

REPORT ON MACHINERY.

No. 25/93

FRI. MAR. 29. 1912

Received at London Office

Date of writing Report

19

When handed in at Local Office

20.3.1912 Port of

Sunderland

No. in Survey held at
Reg. Book.

Date, First Survey

27 Jan'y 11 Last Survey

12 March 12

on the

S.S. "Macedonia"

Master J. Bogiazides

Built at

Sunderland

By whom built

Sir J. Laing & Sons Ltd (Ld)

Engines made at

Sunderland

By whom made

G. Black Ltd (940-1)

when made

1912

Boilers made at

Sunderland

By whom made

G. Black Ltd (940-1)

when made

1912

Registered Horse Power

Owners National S. S. Co. Ltd of Greece

Port belonging to

Andros

Nom. Horse Power as per Section 28

1108.

Is Refrigerating Machinery fitted for cargo purposes

No

Is Electric Light fitted

Wireless telegraphy fitted

ENGINES, &c.—Description of Engines

Quadruple Expansion

No. of Cylinders

Eight

No. of Cranks

Eight

Dia. of Cylinders

24" x 31 1/2" x 49" x 41"

Length of Stroke

48"

Revs. per minute

88

Dia. of Screw shafts

as per rule

15"

as fitted

15"

Material of screw shafts

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

Is 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

Length of stern bush

5'-6"

Dia. of Tunnel shaft

as per rule

13.09"

Dia. of Crank shaft journals

as per rule

13.15"

Dia. of Crank pin

14"

Size of Crank webs

10 3/4" x 9 1/2"

Dia. of thrust shaft under

collars

14"

Dia. of screws

16'0"

Pitch of Screws

19'-9"

No. of Blades

4

State whether moveable

Yes

Total surface

64.5

each prop.

No. of Feed pumps

4

Diameter of ditto

4 1/4"

Stroke

2 1/2"

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps

4

Diameter of ditto

4 1/4"

Stroke

2 1/2"

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines

Seven

Sizes of Pumps

1 1/2" x 15"

1 1/2" x 15"

1 1/2" x 15"

1 1/2" x 15"

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1 1/2" x 15"

1 1/2" x 15"

In Engine Room

4 @ 3 1/2" dia

Boiler room

2 @ 3 1/2" dia

In Holds, &c.

Two in each hold

3 1/2" dia +

No. of Bilge Injections

2

sizes

9 1/2"

Connected to condenser, or to circulating pump

C.P.

Is a separate Donkey Suction fitted in Engine room & size

5" dia.

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

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

Yes

What pipes are carried through the bunkers

None

How are they protected

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

23-8-11

of Stern Tube

23-8-11

Screw shaft and Propeller

27-10-11

Is the Screw Shaft Tunnel watertight

Yes

Is it fitted with a watertight door

Yes

worked from

Top platform

BOILERS, &c.—(Letter for record)

Manufacturers of Steel

Spence & Sons Ltd.

Total Heating Surface of Boilers

16241

Is Forced Draft fitted

Yes

No. and Description of Boilers

Five single ended

Working Pressure

220 lbs.

Tested by hydraulic pressure to

440 lbs.

Date of test

8-4-11

4-8-11

No. of Certificate

2931,

2936,

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

80

No. and Description of Safety Valves to

each boiler

Two Spring loaded

Area of each valve

12.566

Pressure to which they are adjusted

224 lbs.

Are they fitted with easing gear

Yes

Smallest distance between boilers or uptakes and bunkers or woodwork

24"

Mean dia. of boilers

16'-10 1/8"

Length

12'-1 3/8"

Material of shell plates

Steel

Thickness

1 3/8"

Range of tensile strength

31

6

34 1/2"

Are the shell plates welded or flanged

No

Descrip. of riveting: cir. seams

D.R.

long. seams

T.R.D.B.S.

Diameter of rivet holes in long. seams

1 3/4"

Pitch of rivets

10 1/2"

Lap of plates or width of butt straps

2'-1 3/8"

Per centages of strength of longitudinal joint

rivets

94.5

plate

83.3

Working pressure of shell by rules

258 lbs.

Size of manhole in shell

16" x 13"

Size of compensating ring

2'-11" x 2'-8"

No. and Description of Furnaces in each boiler

Four

Corrugated

Material

Steel

Outside diameter

3'-8 1/2"

Length of plain part

top

bottom

Thickness of plates

crown

21"

bottom

32"

Description of longitudinal joint

weld

No. of strengthening rings

1

Working pressure of furnace by the rules

240 lbs.

Combustion chamber plates: Material

Steel

Thickness: Sides

5 1/4"

Back

3 1/2"

Top

5 1/4"

Bottom

1 1/4"

Working pressure by rules

239 lbs.

