

# REPORT ON MACHINERY.

3545

(Received at London Office 12/9/82)

No. 3545

No. in Survey held at *Barrow in Furness*  
Reg. Book.

Date, first Survey *8<sup>th</sup> June 1881* Last Survey *4<sup>th</sup> Sept 1882*

on the *S.S. "Oranmore"*

Tons *3377.13*  
*2215.04*

Master *Jennings* Built at *Barrow in Furness* When built *1882*

Engines made at *Barrow in Furness* By whom made *The Barrow S.B.* When made *1882*

Boilers made at *do* By whom made *do* when made *1882*

Registered Horse Power *300* Owners *The Steamship Oranmore (Lim)* Port belonging to *Barrow*

## ENGINES, &c.—

Description of Engines *Compound inverted direct-acting* Variable *at*

Diameter of Cylinders *42" 80"* Length of Stroke *48* No. of Rev. per minute *65* Point of Cut off, High Pressure *9/16* Low Pressure *9/16*

Diameter of Screw shaft *14"* Diameter of Tunnel shaft *13"* Diameter of Crank shaft journals *14"* Diameter of Crank pin *14"* size of Crank webs *9 3/4" x 17"*

Diameter of screw *17' 8"* Pitch of screw *21' 0"* No. of blades *4* state whether moveable *yes* total surface *84.4 sq 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*

Where do they pump from *All compartments and after well*

No. of Donkey Engines *two* Size of Pumps *5" x 7" x 10" (10" x 10" x 12")* Where do they pump from *Small donkey from sea*

*all compartments, Large donkey from tanks*

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 *6" dia* Are they connected to condenser, or to circulating pump *to suction pipe*

How are the pumps worked *by levers*

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 *yes*

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 *before launching*

Is the screw shaft tunnel watertight *stuffed with oak* and fitted with a sluice door *yes* worked from *main deck*

## BOILERS, &c.—

Number of Boilers *two* Description *Cylindrical, double ended, (steel internal & fronts)*

Working Pressure *80 lbs* Tested by hydraulic pressure to *160 lbs* Date of test *30<sup>th</sup> June 1882*

Description of superheating apparatus or steam chest *Cylindrical, lying fore and aft*

Can each boiler be worked separately *yes* Can the superheater be shut off and the boiler worked separately *yes*

Area of square feet of fire grate surface in each boiler *115* Description of safety valves *Direct Spring (Adams Patent)*

Area of each valve *28.270"* Are they fitted with easing gear *yes*

Area of safety valves to superheater *yes* area of each valve *yes* are they fitted with easing gear *yes*

Smallest distance between boilers and bunkers or ~~woodwork~~ *8 1/2"*

Diameter of boilers *13' 0"* Length of boilers *19' 0"* description of riveting of shell long. seams *lap treble* circum. seams *lap double*

Thickness of shell plates *1"* diameter of rivet holes *1 1/8"* whether punched or drilled *drilled* pitch of rivets *4 1/8"*

Percentage of strength of longitudinal joint *65* working pressure of shell by rules *80 lbs*

Size of manholes in shell *16" x 12"* size of compensating rings *6" x 5 7/8" ring double riveted*

Number of Furnaces in each boiler *Six* outside diameter *3' 5"* length, top *6' 6"* bottom *8' 9"*

Thickness of plates *3/8"* description of joint *one butt chop* if rings are fitted *T* at bottom greatest length between rings *6' 6"*

Working pressure of furnace by the rules *83 lbs*

Thickness of combustion chamber plating, thickness, sides *7/16"* back *7/16"* top *yes*

Thickness of stays to ditto *yes* sides *8 1/4" x 7 3/4"* back *8 1/4" x 7 3/4"* top *rounded*

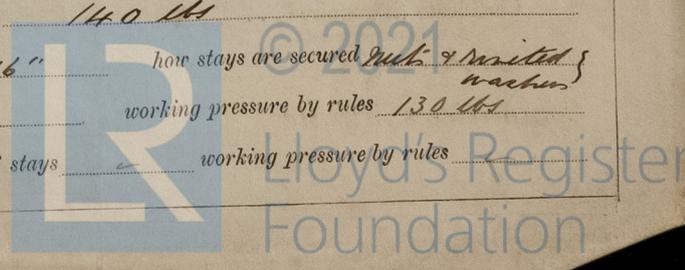
Are stays fitted with nuts or riveted heads *nuts inside* working pressure of plating by rules *79 lbs*

