

REPORT ON MACHINERY.

3695

MONDAY, JULY, 12th. 1886

No. 3695

Received at London Office 18

No. in Survey held at *Aberdeen*

Date, first Survey *17th March* Last Survey *29th June* 1886

Reg. Book.

(Number of Visits *19*.)

266 on the *S. S. Ben Aron*

Tons *632*

Master *Scorpie* Built at *Aberdeen* By whom built *Hall Russell & Co* When built *1875*

Engines made at *Aberdeen* By whom made *Hall Russell & Co* when made *1875*

Boilers made at *Aberdeen* By whom made *Hall Russell & Co* when made *1886*

Registered Horse Power *80* Owners *Grampian Steam Ship Co* Port belonging to *Aberdeen*

ENGINES, &c.—

Description of Engines *Converted to Triple Expansion.* *1 M. 54*

Diameter of Cylinders *14 8 40* Length of Stroke *30* No. of Rev. per minute *70* Point of Cut off, High Pressure *.62* Low Pressure *.42*

Diameter of Screw shaft *7 1/2* Diam. of Tunnel shaft *7 1/2* Diam. of Crank shaft journals *8 1/2* Diam. of Crank pin *8 1/2* size of Crank webs *9 1/2 x 8*

Diameter of screw *11.8* Pitch of screw *14.3* No. of blades *4* state whether moveable *no* total surface *40 sq*

No. of Feed pumps *1* diameter of ditto *2 3/8* Stroke *30* Can *one* be overhauled while the other is at work *yes*

No. of Bilge pumps *1* diameter of ditto *4 1/2* Stroke *30* Can one be overhauled while the other is at work *yes*

Where do they pump from *all compartments*

No. of Donkey Engines *Two* Size of Pumps *3 1/2 x 8 1/2* *8 1/2 x 10 1/2* Where do they pump from *Tank. Sea hotwell*

and bilges

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 *✓* Are they connected to condenser, or to circulating pump *✓*

How are the pumps worked *direct from 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 *19 June 1886.*

Is the screw shaft tunnel watertight *no tunnel* *cylindrical casing and fitted with a sluice door* *worked from* *✓*

round shaft - not watertight

BOILERS, &c.—

Number of Boilers *One* Description *Cylindrical* Whether Steel or Iron *Steel*

Working Pressure *160* Tested by hydraulic pressure to *320* Date of test *19-5-86*

Description of *superheating apparatus* on steam chest *Cylindrical*

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 *35 sq* Description of safety valves *Spring* No. to each boiler *Two*

Area of each valve *8-3 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 *about 9"* Diameter of boilers *11-0*

Length of boilers *9-6* description of riveting of shell long. seams *Triple D. Strap* circum. seams *Double riv.* Thickness of shell plates *1"*

Diameter of rivet holes *1 3/16* whether punched or drilled *drilled* pitch of rivets *6 5/8* Lap of plating *9"*

Per centage of strength of longitudinal joint *82* working pressure of shell by rules *161* size of manholes in shell *16 x 12*

Size of compensating rings *8 x 1 1/2* No. of Furnaces in each boiler *Two. Connug^d*

Outside diameter *43 3/4* length, top *6-4* bottom *8-6* thickness of plates *9/16* description of joint *welded* if rings are fitted *half*

Greatest length between rings *6-9* working pressure of furnace by the rules *160* combustion chamber plating, thickness, sides *7/32* back *17/32* top *17/32*

Pitch of stays to ditto, sides *7 x 7/4* back *7 1/4* top *10* If stays are fitted with nuts or riveted heads *nuts* working pressure of plating by

rules *165* Diameter of stays at smallest part *1 1/4* Steel working pressure of ditto by rules *186* end plates in steam space, thickness *3/32*

Pitch of stays to ditto *14 1/2* how stays are secured *draw* working pressure by rules *159* diameter of stays at

smallest part *2 3/16* Steel working pressure by rules *160* Front plates at bottom, thickness *13/16* Back plates, thickness *7/8*

Greatest pitch of stays *as per plan* working pressure by rules *app^d 160* Diameter of tubes *3 1/2* pitch of tubes *4 3/4* thickness of tube

plates, front *15/16* back *3/4* how stayed *Lutes* pitch of stays *as per plan* width of water spaces *1 1/4*

Diameter of Superheater or Steam chest *3-3* length *6-6* thickness of plates *7/16* description of longitudinal joint *d. Cap* diam. of rivet holes *13/16*

Pitch of rivets *2 3/4* working pressure of shell by rules *172* diameter of flue *✓* thickness of plates *✓* If stiffened with rings *19*

Distance between rings *✓* working pressure by rules *✓* end plates of superheater, or steam chest; thickness *5/8* how stayed *lashed &*

stay in centre Superheater or steam chest; how connected to boiler *Contracted neck*

[Form No. 8-2000-1-11] (State if Report is also sent to the Registrar of Shipping)

Lloyds Register Foundation

3695 Alm

DONKEY BOILER— Description *Cylindrical Steel - uptake of iron*
 Made at *Aberdeen* by whom made *Hall Russell & Co.* when made *27-5-86* where fixed *Engine room*
 Working pressure *80* tested by hydraulic pressure to *160* No. of Certificate *8* fire grate area *12* description of safety
 valves *Spring* No. of safety valves *One* area of each *7* if fitted with easing gear *yes* if steam from main boilers can
 enter the donkey boiler *no* diameter of donkey boiler *4-6* length *10-3* description of riveting *double lap*
 Thickness of shell plates *7/16* diameter of rivet holes *13/16* whether punched or drilled *p & anne* pitch of rivets *3* lap of plating *4 1/4*
 per centage of strength of joint *67-3* thickness of crown plates *5/8 + 3/8* stayed by *doubled slightly dished & 5 stays*
 Diameter of furnace, top *3-6* bottom *4-0* length of furnace *5-8* thickness of plates *15/32* description of joint *s lap*
 Thickness of furnace crown plates *1/2* stayed by *as above & uptake* working pressure of shell by rules *118*
 Working pressure of furnace by rules *82* diameter of uptake *12* thickness of plates *9/16* thickness of water tubes *5/16*

SPARE GEAR. State the articles supplied:—

Note With the exception of the tubes all parts of the Main Boiler are of Steel

The foregoing is a correct description,

Hall Russell & Co. Manufacturers.

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

The vessel placed on the Slipway & the sea cocks exam^d and found satisfactory.

The Cylinders Slide Pistons & the Engines generally overhauled, put into good order & examined.

The Crank Shaft examined & found in good condition.

New Main & Donkey Boilers have been fitted & the Engines converted into Triple Expansion by adding a new cylinder 14 Diar upon the old H.P. Cylinder.

The Main & Donkey Safety Valves set under steam.

The blow off Cock shifted to the bilge.

The tail shaft it is stated was seen in 1884 & will be again submitted for examination when the sternpost requires lining up.

*This is submitted that
 this vessel is eligible to
 have I.M.C. 6-86 and
 NB 6-86 recorded
 12/7/86*

The Machinery of this vessel is now in good order, eligible in my opinion to remain as classed & to have I.M.C. 6-86 and NB 6-86 recorded.

Special Survey of all Boilers
 The amount of Entry Fee .. £ 6 : 0 : 0 received by me,
 Special .. £ 2 : 2 : 0 Paid 11/8/86
 Donkey Boiler Fee .. £ 2 : 2 : 0
 Certificate (if required) .. £ : 2 : 6 July 1886
 To be sent as per margin.
 (Travelling Expenses, if any, £)

Committee's Minute

John H. Heck

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

+ NB 86 LMB 6-86