

# REPORT ON MACHINERY.

TUES, 21 MAR 1899

Port of Sunderland

Received at London Office 18

No. in Survey held at Sunderland Date, first Survey Mar 3 Last Survey Apr 15 1899  
 Reg. Book. on the Donkey Boiler for S/S "Ruapehu" (Number of Visits 3) Tons { Gross / Net }  
 Master Built at By whom built When built  
 Engines made at By whom made when made  
 Boilers made at By whom made when made  
 Registered Horse Power Owners Port belonging to  
 Nom. Horse Power as per Section 28 Is Electric Light fitted

**ENGINES, &c.** — Description of Engines

Description of Engines		No. of Cylinders	No. of Cranks
Diameter of Cylinders	Length of Stroke	Revolutions per minute	Diameter of Screw shaft as per rule as fitted
Diameter of Tunnel shaft as per rule as fitted	Diameter of Crank shaft journals	Diameter of Crank pin	Size of Crank webs
Diameter of screw	Pitch of screw	No. of blades	State whether moveable Total surface
No. of Feed pumps	Diameter of ditto	Stroke	Can one be overhauled while the other is at work
No. of Bilge pumps	Diameter of ditto	Stroke	Can one be overhauled while the other is at work
No. of Donkey Engines	Sizes of Pumps	No. and size of Suctions connected to both Bilge and Donkey pumps	
In Engine Room	In Holds, &c.		
No. of bilge injections	sizes	Connected to condenser, or to circulating pump	Is a separate donkey suction fitted in Engine room & size
Are all the bilge suction pipes fitted with roses	Are the roses in Engine room always accessible		Are the sluices on Engine room bulkheads always accessible
Are all connections with the sea direct on the skin of the ship	Are they Valves or Cocks		
Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates	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	Are the blow off coeks fitted with a spigot and brass covering plate		
What pipes are carried through the bunkers	How are they protected		
Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times			
Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges			
When were stern tube, propeller, screw shaft, and all connections examined in dry dock		Is the screw shaft tunnel watertight	
Is it fitted with a watertight door	worked from		

**BOILERS, &c.** — (Letter for record ) Total Heating Surface of Boilers Is forced draft fitted

No. and Description of Boilers		Working Pressure	Tested by hydraulic pressure to
Date of test	Can each boiler be worked separately	Area of fire grate in each boiler	No. and Description of safety valves to
each boiler	Area of each valve	Pressure to which they are adjusted	Are they fitted
with easing gear	Smallest distance between boilers or uptakes and bunkers or woodwork		Mean diameter of boilers
length	Material of shell plates	Thickness	Description of riveting: circum. seams long. seams
Diameter of rivet holes in long. seams	Pitch of rivets	Lap of plates or width of butt straps	
Per centages of strength of longitudinal joint	rivets plate	Working pressure of shell by rules	Size of manhole in shell
Size of compensating ring	No. and Description of Furnaces in each boiler		
Length of plain part top bottom	Thickness of plates crown bottom	Description of longitudinal joint	
Working pressure of furnace by the rules	Combustion chamber plates: Material		Thickness: Sides Back Top Bottom
Pitch of stays to ditto: Sides	Back	Top	If stays are fitted with nuts or riveted heads
Material of stays	Diameter at smallest part	Area supported by each stay	Working pressure by rules
Material	Thickness	Pitch of stays	How are stays secured
Diameter at smallest part	Area supported by each stay	Working pressure by rules	Material of Front plates at bottom
Thickness	Material of Lower back plate	Thickness	Greatest pitch of stays
Diameter of tubes	Pitch of tubes	Material of tube plates	Thickness: Front Back
Pitch across wide water spaces	Working pressures by rules		Girders to Chamber tops: Material
thickness of girder at centre	Length as per rule	Distance apart	Number and pitch of Stays in each
Working pressure by rules	Superheater or Steam chest; how connected to boiler		Can the superheater be shut off and the boiler worked
separately	Diameter	Length	Thickness of shell plates
holes	Pitch of rivets	Working pressure of shell by rules	Diameter of flue
If stiffened with rings	Distance between rings	Working pressure by rules	Material of flue plates
Working pressure of end plates	Area of safety valves to superheater	End plates: Thickness	How stayed

[1176-5000-24/2/98-Copyable Ink.]



**DONKEY BOILER**— Description *bylded multiple 2 ribbed furnaces*  
 Made at *Sunderland* By whom made *W. Allan & Co Ltd* When made *1890* Where fixed *On deck*  
 Working pressure *120 lbs* tested by hydraulic pressure to *240 lbs* No. of Certificate — Fire grate area — Description of safety valves *Spring loaded*  
 No. of safety valves *2* Area of each *3.97* Pressure to which they are adjusted.  If fitted with easing gear  If steam from main boilers can enter the donkey boiler *No.* Diameter of donkey boiler *9' 6"* Length *11' 5"* Material of shell plates *S.* Thickness *1 1/8"*  
 Description of riveting—long. seams *d. butt. 7. rivd.* Diameter of rivet holes *1 3/8"* Whether punched or drilled *d.* Pitch of rivets *6 3/4" x 1 3/8"*  
 Lap of plating *15"* Per centage of strength of joint Rivets *83.5* Thickness of ~~shell~~ <sup>top end</sup> *15/16"* Radius of do. — No. of Stays to do. —  
 Dia. of stays. *2 1/4"* Diameter of furnace *Top 2' 8 1/2" Bottom* Length of furnace *7' 3"* Thickness of furnace plates *1 7/32"* Description of joint *welded* Thickness of furnace crown plates — Stayed by — Working pressure of shell by rules *120 lbs*  
 Working pressure of furnace by rules *120 lbs* Diameter of <sup>uptake</sup> *2 1/2"* Thickness of uptake plates — Thickness of water tubes —

**SPARE GEAR.** State the articles supplied:—

The foregoing is a correct description,  
 Manufacturer.

Dates of Survey while building  
 During progress of work in shops —  
 During erection on board vessel —  
 Total No. of visits

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

**ENGINES**—Length of stern bush Diameter of crank shaft journals <sup>as per rule</sup> <sub>as fitted</sub> Diameter of thrust shaft under collars

**BOILERS**—Range of tensile strength Are they welded or flanged **DONKEY BOILERS**—No. Range of tensile strength

Is the approved plan of main boiler forwarded herewith Is the approved plan of donkey boiler forwarded herewith

This boiler was made by Messrs W Allan & Co in 1890 and fitted as a main boiler into the S/S "Borchardess" N° 383 in Register Book. It has now been efficiently repaired and retested by hydraulic pressure to 240 lbs per sq for a working pressure, fixed by R.I. of 120 lbs.

The following repairs were done:— 92 sea-eyes stays renewed; all C.C. girders renewed & 3 stay rods fitted in defective tubes.

To complete the survey, this boiler has to be fitted on board; mountings fitted examined under steam & safety valves adjusted to the working pressure.

This boiler has now been fitted on board & all mountings fitted. In opportunity afforded to adjust safety valves. The vessel has now proceeded to Liverpool where the survey will be completed. Liverpool Surveyors advised

See limit list

It is submitted this case be deferred until this boiler has been fitted on board and the safety valves adjusted under steam

Certificate (if required) to be sent to

The amount of Entry Fee... £ : : When applied for, 20.3.18.99  
 Special... £ : :  
 Donkey Boiler Fee... £ : :  
 Travelling Expenses (if any) £ : : 2.11.18.99

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

TUES, 11 APR 1899

Committee's Minute  
 Assigned

as now subject  
 20590

