

## REPORT ON MACHINERY.

ved from  
mayor.

8 SEP. 1900

No. in Survey held at  
1. Book.

Port of

Glasgow

Received at London Office WED. SEP. 26 1900

Date, first Survey 27 July

Last Survey 13th Sept 1900

(Number of Visits 7)

50 on the S.S. Southern Cross.

ster R Phipps Built at Belfast

By whom built Hickman Clark &amp; Co. Ltd

When built 1892-9

ines made at Belfast

By whom made Hickman Clark &amp; Co. Ltd

when made 1892-9

ilers made at Paisley

By whom made Brown &amp; Co. Ltd

when made 1892-9

gistered Horse Power 511

Owners Shoulder Line Ltd

Port belonging to London

m. Horse Power as per Section 28

Is Refrigerating Machinery fitted

Is Electric Light fitted

GINES, &amp;c.—Description of Engines

S.S. do. No. 96

100 ft 6.00

+ LMB 1.99

No. of Cylinders 2

No. of Cranks 2

a. of Cylinders

Length of Stroke

Revs. per minute

Dia. of Screw shaft

as per rule

Lgth. of stern bush

a. of Tunnel shaft

as per rule

Dia. of Crank shaft journals

as per rule

Dia. of Crank pin

Size of Crank webs

Dia. of thrust shaft under

lars

Dia. of screw

Pitch of screw

No. of blades

State whether moveable

Total surface

. of Feed pumps

Diameter of ditto

Stroke

Can one be overhauled while the other is at work

. of Bilge pumps

Diameter of ditto

Stroke

Can one be overhauled while the other is at work

. of Donkey Engines

Sizes of Pumps

No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room

In Holds, &amp;c.

. of bilge injections

sizes

Connected to condenser, or to circulating pump

Is a separate donkey suction fitted in Engine room &amp; size

all the bilge suction pipes fitted with roses

Are the roses in Engine room always accessible

Are the sluices on Engine room bulkheads always accessible

all connections with the sea direct on the skin of the ship

Are they Valves or Cocks

are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates

Are the discharge pipes above or below the deep water line

are they each fitted with a discharge valve always accessible on the plating of the vessel

Are the blow off cocks fitted with a spigot and brass covering plate

That pipes are carried through the bunkers

How are they protected

are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times

are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges

Ten were stern tube, propeller, screw shaft, and all connections examined in dry dock

Is the screw shaft tunnel watertight

Auxiliary Boiler. worked from

ILERS, &amp;c.

(Letter for record S)

Total Heating Surface of Boilers

1313 ft

Is forced draft fitted

o. and Description of Boilers

Are single Ended

Working Pressure

170 lb

Tested by hydraulic pressure to 340 lb

ate of test 13/9/00 Can each boiler be worked separately

Area of fire grate in each boiler

42 1/2 ft

No. and Description of safety valves to

ch boiler

Are, spring

Area of each valve

4.910"

Pressure to which they are adjusted

Are they fitted with easing gear

smallest distance between boilers or uptakes and bunkers or woodwork

Mean dia. of boilers

12-1/8"

Length

10-6"

Material of shell plates

thickness

1/8"

Range of tensile strength

28,322

Are they welded or flanged

Neither

Descrip. of riveting: cir. seam

Double R. Lap

long. seams

Double R. Butt.

diameter of rivet holes in long. seams

1 3/16"

Pitch of rivets

8"

Lap of plates

width of butt straps

18"

er centages of strength of longitudinal joint

rivets

91.6

Working pressure of shell by rules

204 lb

Size of manhole in shell

16" x 12"

ize of compensating ring

27" x 31" x 1/8"

No. and Description of Furnaces in each boiler

3. Deighton's

Material

Steel

Outside diameter

38"

length of plain part

top

24"

Thickness of plates

crown

15/32"

Description of longitudinal joint

Welded

No. of strengthening rings

None

Working pressure of furnace by the rules

152

Combustion chamber plates: Material

Steel

Thickness: Sides

19/32

Back

19/32

Top

19/32

Bottom

Pitch of stays to ditto

Sides

8 1/2 x 7 1/4"

