

REPORT ON MACHINERY.

Received at London Office *By* 24th Sept 1883 *at* 31 March 1884

No. in Survey held at *17553* *Newcastle* Date, first Survey *24th Sept 1883* Last Survey *31 March 1884*
 No. of Book. *1* (Number of Visits *21*) Tons *2517*
 on the *Screw Steamer "Port Harmer"* When built *1884*
 Built at *Newcastle* By whom built *A. Leslie & Co* when made *1884*
Jones By whom made *Sup. R. M. Hawthorn* when made *1884*
 By whom made *do do* when made *1884*
 Owners *Anglo Australasian Ste. Nav. Co.* Port belonging to *London*

ENGINES, &c.—

Description of Engines *Nicol acting compound Surface condensing*
 Diameter of Cylinders *28" & 70"* Length of Stroke *45"* No. of Rev. per minute *65* Point of Cut off, High Pressure *.6* Low Pressure *.52*
 Diameter of Screw shaft *12 1/2"* Diam. of Tunnel shaft *12"* Diam. of Crank shaft journals *12 1/2"* Diam. of Crank pin *12 1/2"* size of Crank webs *15 1/2" x 8"*
 Diameter of screw *16.3"* Pitch of screw *21.0 & 18.0* No. of blades *4* state whether moveable *no* total surface *70 Sqft*
 No. of Feed pumps *2* diameter of ditto *3 3/4"* Stroke *22 1/2"* Can one be overhauled while the other is at work *yes*
 No. of Bilge pumps *2* diameter of ditto *3 3/4"* Stroke *22 1/2"* Can one be overhauled while the other is at work *yes*
 Where do they pump from *Tanks, holds, afta well, hot well, bilges & sea* Where do they pump from *Tanks, holds, bilges*
 No. of Donkey Engines *2* Size of Pumps *8" x 14" & 4" x 8"*
 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 *one* and sizes *4"* Are they connected to condenser, or to circulating pump *Circulating pump*
 How are the pumps worked *Levers over condenser*
 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*
 How are they protected *none*
 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 *now*
 Is the screw shaft tunnel watertight *yes* and fitted with a sluice door *yes* worked from *upper platform*

BOILERS, &c.—

Number of Boilers *2* Description *Cylindrical Single end* Whether Steel or Iron *Steel*
 Working Pressure *100 lbs* Tested by hydraulic pressure to *200 lbs* Date of test *30.1.84. No of Cei-1576*
 Description of superheating apparatus or steam chest *none*
 Can each boiler be worked separately *yes* Can the superheater be shut off and the boiler worked separately *no*
 No. of square feet of fire grate surface in each boiler *63 sq* Description of safety valves *Spring* No. to each boiler *2*
 Area of each valve *16.8* Are they fitted with easing gear *yes* No. of safety valves to superheater *no* area of each valve *no*
 Are they fitted with easing gear *no* Smallest distance between boilers and bunkers or woodwork *3.0"* Diameter of boilers *15.3"*
 Length of boilers *10.6"* description of riveting of shell long. seams *lap tubes* circum. seams *lap double* Thickness of shell plates *1/64"*
 Diameter of rivet holes *15/8"* whether punched or drilled *drilled* pitch of rivets *6 1/2"* Lap of plating *11 3/4"*
 Percentage of strength of longitudinal joint *75%* working pressure of shell by rules *101 lbs* size of manholes in shell *15" x 12"*
 Size of compensating rings *6" x 1"* No. of Furnaces in each boiler *3*
 Outside diameter *42"* length, top *7.6"* bottom *9.6"* thickness of plates *1/32"* description of joint *welded* if rings are fitted *yes*
 Greatest length between rings *3.9"* working pressure of furnace by the rules *100 lbs* combustion chamber plating, thickness, sides *1/32"* back *1/2"* top *1/8"*
 Pitch of stays to ditto, sides *7 3/4"* back *8 3/4"* top *1 1/4"* stays are fitted with nuts or riveted heads *nuts* working pressure of plating by rules *100 lbs*
 Diameter of stays at smallest part *1 1/4"* working pressure of ditto by rules *110 lbs* and plates in steam space, thickness *1/16"*
 Pitch of stays to ditto *16 3/8"* how stays are secured *A. nuts & washers* working pressure by rules *100 lbs* diameter of stays at smallest part *5.8"*
 Greatest pitch of stays *11 1/2"* working pressure by rules *118 lbs* Front plates at bottom, thickness *3/8"* Back plates, thickness *5.8"*
 plates, front *2 1/8"* working pressure by rules *118 lbs* Diameter of tubes *3 1/2"* pitch of tubes *4 3/4"* thickness of tube *6 3/8"*
 Diameter of Superheater or Steam chest *no* length *no* thickness of plates *no* description of longitudinal joint *no* diam. of rivet holes *no*
 Pitch of rivets *no* working pressure of shell by rules *no* diameter of flue *no* thickness of plates *no* If stiffened with rings *no*
 Distance between rings *no* working pressure by rules *no* end plates of superheater, or steam chest; thickness *no* how stayed *no*
 Superheater or steam chest; how connected to boiler *no*

