

Rpt. 4.

REPORT ON MACHINERY.

No. 30962

Received at London Office

THU. JAN 4-1912

Date of writing Report 28-12-1911 When handed in at Local Office

Port of Glasgow

No. in Survey held at

Glasgow

Date, First Survey

20th March 1911

Last Survey

23-12-1911

Reg. Book.

New on the

S/S "END A"

(Number of Visits 20)

Master

Built at

Dublin

By whom built

Dublin Dockyard & Shipbuilding Co. Ltd.

Tons Gross 842

Net 396

When built 1911

Engines made at

Glasgow

By whom made

Ross & Duncan (No. 872)

when made 1911

Boilers made at

Glasgow

By whom made

Ross & Duncan (No. 1345)

when made 1911

Registered Horse Power

Owners

Michael Murphy Ltd.

Port belonging to

Cardiff

Nom. Horse Power as per Section 28

130

Is Refrigerating Machinery fitted for cargo purposes

No

Is Electric Light fitted

Yes

ENGINES, &c.—Description of Engines

Compound

No. of Cylinders

2

No. of Cranks

2

Dia. of Cylinders

22" x 46"

Length of Stroke

30"

Revs. per minute

102

Dia. of Screw shaft

as per rule 9.75

Material of

iron

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 boss

yes

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

yes

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

yes

Length of stern bush

3' 5 1/2"

Dia. of Tunnel shaft

as per rule

none

Dia. of Crank shaft journals

as per rule

9.48"

Dia. of Crank pin

10"

Size of Crank webs

18" x 6"

Dia. of thrust shaft under

collars

9 1/8"

Dia. of screw

11' 3"

Pitch of Screw

13' 3"

No. of Blades

4

State whether moveable

yes

Total surface

46 1/2 sq ft

No. of Feed pumps

2

Diameter of ditto

3 1/2"

Stroke

15"

Can one be overhauled while the other is at work

yes

No. of Bilge pumps

2

Diameter of ditto

3 1/2"

Stroke

15"

Can one be overhauled while the other is at work

yes

No. of Donkey Engines

2

Sizes of Pumps

6 x 4 1/2 x 6 Duplex feed

Balls

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

In Engine Room

one 2 1/4", one 2 3/4" & one 2 1/4" special

In Holds, &c.

two 2"

No. of Bilge Injections

1

sizes

4"

Connected to condenser, or to circulating pump

b.p.

Is a separate Donkey Suction fitted in Engine room & size

yes 2 1/4"

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

None

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

above

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

See Dublin Rpt

What pipes are carried through the bunkers

forward pipes

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

and

of Stern Tube

and

Screw shaft and Propeller

See Dublin Report

Is the Screw Shaft Tunnel watertight

none

Is it fitted with a watertight door

machinery

worked from

No

BOILERS, &c.—(Letter for record (S))

Manufacturers of Steel

David Colville & Sons & Lanarkshire Steel Co.

Total Heating Surface of Boilers

2370 sq ft

Is Forced Draft fitted

no

No. and Description of Boilers

one single ended marine

Working Pressure

135

Tested by hydraulic pressure to

270

Date of test

10-10-11

No. of Certificate

11226

Can each boiler be worked separately

yes

Area of fire grate in each boiler

69 sq ft

No. and Description of Safety Valves to

each boiler

two spring loaded

Area of each valve

8950"

Pressure to which they are adjusted

138 lbs.

Are they fitted with easing gear

Yes

Smallest distance between boilers

on uptakes and bunkers

on woodwork

9"

Mean dia. of boilers

15' 9"

Length

11' 0"

Material of shell plates

steel

Thickness

1"

Range of tensile strength

28-32

Are the shell plates welded or flanged

no

Descrip. of riveting: cir. seams

DR

long. seams

TR DBS

Diameter of rivet holes in long. seams

1 1/8"

Pitch of rivets

6 1/8"

Lap of plates or width of butt straps

1-5 1/2"

Per centages of strength of longitudinal joint

rivets

85.4

plate

83.6

Working pressure of shell by rules

135.5

Size of manhole in shell

12' 16"

Size of compensating ring

6 3/4 x 1"

No. and Description of Furnaces in each boiler

3 corrugated

Material

steel

Outside diameter

4' 4 1/4"

Length of plain part

top

8"

Thickness of plates

crown

3 1/2"

Description of longitudinal joint

welded

No. of strengthening rings

none

Working pressure of furnace by the rules

144

Combustion chamber plates: Material

steel

Thickness: Sides

9 1/16"

Back

9 1/16"

Top

9 1/16"

Bottom

19 1/32"

Pitch of stays to ditto: Sides

8' 9 1/2"

Back

8' 3/4"

Top

8' 9 1/4"

If stays are fitted with nuts or riveted heads

nuts

Working pressure by rules

142

Material of stays

steel

Diameter at smallest part

1' 4 1/8"

