

REPORT ON MACHINERY.

RECEIVED 14 JULY 1884

No. 17675
 No. in Survey held at *Newcastle* Date, first Survey *23rd Febry* Last Survey *18th June 1884*
 eg. Book. *S. S. Elderslie* (Number of Visits *27*) Tons *2761*
 on the *S. S. Elderslie* Tons *1801*
 Master *Heard* Built at *Newcastle* By whom built *Palmer's Co.* When built *1884*
 Engines made at *Newcastle* By whom made *Palmer's Co.* when made *1884*
 Boilers made at *Do* By whom made *Do* when made *Do*
 Registered Horse Power *300* Owners *Turnbull, Martin & Co* Port belonging to *Glasgow*

ENGINES, &c.—

Description of Engines *Inverted Compound Surface Condensing*
 Diameter of Cylinders *38" x 72"* Length of Stroke *48"* No. of Rev. per minute *60* Point of Cut off, High Pressure *5* Low Pressure *5*
 Diameter of Screw shaft *13 1/2"* Diam. of Tunnel shaft *12 1/2"* Diam. of Crank shaft journals *13 1/2"* Diam. of Crank pin *13 3/4"* size of Crank webs *10 1/4" x 18"*
 Diameter of screw *17-6"* Pitch of screw *19-6"* No. of blades *4* state whether moveable *yes* total surface *76-7* \square ft
 No. of Feed pumps *2* diameter of ditto *4 1/2"* Stroke *24"* Can one be overhauled while the other is at work *yes*
 No. of Bilge pumps *2* diameter of ditto *4 1/2"* Stroke *24"* Can one be overhauled while the other is at work *yes*
 Where do they pump from *Tunnel well, after hold, Engine room, Main hold & Fore hold.*
 No. of Donkey Engines *2* Size of Pumps *4 1/2" x 8" & 11" x 12"* Where do they pump from *Same as bilge pumps, also from sea & tanks. Few donkey also from hotwell & bottom of air pump*
 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 *6 1/4"* Are they connected to condenser, or to circulating pump *Circ^d pump*
 How are the pumps worked *lever 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 *just 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 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 *while building*
 Is the screw shaft tunnel watertight *yes* and fitted with a sluice door *yes* worked from *top platform*

BOILERS, &c.—

Number of Boilers *2* Description *Cylindrical (double ends)* Whether Steel or Iron *Steel*
 Working Pressure *90* Tested by hydraulic pressure to *180* Date of test *12-5-84*
 Description of superheating apparatus or steam chest *longitudinal cylinder (one to each boiler)*
 Can each boiler be worked separately *yes* Can the superheater be shut off and the boiler worked separately *✓*
 No. of square feet of fire grate surface in each boiler *83-25* \square Description of safety valves *Spring* No. to each boiler *2*
 Area of each valve *21-6* \square 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 *about 11"* Diameter of boilers *13-4"*
 Length of boilers *16-0"* description of riveting of shell long. seams *lap butt* circum. seams *lap double* Thickness of shell plates *7/8"*
 Diameter of rivet holes *1 1/32"* whether punched or drilled *drilled* pitch of rivets *4 15/16"* Lap of plating *9 3/4"*
 Percentage of strength of longitudinal joint *72-7* working pressure of shell by rules *95* size of manholes in shell *16 x 12*
 Size of compensating rings *as per plan 3/4 thick* No. of Furnaces in each boiler *6*
 Outside diameter *38"* length, top *6-0"* bottom *16-0"* thickness of plates *7/2" & 9/16"* description of joint *double strap* if rings are fitted *half*
 Greatest length between rings *5-3"* working pressure of furnace by the rules *98* combustion chamber plating, thickness, sides *7/2"* back *✓* top *4/2"*
 Pitch of stays to ditto, sides *9"* back *✓* top *finder* If stays are fitted with nuts or riveted heads *nuts* working pressure of plating by rules *95* Diameter of stays at smallest part *1 3/8"* working pressure of ditto by rules *109* end plates in steam space, thickness *25/32"*
 Pitch of stays to ditto *16"* how stays are secured *nuts & washers* working pressure by rules *90* diameter of stays at smallest part *2 1/8"* working pressure by rules *90* Front plates at bottom, thickness *4/16"* Back plates, thickness *✓*
 Greatest pitch of stays *✓* working pressure by rules *✓* Diameter of tubes *3 1/2"* pitch of tubes *4 3/4"* thickness of tube plates, front *3/4"* back *13/16"* how stayed *tubes* pitch of stays *as per plan* width of water spaces *6 1/2"*
 Diameter of Superheater or Steam chest *2-9"* length *11-0"* thickness of plates *7/2"* description of longitudinal joint *lap butt* diam. of rivet holes *7/8"*
 Pitch of rivets *2 1/8"* working pressure of shell by rules *224* 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 *3/4"* how stayed *One Stay 1 1/2"*
 Superheater or steam chest; how connected to boiler *Wrot in*

DONKEY BOILER— Description *Cylindrical. Multi tubular (same type as main boiler)*
 Made at *Newcastle* by whom made *Palmer's Co* when made *16-5-84* where fixed *in one stokehold just above top of main boiler*
 Working pressure *90* tested by hydraulic pressure to *180* No. of Certificate *1679* fire grate area *27.5* \square ft description of safety valves *Spring* No. of safety valves *2* area of each *7* \square if fitted with easing gear *yes* if steam from main boilers can enter the donkey boiler *no* diameter of donkey boiler *10-0* length *10-0* description of riveting *long lap butt*
 Thickness of shell plates *2 1/2* diameter of rivet holes *1 1/2* whether punched or drilled *drilled* pitch of rivets *3 3/4* lap of plating *6 3/4*
 per centage of strength of joint *72-5* thickness of ~~end~~ ^{end} plates *bottom 1/8* stayed by *Stays 2 8/11 Dia. spaced 15 1/2*
 Diameter of furnace, ~~top~~ ^{chamber} *3 1/4* bottom *✓* length of furnace *6-10* thickness of plates *1/2* description of joint *double strap*
 Thickness of ~~furnace~~ ^{chamber} plates *1/2* stayed by *Stays 1 1/4 8/11 Dia. Spaced 8 3/4* working pressure of shell by rules *91*
 Working pressure of furnace by rules *95* diameter of ~~uptake~~ ^{tubes} *3 1/4* thickness of plates *3/4* thickness of ~~water~~ ^{tubes} *as per*

SPARE GEAR. State the articles supplied:— *Tail shaft, 1/2 Crank shaft, 4 propeller blades, 2 top end bolts, 2 bottom end bolts, 2 main bearing bolts, one set coupling to the air pump rod, one circulating pump rod, 2 slide rods, one eccentric strap, 2 feed & bilge pump valves & seats, 2 crank pin braces, assorted to*
The foregoing is a correct description, & nuts, few bars of iron & one set piston & pin

Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c.) *The machinery of this vessel has been constructed under special survey. The workmanship & material is good & in my opinion the vessel is eligible to have I.M.C. 6-84 recorded.*

Tracing of Main & donkey boilers & Steel tests forwarded herewith

The amount of Entry Fee *£ 3 : - -* received by me,
 Special *£ 35 : - -*
 Donkey Boiler Fee *£ 2 : 2 : -*
 Certificate (if required) *frank - -* 11th July 1884
 To be sent as per margin.
 (Travelling Expenses, if any, £ - - -)

Committee's Minute

TUESDAY 15 JULY 1884

John H. Heck
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping



Lloyd's Register
 Foundation