

# REPORT ON MACHINERY.

Port of *Glasgow*

SAT 20 APRIL 1889

No. 9124

Received at London Office

No. in Survey held at *Dumbarton*

Date, first Survey *30<sup>th</sup> July 1888*

Last Survey *April 1889*

Reg. Book.

(Number of Visits *23*)

*3661*

on the *Screw Steamer "Beju"*

Tons *2391*

Master *Taylor*

Built at *Dumbarton*

By whom built *Mr Denny & Co.*

When built *1889*

Engines made at *Dumbarton*

By whom made *Denny & Co.*

when made *1889*

Boilers made at *"*

By whom made *"*

when made *1889*

Registered Horse Power *354*

Owners *British & Burmer Coy*

Port belonging to *Glasgow*

## ENGINES, &c.—

Description of Engines

*Quadruple Expansion*

Diameter of Cylinders *25 3/4" 31 1/2" 38 1/2" 45"* Length of Stroke *57"* No. of Rev. per minute *about 63* Point of Cut off, High Pressure *Variable* Pressure *"*

Diameter of Screw shaft *14 3/4"* Diam. of Tunnel shaft *13 3/4"* Diam. of Crank shaft journals *14 3/4"* Diam. of Crank pin *14 3/4"* size of Crank webs *11" x 20" x 26 3/4"*

Diameter of screw *18 1/2"* Pitch of screw *23 1/2"* No. of blades *4* state whether moveable *Yes* total surface *83 1/2"*

No. of Feed pumps *Two* diameter of ditto *4 1/4"* Stroke *30"* Can one be overhauled while the other is at work *Yes*

No. of Bilge pumps *Two* diameter of ditto *4 1/4"* Stroke *30"* Can one be overhauled while the other is at work *Yes*

Where do they pump from *All compartments*

No. of Donkey Engines *Two* Size of Pumps *8 x 6" x 24" 10" x 8" x 24"* Where do they pump from *Sea Trilges Astwell & Ballast 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 *1 1/2"* Are they connected to condenser, or to circulating pump *To Circulating*

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 *Bilge & tank pipes to hold* How are they protected *By wood casing*

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 before launching*

Is the screw shaft tunnel watertight *Yes* and fitted with a sluice door *Yes* worked from *Upper platform*

## BOILERS, &c.—

Number of Boilers *Two* Description *Round Horizontal* Whether Steel or Iron *Steel*

Working Pressure *180 lbs* Tested by hydraulic pressure to *360 lbs* Date of test *28<sup>th</sup> December 1888*

Description of ~~superheating apparatus~~ steam chest *Round longitudinal*

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 *105 1/2* Description of safety valves *Direct Spring* No. to each boiler *Three*

Area of each valve *9.62"* 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 *about 20"* Diameter of boilers *13'-6 1/2"*

Length of boilers *14'-4 3/8"* Description of riveting of shell long. seams *Double riveted* circum. seams *Double riveted* Thickness of shell plates *1 3/8"*

Diameter of rivet holes *1 3/8"* whether punched or drilled *Drilled* pitch of rivets *8 1/2"* Lap of plating *Strap 20" x 1 3/8"*

Percentage of strength of longitudinal joint *83.8%* working pressure of shell by rules *184 lbs* size of manholes in shell *14" x 13"*

Size of compensating rings *Doubling plates fitted* No. of Furnaces in each boiler *Six*

Outside diameter *3'-3"* length, top *6'-4 1/4"* bottom *through* thickness of plates *9/16"* description of joint *Corrugated* if rings are fitted *"*

Greatest length between rings *"* working pressure of furnace by the rules *180 lbs* combustion chamber plating, thickness, sides *9/16"* back *"* top *9/16"*

Pitch of stays to ditto, sides *4 1/4" x 4 1/2"* back *"* top *4 1/4" x 4 1/2"* stays are fitted with nuts or riveted heads *Nuts* working pressure of plating by rules *184 lbs*

diameter of stays at smallest part *1 3/8" = 1.25* working pressure of ditto by rules *199 lbs* and plates in steam space, thickness *1 1/8"*

Pitch of stays to ditto *16 1/4" x 12" x 15"* how stays are secured *By nuts & doubling pieces* working pressure by rules *190 lbs* diameter of stays at smallest part *2 3/8" x 2 3/8"* working pressure by rules *200 lbs*

Greatest pitch of stays *"* working pressure by rules *"* Diameter of tubes *3 1/2"* pitch of tubes *4 3/4" x 4 3/4"* thickness of tube plates, front *1 1/2"* back *1 1/2"* how stayed *By tubes* pitch of stays *9 1/2" x 9 1/2"* width of water spaces *6"*

Diameter of ~~superheating apparatus~~ Steam chest *3'-1 3/4"* length *6'* thickness of plates *9/16"* description of longitudinal joint *Double riveted* diam. of rivet holes *1 3/8"*

Pitch of rivets *3" x 1 1/2"* 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 ~~superheating apparatus~~ steam chest; thickness *1 1/2"* how stayed *Dished*

~~Superheating apparatus~~ steam chest; how connected to boiler *By neck piece 16" dia x 1 1/2" thick*



9127 Jls

DONKEY BOILER—

Description

Round Multitubular

Made at Dumbarton by whom made

Jenny & Co

when made 1889 where fixed On Upper

Working pressure 180 lbs tested by hydraulic pressure to 360 lbs

No. of Certificate 2181

fire grate area 19 ft

descript

valves Direct Spring

No. of safety valves Two

area of each

3 1/4

if fitted with easing gear

Yes if steam from main

enter the donkey boiler

2 1/2

diameter of donkey boiler

8' 9"

length

8' 5 1/2"

description of riveting

Suble riveted

do

Thickness of shell plates

15/16"

diameter of rivet holes

1"

whether punched or drilled

Drilled

pitch of rivets

5 1/2"

lap of pl

1 1/2"

per centage of strength of joint

81 7/8

thickness of plates

16/16

stayed by

Bar Stays

2 1/2" dia

14"

description of joint

Corrug

working pressure of shell

Diameter of furnace

3' 10"

bottom

length of furnace

6 ft

thickness of plates

2 1/32"

description of joint

Corrug

working pressure of shell

180 lbs

Thickness of furnace cross plates

9/16"

stayed by

Screw Stays

working pressure of shell

180 lbs

Working pressure of furnace by rules

185 lbs

diameter of uptake

thickness of plates

thickness of water t

180 lbs

SPARE GEAR.

State the articles supplied:—

1 Half Crank Shaft. 1 propeller shaft with

10 Coupling bolts, 2 main bearing bolts, 2 bolts for top bottom ends connecting rod

bushes, 1 Quadrant bush, 1 Air pump spindle set metallic valves 16

spindle with set of india rubber valves feed valve pump valves. assortment of bolts nuts

The foregoing is a correct description, a considerable quantity of other gear.

Jenny & Co. Manufacturer.

General Remarks

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

These Engines & Boil

of good workmanship and materials and are in

order and safe working condition and eligible to

be noted in the Register Book

Lloyds M.C.

It is submitted that  
is eligible to have + L  
recorded. W. A.

20-4-0

The amount of Entry Fee .. £ 3 : - : - received by me,

Special

£ 34 : 14 : -

Donkey Boiler Fee .. £ - : - : -

Certificate (if required) .. £ - : - : -

To be sent as per margin.

(Travelling Expenses, if any, £ .. ..)

Committee's Minute

FRIDAY 26 APRIL 1889

+ Lmb 4/89

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

Clyde District

Foundation