

## REPORT ON MACHINERY.

No. 59055

Received at London Office

FIN. 9 SEP 1910

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

Master 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 screw shaft as fitted 17 1/8" 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

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 1/2" Dia. of Crank shaft journals as per rule 15 1/2" 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 moveable no Total surface 103 sq

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 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 No. and Description of Safety Valves to

each boiler Two, spring Area of each valve 8.290 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 8 Lap

long. seams JBS. L. Riv 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 - motionless 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 1/8" Top 7 1/8" x 7 3/4" If stays are fitted with nuts or riveted heads none Working pressure by rules 216 lbs End plates in steam space:

Material of stays Steel Diameter at smallest part 1.73" Area supported by each stay 64 sq Working pressure by rules 216 lbs Material of stays Steel

Material Steel Thickness 1 1/8" Pitch of stays 17 1/2" x 15" How are stays secured 8. H. W. Working pressure by rules 226 lbs Material of Front plates at bottom Steel

Diameter at smallest part 6.10" Area supported by each stay 26.2 sq Working pressure by rules 240 lbs Material of Front plates at bottom Steel

Thickness 1 1/8" Material of Lower back plate Steel Thickness 1 5/16" Greatest pitch of stays 14 1/4" Working pressure of plate by rules 250 lbs

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 2 9/32" Mean pitch of stays 7 3/8"

Pitch across wide water spaces 14" Working pressures by rules 220 lbs 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 1/8"

Working pressure by rules 212 lbs 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

Lloyd's Register  
Foundation  
W570-0026



# 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  
 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 HP piston rings, 1 propeller, a quantity of assorted bolts nuts & washers.

The foregoing is a correct description, *Lib.*

Manufacturer.

Dates of Survey while building  
 During progress of work in shops -- }  
 During erection on board vessel -- }  
 Total No. of visits 50  
 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 PB. P<sup>7</sup>/<sub>16</sub> S<sup>3</sup>/<sub>8</sub>. CB. P<sup>3</sup>/<sub>16</sub> S<sup>3</sup>/<sub>8</sub>. SB. P<sup>3</sup>/<sub>16</sub> S<sup>7</sup>/<sub>16</sub>.  
 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 P 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 surveyors 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  
*J.M.*

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

Assigned

13 SEP 1910

LMC 8.10

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



© 2020

Lloyd's Register Foundation