

REPORT ON MACHINERY.

Port of *Sunderland*

Received at London *THURS. 24 DEC 1891*

No. *16296*

No. in Survey held at *Sunderland*

Date, first Survey *10th September* Last Survey *16th Dec 1891*

(Number of Visits *11*)

Reg. Book.

184 on the *S.S. "Lebanon"*

Tons { Gross *905*
Net *565*

Master *J.H. Nesbitt* Built at *Middlebro'* By whom built *Backhouse & Dixon*

When built *1840*

Engines made at *Sunderland* By whom made *G. Clark*

when made *1840*

Boilers made at *Sunderland* By whom made *G. Clark (Ld)*

when made *1891*

Registered Horse Power *80*

Owners *Freear & Dix*

Port belonging to *London*

ENGINES, &c.

Description of Engines *C. I. D. A. S. C.*

No. of Cylinders *2*

Diam. of Cylinders *20" & 38"* Length of Stroke *30"* Rev. per minute *60* Point of Cut off, High Pressure *1/2 stroke* Low Pressure *1/2 stroke*

Diameter of Screw shaft *4 1/2"* Diam. of Tunnel shaft *4 1/2"* Diam. of Crank shaft journals *4 3/4"* Diam. of Crank pin *4 3/4"* size of Crank webs *15 1/2" x 5 1/4"*

Diameter of screw *as before* Pitch of screw *—* No. of blades *—* state whether moveable *—* total surface *—*

No. of Feed pumps *2* diameter of ditto *3 1/2"* Stroke *2.2"* Can one be overhauled while the other is at work *yes*

No. of Bilge pumps *2* diameter of ditto *3 1/2"* Stroke *2.2"* Can one be overhauled while the other is at work *yes*

Where do they pump from *fore peak, fore hold, engine room & after tank*

No. of Donkey Engines *2* Size of Pumps *8" x 10" & 4" x 6"* Where do they pump from *Sea, hot well, fore peak*

fore hold, engine room & after tank

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 *3 1/2"* Are they connected to condenser, or to circulating pump *circulating pump*

How are the pumps worked *by levers*

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 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 *23rd October 1891*

Is the screw shaft tunnel watertight *—* and fitted with a sluice door *yes* worked from *top platform*

BOILERS, &c.

No. of Boilers *1* Description *Ordinary marine type* Material *Steel* Letter (for record) *S*

Working Pressure *100 lbs* Tested by hydraulic pressure to *200 lbs* Date of test *1-10-91*

Description of superheating apparatus or steam chest *none*

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

No. of square feet of fire grate surface in each boiler *42 sq* Description of safety valves *direct spring* No. to each boiler *2*

Area of each valve *9.620* 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 *16"* Diameter of boilers *12-1 1/2"*

Length of boilers *10-0"* description of riveting of shell long. seams *dbl riv'd dbl butt straps* short seams *dbl riv'd Lap.* Thickness of shell plates *49 lbs / 64*

Diameter of rivet holes *1"* whether punched or drilled *drilled* pitch of rivets *4"* Lap of plating *10 1/4 straps*

Per centage of strength of longitudinal joint *44.4%* working pressure of shell by rules *105 lbs* size of manholes in shell *16" x 13"*

Size of compensating rings *8 1/4" x 1 3/16"* No. of Furnaces in each boiler *3* Description of Furnaces *plain*

Outside diameter *2-10"* length *6 feet* thickness of plates *1 1/2"* description of joint *welded* if rings are fitted *2 on bottom*

Greatest length between rings *—* working pressure of furnace by the rules *11 1/4 lbs* combustion chamber plating, thickness, sides *1/2"* back *1/2"* top *9/16"*

Pitch of stays to ditto, sides *8 1/2" x 8 1/2"* back *8 1/2" x 8"* top *9 1/2" x 8 1/2"* If stays are fitted with nuts or riveted heads *nuts* working pressure of plating by rules *119 lbs*

Diameter of stays at smallest part *1 1/4"* working pressure of ditto by rules *138 lbs* end plates in steam space, thickness *1/8"*

Pitch of stays to ditto *18"* how stays are secured *nuts* working pressure by rules *105 lbs* diameter of stays at smallest part *2"*

Greatest pitch of stays *11"* working pressure by rules *111 lbs* Diameter of tubes *3 1/4"* pitch of tubes *4 1/2" x 4 1/2"* thickness of tube plates, front *3/4"* back *1/6"* how stayed *stay tubes* pitch of stays *9" x 3 1/2"* width of water spaces *1 1/4", 5"*

Diameter of Superheater or Steam chest *none* length *—* thickness of plates *—* description of longitudinal joint *—* diam. 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 *—*

Total heating surface *134 1/2 sq* Superheater or steam chest; how connected to boiler *—*



Lloyd's Register Foundation

DONKEY BOILER— Description *Vertical. This boiler is the same as before.*
 Made at _____ by whom made _____ when made _____ where fixed _____
 Working pressure *50 lbs* tested by hydraulic pressure to _____ No. of Certificate _____ fire grade _____ description of safety
 valves _____ No. of safety valves _____ area of each _____ if fitted with easing gear _____ if steam from main boilers can
 enter the donkey boiler _____ diameter of donkey boiler _____ length _____ description of riveting _____
 Thickness of shell plates _____ diameter of rivet holes _____ whether punched or drilled _____ pitch of rivets _____ lap of plating _____
 per centage of strength of joint _____ thickness of crown plates _____ stayed by _____
 Diameter of furnace, top _____ bottom _____ length of furnace _____ thickness of plates _____ description of joint _____
 Thickness of furnace crown plates _____ stayed by _____ working pressure of shell by rules _____
 Working pressure of furnace by rules _____ diameter of uptake _____ thickness of plates _____ thickness of water tubes _____

SPARE GEAR. State the articles supplied:— *Top & bottom end bolts & nuts for connecting rod, two main
 bearing bolts & nuts, sets of coupling bolts, fuel and bilge pump valves, bolts, nuts &
 iron doorknobs etc.*

The foregoing is a correct description,
 Manufacturer.

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

The old cylinder crank shaft and main boiler mountings were removed from this vessel and new ones fitted. The main boiler was surveyed during construction & it & the new main steam pipes were tested by hydraulic pressure to 200 lbs. and the spring safety valves were adjusted under steam to 100 lbs. When the vessel was in Bridge dry dock all cocks on flat of bottom were shifted about turn of bilge. Examined the tail end and tunnel shafting, pump condenser, and donkey boiler & found them satisfactory. The valve of donkey boiler was adjusted under steam to 50 lbs. In my opinion the machinery of this vessel is in good order & safe working condition and reliable for the notification in the Register Book of B.M.S. 12-91 & N.B. 12-91.

Certificate (if required) to be sent to _____
 The amount of Entry Fee .. £ : : *received by me,*
 Special £ *9 0* : :
 Donkey Boiler Fee £ : :
28th/18 51

J. R. Salmon
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

(Travelling Expenses, if any, £) **TUES. 29 DEC 1891**

Committee's Minute *2 MC 12, 91 + NB 12, 91*

