

# REPORT ON MACHINERY.

No. 6705 Received at London Office 21st May 1886  
 No. in Survey held at Glasgow Port Glasgow Date, first Survey 8th October Last Survey 21 May 1886  
 Reg. Book. on the Screw Steamer "Engineer" Tons 315 1/2  
 Master J. Murray Built at Port Glasgow By whom built Murdoch & Murray When built 1884  
 Engines made at Glasgow By whom made James Gordon & Co. when made 1884  
 Boilers made at " By whom made " when made 1884  
 Registered Horse Power 80 Owners Jatham & Co. Port belonging to London

## ENGINES, &c.—

Description of Engines Compound Inverted Direct acting  
 Diameter of Cylinder 22" x 42" Length of Stroke 30" No. of Rev. per minute 90 Point of Cut off, High Pressure 1/2 Low Pressure 3/4  
 Diameter of Screw shaft 8" Diam. of Tunnel shaft 4" Diam. of Crank shaft journals 7 1/2" Diam. of Crank pin 8 1/2" Diam. of connecting rod 7 1/2"  
 Diameter of screw 10 1/2" Pitch of screw 14 1/2" No. of blades Four state whether movable Yes surface 36 ft  
 No. of Feed pumps Two Diameter of ditto 3" Stroke 15" Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps Two diameter of ditto 3" Stroke 15" 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 Pump 8 1/2" x 5 1/2" x 10" Where do they pump from Sea, bilges & 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 One and sizes 1/2" Are they connected to condenser, or to circulating pump Circulating  
 How are the pumps worked By Levers  
 Are all connections with the sea direct on the ship 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 None  
 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 On ship previous to being launched  
 Is the screw shaft tunnel watertight Yes and fitted with a sluice door Yes worked from Upper platform

## BOILERS, &c.—

Number of Boilers One Description Round Horizontal Whether Steel or Iron Steel  
 Working Pressure 90 lbs Tested by hydraulic pressure to 180 lbs Date of test 19th March 1886  
 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 36 ft Description of safety valves Direct spring  
 Area of each valve 11.04" Are they fitted with easing gear Yes No. of safety valves to superheater None  
 Are they fitted with easing gear Yes Smallest distance between boilers and bunkers or woodwork 13' 6"  
 Length of boilers 9' 6" Description of riveting of shell long. seams Double riveted circum. seams Double riveted  
 Diameter of rivet holes 1 1/16" whether punched or drilled Punched pitch of rivets 4 1/2" Lap 1"  
 Percentage of strength of longitudinal joint 7/8 working pressure of shell by rules 92 lbs size of manhole 16"  
 Size of compensating ring Double flange No. of furnaces One  
 Diameter 3' 2 1/2" length, top 6' 10" bottom 6' 10" thickness of plates 7/16" description of furnace Double flange  
 Greatest length between rings 6' 10" working pressure of furnace by the rules 91 lbs description of chamber plating, minimum 7/16" maximum 7/16"  
 Pitch of stays to water 7/16" back 7/16" stays are fitted with nuts or screw heads Yes working pressure of stays by rules 92 lbs  
 Pitch of stays to ditto 1 1/2" stays are secured By nuts working pressure of ditto by rules 120 lbs thickness of plates at water 7/16"  
 Greatest pitch of stays 10" working pressure by rules 92 lbs diameter of tubes 3 1/2" pitch of tubes 4' 2 1/2" thickness of tube plates 7/16"  
 Diameter of superheater or steam chest None length None thickness of plates None description of longitudinal joint None diameter of rivet holes None  
 Pitch of rivets None working pressure of shell by rules None diameter of rivet holes None thickness of plates None description of longitudinal joint None  
 Distance between rings None working pressure by rules None end plates of superheater or steam chest; thickness None how connected to boiler None




## DONKEY BOILER—

Description *Round Vertical*Made at *Cateshead* by whom made *Clark Chapman & Gurney* when made *1884* where fixed *In the hold*Working pressure *50 lb* tested by hydraulic pressure to *100 lb* No. of Certificate *1663* fire grate area *12 ft* description of sovalves *Street Spring* No. of safety valves *One* area of each *7"* if fitted with easing gear *Yes* if steam from main boilersenter the donkey boiler *No* diameter of donkey boiler *3 ft* length *9 ft* description of riveting *Double riveted*Thickness of shell plates *7/16"* diameter of rivet holes *5/8"* whether punched or drilled *punched* pitch of rivets *2 1/2"* lap of plating *3/8"*per centage of strength of joint *45%* thickness of crown plates *7/16"* stayed by *3 Stays, 18 stays (8)*Diameter of furnace, top *3' 8 1/4"* bottom *4' 3 1/4"* length of furnace *4' 6"* thickness of plates *7/16"* description of joint *Single lap*Thickness of furnace crown plates *7/16"* stayed by *as above* working pressure of shell by rules *60*Working pressure of furnace by rules *60 lb* diameter of uptake *12"* thickness of plates *7/16"* thickness of water tubes *7/16"*SPARE GEAR. State the articles supplied:— *1 Propeller & 2 Connecting rod bolts top & bottom*  
*1 set Coupling bolts & nuts, Studs & nuts for Piston rods & valve spindle*  
*flanges, assortment of bolts & nuts, &c.*

The foregoing is a correct description,

*James Howdell & Co* Manufacturer.

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

*These Engines & Boilers are*  
*of good workmanship and materials and are now in good*  
*and safe working condition and eligible in my opinion to*  
*be noted in the Register Book*  *Lloyd's M.C. 6/84**Straight Shafting turned and finished by the Engineer.**Tracing of boiler, Reports on steel plates & crank shaft**as appended.*The amount of Entry Fee .. £ *1 : 0 : 0* received by me,Special .. £ *12 : 0 : 0*Donkey Boiler Fee .. £ *0 : 0 : 0*Certificate (if required) .. £ *0 : 0 : 0* *30/6 1884*

To be sent as per margin.

(Travelling Expenses, if any, £ *9/6*)

Committee's Minute

FRIDAY 13 JUNE 1884

*James Morrison*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.*Clyde District*Lloyd's Register  
Foundation