

# REPORT ON MACHINERY.

No. 2483

(Received in London Office 12/19/81)

No. in Survey held at  
Reg. Book.

Dunbarton

Date, first Survey Augt 1880

Last Survey Sept 9<sup>th</sup> 1881

on the

S.S. "Clyde"

Tons 4123.84  
2111.92

Master

J.M. Edmond

Built at

Dunbarton

When built

1881

Engines made at

Dunbarton

By whom made

Dunns & Co

when made

1881

Boilers made at

Dunbarton

By whom made

"

when made

1881

Registered Horse Power

780

Owners

P & O Steam Ship Co.

Port belonging to

London

## ENGINES, &c.—

Description of Engines

Compound, inverted, direct-acting.

Diameter of Cylinders

58" 100"

Length of Stroke

5'3"

No. of Rev. per minute

17

Point of Cut off, High Pressure

26%

Low Pressure 65

Diameter of Screw shaft

19"

Diameter of Tunnel shaft

17 1/4"

Diameter of Crank shaft journals

19"

Diameter of Crank pin

19"

size of Crank webs 12" x 25"

Diameter of screw

19 1/4"

Pitch of screw

2'8" 6"

No. of blades

4

state whether moveable

Yes

total surface 94 sq. ft.

No. of Feed pumps

two

diameter of ditto

6 1/2"

Stroke

2'9 1/2"

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps

two

diameter of ditto

5"

Stroke

2'7 1/2"

Can one be overhauled while the other is at work

Yes

Where do they pump from

All compartments

No. of Donkey Engines

four

Size of Pumps

10" x 4 1/2" x 8"

Where do they pump from

No. 1 feed & overboard from bilge & forewell

No. 2 from sea tank into auxiliary boiler

No. 3 wash deck draws from sea

& winch boiler feed

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

two

and sizes

8" dia

Are they connected to condenser, or to circulating pump

on 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

about level

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

before launching

Is the screw shaft tunnel watertight

Yes

and fitted with a sluice door

Yes

worked from top platforms

## BOILERS, &c.—

Number of Boilers

4

Description

all cylindrical (Shell of steel) double-ended

Working Pressure

90 lbs

Tested by hydraulic pressure to

180 lbs

Date of test

12<sup>th</sup> June 1881

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

No. of square feet of fire grate surface in each boiler

110 sq. ft.

Description of safety valves

direct spring (Cockburn)

No. to each boiler

three

area of each valve

4 1/8 dia

Are they fitted with easing gear

Yes

No. of safety valves to superheater

one

area of each valve

4 1/8 dia

are they fitted with easing gear

Yes

Smallest distance between boilers and bunkers

4"

Diameter of boilers

13' 8 1/4"

Length of boilers

16' 10"

Description of riveting of shell long seams

double butt

circum. seams

double lap

Thickness of shell plates

7/16" steel

diameter of rivet holes

1 3/16"

whether punched or drilled

drilled

pitch of rivets

4 1/2" x 2 1/2" long

Lap of plating

12 3/4" butt

per centage of strength of longitudinal joint

73.6 x 66 rivets

working pressure of shell by rules

99 lbs

Size of manholes in shell

17" x 13"

size of compensating rings

doubling plate

No. of Furnaces in each boiler

6

outside diameter

3' 1"

length, top

5' 6"

bottom

all the thro length

Thickness of plates

7/32" bottom 9/16"

description of joint

butt double

if rings are fitted T at bottom

greatest length between rings

5' 4"

Working pressure of furnace by the rules

110 lbs

Combustion chamber plating, thickness, sides

7/16" family iron

back

7/16" family iron

top

7/16" family iron

pitch of stays to ditto

sides

8 1/4" x 7 3/4"

back

8 1/4" x 7 3/4"

top

If stays are fitted with nuts or riveted heads

nuts

working pressure of plating by rules

113 lbs

Diameter of stays at smallest part

1 1/2" screws

working pressure of ditto by rules

134 lbs

End plates in steam space, thickness

1 1/2"

pitch of stays to ditto

15 1/2" x 14 1/2"

how stays are secured

double nuts washers

Working pressure by rules

130 lbs

diameter of stays at smallest part

2 3/4" dia

working pressure by rules

260 lbs

Front plates at bottom, thickness

3/4"

