANY, LIMITED. *Manufacture*

Dates of Survey while building  
 During progress of work in shops - - - *1896 - Oct 7, 21, 29 Nov 3, 9, 18, 20, 24 Dec 29 - 1897. Jan 7, 20 Feb 1, 4, 23 Mar 4, 9, 10, 24, 30*  
 During erection on board vessel - - -  
 Total No. of visits *19*

**General Remarks** (State quality of workmanship, opinions as to class, &c. *The machinery of this vessel has been constructed under special survey in accordance with the approved plans enclosed, Secretary's letters of 31.10.95 and 25.8.96 and in other respects as required by the rules. The boilers are constructed of steel and the material has been tested at the steel works by the society's surveyors. Advice notes are enclosed. The machinery has been tried and safety valves adjusted under steam. Materials and workmanship are good. The machinery of this vessel is in my opinion eligible to be classed **LMC 3-97** in the Register Book.*

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 3.97.

*Large handwritten signature in blue ink, dated 17.4.97.*

*Harry Clarke*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

The amount of Entry Fee... £ 2 : 0 :  
 Special ... £ 34 : 13 :  
 Donkey Boiler Fee ... £  
 Travelling Expenses (if any) £  
 MACHINERY CERTIFICATE WRITTEN: 23 4 97  
 TUES 20 APR 1897

Committee's Minute  
 Assigned *+ LMC 3.97*



Arrived on 17/4

Certificates (if required) to be sent to