

REPORT ON MACHINERY.

No. 16364 (New) Newcastle & Sunderland Date, first Survey May 15th 1882 Last Survey Dec 4th 1882
 Reg. Book. 717.08 Tons 461.86
 on the screw steamer *Caerloch*
 Master *J. Reynow* Built at *Sunderland* When built *1882*
 Engines made at *Newcastle* By whom made *Wigham Richard* when made *1882*
 Boilers made at *do* By whom made *con & co* when made *—*
 Registered Horse Power *88* Owners *J. B Nicol* Port belonging to *Aberdeen*

ENGINES, &c.—

Description of Engines *Vertical double acting*
 Diameter of Cylinders *23 1/4* Length of Stroke *33* No. of Rev. per minute *✓* Point of Cut off, High Pressure *.5* Low Pressure *.5*
 Diameter of Screw shaft *8 3/4* Diameter of Tunnel shaft *8 3/8* Diameter of Crank shaft journals *8 3/4* Diameter of Crank pin *8 3/4* size of Crank webs *11 x 5 1/2*
 Diameter of screw *12.0* Pitch of screw *15.0* No. of blades *4* state whether moveable *no* total surface *37*
 No. of Feed pumps *two* diameter of ditto *2 3/4* Stroke *19* Can one be overhauled while the other is at work *yes*
 No. of Bilge pumps *two* diameter of ditto *2 3/4* Stroke *19* Can one be overhauled while the other is at work *yes*
 Where do they pump from *all holds tanks bilges stunnel well*
 No. of Donkey Engines *two* Size of Pumps *3 1/2 x 6 x 8 x 10* Where do they pump from *Same as main engines*
from hotwell, into boiler, condenser, on deck, & overboard.
 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* Are they connected to condenser, or to circulating pump *air pump*
 How are the pumps worked *by lever over condenser from after engine*
 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 *New vessel*
 Is the screw shaft tunnel watertight *✓* and fitted with a sluice door *yes* worked from *top platform*

BOILERS, &c.—

Number of Boilers *one* Description *cylindrical single-culled steel*
 Working Pressure *90 lbs* Tested by hydraulic pressure to *180 lbs* Date of test *Sept 12th 1882*
 Description of superheating apparatus or steam chest *horizontal dome with contracted neck*
 Can each boiler be worked separately *✓* Can the superheater be shut off and the boiler worked separately *no*
 No. of square feet of fire grate surface in each boiler *40.5* Description of safety valves *spring*
 No. to each boiler *two* area of each valve *11.04* Are they fitted with easing gear *yes*
 No. of safety valves to superheater *none* area of each valve *—* are they fitted with easing gear *—*
 Smallest distance between boilers and bunkers or woodwork *12*
 Diameter of boilers *13.0* Length of boilers *10.6* description of riveting of shell long. seams *lap treble wd* circum. seams *lap double wd*
 Thickness of shell plates *13/16* diameter of rivet holes *1 1/8* whether punched or drilled *drilled* pitch of rivets *4 1/8*
 No. of plating *7 1/2* per centage of strength of longitudinal joint *72.7* working pressure of shell by rules *90.8 lbs*
 No. of manholes in shell *16 x 12* size of compensating rings *6 1/2 x 7 1/8*
 No. of Furnaces in each boiler *three* outside diameter *3.1* length, top *6.11* bottom *9.6*
 Thickness of plates *3/32* description of joint *lap wd* if rings are fitted *2* greatest length between rings *6.11*
 Working pressure of furnace by the rules *99 lbs*
 Combustion chamber plating, thickness, sides *1/2* back *1/2* top *1/2*
 No. of stays to ditto *✓* sides *8 3/8* back *8 3/8* top *rad.*
 Are stays fitted with nuts or riveted heads *both* working pressure of plating by rules *107 lbs*
 Diameter of stays at smallest part *1 1/8* working pressure of ditto by rules *98 lbs*
 Shipping plates in steam space, thickness *3/4* pitch of stays to ditto *15* how stays are secured *4 nuts & washers*
 Working pressure by rules *89 lbs* diameter of stays at smallest part *2 1/4* working pressure by rules *141 lbs*
 Bottom plates at bottom, thickness *9/16* Back plates, thickness *9/16* greatest pitch of stays *12* working pressure by rules *94 lbs*

SLD 943-0250

Boiler Drawing & Results of Shell & Deck are forwarded

Diameter of tubes $3\frac{3}{4}$ " pitch of tubes 5" thickness of tube plates, front $\frac{1}{16}$ " back $\frac{1}{16}$ "
How stayed tubes pitch of stays 15" width of water spaces 12"
Diameter of Superheater or Steam chest 3.0" length 8.0"
Thickness of plates $\frac{3}{8}$ " description of longitudinal joint Lap rivet diameter of rivet holes $\frac{3}{4}$ " pitch of rivets $2\frac{1}{2}$ "
Working pressure of shell by rules 145 lbs 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 $\frac{1}{2}$ " How stayed stay $2\frac{1}{4}$ diam
Superheater or steam chest; how connected to boiler contracted iron neck

DONKEY BOILER— Description cylindrical, vertical, with firebox.
Made at Stockton By whom made Messrs. Riley Bros. when made 1882 dated 9th Dec 1882
Where fixed Stake hold working pressure 80 lbs Tested by hydraulic pressure to 160 lbs No. of Certificate 872
Fire grate area 14 sq ft Description of safety valves spring No. of safety valves one area of each 8.3
If fitted with easing gear yes If steam from main boilers can enter the donkey boiler no
Diameter of donkey boiler 5'-0" length 10'-0" description of riveting lig. seams, lap double riveted
thickness of shell plates $\frac{5}{32}$ " diameter of rivet holes $\frac{13}{16}$ " whether punched or drilled punched
pitch of rivets $2\frac{3}{4}$ " lap of plating $4\frac{1}{4}$ " per centage of strength of joint 70.4
thickness of crown plates $\frac{5}{32}$ " stayed by 5 stays, each $1\frac{1}{2}$ eff. dia. diameter
Diameter of furnace, top 48" bottom 32" length of furnace 4'-3"
thickness of plates $\frac{1}{2}$ " description of joint lap single riveted
thickness of furnace crown plates $\frac{5}{32}$ " stayed as shell crown
Working pressure of shell by rules 84.6 lbs working pressure of furnace by rules 80 lbs
diameter of uptake 3" thickness of plates $\frac{7}{16}$ " thickness of water tubes $\frac{3}{8}$ "

The foregoing is a correct description,
In witness whereof
Wm. Yeadley Manufacturer.

James Ritchie

General Remarks (State quality of workmanship, opinions as to class, &c. The machinery of this vessel has been built under Special Survey. the materials & workmanship are sound & good & eligible, in my opinion, to be classed F.D. M.C. 12.82 in the Society's Register Book.

Submitted that this vessel is eligible to have the notation + 2 m to 12.82 recorded.
18/12/82

The amount of Entry Fee .. £ 2 : - : - received by me,

Special .. £ 13 : 4 : - and permitted to Shields office

Certificate (if required) .. £ - : - : - 14 Dec 1882
To be sent as per margin.

(Travelling Expenses, if any, £ 1.18.9)

Committee's Minute

Friday, 22nd December, 1882.

Geo. Y. Walker 2021
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping