

REPORT ON MACHINERY.

No. 59055

Received at London Office

FIN. 9 SEP 1910

Date of writing Report 31st August 1910 When handed in at Local Office 8 SEP 1910 Port of Newcastle
No. in Survey held at Newcastle Date, First Survey 17th Dec. 1909 Last Survey 30th Aug 1910
Reg. Book. (Number of Visits 50)

Master on the S.S. "Malengo" Built at Newcastle By whom built Northumberland S. B. Co. When built 1910
Engines made at Newcastle By whom made Palmes Co. No. 791 when made 1910
Boilers made at do By whom made do when made 1910

Registered Horse Power 575 Owners J. Wilson Sons & Co. Port belonging to Hull
Nom. Horse Power as per Section 28 582 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 28" - 46 1/2" - 78" Length of Stroke 54" Revs. per minute 70 Dia. of Screw shaft as per rule 16 1/2" Material of steel
as fitted 17 1/8" screw shaft

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 no 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' - 8 1/2"

Dia. of Tunnel shaft as per rule 14 7/8" Dia. of Crank shaft journals as per rule 15 5/8" Dia. of Crank pin 15 5/8" Size of Crank webs 22 3/4" x 10" Dia. of thrust shaft under
collars 15 5/8" Dia. of screw 19' - 0" Pitch of Screw 18' - 0" No. of Blades 4 State whether moceable no Total surface 103 sq ft

No. of Feed pumps 2 Diameter of ditto 4 1/2" Stroke 27" Can one be overhauled while the other is at work yes
No. of Bilge pumps 2 Diameter of ditto 4 1/2" Stroke 27" Can one be overhauled while the other is at work yes
No. of Donkey Engines 2 Sizes of Pumps 13" x 11" x 12" + 7 1/2" x 4 1/2" x 10" No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room four 3 1/2" In Holds, &c. No. 1 hold 2 - 3 1/2", No. 2 hold 2 - 3 1/2"
No. 3 hold 2 - 3 1/2", No. 4 hold 2 - 3 1/2" Tunnel Well 1 - 2 1/2"

No. of Bilge Injections 1 sizes 6" Connected to condenser, or to circulating pump yes Is a separate Donkey Suction fitted in Engine room & size yes 7"
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 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 3/6/10 of Stern Tube 27/7/10 Screw shaft and Propeller 27/7/10

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. Spence & Sons & Palmes Co

Total Heating Surface of Boilers 7926 sq ft Is Forced Draft fitted yes No. and Description of Boilers three, single-ended
Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs Date of test 1/7/10 No. of Certificate 7997
Can each boiler be worked separately yes Area of fire grate in each boiler 63 sq ft No. and Description of Safety Valves to
each boiler two, spring Area of each valve 8.29 sq ft Pressure to which they are adjusted 205 lbs Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 18" Mean dia. of boilers 15' - 3" Length 11' - 6" Material of shell plates Steel
Thickness 1 13/32" Range of tensile strength 29 - 33 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams X Lap
long. seams XBS, L Rivet Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 9 1/2" Lap of plates or width of butt straps 2 1/2"

Per centages of strength of longitudinal joint rivets 98 plate 84.2 Working pressure of shell by rules 206 lbs Size of manhole in shell 16" x 12"
Size of compensating ring Flanged No. and Description of Furnaces in each boiler 3 - Morrison Material Steel Outside diameter 46 3/4"
Length of plain part top Thickness of plates crown 5/8" Description of longitudinal joint Welded No. of strengthening rings
bottom Thickness of plates bottom 5/8"

Working pressure of furnace by the rules 214 lbs Combustion chamber plates: Material Steel Thickness: Sides 2 1/32" Back 2 1/32" Top 2 1/32" Bottom 2 1/32"
Pitch of stays to ditto: Sides 8" x 8" Back 8" x 7 7/8" Top 7 7/8" x 7 3/4" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 233 lb
Material of stays Steel Diameter at smallest part 1.73" Area supported by each stay 64 sq in Working pressure by rules 216 lb End plates in steam space:
Material Steel Thickness 1 1/8" Pitch of stays 17 1/2" x 15" How are stays secured X. H. W. Working pressure by rules 226 lb Material of stays Steel
Diameter at smallest part 6.1" Area supported by each stay 262 sq in Working pressure by rules 240 lb Material of Front plates at bottom Steel
Thickness 1 7/16" Material of Lower back plate Steel Thickness 15/16" Greatest pitch of stays 14 1/4" Working pressure of plate by rules 250 lb