Pitch of stays to ditto: Sides

10 1/8" x 9"

Back

10 3/8" x 8 1/4"

Top

9 1/2" x 9 1/2"

If stays are fitted with nuts or riveted heads

nuts

Material of stays

Steel

Area

2.36

Area supported by each stay

9 1/8"

Working pressure by rules

232 lbs.

End plates in steam space:

Material

Steel

Thickness

1 3/8"

Pitch of stays

20" x 18"

How are stays secured

D. Nuts

Working pressure by rules

233 lbs.

Material of Front plates at bottom

Steel

Thickness

1 3/8"

Greatest pitch of stays

15 3/4" x 8 1/4"

Working pressure of plate by rules

232 lbs.

Thickness

1 3/8"

Material of Lower back plate

Steel

Thickness

1 3/8"

Pitch of tubes

3 3/8" x 3 3/4"

Material of tube plates

Steel

Thickness: Front

1 3/2"

Back

8"

Mean pitch of stays

9 3/16"

VERTICAL DONKEY BOILER—

Manufacturers of Steel

No.	Description		When made		Where fixed
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:—Two each bolts & nuts for connecting rod top & bottom ends & main bearings, one set coupling bolts, one set each valves for all pumps, assorted bolts nuts & wire. One set connecting rod bearings, 1 air pump buckets & rods, quantity of boiler tubes, condenser tubes & ferrules. 1 set HP & LP pistons & springs, 1 set escape & springs, 1 set check valves, 2 safety & springs, 1 set brasses & pins nuts for fore & centrifugal pump, 1 impeller & spindle for centrifugal pump.

The foregoing is a correct description,

FOR GEORGE CLARK, LIMITED.

James C. Clark.

Manufacturer.

Dates	During progress of work in shops --	1911. Jan 27. Feb 6. 21. Mar. 1. 15. 16. 24. Apr. 7. 12. 25. May 1. 3. 10. 18. 22. 29. 31. Jun 2. 7. 15. 26. July 5. 8. 12
of Survey while building	During erection on board vessel ---	Aug. 3. 4. 17. 21. 23. Sep. 1. 11. 14. 21. 22. 26. 28. Oct. 2. 5. 6. 12. 20. 25. 27. Nov. 2. 7. 10. 16. 20. 23. Dec. 8. 14. 20. Jan 2. 11. 22. 27
	Total No. of visits	Feb 8. 15. 17. Mar 6. 12. (63)

Is the approved plan of main boiler forwarded herewith ☒ Yes

" " " donkey " " " Yes

Dates of Examination of principal parts—Cylinders 15-11. 21-11. Slides 19-11. Covers 19-11. Pistons 29-5-11. Rods 3-8-11	
Connecting rods 3-8-11	Crank shafts 29-5-11, 15-11. Thrust shafts 3-8-11, 31-11. Tunnel shafts 3-8-11, 28-11. Screw shafts 11-9-11. Propellers 21-8-11
Stern tubes 21-8-11	Steam pipes tested 20-11, 16-10-11. Engine and boiler seatings 23-8-11. Engines holding down bolts 16-11-11
Completion of pumping arrangements 23-11-11	Boilers fixed 23-11-11
Main boiler safety valves adjusted 8-12-11.	Engines tried under steam 8-12-11.
Material of Crank shaft	Steel Identification Mark on Do. 2946 H.K. 2947 H.K.
Material of Tunnel shafts	Steel Identification Marks on Do. 3152 H.K. 6650 H.K.
Material of Steam Pipes	Solid drawn Copper 2 W.G. & 0 W.G. & Lap Welded iron 1/16" & 3/16" thick. Test pressure 150 lbs. for Copper & 660 lbs. for 2 W.G. Iron.

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

The machinery of this vessel has been built under special survey the materials & workmanship are of good quality and the hydraulic test of the boilers proved satisfactory. The whole of the machinery has been securely fitted on board & satisfactorily tried under steam & is in good & safe working condition & eligible in my opinion to be classed and have record **LMC 3-12** in the Register's Book.

Submarine signalling & Wireless Telegraphy fitted to this vessel.

It is submitted that this vessel is eligible for THE RECORD + LMC 3.12.

F.D.

JUR 30/3/12

William D. Butler.

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

The amount of Entry Fee .. £ 3 : 0 : 0	When applied for, 26. 2. 1912
Special .. £ 42 : 14 : 0	When received, 30. 3. 1912
Donkey Boiler Fee .. £ :	
Travelling Expenses (if any) £ :	

Committee's Minute TUE. APR. 2-1912

Assigned

+ L.M.C. 3.12

MACHINERY CERTIFICATE

NOTES



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