

# REPORT ON MACHINERY.

WED 21 MAY 1890

bro R. 40

Port of *West Hartlepool*

Received at London Office

8020

Survey held at *W. Hartlepool*

Date, first Survey *24<sup>th</sup> Dec. 1889* Last Survey *1<sup>st</sup> May 1890*

ok.

(Number of Visits *27*)

on the

*Screw Steamer "Monrovia"*

Gross *2401.56*  
Tons Net *1537.66*

Built at *Middlesbrough*

By whom built

*Messrs. W. Dixon & Co.* When built *1890*

es made at

*Hartlepool*

By whom made

*Messrs. J. Richardson & Son* when made *1890*

s made at

*Hartlepool*

By whom made

*Messrs. J. Richardson & Son* when made *1890*

tered Horse Power *200*

Owners

*Edgar Dempster & Co. Port belonging to Liverpool*

INES, &c.—

ption of Engines *Inverted, Triple Expansion, 3 Cranks* No. of Cylinders *3*  
of Cylinders *22, 35, 59* Length of Stroke *39* Rev. per minute *65* Point of Cut off, High Pressure *5<sup>th</sup>* Low Pressure *.6 stroke*  
eter of Screw shaft *10 1/2* Diam. of Tunnel shaft *10 1/2* Diam. of Crank shaft journals *10 1/2* Diam. of Crank pin *10 1/2* size of Crank webs *16 1/4 x 7 1/4*  
eter. of screw *16.0* Pitch of screw *15.0* No. of blades *4* state whether moveable *no* total surface *70 sq. ft.*  
of Feed pumps *2* diameter of ditto *2 3/4* Stroke *23* Can one be overhauled while the other is at work *yes*  
of Bilge pumps *2* diameter of ditto *3 3/4* Stroke *23* Can one be overhauled while the other is at work *yes*  
ere do they pump from *So. hold, engine room, after well, & sea*  
of Donkey Engines *2* Size of Pumps *(8 1/2 x 7) (3 1/2 x 5)* Where do they pump from *(Ballast tanks, sea, engine room bilges) (sea, all bilges, hotwell, & main boilers)*  
e 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*  
o. of bilge injections *one* and sizes *1 1/2 in.* Are they connected to condenser, or to circulating pump *Circulating pump.*  
ow are the pumps worked *By levers from the after piston rod crosshead.*  
re all connections with the sea direct on the skin of the ship *yes* Are they Valves or Cocks *both.*  
re 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  
re 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  
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.*  
Then were stern tube, propeller, screw shaft, and all connections examined in dry dock *yes*  
s the screw shaft tunnel watertight *yes* and fitted with a sluice door *yes* worked from *Top platform engine room*

ILERS, &c.—

to. of Boilers *Two* Description *Cyl. Mult. Single Sided* Material *Steel* Letter (for record) *(S)*  
Working Pressure *160 lbs.* Tested by hydraulic pressure to *320 lbs.* Date of test *22<sup>nd</sup> April 1890*  
Description of superheating apparatus or steam chest *none* Heating surface *3372*  
Can each boiler be worked separately *yes* Can the superheater be shut off and the boiler worked separately *no* Superheater  
to. of square feet of fire grate surface in each boiler *47* Description of safety valves *Spring* No. to each boiler *2*  
Area of each valve *5.94* 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 *6"* Diameter of boilers *13.8"*  
Length of boilers *9.4"* description of riveting of shell long. seams *double butt cheep* circum. seams *double in lap* Thickness of shell plates *1 3/16"*  
Diameter of rivet holes *1 3/16"* whether punched or drilled *drilled* pitch of rivets *1 row 8, 2 row 4* Lap of plating *9 3/4"*  
Percentage of strength of longitudinal joint *85.1* working pressure of shell by rules *160 lbs.* size of manholes in shell *none*  
Size of compensating rings No. of Furnaces in each boiler *3* Description of Furnaces *Ribbed*  
Outside diameter *3.1* length top *5.9* bottom *6.3* thickness of plates *1/2"* description of joint *welded* if rings are fitted *no*  
Greatest length between rings working pressure of furnace by the rules *162 lbs.* combustion chamber plating, thickness, sides *5/8"* back *5/8"* top *5/8"*  
Pitch of stays to ditto, sides *8 1/2 x 8* back *8 1/2 x 8* top *8 x 8* If stays are fitted with nuts or riveted heads *nuts* working pressure of plating by  
rules *166 lbs.* Diameter of stays at smallest part *1 3/8"* working pressure of ditto by rules *174 lbs.* end plates in steam space, thickness *1 1/16"*  
Pitch of stays to ditto *15 3/4 x 15 3/4"* how stays are secured *double nuts* working pressure by rules *163 lbs.* diameter of stays at  
smallest part *2 3/8"* working pressure by rules *160 lbs.* Front plates at bottom, thickness *3/4"* Back plates, thickness *1 1/16"*  
Greatest pitch of stays *11 1/4"* working pressure by rules *160 lbs.* Diameter of tubes *3 1/4* pitch of tubes *4 1/2 x 4 3/8* thickness of tube  
plates, front *1 3/16"* back *1 3/16"* how stayed *stay tubes* pitch of stays *9 x 8 3/4"* width of water spaces *1 1/4"*  
Diameter of Superheater or Steam chest length thickness of plates description of longitudinal joint diam. of rivet holes  
Pitch of rivets working pressure of shell by rules diameter of flue thickness of plates If stiffened with rings  
Distance between rings working pressure by rules end plates of superheater, or steam chest; thickness how stayed  
Superheater or steam chest; how connected to boiler

