

# REPORT ON MACHINERY.

No. 14228

THUR. FEB 20 1896

Port of Glasgow

No. in Survey held at Glasgow  
Reg. Book.

Date first Survey 14<sup>th</sup> Oct 1895 Last Survey 15<sup>th</sup> Feb 1896

(Number of Visits 30)

on the Paddle Ferry Steamship "Arvon"

Tons { Gross 106  
Net 35

Master Queen Lewis Built at Rutherglen By whom built J. Smith & Co.

When built 1896

Engines made at Glasgow By whom made Shanks Morris & Co.

when made 1896

Boilers made at Glasgow By whom made L. Burnett & Co.

when made 1896

Registered Horse Power 31 Owners Queen Lewis

Port belonging to Harriman

Nom. Horse Power as per Section 28 33 HP

ENGINES, &c.— Description of Engines Paddle Compound, Diagonal, Surface Condenser No. of Cylinders Two  
Diameter of Cylinders 14"-26" Length of Stroke 30" Revolutions per minute 45 Diameter of Paddle as per rule 576  
Diameter of Tunnel shaft as fitted 5 1/2" Diameter of Crank shaft journals 5 1/2" Diameter of Crank pin 3 3/4" Size of Crank webs 8" x 12" x 2"  
Diameter of Paddles 10 ft Pitch of screw ✓ No. of blades Six State whether moveable ✓ Total surface ✓  
No. of Feed pumps One Diameter of ditto 2 1/2" Stroke 15" Can one be overhauled while the other is at work ✓  
No. of Bilge pumps One Diameter of ditto 2 1/2" Stroke 15" Can one be overhauled while the other is at work ✓  
No. of Donkey Engines One Sizes of Pumps 5" x 2 1/2" x 5" No. and size of Suctions connected to both Bilge and Donkey pumps  
In Engine Room Two - 2" In Holds, &c. Two - 2"

No. of bilge injections One sizes 3" Connected to condenser, or to circulating pump Pump Is a separate donkey suction fitted in Engine room & size Yes - 2"  
Are all the bilge suction pipes fitted with roses Yes Are the roses in Engine room always accessible Yes Are the sluices on Engine room bulkheads always accessible Yes  
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 and all boiler mountings accessible at all times Yes  
Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges Yes  
When were stern tube, propeller, screw shaft, and all connections examined in dry dock Before Launching the screw shaft tunnel watertight ✓  
Is it fitted with a watertight door ✓ worked from ✓

