

# REPORT ON MACHINERY

MONDAY 7 SEPT 1885

No. 13761

No. in Survey held at Sunderland  
Reg. Book.

Date, first Survey 24<sup>th</sup> Nov 1884 Last Survey 25<sup>th</sup> Aug 1885

(Number of Visits 30) Tons 431.9

on the Screw Steamer Hemiramis

Master [Signature] Built at Sunderland By whom built The Sunderland Shipbuilding Co When built 1885

Engines made at Sunderland By whom made North Eastern Marine Eng<sup>y</sup> Co when made 1885

Boilers made at [Signature] By whom made [Signature] when made do

Registered Horse Power 10 Owners Capt<sup>n</sup> W. Watt Port belonging to Glasgow

## ENGINES, &c.

Description of Engines Inverted, Compound, Surface Condensing.

Diameter of Cylinders 20 & 38 Length of Stroke 27 No. of Rev. per minute 85 Point of Cut off, High Pressure 2<sup>nd</sup> stroke Low Pressure 2<sup>nd</sup> stroke

Diameter of Screw shaft 7 Diam. of Tunnel shaft 6 1/2 Diam. of Crank shaft journals 7 Diam. of Crank pin 7 size of Crank webs 8 1/2 x 5

Diameter of screw 9.6 Pitch of screw 12.10 No. of blades 4 state whether moveable no total surface 29 sq. feet

No. of Feed pumps 1 diameter of ditto 3 1/4 Stroke 27 Can one be overhauled while the other is at work yes, one only

No. of Bilge pumps 1 diameter of ditto 3 1/4 Stroke 27 Can one be overhauled while the other is at work yes

Where do they pump from The bilges of the engine room, after well and fore hold.

No. of Donkey Engines 1 Size of Pumps 4 dia. x 6 stroke Where do they pump from The bilges of the engine room,

after well & fore hold, sea and ballast tanks.

Are all the bilge suction pipes fitted with roses yes Are the roses always accessible yes Are the sluices on Engine room bulkheads always accessible yes

No. of bilge injections 1 and sizes 4 dia Are they connected to condenser, or to circulating pump to circulating pump

How are the pumps worked direct from the pistons and crossheads of each engine.

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 below

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 by the hull

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

Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges yes

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

Is the screw shaft tunnel watertight yes and fitted with a sluice door yes worked from top platform of Engine room.

## OILERS, &c.

Number of Boilers one Description Cyl. Mult. & Single ended Whether Steel or Iron steel

Working Pressure 80 lbs Tested by hydraulic pressure to 106 lbs Date of test 6<sup>th</sup> February 1885

Description of superheating apparatus or steam chest Horizontal dome.

Can each boiler be worked separately only Can the superheater be shut off and the boiler worked separately no superheater

No. of square feet of fire grate surface in each boiler 36 Description of safety valves spring valves No. to each boiler 2

Area of each valve 9.6 sq. ins Are they fitted with easing gear yes No. of safety valves to superheater — area of each valve —

Are they fitted with easing gear — Smallest distance between boilers and bunkers or woodwork 9" Diameter of boilers 12.0"

Length of boilers 9.11 description of riveting of shell long. seams hebble w. lap circum. seams double w. lap Thickness of shell plates 1/2"

Diameter of rivet holes 1" whether punched or drilled drilled pitch of rivets 4" Lap of plating 7"

Per centage of strength of longitudinal joint 75 & 72.8 working pressure of shell by rules 80 lbs size of manholes in shell end 16 x 12

Size of compensating rings 4 x 3 1/4 No. of Furnaces in each boiler 2

Outside diameter 3.53 length, top 6.3 bottom 6.3 thickness of plates 1/2" description of joint double butt straps if rings are fitted yes

Greatest length between rings 6.3 working pressure of furnace by the rules 80 lbs combustion chamber plating, thickness, sides 1/2" back 5" top 1/2"

