

REPORT ON MACHINERY.

No. *176*

No. in Survey held at
Reg. Book.

Hull

Date, first Survey *4th Decr '79* Last Survey *17th July 1880*

(Received in London Office *16/1/80*)

404 on the *iron screw steamer "Albano" (late "Albion")*

Tons *Gross 1066*
Net 696

Master *Soulsby*

Built at *Hull*

When built *1861*

Engines *compounded* made at *Hull*

By whom *compounded* made *Earles Co.* when made *1880*

Boilers made at *Hull*

By whom made *Earles Co.* when made *1880*

Registered Horse Power *150*

Owners *Messrs Thos Wilson & Co* Port belonging to *Hull*

ENGINES, &c.—

Description of Engines *Vertical inverted, direct acting, Compound, surface condensing.*

Diameter of Cylinders *22" & 56"* Length of Stroke *26"* No. of Rev. per minute *75* Point of Cut off, High Pressure *14 1/2"* Low Pressure *14 1/2"*

Diameter of Screw shaft *8 3/8"* Diameter of Tunnel shaft *8 1/2"* Diameter of Crank shaft journals *9"* Diameter of Crank pin *9"* size of Crank webs *10 1/2" x 6"*

Diameter of screw *12" 6'* Pitch of screw *15" 0 true* No. of blades *4* state whether moveable *no* total surface *48 sq. feet*

No. of Feed pumps *2* diameter of ditto *5 1/4"* Stroke *13"* Can one be overhauled while the other is at work *No*

No. of Bilge pumps *2* diameter of ditto *5 1/4"* Stroke *13"* Can one be overhauled while the other is at work *Yes*

Where do they pump from *all Compartments — and the after one has sea suction & delivery to deck in addition.*

No. of Donkey Engines *One* Size of Pumps *5" dia x 7" stroke* Where do they pump from *all Compartments & Sea —*

and delivers to deck Sea, main & donkey boilers & Condenser.

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 *—*

No. of bilge injections *One* and sizes *3 3/8"* Are they connected to condenser, or to circulating pump *Circulating pump*

How are the pumps worked *By rocking levers from main overhead.*

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 *—*

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 *on slipway. 26 April 1880.*

Is the screw shaft tunnel watertight *Yes* and fitted with a sluice door *Yes* worked from *upper platform.*

BOILERS, &c.—

Number of Boilers *One* Description *fireclay, multitubular made of Siemens-Martin Steel.*

Working Pressure *75 lb* Tested by hydraulic pressure to *160 lb* Date of test *24th May 1880.*

Description of superheating apparatus or steam chest *None fitted*

Can each boiler be worked separately *One Boiler* Can the superheater be shut off and the boiler worked separately *—*

No. of square feet of fire grate surface in each boiler *66 sq. feet.* Description of safety valves *Lancaster & Sons' patent spring loaded*

No. to each boiler *Two* area of each valve *17.72* Are they fitted with easing gear *Yes*

No. of safety valves to superheater *X* area of each valve *X* are they fitted with easing gear *X*

Smallest distance between boilers and bunkers *on woodwork 7 inches.*

Diameter of boilers *16" 0* Length of boilers *11" 0* description of riveting of shell long. seams *double riv' butts with double straps* circum. seams *double riv' laps*

Thickness of shell plates *7/8 in* diameter of rivet holes *1 3/16"* whether punched or drilled *drilled* pitch of rivets *long joint 4.4*

Lap of plating *10 1/2 Straps* per centage of strength of longitudinal joint *73* working pressure of shell by rules *86 lb*

Size of manholes in shell *16" x 12"* size of compensating rings *28" x 24" x 7/8"*

No. of Furnaces in each boiler *3* outside diameter *49"* length, top *6' 6"* bottom *10' 6"*

Thickness of plates *17/32* description of joint *Budded & strapped & the ends welded* if rings are fitted *Hanged in centre & partial rings at back end* greatest length between rings *4' 0"*

Working pressure of furnace by the rules *130 lb*

Combustion chamber plating, thickness, sides *1/2 in* back *1/2 in* top *1/2 in*

Pitch of stays to ditto *—* sides *9 3/4" x 9"* back *9 3/4" x 9 1/2"* top *part rounded & part supported by vertical struts*

If stays are fitted with nuts or riveted heads *Nuts* working pressure of plating by rules *80 lb*

