

# REPORT ON MACHINERY.

3452

No. 225.

(Received at London Office) Rec'd 15th MAR 1883

No. in Survey held at Aberdeen

Date, first Survey 24/11/81

Last Survey 7th March 1883

Reg. Book.

(Number of Visits.....)

on the T.S.S. "Aberdour"

Tons 970.83

Master Mutch

Built at Aberdeen

When built 1883

Engines made at Aberdeen

By whom made Hall Russell & Co when made 1883

Boilers made at Aberdeen

By whom made Hall Russell & Co when made 1883

Registered Horse Power 150.

Owners Messrs Adam & Co

Port belonging to Aberdeen

**ENGINES, &c.—**

Description of Engines Direct Acting Compound Int. Cyl. Surface Condensing

Diameter of Cylinders 30" & 59" Length of Stroke 36" No. of Rev. per minute 60 Point of Cut off, High Pressure 8/16 Low Pressure 1/2

Diameter of Screw shaft 10 1/2" steel Diameter of Tunnel shaft 10 1/2" Diameter of Crank shaft journals 10 3/4" Diameter of Crank pin 10 3/4" size of Crank webs 12 1/2" x 8"

Diameter of screw 14" 2 Pitch of screw 18" 0 No. of blades 4 state whether moveable sol total surface 54.4 feet

No. of Feed pumps two diameter of ditto 3" Stroke 21" Can one be overhauled while the other is at work yes

No. of Bilge pumps two diameter of ditto 3 1/2" Stroke 21" Can one be overhauled while the other is at work yes

Where do they pump from all compartments - thro ship side

No. of Donkey Engines two Size of Pumps Ballast 8" x 10" x 4" 7" x 8" x 3 1/2" Where do they pump from Tanks, all compartments

thro ship side & Condenser (Feed) from sea, Hotwell - to boilers & on deck

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 4 1/2" Are they connected to condenser, or to circulating pump Circulating

How are the pumps worked by levers from after engine piston crosshead.

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 before launch 6/2/83

Is the screw shaft tunnel watertight yes and fitted with a sluice door yes worked from top of cylinders

**BOILERS, &c.—**

Number of Boilers two Description steel Circular Tubular fired from one end

Working Pressure 100 lbs Tested by hydraulic pressure to 200 lbs Date of test 6th February 1883

Description of superheating apparatus or steam chest Horizontal dumb

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 5.3 feet Description of safety valves Direct Spring load (H.M.C.)

No. to each boiler two area of each valve 12.56 sq 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 12"

Diameter of boilers 12" 3 Length of boilers 9' 6" description of riveting of shell long. seams Butt D.R. circum. seams Lap D.R.

Thickness of shell plates 3 1/2" diameter of rivet holes 1 1/8" whether punched or drilled drilled pitch of rivets 4 1/4" & 5"

Lap of plating 1 1/4" per centage of strength of longitudinal joint 76 & 78 % working pressure of shell by rules 100 lbs

Size of manholes in shell 16" x 11 1/2" size of compensating rings 6" x 3 1/2" x 3 1/2"

No. of Furnaces in each boiler three outside diameter 39" length, top 6' 3" bottom 8' 8"

Thickness of plates 1 3/4" description of joint Butt S.R. if rings are fitted 1/2 angle greatest length between rings 6' 3"

Working pressure of furnace by the rules 103 lbs

Combustion chamber plating, thickness, sides 1/2" back 1/2" top 1/2"

Pitch of stays to ditto, sides 8 1/2" x 8" back 8 1/2" x 8 1/2" top round

If stays are fitted with nuts or riveted heads nuts both ends working pressure of plating by rules 106 lbs

Diameter of stays at smallest part 1 1/2" steel working pressure of ditto by rules 6020 lbs

End plates in steam space, thickness 1 3/8" pitch of stays to ditto 15" x 15" how stays are secured thro ends & nuts

Working pressure by rules 105 lbs diameter of stays at smallest part 2" steel working pressure by rules 7165 lbs

Front plates at bottom, thickness 1 3/8" Back plates, thickness 1 3/8" greatest pitch of stays 12" x 8 1/2" working pressure by rules 5743 lbs