Pitch of stays to ditto, sides 8 3/4 x 8 3/4 back 8 3/4 x 8 3/4 top 10 x 10 If stays are fitted with nuts or riveted heads nuts working pressure of plating by

rules 101 lbs Diameter of stays at smallest part 1 3/8 working pressure of ditto by rules 106 lbs end plates in steam space, thickness 3/4"

Pitch of stays to ditto 15 x 15 how stays are secured double nuts working pressure by rules 89 lbs diameter of stays at

smallest part 2" working pressure by rules 104 lbs Front plates at bottom, thickness 5/8" Back plates, thickness 5/8"

Greatest pitch of stays 12 1/4 working pressure by rules 80 lbs Diameter of tubes 3 1/2 pitch of tubes 5 x 14 3/4 thickness of tube

plates, front 3/4" back 3/4" how stayed stay tube pitch of stays 15 x 14 1/4 width of water spaces 1 1/4 x 1 1/2

Diameter of Superheater or Steam chest 3.0 length 6.0 thickness of plates 3/8" description of longitudinal joint double butt lap diam. of rivet holes 3/4"

Pitch of rivets 2 1/2 working pressure of shell by rules 140 lbs diameter of flue 9 1/2 thickness of plates 1/2" If stiffened with rings yes

Distance between rings — working pressure by rules — end plates of superheater, or steam chest; thickness 1/2" how stayed spherical

ends 4 feet radius Superheater or steam chest; how connected to boiler by a hook piece 15 dia x 3/4 thick



**DONKEY BOILER**— Description *Vertical, with 3 cross tubes.*  
 Made at *Sunderland* by whom made *Welford Brothers* made *1885* where fixed in *stokehole*.  
 Working pressure *80 lbs* tested by hydraulic pressure to *160 lbs* No. of Certificate *782* fire grate area *11 sq ft* description of safety  
 valves *spring* No. of safety valves *1* area of each *8.3 sq in* if fitted with easing gear *yes* if steam from main boilers can  
 enter the donkey boiler *no* diameter of donkey boiler *4.6* length *9.0* description of riveting *Engl Beams double riv lap*  
 Thickness of shell plates *3/8* diameter of rivet holes *3/4* whether punched or drilled *punched* pitch of rivets *3* lap of plating *3 3/4*  
 per centage of strength of joint *75* thickness of crown plates *7/16* stayed by *5 stays 1 1/4 diameter*  
 Diameter of furnace, top *3.6* bottom *3.9* length of furnace *4.4* thickness of plates *1/2* description of joint *single riv lap*  
 Thickness of furnace crown plates *1/2* stayed by *5 stays 1 1/4 diameter* working pressure of shell by rules *80 lbs*  
 Working pressure of furnace by rules *87 lbs* diameter of uptake *12* thickness of plates *3/8* thickness of water tubes *3/8*

**SPARE GEAR.** State the articles supplied:— *1 set of Connecting rod bolts & nuts, 2 feed and 2 bilge  
 pump valves, 1 set of coupling bolts, 2 main bearing bolts, bolts, nuts and  
 iron assorted.*

The foregoing is a correct description,

Manufacturer.

*Except of the Donkey Boiler*

**General Remarks** (State quality of workmanship, opinions as to class, &c.)

*The Machinery of this Vessel has been built under special survey  
 the Materials and workmanship, are good and efficient.*

*The Engines and Boilers have been tried under steam, and in  
 my opinion are in good order and safe working condition, and eligible  
 for the distinguishing mark **L.M.C. 8.85** in the Register  
 Book of this Society.*

The amount of Entry Fee £ : 0 : - received by me,

Special £ 10 : 10 : -

Donkey Boiler Fee £ : : -

Certificate (if required) £ : : - 3<sup>rd</sup> Sept 1885

To be sent as per margin.

(Travelling Expenses, if any, £ )

Committee's Minute

TUESDAY 8 SEPT 1885

*William Allison*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.