

REPORT ON MACHINERY.

No. 56902

Port of *Newcastle-on-Tyne*

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No. in Survey held at *Newcastle*
Reg. Book.Date, first Survey *Oct 28th*Last Survey *June 1909*on the *SS "Portugal"*

(Number of Visits)

Master *Antwerp* Built at *Antwerp* By whom built *Antwerp S.B.C.* Tons *Gross* *Net* When built *1909*Engines made at *Newcastle* By whom made *North Eastern Marine* when made *1909*Boilers made at *Newcastle* By whom made *North Eastern Marine* when made *1909*Registered Horse Power *150* Owners *Port belonging to*Nom. Horse Power as per Section 28 *150* Is Refrigerating Machinery fitted for cargo purposes *No* Is Electric Light fittedENGINES, &c.—Description of Engines *Triple expansion* No. of Cylinders *three* No. of Cranks *3*Dia. of Cylinders *18, 29, 48* Length of Stroke *33* Revs. per minute *78* Dia. of Screw shaft *10 3/4* as per rule *10 1/2* as fitted *10 3/4* Material of screw shaft *iron*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 tightin 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 partbetween the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive *yes* If twoliners are fitted, is the shaft lapped or protected between the liners *yes* Length of stern bush *4 1/2*Dia. of Tunnel shaft *as per rule 2 1/2* as fitted *2 1/2* Dia. of Crank shaft journals *as per rule 4 3/8* as fitted *4 3/8* Dia. of Crank pin *9 7/8* Size of Crank webs *9 1/2* Dia. of thrust shaft undercollars *9 7/8* Dia. of screw *13-3* Pitch of Screw *13-6* No. of Blades *4* State whether moveable *No* Total surface *55 1/2*No. of Feed pumps *2* Diameter of ditto *3* Stroke *16 1/2* Can one be overhauled while the other is at work *yes*No. of Bilge pumps *2* Diameter of ditto *3* Stroke *16 1/2* Can one be overhauled while the other is at work *yes*No. of Donkey Engines *2* Sizes of Pumps *5 1/2 x 3 1/2 x 5, 6 x 8 1/2 x 8* No. and size of Suctions connected to both Bilge and Donkey pumpsIn Engine Room *four 2 1/2* In Holds, &c. *five at 2 1/2*No. of Bilge Injections *1* sizes *4* Connected to condenser, or to circulating pump *yes* Is a separate Donkey Suction fitted in Engine room & size *yes 2 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 *yes*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 *yes*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 *X* of Stern Tube *X* Screw shaft and Propeller *1/6/09*Is the Screw Shaft Tunnel watertight *yes* Is it fitted with a watertight door *yes* worked from *yes*BOILERS, &c.—(Letter for record *S*) Manufacturers of Steel *Messrs John Sponner & Sons*Total Heating Surface of Boilers *2404* Is Forced Draft fitted *No* No. and Description of Boilers *2 Single ended return Tube*Working Pressure *180 lbs* Tested by hydraulic pressure to *360* Date of test *18/2/09* No. of Certificate *7818*Can each boiler be worked separately *yes* Area of fire grate in each boiler *33.6* No. and Description of Safety Valves toeach boiler *1 pair direct* Area of each valve *4.9* Pressure to which they are adjusted *185 lbs* Are they fitted with easing gear *yes*Smallest distance between boilers or uptakes and bunkers or woodwork *12"* Mean dia. of boilers *12"* Length *10.0* Material of shell plates *Steel*Thickness *1"* Range of tensile strength *28 3/4 to 32* Are the shell plates welded or flanged *yes* Descrip. of riveting: cir. seams *double lap*long. seams *double lap* Diameter of rivet holes in long. seams *1 1/16* Pitch of rivets *7 1/16* Lap of plates or width of butt straps *14"*Per centages of strength of longitudinal joint *82.5* Working pressure of shell by rules *182.5* Size of manhole in shell *16" x 12"*Size of compensating ring *flanged* No. and Description of Furnaces in each boiler *2 Dugout* Material *Steel* Outside diameter *41 1/2"*Length of plain part *top 1"* Thickness of plates *bottom 1"* Description of longitudinal joint *Welded* No. of strengthening rings *—*Working pressure of furnace by the rules *182* Combustion chamber plates: Material *Steel* Thickness: Sides *3 1/2"* Back *2 3/4"* Top *2 3/4"* Bottom *2"*Pitch of stays to ditto: Sides *10" x 9 3/4"* Back *10" x 9 3/4"* Top *10" x 9 3/4"* If stays are fitted with nuts or riveted heads *yes* Working pressure by rules *183*Material of stays *Steel* Diameter at smallest part *2.08* Area supported by each stay *77 1/2* Working pressure by rules *187.5* End plates in steam space:Material *Steel* Thickness *1 1/2"* Pitch of stays *8 3/4"* How are stays secured *2 nuts* Working pressure by rules *180 1/2* Material of stays *Steel*Diameter at smallest part *6.09* Area supported by each stay *337* Working pressure by rules *181* Material of Front plates at bottom *Steel*Thickness *13"* Material of Lower back plate *Steel* Thickness *3 1/2"* Greatest pitch of stays *14 1/2"* Working pressure of plate by rules *186*Diameter of tubes *5 1/4"* Pitch of tubes *4 1/2" x 4 1/2"* Material of tube plates *Steel* Thickness: Front *13"* Back *3 1/4"* Mean pitch of stays *9"*Pitch across wide water spaces *14 1/2"* Working pressures by rules *186* Girders to Chamber tops: Material *Steel* Depth andthickness of girder at centre *8 1/2" x 4"* Length as per rule *30* Distance apart *9 3/4"* Number and pitch of stays in each tier *10"*Working pressure by rules *184 1/2* Superheater or Steam chest; how connected to boiler *none* Can the superheater be shut off and the boiler workedseparately *yes* Diameter *—* Length *—* Thickness of shell plates *—* Material *—* Description of longitudinal joint *—* Diam. of rivetholes *—* 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. *101* Description *See Middlesbrough Report No 5660*
 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 *2 Spring Loaded* No. of Safety Valves *2* Area of each *5.94* Pressure to which they are adjusted *100* Date of adjustment *11/6/09*
 If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no* 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 _____ Stayed by _____
 Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____ Dates of survey _____

