

# REPORT ON MACHINERY.

No. 26610

Date of writing Report 21-1-1916 When handed in at Local Office 21-1-1916 Port of Sunderland Received at London Office THU. JAN. 27. 1916

No. in Survey held at Sunderland Reg. Book. Date, First Survey 13<sup>th</sup> January 1915 Last Survey 20-1-1916 (Number of Visits 5)

Supp 40 on the new steel S/S "MADRYN". Master J. H. Corwin Built at Sunderland By whom built O. Shorne Graham & Co. (No. 188) When built 1915 Tons Gross 2245 Net 1329 Engines made at Sunderland By whom made George Blank Ltd (No. 1029) when made 1916 Boilers made at Sunderland By whom made George Blank Ltd (No. 1029) when made 1916 Registered Horse Power Owners Martyn Martyn & Co. Ltd Port belonging to Newport. Nom. Horse Power as per Section 28 243 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

ENGINES, &c.—Description of Engines Triple expansion No. of Cylinders 3 No. of Cranks 3 Dia. of Cylinders 21, 35, 58 Length of Stroke 39 Revs. per minute 65 Dia. of Screw shaft as per rule 12.18 Material of screw shaft as fitted 12.12 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 no liners are fitted, is the shaft lapped or protected between the liners no Length of stern bush 4'-2" Dia. of Tunnel shaft as per rule 10.87 as fitted 11 Dia. of Crank shaft journals as per rule 11.11 as fitted 11.2 Dia. of Crank pin 11.2 Size of Crank webs 14"x7 1/8 Dia. of thrust shaft under collars 11 3/4 Dia. of screw 15'-3" Pitch of Screw 15'-9" No. of Blades 4 State whether moveable no Total surface 71 1/2 No. of Feed pumps 2 Diameter of ditto 2 3/4 Stroke 25" Can one be overhauled while the other is at work yes No. of Bilge pumps 2 Diameter of ditto 4 Stroke 25" Can one be overhauled while the other is at work yes No. of Donkey Engines 2 Sizes of Pumps 8x8x8 6x4x6 No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 3@3" Tunnel well 1@2 1/2" In Holds, &c. Forward hold - 2@3" after hold - 3@3" 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, 3 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 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 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 forward hold suction How are they protected under timber boards 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 9-10-15 of Stern Tube 10-11-15 Screw shaft and Propeller 16-11-15 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 David Beville & Sons Limited Total Heating Surface of Boilers 3958 1/2 Is Forced Draft fitted no No. and Description of Boilers two single ended marine Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 1-10-15 No. of Certificate 3315 Can each boiler be worked separately yes Area of fire grate in each boiler 53 1/2 No. and Description of Safety Valves to each boiler two direct spring Area of each valve 7.60 Pressure to which they are adjusted 185 lb Are they fitted with easing gear yes Smallest distance between boilers on platforms and bunkers or woodwork 18" Main dia. of boilers 14'-6" Length 10'-6" Material of shell plates steel Thickness 1 1/4 Range of tensile strength 29 1/2-33 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams W.R. long. seams JBS:TR Diameter of rivet holes in long. seams 1 1/8 Pitch of rivets 7 3/4 Lap of plates or width of butt straps 17 1/8 Per centages of strength of longitudinal joint rivets 86 plate 85.5 Working pressure of shell by rules 182 Size of manhole in shell 16x13 Size of compensating ring flanged No. and Description of Furnaces in each boiler 3 plain Material steel Outside diameter 2'-6" Length of plain part top 6'-5 9/16 bottom 6'-0" Thickness of plates crown 3 1/4 bottom 3 1/4 Description of longitudinal joint welded No. of strengthening rings none Working pressure of furnace by the rules 184 Combustion chamber plates: Material steel Thickness: Sides 1 1/8 Back 2 3/8 Top 1 1/8 Bottom 1" Pitch of stays to ditto: Sides 10x9 Back 10 1/2 x 9 3/8 Top 7 3/4 x 11 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 181 Material of stays steel Diameter at smallest part 2.030" Area supported by each stay 98.40" Working pressure by rules 185 End plates in steam space: Material steel Thickness 1 3/8 Pitch of stays 24 1/2 x 18 3/8 How are stays secured D.N. Working pressure by rules 180 Material of stays steel Diameter at smallest part 4.90" Area supported by each stay 367.0" Working pressure by rules 183 Material of Front plates at bottom steel Thickness 1 3/16 Material of Lower back plate steel Thickness 1 5/8 Greatest pitch of stays 15 1/2 x 9 3/8 Working pressure of plate by rules 185 Diameter of tubes 3" Pitch of tubes 4 1/4 x 4 1/4 Material of tube plates steel Thickness: Front 1 3/16 Back 3/4 Mean pitch of stays 11 1/8 Pitch across wide water spaces 15 + 1 3/16 Working pressures by rules 236 Girders to Chamber tops: Material steel Depth and thickness of girder at centre 2@7 1/8 x 7 1/8 Length as per rule 2-4 3/8 Distance apart 11" Number and pitch of stays in each 2@9 3/4 Working pressure by rules 183 Superheater or Steam chest; how connected to boiler none 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

