

REPORT ON MACHINERY.

Received at London Office

SAT. 21 APR. 1917

Rivets in Brackets
Bulkheads.Number. Dia.
In

19-4-1917 When handed in at Local Office 19-4-1917 Port of Sunderland

No. in Survey held at Sunderland Date, First Survey 14 May '15 Last Survey 18-4-1917
Reg. Book. 84 on the new steel S/S "MADRONO" (Number of Visits 1)

Master Built at Newcastle By whom built Palmer & Co Ltd (S/S No 846) When built 1917
Engines made at Sunderland By whom made George Black Ltd (No 1034) when made 1917
Boilers made at Sunderland By whom made George Black Ltd (No 1034) when made 1917

Registered Horse Power 498 Owners Port belonging to
Nom. Horse Power as per Section 28 498 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Triple expansion No. of Cylinders 3 No. of Cranks 3
Dia. of Cylinders 26 1/2, 44, 73 Length of Stroke 48 Revs. per minute 65 Dia. of Screw shaft 14 7/8 Material of 5 1/2" 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
n 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 or protected between the liners — Length of stern bush 5'-0"
Dia. of Tunnel shaft 13 1/4 as per rule 13 1/4 Dia. of Crank shaft journals 14 as per rule 14 Dia. of Crank pin 14 Size of Crank webs 21 1/4 x 8 1/2 Dia. of thrust shaft under
collars 14 3/8 Dia. of screw 17 1/2 Pitch of Screw 16'-4" No. of Blades 4 State whether moveable no Total surface 97 1/2
No. of Feed pumps two Diameter of ditto 9 1/8 Stroke 21 Can one be overhauled while the other is at work yes pumps black & the pumps
No. of Bilge pumps two Diameter of ditto 4 1/2 Stroke 26 Can one be overhauled while the other is at work yes
No. of Donkey Engines two Sizes of Pumps 9 1/8 x 10, 7 1/2 x 5 x 6 No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room Three @ 3 1/2 In Holds, &c. Cargo hold - 2 @ 2 1/2 connected to
forward ballast pump only.
No. of Bilge Injections 1 sizes 8" Connected to condenser, or to circulating pump no Is a separate Donkey Suction fitted in Engine room & size yes, 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 —
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 — of Stern Tube 7-3-17 Screw shaft and Propeller 9-3-17
Is the Screw Shaft Tunnel watertight none Is it fitted with a watertight door in by aft worked from —

BOILERS, &c.—(Letter for record 3) Manufacturers of Steel John Spencer & Sons limited & David White & Sons limited.
Total Heating Surface of Boilers 7212 1/2 Is Forced Draft fitted yes No. and Description of Boilers three single ended marine
Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 25-10-16 No. of Certificate 3368
Can each boiler be worked separately yes Area of fire grate in each boiler 58 1/2 No. and Description of Safety Valves to
each boiler two direct spring Area of each valve 9.62 0" Pressure to which they are adjusted 185 Are they fitted with easing gear yes
Smallest distance between boilers on up plates and bunkers on woodwork 1'-10" Mean dia. of boilers 15'-0" Length 11'-7 1/8" Material of shell plates steel
Thickness 1 1/2" Range of tensile strength 29 1/2-33 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams DR
long. seams DRS, TR Diameter of rivet holes in long. seams 1 5/16 Pitch of rivets 9 3/8" Lap of plates or width of butt straps 20"
Per centages of strength of longitudinal joint 92.7 Working pressure of shell by rules 182 Size of manhole in shell do in ends only after
Size of compensating ring 8 1/4 x 1 1/4 No. and Description of Furnaces in each boiler 3 Deighton & Co Material steel Outside diameter 4'-1"
Length of plain part top Thickness of plates bottom 3 1/4" Description of longitudinal joint welded No. of strengthening rings —
Working pressure of furnace by the rules 186 Combustion chamber plates: Material steel Thickness: Sides 1 1/8" Back 2 3/4" Top 3 1/4" Bottom 1 1/8"
Pitch of stays to ditto: Sides 9 3/4 x 10 3/4 Back 10 x 9 1/2 Top 10 1/2 x 9 1/2 If stays are fitted with nuts or riveted heads nuts in cs Working pressure by rules 185
Material of stays steel Diameter at smallest part 2.03 0" Area supported by each stay 95 0" Working pressure by rules 192 End plates in steam space:
Material steel Thickness 1 1/2" Pitch of stays 23 x 21 How are stays secured DR Working pressure by rules 182 Material of stays steel
Diameter at smallest part 8.24 Area supported by each stay 482 0" Working pressure by rules 190 Material of Front plates at bottom steel
Thickness 1 1/8" Material of Lower back plate steel Thickness 1" Greatest pitch of stays 17 1/8 x 9 3/8 Working pressure of plate by rules 182
Diameter of tubes 2 1/2" Pitch of tubes 3 3/4 x 3 5/8 Material of tube plates steel Thickness: Front 1 1/8" Back 3 1/4" Mean pitch of stays 9 1/2"
Pitch across wide water spaces 13 1/2" Working pressures by rules 185 Girders to Chamber tops: Material steel Depth and
thickness of girder at centre 20 9/16 x 7 1/8 Length as per rule 36 Distance apart 9 1/2" Number and pitch of stays in each 2 @ 10 1/4"
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 —

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If so, is a report now forwarded? ✓

The foregoing is a correct description,

FOR GEORGE CLARK, LIMITED

Manufacturer.

Is the approved plan of main boiler forwarded herewith yes
 " " " donkey " " "

Connecting rods 23-1-17 Crank shaft 9-11-16 Thrust shaft 28-12-16 Tunnel shafts none Screw shaft 12-1-17 Propeller 8-1-17

Completion of pumping arrangements 17-4-17 Boilers fixed 12-4-17 Engines tried under steam 14-4-17

Material of Crank shaft Sm Steel Identification Mark on Do. 1163N WC Material of Thrust shaft SA-1 steel

Material of Steam Pipes	Identification Marks on Do.	Material of Screw shafts	Identification Marks on Do.
Handwritten: 12" dia. 10' long	Handwritten: 12" dia. 10' long	Handwritten: S.M. Steel	Handwritten: 7298731

Is an installation fitted for burning oil fuel yes ✓ Is the flash point of the oil to be used over 150°F yes ✓

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

Is this machinery duplicate of a previous case yes If so, state name of vessel S/S "Mirita" SL Rpt # 26763

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

To complete the survey the spare feed pump valves require to be supplied. The vessel has now returned to the builder's yard and the spare valves are being made at Newcastle. Surveyors advised

The materials and workmanship are good.

The machinery has been constructed under special survey and is eligible in our opinion for classification and upon completion the records \times LMC with date, fitted for oil fuel date F.P. above 150°F .

SUNDERLAND.

Certificate (if required) to be sent to

When applied for,

20 APR 1917

When received,

Sh. H. avis.

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

Committee's Minute

TUE. 15 MAY. 1917

Assigned

MACHINERY CERTIFICATE
WRITTEN

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