

# REPORT ON MACHINERY.

No. 12621

Port of *Glasgow*  
 No. in Survey held at *Dumbarton* Date, first Survey *3 May 1893* Last Survey *Dec 15 1893*  
 Reg. Book. *S.S. "Promie"* (Number of Visits *38*)  
 on the *J. Pagan* Master Built at *Dumbarton* By whom built *Wm. Denny & Co.* When built *1893*  
 Engines made at *Dumbarton* By whom made *Denny & Co.* when made *1893*  
 Boilers made at *"* By whom made *"* when made *1893*  
 Registered Horse Power *262* Owners *Butt & Burnerley* Port belonging to *Glasgow*  
 Nom. Horse Power as per Section 28 *329*

ENGINES, &c.— Description of Engines *Triple Expansion* No. of Cylinders *Three*  
 Diameter of Cylinders *26 1/2" 42" 66 1/2"* Length of Stroke *48"* Revolutions per minute *85* Diameter of Screw shaft *12 1/2"*  
 Diameter of Tunnel shaft *12"* Diameter of Crank shaft journals *13"* Diameter of Crank pin *13"* Size of Crank webs *9 1/2" x 19 1/2"*  
 Diameter of screw *19 1/2"* Pitch of screw *19.6"* No. of blades *4* State whether moveable *Yes* Total surface *88 ft.*  
 No. of Feed pumps *Two* Diameter of ditto *4"* Stroke *28"* Can one be overhauled while the other is at work *Yes*  
 No. of Bilge pumps *Two* Diameter of ditto *4"* Stroke *28"* Can one be overhauled while the other is at work *Yes*  
 No. of Donkey Engines *Two* Sizes of Pumps *10" x 8" x 18"* No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room *Four 3 1/2"* *Two in each hold 3 1/2"*  
 No. of bilge injections *One* Connected to condenser, or to circulating pump *Is a separate donkey suction fitted in Engine room of size* *Yes (3 1/2")*  
 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 *near to*  
 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 *Pipes for fore & aft motors* How are they protected *By wood casing*  
 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 *on ship before launching* Is the screw shaft tunnel watertight *Yes*  
 Is it fitted with a watertight door *Yes* worked from *upper platform*

BOILERS, &c.— (Letter for record) Total Heating Surface of Boilers *5284 ft.*  
 No. and Description of Boilers *2 Round Horizontal* Working Pressure *160 lbs.* Tested by hydraulic pressure *160 lbs.*  
 Date of test *31/12/93* in each boiler be worked separately *Yes* Area of fire grate in each boiler *58 ft.* No. and Description of safety valves to  
 each boiler *Direct Spring (2)* Area of each valve *8.0"* Pressure to which they are adjusted *160 lbs.* Are they fitted  
 with easing gear *Yes* Smallest distance between boilers or uptakes and bunkers or woodwork *about 10"* Mean diameter of boilers *15.0 3/8"*  
 Length *11.8 1/2"* Material of shell plates *Steel* Thickness *1 1/2"* Description of riveting: circum. seams *Double lap* long. seams *Double straps*  
 Diameter of rivet holes in long. seams *1 1/2"* Pitch of rivets *8 1/2" + 1 1/4"* Lap of plates or width of butt straps *19 3/8" x 1 1/2"*  
 Per centages of strength of longitudinal joint *89.2* Working pressure of shell by rules *181 lbs.* Size of manhole in shell *14" x 18"*  
 Size of compensating ring *Double flange* and Description of Furnaces in each boiler *3 Cornucopia* Material *Steel* Outside diameter *3.8 1/2"*  
 Length of *8.4"* Thickness of plates *1 1/2"* Description of longitudinal joint *Welded* No. of strengthening rings *3*  
 Working pressure of furnace by the rules *140 lbs.* Combustion chamber plates: Material *Steel* Thickness: Sides *9/16"* Back *9/16"* Top *9/16"* Bottom *1/16"*  
 Pitch of stays to ditto: Sides *8" x 7 1/4"* Back *8" x 7 1/4"* Top *8" x 8"* If stays are fitted with nuts or riveted heads *Nuts* Working pressure by rules *140 lbs.*  
 Material of stay *Steel* Diameter at smallest part *1 1/2"* Area supported by each stay *6 1/4"* Working pressure by rules *189 lbs.* End plates in steam space:  
 Material *Steel* Thickness *1/16"* Pitch of stays *14 1/2" x 10 1/2"* Working pressure by rules *183 lbs.* Material of stays *Steel*  
 Diameter at smallest part *2 3/4"* Area supported by each stay *24 1/2"* Working pressure by rules *186 lbs.* Material of Front plates at bottom *Steel*  
 Thickness *1/16"* Material of Lower back plate *Steel* Thickness *1/16"* Greatest pitch of stays *14" x 8"* Working pressure of plate by rules *186 lbs.*  
 Diameter of tubes *2 1/2"* Pitch of tubes *8 3/4" x 8 3/4"* Material of tube plates *Steel* Thickness: Front *1/16"* Back *1/16"* Mean pitch of stays *7 1/2" x 4 1/2"*  
 Pitch across wide water spaces *14 1/2"* Working pressures by rules *181 lbs.* Girders to Chamber tops: Material *Iron* Depth and  
 thickness of girder at centre *8 1/2" x 4 1/2"* Length as per rule *2' 6"* Distance apart *8"* Number and pitch of Stays in each *3 (8")*  
 Working pressure by rules *253 lbs.* Superheater or Steam chest; how connected to boiler *None* Can the superheater be shut off and the boiler worked  
 separately *Yes* 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 *—*