Form No. 8-21/6/83 1000. (State if Report is also sent on 71)

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Diameter of tubes  $3\frac{1}{2}$ " pitch of tubes  $4\frac{1}{2}$ " thickness of tube plates, front  $\frac{12}{16}$ " back  $\frac{4}{16}$ "  
 How stayed *tubes Multi* pitch of stays  $13\frac{1}{2} \times 9$ " width of water spaces  $1\frac{1}{2}$ "  
 Diameter of ~~Superheater~~ or Steam chest  $3\frac{1}{2}$ " length  $6\frac{1}{10}$ "  
 Thickness of plates  $\frac{8}{16}$ " description of longitudinal joint *Lap D.R.* diameter of rivet holes  $\frac{13}{16}$ " pitch of rivets  $2\frac{1}{8}$ "  
 Working pressure of shell by rules  $156$  lbs Diameter of flue  $\leftarrow$  thickness of plates  $\leftarrow$   
 If stiffened with rings  $\leftarrow$  distance between rings  $\leftarrow$  Working pressure by rules  $\leftarrow$   
 End plates of ~~superheater~~, or steam chest; thickness  $\frac{4}{16}$ " How stayed *dished out one bolt stay  $2\frac{3}{4}$ " dia*  
~~Superheater~~ or steam chest; how connected to boiler *by one malleable neck riveted to shells*

DONKEY BOILER— Description *one round vertical*  
 Made at *Aberdeen* By whom made *Hall Russell & Co* when made *1883*  
 Where fixed *Stockholm* working pressure  $70$  lbs Tested by hydraulic pressure to  $140$  lbs No. of Certificate *233*  
 Fire grate area  $16$  feet Description of safety valves *D.S. Lead* No. of safety valves *one* area of each  $11.04$  sq  
 If fitted with casing gear *Yes* If steam from main boilers can enter the donkey boiler *No*  
 Diameter of donkey boiler  $5\frac{1}{2}$ " length  $13\frac{1}{2}$ " description of riveting *Lap double R*  
 thickness of shell plates  $\frac{8}{16}$ " diameter of rivet holes  $\frac{13}{16}$ " whether punched or drilled *Punched*  
 pitch of rivets  $3$ " lap of plating  $\leftarrow$  per centage of strength of joint  $73.69\%$   
 thickness of crown plates  $\frac{8}{16}$ " stayed by *dished and six stays to side of boiler stay  $3\frac{1}{2}$ "*  
 Diameter of furnace, top  $3\frac{1}{2}$ " bottom  $4\frac{1}{2}$ " length of furnace  $7\frac{1}{2}$ "  
 thickness of plates  $\frac{1}{2}$ " description of joint *Lap S.R.*  
 thickness of furnace crown plates  $\frac{1}{2}$ " stayed by *dished & side stays  $1\frac{1}{2}$ " dia*  
 Working pressure of shell by rules  $86$  lbs working pressure of furnace by rules  $61$  lbs  
 diameter of uptake  $1\frac{1}{4}$ " thickness of plates  $\frac{1}{2}$ " thickness of water tubes  $\frac{5}{16}$ "

The foregoing is a correct description,  
*Hall Russell & Co* Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c. *The Boilers & Engines of this vessel have been built under special survey. The material and workmanship are of the best description. The boilers and engines have been tested under steam and the safety valves set to 100 lbs working pressure, and in my opinion all are in good and safe working order, and eligible to be entered into the Register Book with the distinctive mark \* L.M.C. 3-83.*

*It is submitted that this vessel is eligible to have the certificate to be issued by the committee + 2m*

The amount of Entry Fee  $\pounds 3 : 0 : 0$  received by me, *this day and*  
 Special  $\pounds 22 : 10 : 0$  *sent to Register*  
 Certificate (if required)  $\pounds - : 5 : 0$  *sent 1883*  
 To be sent as per margin.  
 (Travelling Expenses, if any,  $\pounds 5-10-6$ )

*John Sturrock* 2019  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.  
*Bundee District*

Committee's Minute *Friday, 10th March 1883.*