

REPORT ON MACHINERY.

No. 21421

Received at London Office

WED. 21 JUL 1909

Date of writing Report

19

When handed in at Local Office

20/7/1909 Port of Hull

No. in Survey held at
Reg. Book.

Hull

Date, First Survey

Nov 4/08

Last Survey

20 July 1909

on the

Steel Se. Sr. Macquarie

(Number of Visits 50)

Gross 493

Tons Net 263

When built 1909

Master

Built at

Hull

By whom built

Messrs Earles & Co Ltd

Engines made at

By whom made

Messrs

when made 1909

Boilers made at

Hull

By whom made

Earles & Co Ltd

when made 1909

Registered Horse Power

Owners Nicolas Cairn Coastal Cooperative Co Ltd Port belonging to Sydney

Nom. Horse Power as per Section 28

118

Is Refrigerating Machinery fitted for cargo purposes

Yes

Is Electric Light fitted

Yes

ENGINES, &c.—Description of Engines Twin Se. Triple Expansion

No. of Cylinders 3 on each

No. of Cranks 3 on each

Dia. of Cylinders 11" - 18" - 30"

Length of Stroke 18"

Revs. per minute 150

Dia. of Screw shaft

as per rule 5.94"

Material of screw shaft

Steel

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

Yes

Is the after end of the liner made water tight

in the propeller bosses Yes If the liner is in more than one length are the joints burned on length 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

Yes

If two

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

Length of stern bush 24"

Dia. of Tunnel shaft

as per rule 5.29"

as fitted 5.38"

Dia. of Crank shaft journals

as per rule 5.35"

as fitted 5.75"

Dia. of Crank pin 5.34"

Size of Crank webs 11" x 3 3/4"

Dia. of thrust shaft under

collars 5.34"

Dia. of screws 7.3"

Pitch of Screws 8'-6"

No. of Blades 3 on each

State whether moveable No

Total surface 19 sq ft on each propeller

No. of Feed pumps

Diameter of ditto 2 1/2"

Stroke 9"

Can one be overhauled while the other is at work

No. of Bilge pumps

Diameter of ditto 3"

Stroke 9"

Can one be overhauled while the other is at work

No. of Donkey Engines 3

Sizes of Pumps 7 1/2" x 5", 6" x 6", 4" x 4"

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

In Engine Room Two 2", two 3", In Holds, &c. One each 2" to each, the tunnel well,

apthold, aft peak, fore hold, fore peak.

No. of Bilge Injections 2

sizes 3"

Connected to condenser, or to circulating pump pumps

Is a separate Donkey Suction fitted in Engine room & size Yes 2"

Are all the bilge suction pipes fitted with roses

Yes

Are the roses in Engine room always accessible

Yes

Are the sluices on Engine room bulkheads always accessible

0

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

below

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

Cold suction

How are they protected

wood casing

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times

Yes

Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges

Yes

Dates of examination of completion of fitting of Sea Connections

6.7.09

of Stern Tube

6.7.09

Screw shaft and Propeller

6.7.09

Is the Screw Shaft Tunnel watertight

Yes

Is it fitted with a watertight door

Yes

worked from top platform

BOILERS, &c.—(Letter for record 5)

Manufacturers of Steel Messrs W. Beames & Co and G. Bennett & Co

Total Heating Surface of Boilers 2310 sq ft

Is Forced Draft fitted

No

No. and Description of Boilers 1 Cyl. Mult. Single ended

Working Pressure 190 lbs

Tested by hydraulic pressure to

360 lbs

Date of test

21.5.09

No. of Certificate

1704

Can each boiler be worked separately

—

Area of fire grate in each boiler

65.5 sq ft

No. and Description of Safety Valves to

each boiler

Two Spring

Area of each valve

7 sq ft

Pressure to which they are adjusted

180 lbs

Smallest distance between boilers or uptakes and bunkers or woodwork

11 1/2"

Mean dia. of boilers

16'-0"

Length

10'-6"

Material of shell plates

Steel

Thickness 1 1/4"

Range of tensile strength

29,320 tons

Are the shell plates welded or flanged

No

Descrip. of riveting: cir. seams

L. D.

long. seams D. B. S. & R

Diameter of rivet holes in long. seams

1 1/2"

Pitch of rivets

9 1/2"

Lap of plates or width of butt straps

2 1/2"

Per centages of strength of longitudinal joint

rivets 96.2

plate 84.2

Working pressure of shell by rules

209 lbs

Size of manhole in shell

16" x 12"

Size of compensating ring

End flange

No. and Description of Furnaces in each boiler

3 Morrison

Material

Steel

Outside diameter

48"

Length of plain part

top 19"

Thickness of plates

bottom 19"

Description of longitudinal joint

Welded

No. of strengthening rings

0

Working pressure of furnace by the rules

196 lbs

Combustion chamber plates: Material

Steel

Thickness: Sides

7/16"