12621 gls

DONKEY BOILER— Description *Round Multitubular*  
Made at *Ambarton* By whom made *Denny & Co* When made *1893* Where fixed  
Working pressure *80 lbs* Tested by hydraulic pressure to *160 lbs* of Certificate *3459* Fire grate area *19.5 sq ft* Description of safety valves *Direct Spring*  
No. of safety valves *2* Area of each *3.98* Pressure to which they are adjusted *80 lbs* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Diameter of donkey boiler *8' 11"* Length *8' 4 1/4"* Material of shell plates *Steel* Thickness *3/16"*  
Description of riveting long seams *Double Straps* Diameter of rivet holes *1 1/8"* Whether punched or drilled *Drilled* Pitch of rivets *3 1/2"*  
Percentage of strength of joint *88.4* Thickness of shell plates *3/16"* Radius of do. *11"* No. of Stays to donkey boiler *24*  
Dia. of stays *1 1/8"* Diameter of furnace *3' 9"* Bottom *—* Length of furnace *5' 9"* Thickness of furnace plates *3/16"* Description of joint *Welded* Thickness of furnace plates *3/16"* Stayed by *Long Stays 1 1/4" x 1 1/2" 8 x 8 pitch* Working pressure of shell by rules *86 lbs*  
Working pressure of furnace by rules *89 lbs* Diameter of uptake *—* Thickness of uptake plates *3/16"* Thickness of water tubes *—*

SPARE GEAR. State the articles supplied: *1 3/4 length Crank Shaft, Air pump & Bucket & head valves, 2 valve spindles & pair of connecting rod braces (Crank pin), main bearing bolts, 2 connecting rod bolts, top & bottom coupling bolts, 1 Propeller, Shaft complete, set of valves for all the pumps, assortment of bolts nuts, springs & other gear.*  
The foregoing is a correct description,  
*Denny & Co* Manufacturers.

General Remarks (State quality of workmanship, opinions as to class, &c. *These Engines & Boilers are of good workmanship & materials and are now in good & safe working condition and eligible in my opinion to be noted in the Register Book*  
*L.M.C*

*The Boilers have been fitted with Howden's arrangement of Force draught*

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 12-93 -  
*EMR*  
*18/12/93 -*

Certificate (if required) to be sent to *Glasgow*  
The amount of Entry Fee... £ *3* : : When applied for, *6/12/1893*  
Special ... .. £ *36* : *9* :  
Donkey Boiler Fee ... .. £ : :  
Travelling Expenses (if any) £ : : When received, *9/12/93*

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

Committee's Minute  
Assigned  
*TUES. 19 DEC 1893*  
*+ L.M.C 12.93*

(This Surveys are required not to write on or below the space for Committee's Minute.)