Back

5 x 7 1/4"

Top

9 x 7 1/4"

If stays are fitted with nuts or riveted heads

Nuts

Working pressure by rules

189

End plates in steam space

Material of stay

Steel

Diameter at smallest part

2 3/8"

Area supported by each stay

69 1/4"

Working pressure by rules

189

Material of stays

Steel

Material

Steel

Thickness

1 5/32"

Pitch of stays

17 x 15"

How are stays secured

Double Nuts

Working pressure by rules

232 lb

Material of Front plates at bottom

Steel

with doubler.

Thicknes

1"

Material of Lower back plate

Steel

Thickness

3/4"

Greatest pitch of stays

13"

Working pressure of plate by rules

377

Diameter of tubes

3 1/2"

Pitch of tubes

4 1/2"

Material of tube plates

Steel

Thickness: Front

1"

Back

23/32"

Mean pitch of stays

9"

Pitch across wide water spaces

15"

Working pressures by rules

170 lb

Girders to Chamber tops: Material

Steel

Depth and

Number and pitch of Stays in each

Two, 7 3/4"

thickness of girder at centre

8 1/2 x 1 3/8"

Length as per rule

27"

Distance apart

9"

Can the superheater be shut off and the boiler worked

None

Working pressure by rules

197 lb

Superheater or Steam chest; how connected to boiler

None

Diameter

Length

Thickness of shell plates

Material

Description of longitudinal joint

Diam. of rivet

Pitch of rivets

Working pressure of shell by rules

Diameter of flue

Material of flue plates

Thickness

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

Lloyd's Register

Foundation

CUS 290-0122



## DONKEY BOILER—

No.

Description

See other side.

Made at

By whom made

When made

Where fixed

Working pressure

tested by hydraulic pressure to

No. of certificate

Free grate area

Description of safety valves

No. of safety valves

Area of each

Pressure to which they are adjusted

If fitted with easing gear

If steam from main boilers can

enter the donkey boiler

Dia. of donkey boiler

Length

Material of shell plates

Thickness

Range of tensile

strength

Descrip. of riveting long. seams

Dia. of rivet holes

Whether punched or drilled

Pitch of rivets

Lap of plating

Per. centage of strength of joint

Rivets

Plates

Thickness of shell crown plates

Radius of do.

No. of Stays to do.

Dia. of stays.

Diameter of furnace Top

Bottom

Length of furnace

Thickness of furnace plates

Description of

joint

Thickness of furnace crown plates

Stayed by

Working pressure of shell by rules

Working pressure of furnace by rules

Diameter of uptake

Thickness of uptake plates

Thickness of water tubes

SPARE GEAR. State the articles supplied:—

The foregoing is a correct description,

Manufacturer.

Bow. McLachlan &amp; Co.

Dates  
of Survey  
while  
buildingDuring progress of  
work in shops—  
During erection on  
board vessel—  
Total No. of visits

1900:— July. 27. Aug. 20. 23. 30. Sep. 7. 8. 13.

7.

Is the approved plan of main boiler forwarded herewith

No.

## General Remarks

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

This boiler has been built under special survey, the material & workmanship being of good quality, it has been tested by hydraulic pressure to (340) three hundred & forty pounds per square inch and found tight and sound at that pressure.

This boiler is being forwarded to Liverpool to be fitted on board the S.S. Southern Cross.

The amount of Entry Fee.. £

Special

4 : 10

When applied for,

19/9/900

Donkey Boiler Fee .. £

When received,

25/10/100

Travelling Expenses (if any) £

Committee's Minute

Glasgow. 25 SEP. 1900

Assigned

Deferred for completion.

Mkt. 27/9/00.

George Hurdock.

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

FRI. 19 OCT 1900

THES. 30 OCT 1900

FRI. MAY 31 1901

THES. 5 FEB 1901

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