

## REPORT ON MACHINERY

No. 25641

Date of writing Report 10 When handed in at Local Office 24 10/3 Port of Sunderland  
No. in Survey held at Sunderland Date, First Survey 19 Mar 12 Last Survey 29 Mar 1913  
Reg. Book. on the H.M.S. "Ellin" (Number of Visits 3)  
Master Goulondris Built at S. Land By whom built Short Bros. Ltd. Tons Gross 4575  
Engines made at Sunderland By whom made J. Dickinson & Sons Ltd. Net 2780  
Boilers made at " By whom made " when made 1913  
Registered Horse Power " Owners J. G. Embiricos Port belonging to Andros  
Nom. Horse Power as per Section 28 386 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no.

## ENGINES, &amp;c.—Description of Engines Tri. C.P.A.

No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 25 1/2 42 1/2 42 Length of Stroke 48 Revs. per minute 40 Dia. of Screw shaft as per rule 14 1/4 Material of screw shaft as fitted 14 1/4  
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 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 for protected between the liners Length of stern bush 5 ft

Dia. of Tunnel shaft as per rule 12 9/32 Dia. of Crank shaft journals as per rule 13 1/4 Dia. of Crank pin 13 1/4 Size of Crank webs 82 1/2 Dia. of thrust shaft under  
collars 13 1/4 Dia. of screw 14 1/4 Pitch of Screw 14 1/4 No. of Blades 4 State whether moveable no Total surface 96 sq

No. of Feed pumps 2 Diameter of ditto 4 Stroke 2 1/2 Can one be overhauled while the other is at work yes  
No. of Bilge pumps 2 Diameter of ditto 4 1/2 Stroke 2 1/2 Can one be overhauled while the other is at work yes  
No. of Donkey Engines 2 Sizes of Pumps 5 1/2 6 1/2 12 1/2 10 duplex No. and size of Suctions connected to both Bilge and Donkey pumps  
In Engine Room 3 1/2 In Holds, &c. two 3 1/2 inches each

No. of Bilge Injections 1 sizes 5 Connected to condenser, or to circulating pump CP Is a separate Donkey Suction fitted in Engine room & size 4 1/2  
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  
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 31 1/13 of Stern Tube 8 1/2 13 Screw shaft and Propeller 8 2 13

Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from top platform  
BOILERS, &c.—(Letter for record S.) Manufacturers of Steel J. Spencer & Sons Ltd.

Total Heating Surface of Boilers 5869 sq. Is Forced Draft fitted no No. and Description of Boilers two marine type  
Working Pressure 180 lbs. Tested by hydraulic pressure to 360 Date of test 13 2 13 No. of Certificate 3084

Can each boiler be worked separately yes Area of fire grate in each boiler 81 sq. No. and Description of Safety Valves to  
each boiler 2 Spring Area of each valve 9 1/2 Pressure to which they are adjusted 185 Are they fitted with easing gear yes  
Smallest distance between boilers or uptakes and bunkers or woodwork 1 1/2 Mean dia. of boilers 14 1/2 Length 11 1/2 Material of shell plates S  
Thickness 15/16 Range of tensile strength 28 1/2 - 32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams 2 x lap  
long. seams TR. A.B.S. Diameter of rivet holes in long. seams 1 3/8 Pitch of rivets 9 1/2 Top of plates or width of butt straps 1 8 1/8

Per centages of strength of longitudinal joint rivets 88 1/2 plate 85 1/2 Working pressure of shell by rules 181 Size of manhole in shell 16 x 12  
Size of compensating ring 8 3/4 x 1 7/8 No. and Description of Furnaces in each boiler 4 Corrugated Material S Outside diameter 3 1/2  
Length of plain part top 19 Thickness of plates crown 1 1/2 bottom 1 1/2 Description of longitudinal joint weld No. of strengthening rings  
Working pressure of furnace by the rules 184 Combustion chamber plates: Material S Thickness: Sides 7/8 Back 4/8 Top 1/8 Bottom 1/8  
Pitch of stays to ditto: Sides 9 x 10 Back 9 x 10 Top 9 x 10 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 181