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DONKEY BOILER— Description *vertical form crop tubes*
 Made at *Gateshead* by whom made *Blake Chapman & Co* when made *18.2.84* where fixed *Stokehold*
 Working pressure *75 lb* tested by hydraulic pressure to *150 lb* No. of Certificate *1595* fire grate area *29 sq* description of safety
 valves *Spring* No. of safety valves *2* area of each *8.30* if fitted with easing gear *yes* if steam from main boilers can
 enter the donkey boiler *no* diameter of donkey boiler *9.0"* length *13.6"* description of riveting *Cap donkey*
 Thickness of shell plates *7/16"* diameter of rivet holes *1"* whether punched or drilled *punched* pitch of rivets *3 3/4"* lap of plating *4"*
 per centage of strength of joint *73%* thickness of crown plates *5/8"* stayed by *8 Stay 1 3/4" diam effective*
 Diameter of furnace, top *5.8"* bottom *5.11 1/4"* length of furnace *6.2"* thickness of plates *5/8"* description of joint *Cap Single*
 Thickness of furnace crown plates *7/16"* stayed by *as above* working pressure of shell by rules *80 lb*
 Working pressure of furnace by rules *70 lb* diameter of uptake *18"* thickness of plates *7/16"* thickness of water tubes *3/8"*

SPARE GEAR. State the articles supplied:— *Half crank shaft, propeller & shaft, 1 pair of bottom &*
& 1 pair of top end brasses, 2 feed & 2 bilge valves & seats, piston patent, 2 main
bearing bolts & nuts, 2 top end bolts & nuts, 1 set of coupling bolts & nuts, 4 rings for three
carriage, set of rubber valves for circulating pump & feed donkey, 12 boiler tubes & a
 The foregoing is a correct description, (*2 bottom end bolts & nuts*) quantity of assorted *as*
W. W. Anthon Manufacturers of Main Engines & Boilers.

General Remarks (State quality of workmanship, opinions as to class, &c.) *The machinery of this vessel*
has been specially surveyed during construction the material
and workmanship good & under the vessel eligible in my
opinion to have the notification L. M. C. 3. 84 *in the*
Register Book of the Society.

This submitted that the vessel is eligible to have the notification in the Register Book of the Society.

Richard Hirst
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.
 Newcastle

The amount of Entry Fee .. £ 3 : - : - *received by me,*
 Special .. *W.M.* £ 37 : 10 : - *Paid Vade*
 Donkey Boiler Fee .. £ - : - : - *Lillo, Alkashi*
 Certificate (if required) *gratis* .. - : - : - 18
 To be sent as per margin.

(Travelling Expenses, if any, £ - : - : -)
 Committee's Minute FRIDAY 9 MAY 1884
+ D. H. L.

