

ON MACHINERY.

(Received in London Office)

Date, first Survey *14th Nov 1879* Last Survey *22nd Oct 1880*

Sull
on the *steel Steamship "Assyrian March"* Tons *3316 1/2*
Master *Mr. H. B. Westlake* Built at *Hull* When built *1880*
Engines made at *Hull* By whom made *Charles P. & Co.* when made *1880*
Boilers made at *Hull* By whom made *Charles P. & Co.* when made *1880*
Registered Horse Power *500* Owners *Royal Exchange Shipping Co. (limited)* Port belonging to *London*

ENGINES, &c.—

Description of Engines *Vertical, inverted, direct acting, Compound, Surface Condensing.*
Diameter of Cylinders *(2) 46" + 84"* Length of Stroke *54"* No. of Rev. per minute *57* Point of Cut off, High Pressure *4 1/2"* Low Pressure *3 1/2"*
Diameter of Screw shaft *16"* Diameter of Tunnel shaft *16"* Diameter of Crank shaft journals *16"* Diameter of Crank pin *16"* size of Crank webs *17 1/2" x 11"*
Diameter of screw *19' 0"* Pitch of screw *23' 0"* No. of blades *4* state whether moveable *yes* total surface *101 sq. feet.*
No. of Feed pumps *2* diameter of ditto *5 1/2"* Stroke *36"* Can one be overhauled while the other is at work *Yes*
No. of Bilge pumps *2* diameter of ditto *6 1/2"* Stroke *36"* Can one be overhauled while the other is at work *Yes*
Where do they pump from *all compartments - from wells which drain top of double bottom.*
No. of Donkey Engines *Two (also making for deck boiler)* Size of Pumps *9" dia. x 12" stroke* Where do they pump from *The Ballast Engine pumps from all tanks & Engine room Bilge. The donkey from all the wells which drain from top of tanks & from sea & from holdalls.*
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 *7 1/2" valve* Are they connected to condenser, or to circulating pump *Circulator.*
How are the pumps worked *By rocking levers from piston crossheads.*
Are all connections with the sea direct on the skin of the ship *Yes except the main inlet which comes in through the mainmast.* 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 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 *Nov.*
Is the screw shaft tunnel watertight *Yes* and fitted with a sluice door *Yes* worked from *the donkey balanced & worked from upper platform in engine room*

BOILERS, &c.—

Number of Boilers *Three.* Description *Circular, double ended, multitubular.*
Working Pressure *80 lbs* Tested by hydraulic pressure to *160 lbs.* Date of test *24/7/80, 10/8/80 & 15/8/80*
Description of superheating apparatus or steam chest *Horizontal circular.*
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 *82.5* Description of safety valves *Cameron & Leaton's patent.*
No. to each boiler *2* area of each valve *23.76* 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 *woodwork* *8" (Eight inches)*
Diameter of boilers *12' 3"* Length of boilers *18' 6"* description of riveting of shell long. seams *butted joints with double straps, double rivets* circum. seams *double riveted laps*
Thickness of shell plates *1 1/16"* diameter of rivet holes *1"* whether punched or drilled *drilled* pitch of rivets *3 1/8"*
Lap of plating *9" Straps* per centage of strength of longitudinal joint *73.77* working pressure of shell by rules *79.3 lbs.*
Size of manholes in shell *16" x 12"* size of compensating rings *28" x 24" x 1 1/16"*
No. of Furnaces in each boiler *4* outside diameter *4' 0"* length, top *6' 7"* bottom *9' 0"*
Thickness of plates *1/2"* description of joint *Welded.* if rings are fitted *Corrugated* greatest length between rings *✓*
Working pressure of furnace by the rules *8000 x 1/2 = 80 lbs.*
Combustion chamber plating, thickness, sides *1/2"* back *1/2"* top *1/2"*
Pitch of stays to ditto sides *9 3/4"* back *9 3/4"* top *rounded.*
If stays are fitted with nuts or riveted heads *nuts.* working pressure of plating by rules *80 lbs.*
Diameter of stays at smallest part *1 7/16" full.* working pressure of ditto by rules *115 lbs.*
End plates in steam space, thickness *2 1/32"* pitch of stays to ditto *15 1/2" x 15 1/2"* how stays are secured *double nut machine.*
Working pressure by rules *80 lbs. allowing for extra eye washes* diameter of stays at smallest part *top row 2 1/4" - 2 Row 2 1/2"* working pressure by rules *top row 99 lbs - 2 Row 80 lbs.*
Front plates at bottom, thickness *5/8"* Back plates, thickness *Boilers double ended* greatest pitch of stays *working pressure by rules*