Diameter of stays at smallest part *1 5/16"* working pressure of ditto by rules *92 lb*

End plates in steam space, thickness *13/16"* pitch of stays to ditto *16 3/4"* how stays are secured *double nuts & washers*

Working pressure by rules *84 lb* diameter of stays at smallest part *2 1/4"* working pressure by rules *98 lb*

Front plates at bottom, thickness *5/8"* Back plates, thickness *5/8"* greatest pitch of stays *12* working pressure by rules *88 lb*

IRON 494-0425

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Diameter of tubes $3\frac{1}{4}$ " pitch of tubes $4\frac{1}{8}$ " thickness of tube plates, front $5\frac{1}{8}$ " back $5\frac{1}{8}$ "
How stayed *Stay tubes* pitch of stays *various (see drawing)* width of water spaces $1\frac{3}{8}$ " $1\frac{1}{4}$ "
Diameter of Superheater or Steam chest *No Superheater or Steam chest fitted*
Thickness of plates description of longitudinal joint diameter 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

DONKEY BOILER— Description *Multitubular, flat sided, semi-circular top bottom with dry flue*
Made at *Bull* By whom made *Amos & Smith* when made *1878*
Where fixed *In Strickland* working pressure *40 lb* Tested by hydraulic pressure to *80 lb* No. of Certificate
Fire grate area *11.25* Description of safety valves *dead load* No. of safety valves *One* area of each *2 sq. in*
If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No*
Diameter of donkey boiler *4.4" wide 9.3" high* length *5' 6"* description of riveting *in long seam, double rivet laps*
thickness of shell plates *7/16"* diameter of rivet holes *3/4"* whether punched or drilled
pitch of rivets *flat 2 1/2"* lap of plating *3 1/8"* per centage of strength of joint *70*
thickness of crown plates *(see shell)* stayed by *Flat sides of Boiler, stiffened with 4 double angle ribs at each side + stayed by 12 cross stays of square iron with palm ends*
Diameter of furnace, top *39"* bottom *horizontal furnace* length of furnace *5' 6"*
thickness of plates *7/16"* description of joint *welded*
thickness of furnace crown plates stayed by
Working pressure of shell by rules *53 lb* working pressure of furnace by rules *80 lb*
diameter of uptake thickness of plates thickness of *flame* water tubes *2 1/2" diam x 3 1/2" pitch*

The foregoing is a correct description,
EARLE'S SHIPBUILDING & ENGINEERING COY LIMITED
Frank R Pearson Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c. *This vessel has now been fitted with new main Boiler & the Engines have been compounded with general overhaul to the machinery as follows. New steel main Boiler with all new mountings including two new sprung loaded safety valves. The Boiler made to approved design, tested in my presence by hydraulic pressure to twice the working pressure, & the safety valves set under steam, & tested for accumulator in the usual manner with satisfactory results. Two new cylinders, with covers, pistons, slides & slide covers, new piston rods & slide rods, guides &c complete. Link motion overhauled & bushed as requisite. Shank shaft examined & new main brasses fitted. Surface Condenser fitted with 200 new tubes - & the remainder drawn clean & replaced. One new circulating pump & the other bored out - new rods for both pumps, new valves as requisite. Bilge injection examined (is under platform with partition indicated by brass name plate) New main steam & feed pipes. One new feed pump & 2 air valves. New valve box for one bilge pump, new valves to the other. Two new bearing brasses to the tunnel shaft, New tail shaft & propeller. Bilge suction pipe re-arranged. Keel of coaks raised to level of platform (that are covered by new hatch). Riser made accessible. Senforks arranged in accordance with the rules. New main injection valve box, Donkey Engine overhauled, Donkey Boiler removed from deck & Strickland & fitted with non-return stop valve.*

I beg to submit the case as eligible in my opinion for the notification Lloyd's M.C.

The amount of Entry Fee £ 2 : : : received by me,
Special £ 4 : 4 : :
Certificate (if required) £ : : 2 : 6 } 10/9/80.
To be sent as per margin. X
(Travelling Expenses, if any, £)

Committee's Minute Friday, September 17th 1880
Lloyd's

John B. Stevens
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.
It is submitted that this vessel is eligible to have the notification Lloyd's M.C. 7.80. placed in the Register Book, also N.B. & Comp. 80 Earle's & Co. Bull
M. 16/9/80