Diameter of stays at smallest part *1.396"* working pressure of ditto by rules *140 lbs*

Thickness of plates in steam space, thickness *13/16"* pitch of stays to ditto *15 1/2" x 16"* how stays are secured *nuts & riveted washers*

Working pressure by rules *106 lbs* diameter of stays at smallest part *2 7/8"* working pressure by rules *130 lbs*

Thickness of plates at bottom, thickness *3/4"* Back plates, thickness *yes* greatest pitch of stays *yes* working pressure by rules *yes*



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Diameter of tubes  $3\frac{1}{4}$ " pitch of tubes  $4\frac{1}{2}$ " thickness of tube plates, front  $3\frac{1}{4}$ " back  $1\frac{1}{16}$ "  
 How stayed *Stay tubes* pitch of stays  $13\frac{1}{2} \times 9$ " width of water spaces  $1\frac{1}{4}$ "  
 Diameter of Superheater or Steam chest  $3'-6"$  length  $19'-0"$   
 Thickness of plates  $\frac{1}{2}$ " description of longitudinal joint *Lap double* diameter of rivet holes  $1\frac{1}{16}$ " pitch of rivets  $2\frac{1}{2}$ "  
 Working pressure of shell by rules  $123\frac{1}{2}$  Diameter of flue  $\checkmark$  thickness of plates  $\checkmark$   
 If stiffened with rings  $\checkmark$  distance between rings  $\checkmark$  Working pressure by rules  $\checkmark$   
 End plates of superheater, or steam chest; thickness  $9\frac{1}{16}$  How stayed *dome ends*  
 Superheater or steam chest; how connected to boiler *two steel necks  $3\frac{1}{4}$ " thick*

**DONKEY BOILER**— Description *Cylindrical tubular (Steel riveted & Franch)*  
 Made at *Barrow* By whom made *The Barrow S.B. Co* when made *1882*  
 Where fixed *Stockholm* working pressure *80 lbs* Tested by hydraulic pressure to *160 lbs* No. of Certificate *8*  
 Fire grate area *26 sq. ft* Description of safety valves *Direct spring* No. of safety valves *two* area of each *70"*  
 If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *No*  
 Diameter of donkey boiler *9'-0"* length *8'-0"* description of riveting *Lap treble*  
 thickness of shell plates  $2\frac{1}{32}$ " diameter of rivet holes  $7\frac{1}{8}$ " whether punched or drilled *drilled*  
 pitch of rivets  $3\frac{1}{2}$ " lap of plating  $7"$  per centage of strength of joint  $71$   
 thickness of crown plates  $\checkmark$  stayed by  $\checkmark$   
 Diameter of furnace, top  $2'-7\frac{7}{8}"$  bottom  $\checkmark$  length of furnace  $5'-3"$   
 thickness of plates  $7\frac{1}{16}$ " description of joint *single butt double riveted*  
 thickness of furnace crown plates  $\checkmark$  stayed by  $\checkmark$   
 Working pressure of shell by rules  $78\frac{1}{2}$  working pressure of furnace by rules  $85\frac{1}{2}$   
 diameter of uptake  $\checkmark$  thickness of plates  $\checkmark$  thickness of water tubes  $\checkmark$

The foregoing is a correct description,  
*Geo Rodger* MANAGER ENGINEER Manufacturer.  
*Barrow Shipbuilding Co.*

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

*The Engines and Boilers of this vessel have been specially surveyed during construction, the workmanship and materials are good they are now in good order and safe working condition and eligible in my opinion to be noted in the Register's Book + L.M.C. 9.82*

The amount of Entry Fee .. £ 3 : 0 : 0 received by me.  
 Special *[Signature]* .. £ 35 : 0 : 0  
 Certificate (if required) .. £ : : *9th Feb 1882*  
 To be sent as per margin.  
 (Travelling Expenses, if any, £ 5-5-5)

*A. Thomson* Esq.  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute  
 18  
*+ L.M.C. 9.82*