Material of stays S Diameter at smallest part 1 1/2 Area supported by each stay 90 Working pressure by rules 203 End plates in steam space:  
Material S Thickness 1 1/4 Pitch of stays 18 1/2 How are stays secured 8 x 1 1/2 Working pressure by rules 183 1/2 Material of stays S  
Diameter at smallest part 2 03 Area supported by each stay 396 Working pressure by rules 190 Material of Front plates at bottom S  
Thickness 1/8 Material of Lower back plate S Thickness 3/8 Greatest pitch of stays 13 1/2 9 1/2 Working pressure of plate by rules 182  
Diameter of tubes 3 1/2 Pitch of tubes 4 1/2 Material of tube plates S Thickness: Front 1 3/8 Back 1/8 Mean pitch of stays 9  
Pitch across wide water spaces 1 1/4 Working pressures by rules 288 1/2 Girders to Chamber tops: Material S Depth and  
thickness of girder at centre 8 3/4 x 1 1/2 x 2 1/2 Length as per rule 3 2 3/2 Distance apart 10 Number and pitch of stays in each 3 @ 9  
Working pressure by rules 184 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

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# 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:—1 Set Coupling bolts & nuts, 1 Set top & bottom end bolts & nuts, two main bearing bolts & nuts, one set feed and bilge pump valves two feed check, two safety valve springs, two escape valve springs, 1 Set air & air pump valves, 270 B. two ballast valves, one set of M.P. piston ring assorted iron nuts, bolts & propeller.

The foregoing is a correct description,

John Dickinson & Sons, Limited.

apchm

Manufacturer.

Dates of Survey while building	During progress of work in shops	During erection on board vessel	Total No. of visits
1912. Mar. 19. May 17. 24. Aug. 9. Oct. 9. 16. 17. 18. 25. Nov. 14. 21. 28. Dec. 5. 12. 30.	Jan. 9. 20. 23. 31. Feb. 6. 8. 12. 13. 24. Mar. 6. 11. 14. 17. 22. 24. 25. 27. 29.	(33)	Is the approved plan of main boiler forwarded herewith <u>yes</u>

Dates of Examination of principal parts—Cylinders	16.10.12	Slides	9.8.12	Covers	19.11.12	Pistons	21.11.12	Rods	21.11.12
Connecting rods	12.12.12	Crank shaft	9.1.13	Thrust shaft	9.1.13	Tunnel shafts	9.1.13	Screw shaft	9.1.13
Stern tube	31.1.13	Steam pipes tested	24.2.13	Engine and boiler seatings	12.2.13	Engines holding down bolts	22.3.13		
Completion of pumping arrangements	27.3.13	Boilers fixed	24.3.13	Engines tried under steam	25.3.13				
Main boiler safety valves adjusted	25.3.13	Thickness of adjusting washers	P. & H. full $\frac{3}{8}$ " S. & F. $\frac{3}{8}$ " $\frac{1}{2}$ " full						
Material of Crank shaft	S.	Identification Mark on Do.	R. JTF	Material of Thrust shaft	S.	Identification Mark on Do.	R. JTF		
Material of Tunnel shafts	S.	Identification Marks on Do.	R. JTF	Material of Screw shafts	W. J.	Identification Marks on Do.	R. JTF		
Material of Steam Pipes	Copper	Test pressure	360 lbs.						

General Remarks (State quality of workmanship, opinions as to class, &c.) Engines and boilers constructed under special survey. Materials and workmanship good. On question of boilers examined under full steam & found satisfactory. It is submitted that this vessel be recorded in the Register book with notification L.M.C. 3.1913

It is submitted that this vessel is eligible for THE RECORD. L.M.C. 3.13.

hms.  
3.4.13

The amount of Entry Fee	£ 3 :	When applied for.	
Special	£ 39. 6 :	When received.	
Donkey Boiler Fee	£ :		
Travelling Expenses (if any)	£ :		

Committee's Minute

FRI APR 4--1913

Assigned

+ L.M.C. 3.13

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



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Lloyd's Register Foundation

MACHINERY CERTIFICATE  
WRITTEN