SPARE GEAR. State the articles supplied:— *2 Top and Bottom Bolts & Nuts 2 bottom and bolts & nuts 2 main bearing bolts & nuts, 1 set of coupling bolts & nuts, 1 set of piston springs, 2 fuel & 2 bilge pump valves, bolts & nuts of various sizes*

The foregoing is a correct description,
 NORTH EASTERN MARINE ENGINEERING CO., LTD.
 Manufacturer.

Dates of Survey while building _____
 During progress of work in shops _____ Secretary _____
 During erection on board vessel _____
 Total No. of visits *27* Is the approved plan of main boiler forwarded herewith _____

Dates of Examination of principal parts—Cylinders *3-2-09* Slides *3-2-09* Covers *3-2-09* Pistons *4-2-09* Rods *4-2-09*
 Connecting rods *12-1-09* Crank shaft *24/2/09* Thrust shaft *28/10/08* Tunnel shafts *28/10/08* Screw shaft *3-09* Propeller *24/2/09*
 Stern tube *24/2/09* Steam pipes tested *7/6/09* Engine and boiler seatings *7/6/09* Engines holding down bolts *7/6/09*
 Completion of pumping arrangements *11/6/09* Boilers fixed *7/6/09* Engines tried under steam *11/6/09*
 Main boiler safety valves adjusted *11/6/09* Thickness of adjusting washers *Port boiler 7/16" 7/16" St boiler 13/32" 13/32"*
 Material of Crank shaft *Light Steel* Identification Mark on Do. *R J.T.F.* Material of Thrust shaft *Light Steel* Identification Mark on Do. *R J.T.F.*
 Material of Tunnel shafts *S. Iron* Identification Marks on Do. *R J.T.F.* Material of Screw shafts *S. Iron* Identification Marks on Do. *R J.T.F.*
 Material of Steam Pipes *Copper* Test pressure *360lbs.*

General Remarks (State quality of workmanship, opinions as to class, &c. *These engines and boilers have been built under special survey, the materials and workmanship are of good description they have been well fitted on board and tried under steam.*

*The machinery of this vessel is in our opinion eligible to have notation of **LMC 6-09** in the Register Book*

It is submitted that this vessel is eligible for THE RECORD + LMC 6-09. ARK
J.W.D. 28/6/09

The amount of Entry Fee. £ *2* : : When applied for, *4 JUN 1909*
 Special £ *22* : *10* :
 Donkey Boiler Fee £ *24* : *10* :
 Travelling Expenses (if any) £ : : When received, *19/7/09*

Committee's Minute *TUES. 29 JUN 1909*
 Assigned *+ Lmb 6 09*

J. Robinson.
J. T. Findlay & A. M. Reid
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.