Back

5/8"

Top

5/8"

Bottom

5/8"

Pitch of stays to ditto: Sides

9 1/2" x 7 1/2"

Back

9" x 7 1/2"

Top

9" x 7 1/2"

If stays are fitted with nuts or riveted heads

7 nuts

Working pressure by rules

191 lbs

Material of stays

Steel

Diameter at smallest part

1 1/2"

Area supported by each stay

71.25 sq ft

Working pressure by rules

197 lbs

End plates in steam space:

Material

Steel

Thickness

1 1/2"

Diameter at smallest part

2 1/2"

Area supported by each stay

288 sq ft

Working pressure by rules

224 lbs

Material of Front plates at bottom

Steel

Thickness

7/16"

Material of Lower back plate

Steel

Thickness

7/16"

Material of tube plates

Steel

Thickness: Front

15/16"

Back

7/8"

Mean pitch of stays

9 5/8"

Pitch across wide water spaces

14 1/2"

Working pressures by rules

182 lbs

Girders to Chamber tops: Material

Steel

Depth and

thickness of girder at centre

9" x 13 1/4"

Length as per rule

2'-7 1/2"

Distance apart

9"

Working pressure by rules

222 lbs

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

Yes

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

Yes

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

W1520-01143

N^o 21421

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	Stayed by			
Diameter of uptake	Thickness of uptake plates	Thickness of water tubes	Dates of survey		

SPARE GEAR. State the articles supplied:— Two screw shafts, two propellers, two top and bottom end bolts and nuts, Two main bearing bolts and nuts, One set coupling bolts and nuts, one set air circulating feed and bilge pump valves, and a quantity of assorted bolts, nuts, iron etc.

The foregoing is a correct description,

Manufacturer.

Flourens.

Dates of Survey while building	During progress of work in shops—	1908:— Nov 4. 17. 20. 25. Dec 4. 7. 16. 17. 23. 1909:— Jan 8. 11. 19. 22. 29. 30. Feb 3. 9. 15. 24. Mar 3. 12. 19. 26
	During erection on board vessel—	Mar 31. Apr 7. 14. 27. May 1. 5. 11. 20. 21. 26. 27. Jun 3. 10. 16. 17. 21. 30. Jul 3. 6. 7. 8. 9. 12. 13. 16. 17. 19
	Total No. of visits	50.

Is the approved plan of main boiler forwarded herewith Yes

" " " donkey " " "

Dates of Examination of principal parts—	Cylinders 22. 1. 09	Slides 24. 2. 09	Covers 15. 2. 09	Pistons 25. 11. 08	Rods 4. 12. 08
Connecting rods 4. 12. 08	Crank shaft 3. 6. 09	Thrust shaft 3. 6. 09	Tunnel shafts 3. 6. 09	Screw shafts 3. 6. 09	Propeller 3. 6. 09
Stern tube 3. 6. 09	Steam pipes tested 10. 6. 09	Engine and boiler seatings 3. 6. 09	Engines holding down bolts 8. 7. 09		
Completion of pumping arrangements 13. 7. 09	Boilers fixed 8. 7. 09	Engines tried under steam 13. 7. 09			
Main boiler safety valves adjusted 13. 7. 09	Thickness of adjusting washers 3/8 3/8				
Material of Crank shafts Steel	Identification Mark on Do. 2140	Material of Thrust shaft Steel	Identification Mark on Do. 163		
Material of Tunnel shafts Steel	Identification Marks on Do. 163	Material of Screw shafts Steel	Identification Marks on Do. 163		
Material of Steam Pipes Solid drawn Copper	Test pressure 400 lbs per sq. inch				

General Remarks (State quality of workmanship, opinions as to class, &c. The machinery of this vessel) has been constructed under special survey in general conformity with the Rules. The boiler built in accordance with the approved plan, and the Secretary's letter of the 12. 11. 08. The material and workmanship are sound and good. The boiler tested by hydraulic pressure found satisfactory, and with the engines secured on board and tried under steam. They are now in good order and safe working condition, and respectfully submitted as being eligible in my opinion to be classed with the notation of $\frac{1}{2}$ L. M. B. Y. 09 in the Register Book.

This vessel has been fitted with a Refrigerating Machinery and part of the after hold has been insulated for the purpose of carrying butter. Particulars of the Appliances are given above. She has also been fitted with an Electric Light Installation Report on which will be sent on when signed by the Contractors.

The amount of Entry Fee	£ 2	When applied for,	20/7/09
Special	£ 14. 14	When received,	20/7/09
Donkey Boiler Fee	£ .		
Travelling Expenses (if any)	£ .		

James Barclay
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute
Assigned

+ Lmc 7. 09

MACHINERY CERTIFICATE WRITTEN.



Lloyd's Register Foundation