Back plates, thickness

3/4"

greatest pitch of stays

18"

working pressure by rules

102 lbs

5483 gles

Number of tubes  $3\frac{1}{2}$  pitch of tubes  $4\frac{3}{4}$  thickness of tube plates, front  $3\frac{1}{4}$  back  $7\frac{1}{2}$   
 How stayed *Stay tubes* pitch of stays  $14\frac{1}{4} \times 14\frac{1}{4}$  width of water spaces  $1\frac{1}{4}$   
 Diameter of Superheater or Steam chest  $4\text{'}-6\frac{1}{4}$  length  $20\text{'}-0$  avc  $3\text{'}-6\frac{1}{2}$  diam  $\times$   $6\text{'}$  high *hemispherical*  
 Thickness of plates  $9\frac{1}{16}$  description of longitudinal joint *lap double* diameter of rivet holes  $1\text{'}$  pitch of rivets  $3\frac{3}{4} \times 1\frac{1}{8}$   
 Working pressure of shell by rules  $134\text{ lbs}$  Diameter of flue *✓* thickness of plates *✓*  
 If stiffened with rings *✓* distance between rings *✓* Working pressure by rules *✓*  
 End plates of superheater, or steam chest; thickness  $9\frac{1}{16}$  How stayed *hemispherical*  
 Superheater or steam chest; how connected to boiler *by wrought iron studs, riveted*  
**DONKEY BOILER**— Description *Upright, with dome end & cross tubes, welded in*  
 Made at *Exmouth* By whom made *Denny & Co* when made *1881*  
 Where fixed *Upper Deck* working pressure  $60\text{ lbs}$  Tested by hydraulic pressure to  $120\text{ lbs}$  No. of Certificate *586*  
 Fire grate area  $11.8\text{ sq. ft}$  Description of safety valves *Direct Spring* No. of safety valves *one* area of each  $7.2\text{ sq. in}$   
 If fitted with casing gear *✓* If steam from main boilers can enter the donkey boiler *NO*  
 Diameter of donkey boiler  $5\text{'}-0$  length  $11\text{'}-6$  description of riveting *lap double*  
 thickness of shell plates  $7\frac{1}{16}$  diameter of rivet holes  $7\frac{3}{8}$  whether punched or drilled *punched & riveted*  
 pitch of rivets  $3\frac{3}{4} \times 1\frac{1}{8}$  lap of plating  $4\frac{1}{2}$  per centage of strength of joint  $73$   
 thickness of crown plates  $7\frac{1}{16}$  stayed by *Egg end*  
 Diameter of furnace, top  $3\text{'}-6$  bottom  $4\text{'}-4$  length of furnace  $4\text{'}-0$   
 thickness of plates  $1\frac{1}{2}$  description of joint *lap joint*  
 thickness of furnace crown plates  $1\frac{1}{2}$  stayed by *dome, & uptake*  
 Working pressure of shell by rules  $90\text{ lbs}$  working pressure of furnace by rules  $104\text{ lbs}$   
 diameter of uptake  $15\text{'}$  thickness of plates  $1\frac{1}{2}$  thickness of water tubes  $1\frac{1}{2}$

The foregoing is a correct description,  
*Denny & Co* Manufacturer.

**General Remarks** (State quality of workmanship, opinions as to class, &c. *These Engines and Boilers*)  
*have been especially surveyed during construction & are*  
*now in good order & safe working condition, and*  
*eligible in my opinion to be noted in Register Book & Lloyd's M*  
*(with a date)*

*This submitted that this need is*  
*eligible to have the notification*  
*Lloyd's M.C. recorded*  
*R.W.P. 9/18*

The amount of Entry Fee £ 3 : : : received by me,  
 Special .. £ 59 : : :  
 Certificate (if required) .. £ : : : 6<sup>th</sup> Sept 1881  
 To be sent as per margin.  
 (Travelling Expenses, if any, £ 3 : 3 : 0 )

Committee's Minute

Tuesday, September, 13<sup>th</sup> 18 81.

*Lloyd's*

*James Molloy, A.S.M.*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

*Clyde District*

Lloyd's Register  
 Foundation