BOILERS, &c.— (Letter for record S) Total Heating Surface of Boilers 580 sq ft  
No. and Description of Boilers One, Cylindrical & Multitubular Working Pressure 100 lbs Tested by hydraulic pressure to 200 lbs  
Date of test 28-12-95 Can each boiler be worked separately ✓ Area of fire grate in each boiler 20.6 sq ft No. and Description of safety valves to  
each boiler Two - Direct Spring Area of each valve 4.07 sq" Pressure to which they are adjusted 100 lbs Are they fitted  
with easing gear Yes Smallest distance between boilers on uptakes and bunkers on woodwork 21" Mean diameter of boilers 8'-6"  
Length 9'-0" Material of shell plates Steel Thickness 3/8" Description of riveting: circum. seams Lap Rivet Riv? long. seams Lap Rivet Riv?  
Diameter of rivet holes in long. seams 5/16" Pitch of rivets 3 1/4" Lap of plates on width of butt straps 6 1/2"  
Per centages of strength of longitudinal joint 80% Working pressure of shell by rules 101 lbs Size of manhole in shell 16" x 12"  
Size of compensating ring 7" x 9" No. and Description of Furnaces in each boiler Two - Plain Material Steel Outside diameter 32"  
Length of plain part 3 1/2" Thickness of plates 3/8" Description of longitudinal joint Welded No. of strengthening rings One - 5' x 3'  
Working pressure of furnace by the rules 125 lbs Combustion chamber plates: Material Steel Thickness: Sides 5/8" Back 5" Top 5" Bottom 5/8"  
Pitch of stays to ditto: Sides 8" x 12" Back 8 1/2" x 8 1/2" Top 8 1/2" x 8" If stays are fitted with nuts or riveted heads Nuts inside Working pressure by rules 105 lbs  
Material of stays Steel Diameter at smallest part 7/8" Area supported by each stay 60 sq" Working pressure by rules 101 lbs End plates in steam space:  
Material Steel Thickness 3/4" Pitch of stays 16" x 16" How are stays secured Nuts & Washers Working pressure by rules 124 lbs Material of stays Steel  
Diameter at smallest part 3 1/4" Area supported by each stay 256 sq" Working pressure by rules 120 lbs Material of Front plates at bottom Steel  
Thickness 3/4" Material of Lower back plate Steel Thickness 3/4" Greatest pitch of stays 12" Working pressure of plate by rules 135 lbs  
Diameter of tubes 3" Pitch of tubes 4" x 4" Material of tube plates Steel Thickness: Front 3/4" Back 5/8" Mean pitch of stays 12"  
Pitch across wide water spaces 13" Working pressures by rules 127 lbs Girders to Chamber tops: Material Iron Depth and  
thickness of girder at centre 6" x 1" Length as per rule 22 1/2" Distance apart 8 1/2" Number and pitch of Stays in each Two - 8"  
Working pressure by rules 102 lbs Superheater or Steam chest; how connected to boiler None Can the superheater be shut off and the boiler worked  
separately ✓ Diameter ✓ Length ✓ Thickness of shell plates ✓ Material ✓ Description of longitudinal joint ✓ Diam. of rivet  
holes ✓ Pitch of rivets ✓ Working pressure of shell by rules ✓ Diameter of flue ✓ Material of flue plates ✓ Thickness ✓  
If stiffened with rings ✓ Distance between rings ✓ Working pressure by rules ✓ End plates: Thickness ✓ How stayed ✓  
Working pressure of end plates ✓ Area of safety valves to superheater ✓ Are they fitted with easing gear ✓



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**DONKEY BOILER**— Description None.

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 \_\_\_\_\_ 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 \_\_\_\_\_ Length \_\_\_\_\_ Material of shell plates \_\_\_\_\_ Thickness \_\_\_\_\_

Description of riveting long. seams \_\_\_\_\_ Diameter of rivet holes \_\_\_\_\_ Whether punched or drilled \_\_\_\_\_ Pitch of rivets \_\_\_\_\_

Lap of plating \_\_\_\_\_ Per centage of strength of joint \_\_\_\_\_ Rivets \_\_\_\_\_ Thickness of shell crown plates \_\_\_\_\_ Radius of do. \_\_\_\_\_ No. of Stays to do. \_\_\_\_\_

Dia. of stays \_\_\_\_\_ Diameter of furnace Top \_\_\_\_\_ Bottom \_\_\_\_\_ Length of furnace \_\_\_\_\_ Thickness of furnace 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 uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_

**SPARE GEAR.** State the articles supplied:— None.

The foregoing is a correct description,  
Shanks Morris & Co. Manufacturer.

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

The machinery of this vessel has been constructed under Special Survey. It has been securely fitted on board, and worked under test to our satisfaction. In our opinion it is eligible for notification in the Register Book + L.M.C. 2-96

The approved boiler tracing, and one Forging Report are appended.

It is submitted that  
this vessel is eligible for  
**THE RECORD.** + L.M.C. 2.96.

R.S. 20.2.96 W.M. 20.2.96

(The Surveyors are requested not to write on or below the space for Committee's Minute.)

Certificate (if required) to be sent to Glasgow

The amount of Entry Fee..	£ 1 : "	When applied for,	4/21 1896
Special .. .. .	£ 8 : "	When received,	18/2/96
Donkey Boiler Fee .. .. .	£ " : "		
Travelling Expenses (if any) £	" : "		

Committee's Minute FRI, FEB 21 1896

Assigned + L.M.C. 2.96

James Hollison R.M. Davidge  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

MACHINE WRITTEN.