

REPORT ON MACHINERY.

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 Ste. Sr. Macquarie

(Number of Visits 50.)

Gross 493
Net 263

Master

Built at

Hull

By whom built

Messrs Earles & Co Ltd

When built 1909

Engines made at

Hull

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 Cairns 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 Sc. Triple Expansion No. of Cylinders 3 on each No. of Cranks 3 on each

Dia. of Cylinders 11" - 14" - 30" Length of Stroke 14" Revs. per minute 150 Dia. of Screw shaft as per rule 5.94" Material of screw shaft as fitted 6" 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 one 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

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" Dia. of Crank shaft journals as per rule 5.55" Dia. of Crank pin 5 3/4" Size of Crank webs 11" x 3 3/4" Dia. of thrust shaft under collars 5 3/4" 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 one each Diameter of ditto 2 1/2" Stroke 9" Can one be overhauled while the other is at work

No. of Bilge pumps one each 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 x 5-12, 6 x 6-6, 4 x 4-6 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. Beardmore and Co Ltd

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 1707

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 Are they fitted with easing gear Yes

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 7/16" Range of tensile strength 29,322 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams L. D.

long. seams D. A. 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's Material Steel Outside diameter 48"

Length of plain part top bottom Thickness of plates crown 1 9/16" bottom 1 1/2" 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 5/16"

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 3/32" Pitch of stays 18" x 16" How are stays secured d. nuts Working pressure by rules 185 lbs Material of stays Steel

Diameter at smallest part 2 3/16" Area supported by each stay 288 sq ft Working pressure by rules 224 lbs Material of Front plates at bottom Steel

Thickness 1 5/16" Material of Lower back plate Steel Thickness 7/16" Greatest pitch of stays 14 1/2" x 9" Working pressure of plate by rules 181 lbs

Diameter of tubes 3 1/2" Pitch of tubes 4 1/2" x 4 3/4" Material of tube plates Steel Thickness: Front 1 5/16" 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" Number and pitch of stays in each 3 ~ 7 1/2"

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

W1520-01143

Lloyd's Register Foundation

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.

Flourence

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

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 **1st M. B. 7. 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 : :
 Special £ 17 14 : :
 Donkey Boiler Fee £ . : :
 Travelling Expenses (if any) £ . : :
 When applied for, 20/7/09
 When received, 20/7/09
 FRI. 23 JUL 1909

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

Committee's Minute Assigned

+ dmc 7. 09

MACHINERY CERTIFICATE WRITTEN.



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