

## REPORT ON MACHINERY.

No. 3470

Port of NEWCASTLE-ON-TYNE

SAT 17 APL 1897

No. in Survey held at Newcastle

Reg. Book.

Date, first Survey 7 October 1896

Received at London Office

Last Survey 30th March 1897

(Number of Visits)

on the S/s "Ashanti"Master F. J. SymonsBuilt at NewcastleBy whom built C. S. Swan & Hunter LtdTons { Gross 3388.7Net 2185.7When built 1897Engines made at NewcastleBy whom made North Eastern Marine Eng Co Ltdwhen made 1897Boilers made at NewcastleBy whom made North Eastern Marine Eng Co Ltdwhen made 1897

Registered Horse Power

Owners G. A. Hunter & W. J. Davey  
(managers Elder Dempster & Co)Port belonging to LiverpoolNom. Horse Power as per Section 28 293Is Electric Light fitted NoENGINES, &c.—Description of Engines Triple expansionNo. of Cylinders Three No. of Cranks 3Diameter of Cylinders 24" 40" 64"Length of Stroke 42" Revolutions per minuteDiameter of Screw shaft as per rule 11.59"Diameter of Tunnel shaft as fitted 11.4"Diameter of Crank shaft journals 12"Diameter of Crank pin 12"Size of Crank webs 21.2" x 8.4"Diameter of screw 17.0"Pitch of screw 16.0"No. of blades 4State whether moveable noTotal surface 85 sq ftNo. of Feed pumps 2Diameter of ditto 3.4"Stroke 24"Can one be overhauled while the other is at work yesNo. of Bilge pumps 2Diameter of ditto 3.2"Stroke 24"Can one be overhauled while the other is at work yesNo. of Donkey Engines twoSizes of Pumps 9" 9" x 12" single  
6" 4" x 6" duplex

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

In Engine Room 4 of 3.2" diaafter hold 3 of 3.2" Tunnel well 1 of 2.2"In Holds, &c. Fore hold 2 of 3.2" Main hold 2 of 3.2"No. of bilge injections 1sizes 4"Connected to condenser, or to circulating pump yesIs a separate donkey suction fitted in Engine room & size two of 3.2"Are all the bilge suction pipes fitted with roses yesAre the roses in Engine room always accessible yesAre the sluices on Engine room bulkheads always accessible noneAre all connections with the sea direct on the skin of the ship yesAre they Valves or Cocks bothAre they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates yesAre the discharge pipes above or below the deep water line aboveAre they each fitted with a discharge valve always accessible on the plating of the vessel yesAre the blow off cocks fitted with a spigot and brass covering plate yesWhat pipes are carried through the bunkers noneHow are they protected yesAre all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times yesAre the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges yesWhen were stern tube, propeller, screw shaft, and all connections examined in dry dock before launchIs it fitted with a watertight door yesworked from upper platformIs the screw shaft tunnel watertight yes

## BOILERS, &amp;c.—

(Letter for record S)Total Heating Surface of Boilers 4700 sq ftIs forced draft fitted noNo. and Description of Boilers Two single endedWorking Pressure 170 lbsTested by hydraulic pressure to 340 lbsDate of test 20-11-96Can each boiler be worked separately yesArea of fire grate in each boiler 63 sq ft

No. and Description of safety valves to

each boiler 2 spring loadedArea of each valve 2.07 sq ftPressure to which they are adjusted 175 lbs

Are they fitted

with easing gear yesSmallest distance between boilers or uptakes and bunkers or woodwork 24"Mean diameter of boilers 15.08"Length 10.6"Material of shell plates steelThickness 1.5"Description of riveting: circum. seams lap DRlong. seams Double straps DRDiameter of rivet holes in long. seams 1.9"Pitch of rivets 8.75"Lap of plates or width of butt straps 16.2"

Per centages of strength of longitudinal joint

rivets 80.8plate 80.6Working pressure of shell by rules 170 lbsSize of manhole in shell 16 x 12 in end plateSize of compensating ring flangedNo. and Description of Furnaces in each boiler 4 plainMaterial 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 SRNo. of strengthening rings 1 on bottomWorking pressure of furnace by the rules 175 lbsCombustion chamber plates: Material steelThickness: Sides 2.1"Back 1.9"Top 2.1"Bottom 3.4"Pitch of stays to ditto: Sides 9.4" x 9.4"Back 8.8" x 8.8"Top 9.4" x 9.4"If stays are fitted with nuts or riveted heads nutsWorking pressure by rules 173 lbsMaterial of stays steelDiameter at smallest part 1.38"Area supported by each stay 70 sq ftWorking pressure by rules 171 lbs

End plates in steam space:

Material steelThickness 1.8"Pitch of stays 22.2" x 22.2"How are stays secured DN + WWorking pressure by rules 173 lbsMaterial of stays steelDiameter at smallest part 3.54"Area supported by each stay 517 sq ftWorking pressure by rules 171 lbsMaterial of Front plates at bottom steelThickness 7/8"Material of Lower back plate steelThickness 3/4"Greatest pitch of stays 14.2"Working pressure of plate by rules 175 lbsPitch of tubes 4.5" x 4.5"Material of tube plates steelThickness: Front 3/4"Back 3/4"Mean pitch of stays 11.7"Diameter of tubes 3.4"Pitch of tubes 4.5" x 4.5"Material of tube plates steelThickness: Front 3/4"Back 3/4"Mean pitch of stays 11.7"Pitch across wide water spaces 14.2" dbdWorking pressures by rules 235 lbsGirders to Chamber tops: Material steel

Depth and

thickness of girder at centre 2 of 8.2" x 4"Length as per rule 30.2"Distance apart 9.4"Number and pitch of Stays in each 2 of 9.4"Working pressure by rules 178 lbsSuperheater 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

holes

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

Working pressure by rules

End plates: Thickness

How stayed

Working pressure of end plates

Area of safety valves to superheater

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Working pressure by rules

End plates: Thickness

How stayed



**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 *end* 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 *combustion* 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 *tubes* *3 1/4* Thickness of *tube* plates *F 3/4 B 7/16* Thickness of *stay* 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.

Dates of Survey while building { During progress of work in shops - - - - -  
 { During erection on board vessel - - - - -  
 { Total No. of visits *19*  
*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*

**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.*

*Handwritten signature and date: 17.4.97*

The amount of Entry Fee. £ *2 : 0* : When applied for, *15.4.97*  
 Special .. .. £ *34 : 13* : .. ..  
 Donkey Boiler Fee .. .. £ .. ..  
 Travelling Expenses (if any) £ .. ..  
 Committee's Minute  
 Assigned *+ LMC 3.97*

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