If not, state whether, and when, and will be sent? Is a Report also sent on the Hull of the Ship?

IS A DONKEY BOILER FITTED?

yes

If so, is a report now forwarded?

yes

SPARE GEAR. State the articles supplied:-

Two connecting rod top and bottom end bolts and nuts  
two main bearing bolts one set of coupling bolts one set of feed air bridge and  
circulating pump valves iron and bolts of various sizes

The foregoing is a correct description,  
FOR GEORGE CLARK, LIMITED

W. S. Spence

Manufacturer of Main Engines & Boilers.

Dates of Survey while building: During progress of work in shops - 1915 Jan 13-22-27 Feb 19 Mar 1-6-22-29-24-26 Apr 15-21-22-27 May 3-5-12 Jun 2-15-16-21 Jul 8 Aug 4-10-25 Oct 1-7-8-9-11-14  
During erection on board vessel - Nov 8-10-11-16-17-19 Dec 14-28-31 Jan 4-5-7-10-11-14-15-18-19-21  
Total No. of visits 51

Is the approved plan of main boiler forwarded herewith

yes

" " " donkey "

no

Dates of Examination of principal parts - Cylinders 16-3-15 Slides 11-10-15 Covers 24-3-15 Pistons 15-4-15 Rods 16-6-15  
Connecting rods 11-10-15 Crank shaft 5-11-15 Thrust shaft 8-11-15 Tunnel shafts 24-3-15 Screw shaft 25-10-15 Propeller 22-4-15  
Stern tube 29-10-15 Steam pipes tested 17-12-15 Engine and boiler seatings 14-10-15 Engines holding down bolts 28-12-15  
Completion of pumping arrangements 11-1-16 Boilers fixed 28-12-15 Engines tried under steam 19-1-16  
Main boiler safety valves adjusted 7-1-16 Thickness of adjusting washers 1008 N  
Material of Crank shaft 9 steel Identification Mark on Do. 7475 1008 N Material of Thrust shaft 9 steel Identification Mark on Do. 1008 N S.M.  
Material of Tunnel shafts 9 steel Identification Marks on Do. 1008 N S.M. Material of Screw shaft 9 steel Identification Marks on Do. 1008 N S.M.  
Material of Steam Pipes Solid drawn copper 4" x 6 mm Test pressure 360 lbs per sq in

Is an installation fitted for burning oil fuel

no

Is the flash point of the oil to be used over 150°F.

Have the requirements of Section 49 of the Rules been complied with

yes

Is this machinery duplicate of a previous case

no

If so, state name of vessel

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

The materials and workmanship are good.  
The machinery has been constructed under special survey and is eligible in my opinion for classification and the record + LMC 1.16

When the engines were being steamed the after door and water box of the main condenser were burst. This was found to have been caused by a sock left in the discharge pipe, the sock catching under the discharge valve seat. The condenser has since been tested and found tight at new water end and after door fitted and all found satisfactory under trials.

It is submitted that  
this vessel is eligible for  
THE RECORD + LMC 1.16.

The amount of Entry Fee ... £ 2 : - :  
Special ... £ 32 : 3 :  
Donkey Boiler Fee ... £ : :  
Travelling Expenses (if any) £ : :  
When applied for, 1916  
When received, 24-1-1916

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

Committee's Minute TUE FEB. 7 - 1916

Assigned

+ LMC 1.16

MACHINERY CERTIFICATE  
WRITTEN.



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Foundation