Lloyd's Register Foundation



**DONKEY BOILER—** Description *Vertical, Cylindrical, 6 Cross tubes*  
 Made at *Stockton* by whom made *Messrs. Riley Bros.* when made *25.2.90* where fixed *In stockhole*  
 Working pressure *90 lb* tested by hydraulic pressure to *180 lb* No. of Certificate *2081* fire grate area *21.6 sq. ft.* description of safety  
 valves *Spring* No. of safety valves *2* area of each *7.07* if fitted with easing gear *yes* if steam from main boilers can  
 enter the donkey boiler *no* diameter of donkey boiler *6.6* length *13.0* description of riveting *double riv. lap*  
 Thickness of shell plates *15/32* diameter of rivet holes *13/16* whether punched or drilled *punched* pitch of rivets *2 3/4* lap of plating *4 1/2*  
 per centage of strength of joint *70* thickness of crown plates *5/8* stayed by *6 stays 1 1/2" dia.*  
 Diameter of furnace, top *4.9* bottom *5.5* length of furnace *6.1* thickness of plates *5/8* description of joint *single riv. lap*  
 Thickness of furnace crown plates *9/16* stayed by *6 stays 1 1/2" dia.* working pressure of shell by rules *90 lb*  
 Working pressure of furnace by rules *90 lb* diameter of uptake *16* thickness of plates *7/16* thickness of water tubes *3/8*

**SPARE GEAR.** State the articles supplied:— *One propeller, A set of bolts & nuts for a  
 connecting rod, main bearing, & shaft coupling, A set of  
 valves for the feed & bilge pumps, Bolts, nuts, & Iron assorted*

*The foregoing is a correct description,*

*J. Richardson* Manufacturer of Engines & Main Boilers

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

*Main steam pipes tested by hydraulic pressure to 320 lb  
 per square inch and found tight.*

*The engines and boilers of this vessel have been constructed  
 under Special Survey, and the workmanship is of a good  
 quality, they have been examined under steam, and  
 the safety valves adjusted and found to work well  
 and will in my opinion, be eligible to have ~~L.M.C.~~ *L.M.C. 5.90*  
 recorded in the Society's Register Book, when the screw  
 tunnel is made water-tight and to the satisfaction of a  
 Surveyor of this Society. The vessel has proceeded  
 to Middlesbrough for completion.*

*The Tunnel has now been made watertight.*

*Wm. R. Austin.*

*It is submitted that this vessel is  
 eligible to have + L.M.C. 5.90  
 recorded*

*21.5.90*

The amount of Entry Fee .. £ 2 : 0 : 0 received by me,

Special .. £ 31 : 1 : 0

Donkey Boiler Fee .. £ : : :

Certificate (if required) .. £ : : 20.5.1890

To be sent as per margin.

(Travelling Expenses, if any, £ )

Committee's Minute

FRI 30 MAY 1890

*+ L.M.C. 5/90*

*A. Stoddart*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Ships



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 Foundation