

## REPORT ON MACHINERY

THUR, 8 JUN 1899

Port of Sunderland

Received at London Office

18

No. in Survey held at Sunderland Date, first Survey Oct 24<sup>th</sup> 1898 Last Survey June 3<sup>rd</sup> 1899  
Reg. Book. (Number of Visits 45)

on the

S/S. MatienzoTons { Gross 1834  
Net 1164Master Alfreda Banco Built at Siland By whom built R. Thompson & Sons When built 1899Engines made at Siland By whom made H. E. M. Engle & Co. Ltd when made 1899Boilers made at Siland By whom made H. E. M. Engle & Co. Ltd when made 1899

Registered Horse Power

Owners Montana Steamship Co Port belonging to SantanderNom. Horse Power as per Section 28 185 Compania Montanesea de Navegacion Is Electric Light fitted

ENGINES, &c.—Description of Engines Tri C.R.D No. of Cylinders 3 No. of Cranks 3  
 Diameter of Cylinders 20 1/2" 33" 54" Length of Stroke 39 Revolutions per minute 70 Diameter of Screw shaft as per rule 9.84"  
 Diameter of Tunnel shaft as fitted 9 1/2" Diameter of Crank shaft journals 10" Diameter of Crank pin 10" Size of Crank webs 15" x 6 3/4"  
 Diameter of screw 14" 6" Pitch of screw 14" 6" No. of blades 4 State whether moveable f Total surface 58 sq  
 No. of Feed pumps 2 Diameter of ditto 3" Stroke 21" Can one be overhauled while the other is at work yes  
 No. of Bilge pumps 2 Diameter of ditto 3 1/2" Stroke 21" Can one be overhauled while the other is at work yes  
 No. of Donkey Engines 2 Sizes of Pumps 7 x 9 x 9" 7 1/2 x 3 1/2 x 5" No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room 3 of 3" In Holds, &c. Nº 1 - 2 of 3" Nº 2 - 2 of 3"  
Hold well 3" tunnel well 3"  
 No. of bilge injections 1 sizes 5" Connected to condenser, or to circulating pump C.D Is a separate donkey suction fitted in Engine room & size yes 3  
 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 —  
 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 —  
 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 new vessel Is the screw shaft tunnel watertight yes  
 it fitted with a watertight door yes worked from top platform

OILERS, &c.— (Letter for record 3) Total Heating Surface of Boilers 2842 Is forced draft fitted no  
 No. and Description of Boilers 2 byl. Multib. S. End Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs  
 Date of test 22/3/99 Can each boiler be worked separately yes Area of fire grate in each boiler 39 sq No. and Description of safety valves to  
 each boiler 2 Spring Area of each valve 4.90 Pressure to which they are adjusted 165 Are they fitted  
 with easing gear yes Smallest distance between boilers or uptakes and bunkers or woodwork 18" Mean diameter of boilers 12.9 1/6"  
 Length 10' 0" Material of shell plates S Thickness 1 5/16 Description of riveting: circum. seams D.R. lap. long. seams T. & A. butt.  
 Diameter of rivet holes in long. seams 1 1/8" Pitch of rivets 7 3/8" Lap of plates or width of butt straps 18"  
 Per centages of strength of longitudinal joint 85.5 Working pressure of shell by rules 162 1/2 Size of manhole in shell 16" x 12"  
 Size of compensating ring 30" x 26" x 1 5/16" No. and Description of Furnaces in each boiler 2 plain Material S Outside diameter 36"  
 Length of plain part top 6' 0" bottom 6' 6" Thickness of plates crown 2 1/2" bottom 3 1/2" Description of longitudinal joint D.B. S. R. No. of strengthening rings —  
 Working pressure of furnace by the rules 165 1/2 Combustion chamber plates: Material S Thickness: Sides 2 1/32 Back 20/32 Top 21/32 Bottom 1"  
 Pitch of stays to ditto: Sides 9 1/2 x 9" Back 9 x 9" Top 9 x 8" If stays are fitted with nuts or riveted heads nut 8 Working pressure by rules 166 1/2  
 Material of stays S Diameter at smallest part 1 7/8" Area supported by each stay 85.5 Working pressure by rules 188 End plates in steam space:  
 Material S Thickness 1 3/32 Pitch of stays 20 x 14 How are stays secured 4 nuts Working pressure by rules 164 1/2 Material of stays S  
 Diameter at smallest part 6 1/4" Area supported by each stay 340 Working pressure by rules 173 Material of Front plates at bottom S  
 Thickness 3/4" Material of Lower back plate S Thickness 2 5/32 Greatest pitch of stays 1 3/32 Working pressure of plate by rules 161 1/2  
 Diameter of tubes 3 1/4" Pitch of tubes 4 1/2 x 4 1/2" Material of tube plates S Thickness: Front 3/4 Back 3/4 Mean pitch of stays 9"  
 Pitch across wide water spaces 13 1/2 Working pressures by rules 196 1/2 Girders to Chamber tops: Material S Depth and  
 thickness of girder at centre 6 3/4 x 1 3/4 Length as per rule 28.6" Distance apart 8" Number and pitch of Stays in each 2 of 9"  
 Working pressure by rules — Superheater or Steam chest; how connected to boiler — 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 easing gear —