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Diameter of tubes $3\frac{1}{4}$ " pitch of tubes $4\frac{7}{8}$ " thickness of tube plates, front $\frac{5}{16}$ "
 How stayed *Stay tubes in each pitch of stays* $15\frac{1}{4}$ in centre width of water spaces $1\frac{3}{8}$ "
 Diameter of Superheater or Steam chest $3\frac{1}{2}$ " length $17\frac{1}{2}$ "
 Thickness of plates $\frac{7}{16}$ " description of longitudinal joint *Single riv' lap* diameter of rivet holes $\frac{13}{16}$ " pitch of rivets
 Working pressure of shell by rules $14\frac{1}{2}$ lbs. Diameter of flue $\frac{1}{2}$ " thickness of plates $\frac{1}{2}$ "
 If stiffened with rings $\frac{1}{2}$ " distance between rings $\frac{1}{2}$ " Working pressure by rules $14\frac{1}{2}$ lbs.
 End plates of ~~superheater~~ or steam chest; thickness $\frac{1}{2}$ " How stayed *One $2\frac{1}{4}$ " long stay* (End also checked to 3.5 in centre)
 Superheater or steam chest; how connected to boiler *By neck pieces*

DONKEY BOILER— Description *Circular, multitubular* 2 furnaces.
 Made at *Hull* By whom made *Earle & Co* when made *1880*
 Where fixed *on deck* working pressure *80 lbs* Tested by hydraulic pressure to *160 lbs* No. of Certificate *57*
 Fire grate area *22.5 sq ft* Description of safety valves *Cam and float* of safety valves *Two* area of each *7.07*
 If fitted with casing gear *One valve is fitted* If steam from main boilers can enter the donkey boiler *Stop valve on donkey boiler to be*
 Diameter of donkey boiler *8' 6"* length *9' 6"* description of riveting *Butt joints, double straps, double rivets*
 thickness of shell plates $\frac{5}{8}$ " diameter of rivet holes $\frac{13}{16}$ " whether punched or drilled *drilled*
 pitch of rivets $3\frac{1}{8}$ " lap of plating *6 $\frac{3}{4}$ " straps* per centage of strength of joint *74*
 thickness of ~~end~~ plates *in steam space* $\frac{9}{16}$ " stayed by *10 long stays* $13\frac{1}{4}$ " off deck.
 Diameter of furnace, ~~top~~ *Horizontal* bottom *2' 6"* length of furnace *6' 9" top*
 thickness of plates $\frac{5}{32}$ " description of joint *Butt joint, double straps, single rivets*
 thickness of furnace crown plates $\frac{1}{2}$ " stayed by $\frac{1}{2}$ "
 Working pressure of shell by rules *81 lbs* working pressure of furnace by rules *94 lbs*
 diameter of uptake *EARLE'S* thickness of plates $\frac{1}{2}$ " thickness of water tubes $\frac{1}{2}$ "

SHIPBUILDING & ENGINEERING CO. LIMITED

The foregoing is a correct description,

Frank Pearson

SECRETARY.

Manufacturer.

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

The ^{main} Boilers in this ship are made to approved plans of steel manufactured at the works of Messrs J. Brown & Co. Sheffield, the plates having been tested at Sheffield, as already reported. The main & donkey Boilers have been tested by hydraulic pressure to twice the intended working pressure with satisfactory results, and the Engines have been successfully tried in a Sir John Purnell Sea. The pumps, Bilge Suctions, Sea Suctions &c are fitted in accordance with the rules. The workmanship is good, and the whole of the requirements of the Board's rules have been carried out, with the exception of testing the safety valves which is proposed to be done the next time steam is raised.

I beg to submit the case to the favourable consideration of the Committee as eligible in my opinion for the notification of Lloyd's Register.

The amount of Entry Fee .. £ 3: .. received by me, *J.M.N.*

Special on 500 H. Power £ 45: ..

Donkey Boiler fee 2: ..

Certificate (if required) .. £ 3: .. 20th Oct 1880.

To be sent as per margin.

(Travelling Expenses, if any, £ ..)

Committee's Minute

Tuesday, October, 26 1880.

*J. Lloyd's M.C. 10.80**John Brown*
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.