

## REPORT ON MACHINERY.

No. 71856  
WED. AUG. 19. 1914

Date of writing Report 18 AUG 1914

When handed in at Local Office

18 AUG 1914

Received at London Office

No. in Survey held at  
Reg. Book.

Birkenhead

Port of

LIVERPOOL

Date, First Survey

May 27

Last Survey

Jul 30 1914

(Number of Visits)

Master

Built at

Birkenhead

By whom built

Cammell Laird &amp; Co. Ltd.

Tons

Gross 3365

Net 1491

When built

1914

Engines made at

Birkenhead

By whom made

Cammell Laird &amp; Co. Ltd.

when made

1914

Boilers made at

Birkenhead

By whom made

Cammell Laird &amp; Co. Ltd.

when made

1914

Registered Horse Power

Owners

National Trans-continental Rly.

Port belonging to

Quebec

Nom. Horse Power as per Section 28

Is Refrigerating Machinery fitted for cargo purposes

Is Electric Light fitted

Yes

## ENGINE, &amp;c.

Description of Engine

Inverted Compound

No. of Cylinders

2

No. of Cranks

2

Dia. of Cylinders

15" x 32"

Length of Stroke

21"

Revs. per minute

130

Dia. of Screw shaft

as per rule 7 1/8"

Material of

steel

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

No

Is the after end of the liner made water tight

in the propeller boss

yes

If the liner is in more than one length are the joints burned

—

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

yes

Length of stern bush

2'-8"

Dia. of Tunnel shaft

as per rule 6 1/4"

Dia. of Crank shaft journals

as per rule 7 1/4"

Dia. of Crank pin

7 1/2"

Size of Crank webs

4 3/4" thick

Dia. of thrust shaft under

collars

7 1/2"

Dia. of screw

7'-6"

Pitch of Screw

9'-9"

No. of Blades

3

State whether moveable

No

Total surface

20 sq ft

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

—

Sizes 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 on 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

✓

of Stern Tube

7-7-14

Screw shaft and Propeller now disconnected

Is the Screw Shaft Tunnel watertight

✓

Is it fitted with a watertight door

✓

worked from

✓

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

Manufacturers of Steel

Total Heating Surface of Boilers

Is Forced Draft fitted

No. and Description of Boilers

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

—

Area of each valve

—

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

—

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

—

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

—

Thickness of plates

—

Description of longitudinal joint

—

No. of strengthening rings

Working pressure of furnace by the rules

—

Combustion chamber plates. Material

—

Thickness: Sides

—

Back

—

Top

—

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

—

—

—

W639-0188



VERTICAL DONKEY BOILER—

Manufacturers of Steel

No.	Description					
Made at	By whom made		When made		Where fixed	
Working pressure	tested by hydraulic pressure to	Date of test	No. of Certificate	Fire grate area	Description of Safety	
Valves	No. of Safety Valves	Area of each	Pressure to which they are adjusted	Date of adjustment		
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
Working pressure of shell by rules	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		
Working pressure of furnace by rules	Thickness of furnace crown plates	Radius of do.	Stayed by			
Diameter of uptake	Thickness of uptake plates	Thickness of water tubes	Dates of survey			

SPARE GEAR. State the articles supplied:—

The foregoing is a correct description,

Manufacturer.

CAMMELL LAIRD AND COMPANY LIMITED,

ENGINEERING MANAGER

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

Is the approved plan of main boiler forwarded herewith

Dates of Examination of principal parts—Cylinders 15-7-14 Slides 15-12-14 Covers 14-10-13 Pistons 4-11-13 Rods 5-9-13  
 Connecting rods 18-2-14 Crank shaft 9-2-14 Thrust shaft 12-11-13 Tunnel shafts 20-10-13 Screw shaft 10-7-14 Propeller 18-6-14  
 Stern tube 7-7-14 Steam pipes tested ✓ Engine and boiler seatings 4-12-13 Engines holding down bolts 18-2-14  
 Completion of pumping arrangements ✓ Boilers fixed ✓ Engines tried under steam 28-7-14  
 Main boiler safety valves adjusted ✓ Thickness of adjusting washers ✓  
 Material of Crank shaft steel Identification Mark on Do. 729 Material of Thrust shaft steel Identification Mark on Do. 459  
 Material of Tunnel shafts ✓ Identification Marks on Do. ✓ Material of Screw shafts steel Identification Marks on Do. 473  
 Material of Steam Pipes lap welded working Test pressure 495 lbs.

General Remarks

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

This engine is intended for ice-breaking purposes in the St. Lawrence River, it has been built under Special Survey and in accordance with the approved plan herewith enclosed, the materials and workmanship are of a good quality and when tried under steam were found satisfactory in every respect.

The amount of Entry Fee .. £  
 Special .. £  
 Donkey Boiler Fee .. £  
 Travelling Expenses (if any) £

When applied for,

When received,

Committee's Minute

18 AUG 1914

Assigned

See report attached

Engine Surveyor to Lloyd's Register of British & Foreign Shipping



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