**DONKEY BOILER**— Description *Circular Vertical "Boehrs Patent"*  
 Made at *Birkenhead* By whom made *Boehrs & Co.* When made *2/99* Where fixed *Stokehold*  
 Working pressure *80 lbs* Tested by hydraulic pressure to *160* No. of Certificate *1547* Fire grate area *18 sq ft* Description of safety valves *1 spring*  
 No. of safety valves *1* Area of each *9.6 sq ft* Pressure to which they are adjusted *82 lbs* If fitted with easing gear *yes* If steam from main boilers enter the donkey boiler *no* Diameter of donkey boiler *6' 3"* Length *14 ft* Material of shell plates *8* Thickness *7/16"*  
 Description of riveting long. seams *B.R. lap* Diameter of rivet holes *1 1/16"* Whether punched or drilled *D* Pitch of rivets *2 1/2"*  
 Lap of plating *4"* Per centage of strength of joint *68.4* Rivets *64.5* Thickness of shell crown plates *1 3/32"* Radius of do. *3' 1 1/2"* No. of Stays to do. *hemp*  
 Dia. of stays *—* *rad* Diameter of furnace Top *2' 6"* Bottom *5' 0"* Length of furnace *circ* Thickness of furnace plates *5"* Description of joint *S.B. lap* Thickness of furnace crown plates *1 1/2"* Stayed by *hemp*  
 Working pressure of shell by rules *83.2*  
 Working pressure of furnace by rules *100 lbs* Diameter of uptake *15" x 18"* Thickness of uptake plates *5"* Thickness of water tubes *—*

**SPARE GEAR.** the articles supplied:— *Spare gear supplied in accordance with Rules. in addition spare propeller.*

The foregoing is a correct description.  
*M. North Eastern Marine Engineering Co. Ltd.* Manufacturer. *main engine & boilers*  
*M. North Eastern*

Dates of Survey  
 During progress of work in shops— *1898 Oct 24, Nov 22, Dec 3, 5, 8, 12, 13, 14, 1899 Jan 12, 27, Feb, 3, 8, 9, 10, 14, 16*  
 During erection on board vessel— *21, 23, 27, March 2, 6, 8, 9, 10, 13, 14, 15, 16, 17, 18, 20, 21, 22, 24, 27, 28, 29, 30, April 10, 11, 18, 25 June 3*  
 Total No. of visits *45*

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

**ENGINES**—Length of stern bush *3' 10 1/2"* Diameter of crank shaft journals *as per rule 9.4"* Diameter of thrust shaft under collars *10 1/4"*  
**BOILERS**—Range of tensile strength *29-32* Are they welded or flanged *ends* **DONKEY BOILERS**—No. *1* Range of tensile strength *27-32*  
 Is the approved plan of main boiler forwarded herewith *yes* Is the approved plan of donkey boiler forwarded herewith *no*

*Machinery and boilers constructed under special survey. Materials and workmanship good & efficient. Boilers & steam pipes tested by hydraulic to 320 lbs. Engines & boilers examined under steam & found satisfactory. In my opinion this vessel is eligible for the record of L.M.C 6/99 in the Register 1899.*

It is submitted that  
 this vessel is eligible for  
 THE RECORD. *L.M.C 6, 99*  
*7/6/99*

The amount of Entry Fee.. £ *2* : : When applied for, *7-6-99*  
 Special .. £ *27* : *15* : *18/6/99*  
 Donkey Boiler Fee .. £ : : *15-6-99*  
 Travelling Expenses (if any) £ : : *18*

Committee's Minute

**FRI. 9 JUN. 1899**

CERTIFICATE WRITTEN

Assigned

*L.M.C 6, 99*

*J. J. Findlay*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



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Certificate (if required) to be sent to Sunderland.

(This Surveyors are requested not to write on or below the space for Committee's Minute.)