Diameter of tubes 2 1/2" Pitch of tubes 3 3/4" x 3 5/8" Material of tube plates Steel Thickness: Front 1 7/16" Back 29/32" Mean pitch of stays 7 3/8"
Pitch across wide water spaces 14" Working pressures by rules 220 lb Girders to Chamber tops: Material Steel Depth and
thickness of girder at centre 8" x 2" Length as per rule 32" Distance apart 7 3/4" Number and pitch of stays in each 3 - 7 7/8"

Working pressure by rules 212 lb 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

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:— Two top-end, two bottom-end & two main bearing bolts & nuts, 1 set of coupling bolts, 1 set of feed & bilge pump valves, 1 set of H.P. piston rings, 1 propeller, a quantity of assorted bolts nuts & washers.

The foregoing is a correct description, *Ltd.*

W. K. ... Manufacturer.

Dates of Survey while building	During progress of work in shops ---	1909	1910						
		Dec. 17 23	Jan. 5 7 12 20 26 27	Feb. 2 7 8 15 25 28	Mar. 2 8 15 22				
Total No. of visits	During erection on board vessel ---	50							
		Apr. 1 6 7 13 14 18 26 28 29	May 3 5 13 24 25 30 31	Jun. 2 3 8 9 10 28 29	Jul. 1 6 26 27	Aug. 4 5 9 11 30			

Is the approved plan of main boiler forwarded herewith Yes

Dates of Examination of principal parts—Cylinders 14/4/10 Slides 13/5/10 Covers 14/4/10 Pistons 14/4/10 Rods 14/4/10

Connecting rods 14/4/10 Crank shaft 1/4/10 Thrust shaft 13/5/10 Tunnel shafts 10/6/10 Screw shaft 25/5/10 Propeller 13/5/10

Stern tube 28/4/10 Steam pipes tested 5/8/10 Engine and boiler seatings 3/6/10 Engines holding down bolts 11/8/10

Completion of pumping arrangements 30/8/10 Boilers fixed 9/8/10 Engines tried under steam 11/8/10

Main boiler safety valves adjusted 11/8/10 Thickness of adjusting washers P.B. P⁷/₁₆" S³/₈". C.B. P³/₁₆" S³/₈". S.B. P³/₁₆" S⁷/₁₆".

Material of Crank shaft Steel Identification Mark on Do. T.P. 4/10 Material of Thrust shaft Steel Identification Mark on Do. T.P. 5/10

Material of Tunnel shafts Steel Identification Marks on Do. T.P. 6/10 Material of Screw shafts Steel Identification Marks on Do. T.F. 5/10

Material of Steam Pipes Steel Test pressure 400 lbs

General Remarks (State quality of workmanship, opinions as to class, &c.) The engine & boiler of this vessel have been constructed under special survey and the materials and workmanship are found to be good. The engines have been tried under steam and the boiler safety valves adjusted at the working pressure. The machinery is now in good & safe working condition & eligible in my opinion to have the notation of +LMC 8-10. The electric installation is to be fitted at Hull and the surveys have been advised.

It is submitted that this vessel is eligible for THE RECORD, + LMC 8.10.

F.D. J.W.D. 9/9/10

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

The amount of Entry Fee	£ 3 : 0 : 0	When applied for, 8 - SEP 1910
Special	£ 49 : 2 : 0	
Donkey Boiler Fee	£ - : - : -	When received, 26.9.1910
Travelling Expenses (if any)	£ - : - : -	12.9

Committee's Minute

1910 SEP 13

Assigned

LMC 8.10



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Certificate (if reqd./red) to be sent to the Surveyors are requested not to write on or before the space for Committee's Minute.