

# REPORT ON MACHINERY.

No. 3773-

No. in Survey held at *Aberdeen*  
Reg. Book.

Date, first Survey *9 Nov 1886* Last Survey *9 May 1887*  
(Number of Vols. *55*)

on the *S. S. St. Sunniva*

Tons *436-94*

Master *Angus* Built at *Aberdeen* By whom built *Hall Russell & Co* When built *1887*

Engines made at *Aberdeen* By whom made *Hall Russell & Co* when made *1887*

Boilers made at *D* By whom made *D* when made *D*

Registered Horse Power *250* Owners *N<sup>th</sup> of Scotland, Orkney & Shetland Port belonging to Aberdeen*

## ENGINES, &c.—

Description of Engines *Inverted Triple Surface Condensing*  
Diameter of Cylinders *24-36 x 63* Length of Stroke *36* No. of Rev. per minute *90* Point of Cut off, High Pressure *1M 23 3/4* Low Pressure *1B 3/4*  
Diameter of Screw shaft *12* Diam. of Tunnel shaft *11 3/4* Diam. of Crank shaft journals *12* Diam. of Crank pin *12* size of Crank webs *14 x 8 1/2*  
Diameter of screw *12-8* Pitch of screw *18-6* No. of blades *4* state whether movable *No* total surface *64 sq ft*  
No. of Feed pumps *Two* diameter of ditto *3 1/4* Stroke *24* Can one be overhauled while the other is at work *Yes*  
No. of Bilge pumps *Two* diameter of ditto *3 1/4* Stroke *24* Can one be overhauled while the other is at work *Yes*  
Where do they pump from *all compartments*  
No. of Donkey Engines *One* Size of Pumps *3 3/4 Dia x 10 Stroke* Where do they pump from *all compartments*  
*Sea & Hotwell.*

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 *5* Are they connected to condenser, or to circulating pump *Cir. Pump*

How are the pumps worked *lever over condenser*

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

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

What pipes are carried through the bunkers *Forehold Bilge Suction* How are they protected *strong wood casing*

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 *while building*

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

## BOILERS, &c.—

Number of Boilers *Two* Description *Cylindrical Double Ended* Whether Steel or Iron *Steel*  
Working Pressure *160* Tested by hydraulic pressure to *320* Date of test *10-3-87*

Description of superheating apparatus or steam chest *None*

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

No. of square feet of fire grate surface in each boiler *74* Description of safety valves *Spring* No. to each boiler *Two*

Area of each valve *11 sq* Are they fitted with easing gear *Yes* No. of safety valves to superheater *Yes* area of each valve *Yes*

Are they fitted with easing gear *Yes* Smallest distance between boilers and bunkers or woodwork *18* Diameter of boilers *12-3*

Length of boilers *16-0* description of riveting of shell long. seams *Triple D Shape* circum. seams *Triple Lap* Thickness of shell plates *1 1/16*

Diameter of rivet holes *1 1/16* whether punched or drilled *drilled* pitch of rivets *8 1/4* Lap of plating *19 3/4 Shape*

Per centage of strength of longitudinal joint *85-6* working pressure of shell by rules *160* size of manholes in shell *16 x 12*

Size of compensating rings *28 Dia x 1 1/2* No. of Furnaces in each boiler *Four*

Outside diameter *47* length, top *6-6* bottom *6-0* thickness of plates *19 1/32* description of joint *corrugated* if rings are fitted *half*

Greatest length between rings *as per plan* working pressure of furnace by the rules *160* combustion chamber plating, thickness, sides *9 1/16 + 17/32* back *Yes* top *9 1/16*

Pitch of stays to ditto, sides *7 3/8* back *Yes* top *7 x 7 1/2* If stays are fitted with nuts or riveted heads *Nuts* working pressure of plating by

rules *160* Diameter of stays at smallest part *1 1/4* working pressure of ditto by rules *180* end plates in steam space, thickness *1*

Pitch of stays to ditto *15 x 14 1/2* how stays are secured *d nuts & washers* working pressure by rules *160* diameter of stays at

smallest part *2 1/16* working pressure by rules *173* Front plates at bottom, thickness *13 1/16* Back plates, thickness *Yes*

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

plates, front *15 1/16* back *13 1/16* how stayed *Nuts* pitch of stays *9 x 13 1/2* width of water spaces *1 1/4*

Diameter of Superheater or Steam chest *Yes* length *Yes* thickness of plates *Yes* description of longitudinal joint *Yes* diam. of rivet holes *Yes*

Pitch of rivets *Yes* working pressure of shell by rules *Yes* diameter of flue *Yes* thickness of plates *Yes* If stiffened with rings *Yes*

Distance between rings *Yes* working pressure by rules *Yes* end plates of superheater, or steam chest; thickness *Yes* how stayed *Yes*

Superheater or steam chest; how connected to boiler *Yes*



3773. Ah.

**KEY BOILER—** Description *Vertical & Lute Steel*  
 Made at *Aberdeen* by whom made *Hall Russell & Co* when made *10-3-87* where fixed *Stokehole*  
 Working pressure *80* tested by hydraulic pressure to *160* No. of Certificate *17* fire grate area *11* 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 *10-0* description of riveting *Lap Lute*  
 Thickness of shell plates *7/16* diameter of rivet holes *13/16* whether punched or drilled *drilled* pitch of rivets *3* lap of plating *4*  
 per centage of strength of joint *64-6* thickness of crown plates *5/8 + 1/2* stayed by *5 Stays 1 1/2 Dia*  
 Diameter of furnace, top *3-6* bottom *4-0* length of furnace *4-8* thickness of plates *15/32* description of joint *Single Lap*  
 Thickness of furnace crown plates *1/2* stayed by *dished & as above* working pressure of shell by rules *112*  
 Working pressure of furnace by rules *80* diameter of uptake *12* thickness of plates *7/8* thickness of water tubes *5/16*

**SPARE GEAR.** State the articles supplied:— *Propeller, Tail Shaft, Air Pump rod, bucket &*  
*Valves, Circulating Pump rod, Set of hammers for top & bottom ends, Two*  
*Main bearings, Two top end, Two bottom end & One set coupling*  
*bolts, One set Feed & Bilge Valves & Seats, Assorted bolts & nuts & a few*  
*bars of iron—*  
 The foregoing is a correct description,  
*Hall Russell & Co. Manufacturer.*

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

*The Machinery of this vessel has been constructed under*  
*Special Survey*  
*& material & workmanship is good & the vessel is*  
*fitable in my opinion to have L.M.C. 587 Recorded*  
*Drawings of Main Boiler & Steel Tests forwarded herewith,*

The amount of Entry Fee .. £ 2 : 0 : 0 received by me,  
 Special .. £ 32 : 10 :  
 Donkey Boiler Fee .. £ 2 : 2 : 0  
 Certificate (if required) .. £ 18 : 18 :  
 To be sent as per margin  
 Selling Expenses, if any, £

Committee's Minute

*John H. Heck.*

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

*17 May 1887*  
*L.M.C.*