

# REPORT ON MACHINERY.

No. \_\_\_\_\_ Port of \_\_\_\_\_  
 No. in Survey held at London Date, first Survey Apr. 15 Last Survey Mar. 14 1889  
 Reg. Book. \_\_\_\_\_ (Number of Visits 15)  
 on the Paddle Steamer "Duncan" Tons \_\_\_\_\_  
 Master \_\_\_\_\_ Built at Blackwall By whom built R + A Green When built 1888  
 Engines made at Greenwich By whom made John Penn + Son when made 1888  
 Boilers made at Deptford By whom made Do when made 1888  
 Registered Horse Power 140 Owners Metropolitan Bd. Wks. Port belonging to London

## ENGINES, &c.—

Description of Engines Diagonal 4 Cylinders  
 Diameter of Cylinders 33" Length of Stroke 36 No. of Rev. per minute \_\_\_\_\_ Point of Cut off, High Pressure \_\_\_\_\_ Low Pressure \_\_\_\_\_  
 Diameter of Screw shaft  Diam. of Tunnel shaft  Diam. of Crank shaft journals 9 1/2 Diam. of Crank pin 9 1/2 size of Crank webs 11 x 7  
 Diameter of screw  Pitch of screw  No. of blades  state whether moveable  total surface   
 No. of Feed pumps 2 diameter of ditto 3" Stroke 5" Can one be overhauled while the other is at work yes  
 No. of Bilge pumps 1 diameter of ditto 4 Stroke 8 Can one be overhauled while the other is at work   
 Where do they pump from Engine Rm. Fore + aft Hold  
 No. of Donkey Engines 2 Size of Pumps 3 1/2 x 6 Where do they pump from E. Rm. Sea F + a. Hold.

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 1 and sizes 4" Are they connected to condenser, or to circulating pump centrif. bilge pump.  
 How are the pumps worked Levers on 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   
 Is the screw shaft tunnel watertight  and fitted with a sluice door  worked from

## BOILERS, &c.—

Number of Boilers Two Description Multitubular Whether Steel or Iron All Steel  
 Working Pressure 30 lbs. Tested by hydraulic pressure to 60 lbs Date of test Nov. 12<sup>th</sup> 1888  
 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   
 No. of square feet of fire grate surface in each boiler 44 Description of safety valves Direct spring No. to each boiler 2  
 Area of each valve 19.6 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 18" Diameter of boilers 8' 6 3/4"  
 Length of boilers 17.3 description of riveting of shell long. seams double lap circum. seams single lap. Thickness of shell plates 3/8"  
 Diameter of rivet holes 3/4" whether punched or drilled drilled pitch of rivets 2 1/2" Lap of plating 3 3/4"  
 Percentage of strength of longitudinal joint 70% working pressure of shell by rules 57 lbs. size of manholes in shell 16 x 12  
 Size of compensating rings 6 x 1" No. of Furnaces in each boiler 2  
 Outside diameter 3' 7 1/4" length, top 7' 3" bottom 7' 3" thickness of plates 3/8" description of joint welded if rings are fitted yes  
 Greatest length between rings 3' 9" working pressure of furnace by the rules 71 lbs. combustion chamber plating, thickness, sides 7/16" back 7/16" top 7/16"  
 Pitch of stays to ditto, sides 13" back 13" top 13" If stays are fitted with nuts or riveted heads nuts. working pressure of plating by rules 32 lbs. Diameter of stays at smallest part 1 1/4" working pressure of ditto by rules 43 lbs. end plates in steam space, thickness 9/16"  
 Pitch of stays to ditto 18" how stays are secured nuts & washers working pressure by rules 35 lbs. diameter of stays at smallest part 1 1/4" working pressure by rules 30 lbs. Front plates at bottom, thickness 9/16" Back plates, thickness 9/16"  
 Greatest pitch of stays  working pressure by rules  Diameter of tubes 3" pitch of tubes 4" thickness of tube plates, front 9/16" back 9/16" how stayed stayed pitch of stays 16" width of water spaces 7"  
 Diameter of Superheater or Steam chest  length  thickness of plates  description of longitudinal joint  diam. of rivet holes   
 Pitch of rivets  working pressure of shell by rules  diameter of flue  thickness of plates  If stiffened with rings   
 Distance between rings  working pressure by rules  end plates of superheater, or steam chest; thickness  how stayed   
 Superheater or steam chest; how connected to boiler

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**DONKEY BOILER—** Description

Made at \_\_\_\_\_ by whom made \_\_\_\_\_ when made \_\_\_\_\_ where fixed \_\_\_\_\_

Working pressure \_\_\_\_\_ tested by hydraulic pressure to \_\_\_\_\_ No. of Certificate \_\_\_\_\_ fire grate area \_\_\_\_\_ description of safety valves \_\_\_\_\_

No. of safety valves \_\_\_\_\_ area of each \_\_\_\_\_ if fitted with easing gear \_\_\_\_\_ if steam from main boilers can enter the donkey boiler \_\_\_\_\_ diameter of donkey boiler \_\_\_\_\_ length \_\_\_\_\_ description of riveting \_\_\_\_\_

Thickness of shell plates \_\_\_\_\_ diameter of rivet holes \_\_\_\_\_ whether punched or drilled \_\_\_\_\_ pitch of rivets \_\_\_\_\_ lap of plating \_\_\_\_\_

percentage of strength of joint \_\_\_\_\_ thickness of crown plates \_\_\_\_\_ stayed by \_\_\_\_\_

Diameter of furnace, top \_\_\_\_\_ bottom \_\_\_\_\_ length of furnace \_\_\_\_\_ thickness of plates \_\_\_\_\_ description of joint \_\_\_\_\_

Thickness of furnace crown plates \_\_\_\_\_ stayed by \_\_\_\_\_ working pressure of shell by rules \_\_\_\_\_

Working pressure of furnace by rules \_\_\_\_\_ diameter of uptake \_\_\_\_\_ thickness of plates \_\_\_\_\_ thickness of water tubes \_\_\_\_\_

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

The foregoing is a correct description,

Manufacturer.

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

These Engines have been built under Special Survey Material + Workmanship good, & eligible in my opinion to be marked in the Reg. BR-V-LMC 3.89

It is submitted that the vessel is eligible to have + LMC 3.89 recorded, subject to the bridge inspection value being fitted.

W.A.  
15.3.89

The amount of Entry Fee .. £ 2 : 0 : received by me,  
 Special .. .. £ 21 : — :  
 Donkey Boiler Fee .. .. £ : :  
 Certificate (if required) .. £ : : 15.3.1889.  
To be sent as per margin.  
 (Travelling Expenses, if any, £ .. ..)

W.A.

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

Committee's Minute

FRIDAY 15 MARCH 1889

+ CMB 3/89 Wilkinson