Area supported by each stay

76.56 sq ft

Working pressure by rules

154

End plates in steam space:

Material

steel

Thickness

1"

Pitch of stays

1' 8 1/4"

How are stays secured

downward

Working pressure by rules

135

Material of stays

steel

Diameter at smallest part

4' 9 1/2"

Area supported by each stay

344.25 sq ft

Working pressure by rules

156

Material of Front plates at bottom

steel

Thickness

23/32"

Material of Lower back plate

steel

Thickness

23/32"

Greatest pitch of stays

13 1/2' + 8 1/2'

Working pressure of plate by rules

138

Diameter of tubes

3 1/2"

Pitch of tubes

4' 5/8" x 4 1/2"

Material of tube plates

steel

Thickness: Front

23/32" + 1"

Back

1 1/16"

Mean pitch of stays

11 1/4"

Pitch across wide water spaces

14"

Working pressures by rules

135

Girders to Chamber tops: Material

iron

Depth and

thickness of girder at centre

7 1/2" x 2"

Length as per rule

2' 8 3/4"

Distance apart

9 1/4"

Number and pitch of stays in each

3 @ 8"

Working pressure by rules

137

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

VERTICAL DONKEY BOILER—

Manufacturers of *Steel* **Alex Anderson & Sons (N° 1325)**

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 _____ 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 _____ Rivets _____
 Dia. of rivet holes _____ Whether punched or drilled _____ Pitch of rivets _____ Lap of plating _____ Per centage of strength of joint _____ 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:— *2 top end bolts & nuts, 2 bottom end bolts & nuts, 2 main bearing bolts, 1 set coupling bolts, 1 set feed & bilge pump valves, 1 set air pump valves, 1 set circulating pump valves, 1 propeller shaft, 4 propeller blades, 1 pair eccentric straps, 1 valve for main check, 1 valve for donkey check, quantity of bolts, nuts, boiler tubes, condenser tubes and firebars, 1 set piston springs for HP, 1 complete piston valve and springs*
 The foregoing is a correct description,

Manufacturer.

Dates of Survey while building { During progress of work in shops— 1911. Mar 20. Apr 3. 4. 13. 25. May 1. 12. 17. 19. 22. 29. June 1. 5. 6. 7. 13. 16. 29.
 During erection on board vessel — July 3. 12. 27. Aug. 3. 10. 21. Sept. 5. 11. 13. 15. 29. Oct. 10. Nov. 15. 17. 23. 27. 29. Dec 2. 4. 12. 13. 23
 Total No. of visits 40.

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

Dates of Examination of principal parts—Cylinders 1-6-11 Slides 7-6-11 Covers 7-6-11 Pistons 11-9-11 Rods 19-5-11
 Connecting rods 12-5-11 Crank shaft 12-5-11 Thrust shaft 5-9-11 Tunnel shafts none Screw shaft 15-9-11 Propeller 13-9-11
 Stern tube 13-9-11 Steam pipes tested 2-12-11. Engine and boiler seatings 15-11-11 Engines holding down bolts 29-11-11.
 Completion of pumping arrangements 12-12-11 Boilers fixed 29-11-11. Engines tried under steam 23-12-1911.
 Main boiler safety valves adjusted 13-12-11. Thickness of adjusting washers $\frac{9}{32}$ P. $\frac{11}{32}$ S.
 Material of Crank shaft *steel* Identification Mark on Do. 872 Material of Thrust shaft *steel* Identification Mark on Do. 872
 Material of Tunnel shafts *none* Identification Marks on Do. ✓ Material of Screw shafts *iron* Identification Marks on Do. 872
 Material of Steam Pipes *Copper* Test pressure 240 lbs.

General Remarks (State quality of workmanship, opinions as to class, &c.) *The engine and boilers of this ship have been constructed under special survey and are of good material and workmanship. They have been securely fitted on board and tried under steam with satisfactory results, and are in my opinion eligible for the notation + L.M.C. 12, 11.*

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 12, 11.

The amount of Entry Fee .. £ 2-0-0 When applied for, 2/11/12
 Special .. £ 19-10-0
 Donkey Boiler Fee .. £ : : When received, 6.1.12
 Travelling Expenses (if any) £ : :
 Committee's Minute GLASGOW 3-JAN-1912

P. J. Brown
Heurste Davis
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

FRI. JAN. 5-1912

Assigned + L.M.C. 12, 11 subject to classification of hull.



Glasgow.

Certificate (if required) to be sent to

24/11/12
 30/12/12

(The Surveyor is requested not to write on or below the space for Committee's Minute.)

Rpt. 5b

Date of

No. in Reg. Book

Master

Boilers m

Owners

VERTI

Made at

tested by h

No. of saf

enter the d

strength 2

Lap of pla

Radius of d

Thickness c

plates

Thickness c

Dates of Survey while building

GENER

good.
 This
 rules
 be fo

Survey

No.

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Travel

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