

## REPORT ON MACHINERY.

Port of *Dundee*

Received at London Office

2 SEP 92

No. in Survey held at *Dundee*  
Reg. Book.Date, first Survey *July 12<sup>th</sup>* Last Survey *Aug 23<sup>rd</sup> 1892*404 on the *New Donkey Boilers for S.S. Loch Rannoch*(Number of Visits *5*)Tons { Gross *1623*Net *1057*Master *Cameron* Built at *Dundee*By whom built *Gourley Bros & Co*When built *1880-9*Engines made at *Dundee*By whom made *Gourley Bros & Co*when made *1880*Boilers made at *Dundee*By whom made *Gourley Bros & Co*when made *1880*Registered Horse Power *185*Owners *Dundee Loch Line S.S. Co* Port belonging to *Dundee*

Nom. Horse Power as per Section 28

*5765 (Nom)*+ *H1<sup>st</sup> red* 5<sup>th</sup> 2<sup>nd</sup> Sur. 5<sup>th</sup>

## ENGINES, &amp;c.—

Description of Engines

No. of Cylinders

Diameter of Cylinders	Length of Stroke	Revolutions per minute	Diameter of Screw shaft
Diameter of Tunnel shaft	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
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 cocks 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, &amp;c.—

(Letter for record)

Total Heating Surface of Boilers

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
Each boiler	Area of each valve	Pressure to which they are adjusted
With easing gear	Smallest distance between boilers or uptakes and bunkers or woodwork	Mean diameter of boilers
Length	Material of shell plates	Thickness
Distance of rivet holes in long. seams	Pitch of rivets	Length of plates or width of butt straps
Percentage of strength of longitudinal joint	Working pressure of shell by rules	Size of manhole in shell
Size of compensating ring	No. and Description of Furnaces in each boiler	Material
Length of plain part	Thickness of plates	Description of longitudinal joint
Working pressure of furnace by the rules	Combustion chamber plates: Material	Thickness: Sides
Thickness of stays to ditto: Sides	Back	Top
Material of stays	Diameter at smallest part	Area supported by each stay
Material	Thickness	Pitch of stays
Diameter at smallest part	Area supported by each stay	Working pressure by rules
Thickness	Material of Lower back plate	Thickness
Diameter of tubes	Pitch of tubes	Material of tube plates
Distance across wide water spaces	Working pressures by rules	Girders to Chamber tops: Material
Thickness of girder at centre	Length as per rule	Distance apart
Working pressure by rules	Superheater or Steam chest; how connected to boiler	Can the superheater be shut off and the boiler work
Material	Diameter	Length
Thickness of shell plates	Material	Description of longitudinal joint
Pitch of rivets	Working pressure of shell by rules	Diameter of flue
Stiffened with rings	Distance between rings	Working pressure by rules
Working pressure of end plates	Area of safety valves to superheater	Are they fitted with easing gear



**DONKEY BOILER**— Description *Vertical - 4 cross tubes*  
 Made at *Bundee* By whom made *Gourley Bros & Co* When made *1892* Where fixed  
 Working pressure *80* tested by hydraulic pressure to *160* No. of Certificate *639* Fire grate area *16.5* Description of safety valves ✓  
 No. of safety valves ✓ of each ✓ Pressure to which they are adjusted ✓ If fitted with easing gear ✓ If steam from main boilers can enter the donkey boiler ✓  
 Diameter of donkey boiler *5' 6"* Length *13' 8"* Material of shell plates *steel* Thickness  *$\frac{13}{32}$*   
 Description of riveting long. seams *Double riv lap* Diameter of rivet holes  *$\frac{3}{4}$*  Whether punched or drilled *drilled* Pitch of rivets *2"*  
 Lap of plating  *$3\frac{1}{16}$*  Per centage of strength of joint Rivets *80%* Thickness of shell crown plates  *$\frac{13}{16}$*  Radius of do. *6' 9"* No. of Stays to do. *4*  
 Dia. of stays. *2" steel* Diameter of furnace Top *4' 0"* Bottom *4' 4"* Length of furnace *6' 0"* Thickness of furnace plates  *$\frac{9}{16}$*  Description of joint *single riv lap* Thickness of furnace crown plates  *$\frac{9}{16}$*  Stayed by *7 solid stays & funnel* Working pressure of shell by rules *88 lbs*  
 Working pressure of furnace by rules *82 lbs* Diameter of uptake *15½"* Thickness of uptake plates  *$\frac{3}{8}$ "* Thickness of water tubes  *$\frac{3}{8}$ "*

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

The foregoing is a correct description,

Manufacturer.

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

This donkey boiler has been constructed of steel under special survey and in accordance with the approved drawing for a working pressure of 80 lbs per sq in and has been tested by hydraulic pressure to 160 lbs per sq in as required by the rules. Materials and workmanship are good.

*It is submitted that the action  
 be taken on this report, pending  
 decision as to vessel's character  
 as regards hull.  
 Lr. to Bun 5.9.92  
 J. Mc 5/9/92*

Certificate (if required) to be sent to

The amount of Entry Fee..	£	:	:	When applied for,
Special Report attached	£	3	: 3	Aug 23. 92
Donkey Boiler Fee ..	£	2	: 2	When received, Aug 30. 18. 92
Travelling Expenses (if any)	£	:	:	

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

Committee's Minute

Assigned

TUES. 25 OCT 1892



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 Foundation