

REPORT ON MACHINERY.

No. 403

No. in Survey held at
Reg. Book.

Dundee

Date, first Survey

18th April

Last Survey

17th Sept. 1885

on the

S. S. Shieldrake

(Number of Visits)

1080

Tons 606

Master

Hore

Built at

Dundee

By whom built

W. B. Thompson

When built

1885

Engines made at

Dundee

By whom made

W. B. Thompson

when made

1885

Boilers made at

do.

By whom made

do.

when made

1885

Registered Horse Power

160

Owners

Cork S. S. Co (Lim)

Port belonging to

Cork

ENGINES, &c.—

Description of Engines

Compound, Surface condensing, direct acting, inverted cyls.

Diameter of Cylinders

29" x 57"

Length of Stroke

48"

No. of Rev. per minute

77

Point of Cut off, High Pressure

6

Low Pressure 45

Diameter of Screw shaft

11"

Diam. of Tunnel shaft

10 3/4"

Diam. of Crank shaft journals

11"

Diam. of Crank pin

11"

size of Crank webs 12 1/2 x 7 3/4

Diameter of screw

13-9"

Pitch of screw

18"

No. of blades

4

state whether moveable ~~old~~ total surface 60 ft²

No. of Feed pumps

2

diameter of ditto

3 1/4"

Stroke

30"

Can one be overhauled while the other is at work

yes

No. of Bilge pumps

2

diameter of ditto

3 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

9 x 7 1/2

8 4" x 4"

Where do they pump from

Bilge, Sea & hotwell and 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

Are there any bilge injections

no

and sizes

5"

Are they connected to condenser, or to circulating pump

Circulating pump.

How are the pumps worked

Revers from L. P. Engine

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 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

While building

Is the screw shaft tunnel watertight

yes

and fitted with a sluice door

yes

worked from

Top platform

BOILERS, &c.—

Number of Boilers

One

Description

Cylindrical multibolted D. E.

Whether Steel or Iron

Steel

Working Pressure

90 lbs.

Tested by hydraulic pressure to

180 lbs.

Date of test

12th Aug. 1885

Description of superheating apparatus or steam chest

None

Can each boiler be worked separately

✓

Can the superheater be shut off and the boiler worked separately

✓

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

115 ft²

Description of safety valves

Spring

No. to each boiler

2

Area of each valve

✓

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

10"

Diameter of boilers

14'-8"

Length of boilers

15'-6"

description of riveting of shell long. seams

Lap. double riv.

circum. seams

Lap. double riv.

Thickness of shell plates

3 1/2"

Diameter of rivet holes

1 5/16"

whether punched or drilled

drilled

pitch of rivets

4 3/4"

Lap of plating

8 3/4"

Percentage of strength of longitudinal joint

72%

working pressure of shell by rules

94 lbs.

size of manholes in shell

17' x 13'

Size of compensating rings

5' x 4' x 3/4"

No. of Furnaces in each boiler

6

Outside diameter

43'

length, top

6'-2"

bottom

6'-2"

thickness of plates

5/16"

description of joint

Butt shops S. R.

if rings are fitted

210.

Greatest length between rings

✓

working pressure of furnace by the rules

94 lbs.

combustion chamber plating, thickness, sides

3 3/4"

back

✓

Pitch of stays to ditto, sides

9 1/2"

back

✓

top

9 1/2"

If stays are fitted with nuts or riveted heads

Auto

working pressure of plating by

rules

90 lbs.

Diameter of stays at smallest part

1 3/8"

working pressure of ditto by rules

5200

end plates in steam space, thickness

2 3/4"

Pitch of stays to ditto

16' x 15 1/2"

how stays are secured

double nuts

working pressure by rules

90 lbs.

diameter of stays at

smallest part

2 3/16"

working pressure by rules

6112 lbs.

Greatest pitch of stays

✓

working pressure by rules

✓

Diameter of tubes

3 3/4"

pitch of tubes

5 1/4"

thickness of tube

3/4"

plates, front

3/4"

back

3/4"

how stayed

by tubes

pitch of stays

15 3/4' x 10 1/2'

width of water spaces

1 1/2"

Diameter of Superheater or Steam chest

✓

Pitch of rivets

✓

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 superheater, or steam chest; thickness

✓

how stayed

✓

Superheater or steam chest; how connected to boiler

✓

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000110-0298

DONKEY BOILER— Description *Vertical (Patent)*
 Made at *Exeter* by whom made *Clark Chapman & Co.* when made *1885* where fixed *on an dunn*
 Working pressure *60 lbs* tested by hydraulic pressure to *120 lbs* No. of Certificate *1890* fire grate area *14 ft* description of a
 valves *Spring* No. of safety valves *Two* area of each *7.0 sq* if fitted with easing gear *yes* if steam from main boiler
 enter the donkey boiler *no* diameter of donkey boiler *5'-6"* length *10'-6"* description of riveting *Cap. d. l. w.*
 Thickness of shell plates *3/8* diameter of rivet holes *5/16* whether punched or drilled *D.* pitch of rivets *2 3/4* lap of plating *3 5/8*
 per centage of strength of joint *75%* thickness of crown plates *9/16* stayed by *6 gusset stays*
 Diameter of furnace, top *16"* bottom *4'-9"* length of furnace *7'-8 1/2"* thickness of plates *7/16* description of joint *Cap single*
 Thickness of furnace crown plates *7/16* stayed by *crucial top* working pressure of shell by rules *80 lbs*
 Working pressure of furnace by rules *60 lbs* diameter of uptake *16"* thickness of plates *3/8* thickness of water tubes *—*
SPARE GEAR. State the articles supplied:— *As per Rule.*

The foregoing is a correct description,

W. Cooper Manufacturer *W. B. Chapman*

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

The machinery of this vessel has been built under Special Survey, and is now in good working order and flexible in my opinion to be classed and marked. ✱ LMC 9-85

The workmanship and materials are of good description.

The Safety valves have been set under steam to a working pressure of 90 lbs per square inch.

The Donkey boiler Safety valve has been set to a working pressure of 60 lbs per square inch under steam.

The Shafting was examined while being turned.

The amount of Entry Fee .. £ 2 : 0 : 0 received by me,

Special .. £ 24 : 0 : 0

Donkey Boiler Fee .. £ : : :

Certificate (if required) .. £ : : : 3rd Oct 1885

To be sent as per margin.

(Travelling Expenses, if any, £)

Committee's Minute

TUESDAY 13 OCT 1885

W. B. Chapman

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