

## REPORT ON MACHINERY.

6658.

Port of

Received at London Office

FRI 8 SEP 1900

No. in Survey held at  
Reg. Book.

Date, first Survey

Last Survey

1909

(Number of Visits)

Gross

Master

Built at

By whom built

Tons

when made

Engines made at

By whom made

when made

Boilers made at

By whom made

when made

Registered Horse Power

Owners

Port belonging to

Nom. Horse Power as per Section 28

Is Refrigerating Machinery fitted for cargo purposes

Is Electric Light fitted

## ENGINES, &amp;c.—Description of Engines

Compound Reciprocating

No. of Cylinders

No. of Cranks

Dia. of Cylinders

Length of Stroke

Revs. per minute

Dia. of Screw shaft

Material of

Is the screw shaft fitted with a continuous liner the whole length of the stern tube

Is the after end of the liner made water tight

in the propeller boss

If the liner does not fit tightly at the part

between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive

If two

liners are fitted, is the shaft lapped or protected between the liners

Length of stern bush

Dia. of Tunnal shaft

Dia. of Crank shaft journals

Dia. of Crank pin

Size of Crank webs

Dia. of thrust shaft under

collars

Dia. of screw

Pitch of Screw

No. of Blades

State whether moveable

Total surface

No. of Feed pumps

Diameter of ditto

Stroke

Can one be overhauled while the other is at work

No. of Bilge pumps

Diameter of ditto

Stroke

Can one be overhauled while the other is at work

No. of Donkey Engines

Size of pumps

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

In Engine Room

In Holds, &amp;c.

No. of Bilge Injections

sizes

Connected to condenser, or to circulating pump

Is a separate Donkey Suction fitted in Engine room &amp; size

Are all the bilge suction pipes fitted with roses

Are the roses in Engine room always accessible

Are the sluices in Engine room bulkheads always accessible

Are 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

What 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

Dates of examination of completion of fitting of Sea Connections

Fitted at

Screw shaft and Propeller

Is the Screw Shaft Tunnel watertight

Is it fitted with a watertight door

Is it fitted with a watertight door

## BOILERS, &amp;c.—(Letter for record)

Manufacturers of Steel

Total Heating Surface of Boilers

Is Forced Draft fitted

No. and Description of Boilers

Ans. Single End Cyl.

Working Pressure

Tested by hydraulic pressure to

Date of test

No. of Certificate

Can each boiler be worked separately

Area of fire grate in each boiler

No. and Description of Safety Valves to

each boiler

Two-Rowed Springs

Area of each valve

Pressure to which they are adjusted

145 lbs

Are they fitted with easing gear

Smallest distance between boilers or uptakes and bunkers or woodwork

Mean dia. of boilers

Length

Material of shell plates

Thickness

Range of tensile strength

Are the shell plates welded or flanged

Descrip. of riveting: cir. seams

long. seams

Diameter of rivet holes in long. seams

Pitch of rivets

Lap of plates or width of butt straps

Per centages of strength of longitudinal joint

rivets

Working pressure of shell by rules

Size of manhole in shell

Size of compensating ring

No. and Description of Furnaces in each boiler

Material

Outside diameter

Length of plain part

top

Thickness of plates

bottom

Description of longitudinal joint

No. of strengthening rings

Working pressure of furnace by the rules

Combustion chamber plates: Material

Thickness: Sides

Back

Top

Bottom

Pitch of stays to ditto: Sides

Back

Top

If stays are fitted with nuts or riveted heads

Working pressure by rules

Material of stays

Diameter at smallest part

Area supported by each stay

Working pressure by rules

End plates in steam space:

Material

Thickness

Pitch of stays

How are stays secured

Working pressure by rules

Material of stays

Diameter at smallest part

Area supported by each stay

Working pressure by rules

Material of Front plates at bottom

Thickness

Material of Lower back plate

Thickness

Greatest pitch of stays

Working pressure of plate by rules

Diameter of tubes

Pitch of tubes

Material of tube plates

Thickness: Front

Back

Mean pitch of stays

Pitch across wide water spaces

Working pressures by rules

Girders to Chamber tops: Material

Depth and

Thickness of girder at centre

Length as per rule

Distance apart

Number and pitch of stays in each

Working pressure by rules

Superheater or Steam chest; how connected to boiler

Can the superheater be shut off and the boiler worked

separately

Diameter

Length

Thickness of shell plates

Material

Description of longitudinal joint

Diam. of rivet

holes

Pitch of rivets

Working pressure of shell by rules

Diameter of flue

Material of flue plates

Thickness

If 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



VERTICAL DONKEY BOILER—

Manufacturers of Steel

Calderbank Steel Coy

No. *one* Description *Vertical two cross tubes*  
 Made at *Belfast* By whom made *Macdonald & Co Ltd* When made *1904* Where fixed *Stokehold*  
 Working pressure *100 lbs* tested by hydraulic pressure to *200 lbs* Date of test *22-1-04* No. of Certificate *389* Fire grate area *14 sq ft* Description of Safety  
 Valves *two of Spring* No. of Safety Valves *1* Area of each *7 sq* Pressure to which they are adjusted *100 lbs* Date of adjustment *2/9/09*  
 If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Dia. of donkey boiler *4'-9"* Length *10'-3"*  
 Material of shell plates *Steel* Thickness *3/8"* Range of tensile strength *25-32 tons* of riveting long. seams *Lap double*  
 Dia. of rivet holes *3/4"* Whether punched or drilled *drilled* Dia. of rivets *2 1/4"* Lap of plating *3 1/2"* Per centage of strength of joint *72.5*  
 Working pressure of shell by rules *100 lbs* Thickness of shell crown plates *7/8"* Radius of do. *4'-9"* No. of stays to do. *6* Dia. of stays *1 1/2"*  
 Diameter of furnace Top *5'-7"* Bottom *4'-2 1/2"* Length of furnace *4'-8"* Thickness of furnace plates *7/8"* Description of joint *Lap S. R.*  
 Working pressure of furnace by rules *100 lbs* Thickness of furnace crown plates *7/8"* Stayed by *to shell gusset*  
 Diameter of uptake *13"* Thickness of uptake plates *1/2"* Thickness of water tubes *3/8"* Dates of survey *Aug 31, Sept 21, Oct 16, Nov 5, 15, 21*

SPARE GEAR. State the articles supplied:— *2 Top end & 2 Bottom end bolts & nuts; two main beam bolts & nuts; set coupling bolts; 2 sets feed pump valves; two sets bilge pump valves; two main check valves; 1 damper check valve; 6 cyl. cross studs; 6 pump ring bolts; 10 boiler tubes; 10 condenser tubes; 12 pin bars; 12 water pump flanges; 15 con. end bolts & nuts; man. assembled etc.*  
 The foregoing is a correct description,  
*Macdonald & Co Ltd* Manufacturer.

Dates of Survey while building  
 During progress of work in shops— *1908, Dec 23, Jan 26, 28, Feb 3, 24, March 1, 5, 10, 15, 19, 24.*  
 During erection on board vessel— *April 2, 3, 4, 22 up to 2 Sep 1909.*  
 Total No. of visits *37*

Is the approved plan of main boiler forwarded herewith *Yes*

Dates of Examination of principal parts—Cylinders *28/1/04* Slides *28/1/04* Covers *28/1/04* Pistons *28/1/04* Rods *13/5/04*  
 Connecting rods *13/5/04* Crank shaft *28/1/04* Thrust shaft *3/6/04* Tunnel shafts *28/1/04* Screw shaft *28/1/04* Propeller *5/4/04*  
 Stern tube *27/6/04* Steam pipes tested *7/9/04* Engine and boiler seatings *28/8/04* Engines holding down bolts *16/8/04*  
 Completion of pumping arrangements *20/8/04* Boilers fixed *27/7/04* Engines tried under steam *2/9/04*  
 Main boiler safety valves adjusted *2/9/04* Thickness of adjusting washers *5-4*  
 Material of Crank shaft *Steel* Identification Mark on Do. *2490 9-4-09 W.B.* Material of Thrust shaft *Steel* Identification Mark on Do. *27-6-09 9-5-09*  
 Material of Tunnel shafts *None* Identification Marks on Do. *✓* Material of Screw shafts *Steel* Identification Marks on Do. *do*  
 Material of Steam Pipes *W. Sean* Test pressure *450 lbs*

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

*The machinery of this vessel has been constructed under special survey, and in accordance with the Rules. The workmanship, and the materials are of good description, and are tried under steam in Belfast Lough, the machinery worked satisfactorily.*

*In my opinion, it is eligible for record + L.M.C. 9-09*

*Please see Letter from Secretary 10<sup>th</sup> November 1908.*

*It is submitted that this vessel is eligible for the RECORD. + L.M.C. 9-09.*

The amount of Entry Fee.. £ *2 : 0 :* When applied for, *30-8-09*  
 Special .. £ *20 : 2 :*  
 Donkey Boiler Fee .. £ : : When received, *31-8-09*  
 Travelling Expenses (if any) £ : : *19-09*

Committee's Minute **TUES. 7 SEP 1909**

Assigned *+ L.M.C. 9-09*

*A.R.R.*  
*4-9-09.*  
*4-9-09*  
*R. L. Bennet*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.