

REPORT ON MACHINERY.

Received at London Office SAT. JUN. 19, 1915

Date of writing Report *in* When handed in at Local Office **JUN 17 1915** Port of **NEWCASTLE-ON-TYNE**
 No. in Survey held at *North & South Shields* Date, First Survey *Aug 8, 1914* Last Survey *June 1, 1915*
 Reg. Book. *85* on the *SS "MATA HARI"* (Number of Vents *44*)
 Master *W J Carver* Built at *South Shields* By whom built *C Renaldson & Co* Tons { Gross *1019*
 Engines made at *North Shields* By whom made *Shields Engineering Co* when made *1915* Net *510*
 Boilers made at *Newcastle* By whom made *Palmers* when made *1914*
 Registered Horse Power _____ Owners *British India Steam Nav. Co Ltd* Port belonging to *South Shields*
 Nom. Horse Power as per Section 28 *165* Is Refrigerating Machinery fitted for cargo purposes *no* Is Electric Light fitted *yes*

ENGINES, &c.—Description of Engines *Inverted Triple expansion* No. of Cylinders *3* No. of Cranks *3*
 Dia. of Cylinders *17 1/2, 29, 47* Length of Stroke *30* Revs. per minute *100* Dia. of Screw shaft *as per rule 9.08* Material of *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 *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 *yes* If two
 liners are fitted, is the shaft lapped or protected between the liners *yes* Length of stern bush *3'-6"*
 Dia. of Tunnel shaft *as per rule 8.4* Dia. of Crank shaft journals *as per rule 8.8* Dia. of Crank pin *9 1/8* Size of Crank webs *6 1/2 x 13 1/2* Dia. of thrust shaft under
 collars *9 1/8* Dia. of screw *10'-6"* Pitch of Screw *12'-0"* No. of Blades *4* State whether moveable *yes* Total surface *32 sq ft*
 No. of Feed pumps *2* Diameter of ditto *3 1/2* Stroke *15* Can one be overhauled while the other is at work *yes* also *2 Weirs feed pumps*
 No. of Bilge pumps *2* Diameter of ditto *3 1/2* Stroke *15* Can one be overhauled while the other is at work *yes*
 No. of Donkey Engines *One Weirs* Sizes of Pumps *9 1/2 x 7 1/2 x 18* No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room *three 2 1/4" & two 2"* In Holds, &c. *2 1/4" Tunnel well suction N°1 Hold one 2 1/4"*
 N°2 Hold *two 2"* N°3 Hold *two 2" & one 2 1/4"*
 No. of Bilge Injections *1* sizes *5 1/2* Connected to *condenser, or to circulating pump* *yes* Is a separate Donkey Suction fitted in Engine room & size *yes 2 1/4"*
 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 *yes*
 Are all connections with the sea direct on the skin of the ship *yes* Are they Valves or Cocks *both*
 Are they sized 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 *oil suction pipes* 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 *22.5.15* of Stern Tube *22.5.15* Screw shaft and Propeller *22.5.15*
 Is the Screw Shaft Tunnel watertight *yes* Is it fitted with a watertight door *yes* worked from *steering engine platform*

BOILERS, &c.—(Letter for record _____) Manufacturers of Steel _____

Total Heating Surface of Boilers	Is Forced Draft fitted	No. and Description of Boilers
Working Pressure	Tested by hydraulic pressure to	Date of test
Can each boiler be worked separately	Area of fire grate in each boiler	No. of Certificate
each boiler	Area of each valve	Pressure to which they are adjusted
Smallest distance between boilers or uptakes and bunkers or woodwork	Mean dia. of boilers	Length
Thickness	Range of tensile strength	Material of shell plates
long. seams	Are the shell plates welded or flanged	Descrip. of riveting: cir. seams
Per centages of strength of longitudinal joint	Diameter of rivet holes in long. seams	Pitch of rivets
rivets	Pitch of rivets	Lap of plates or width of butt straps
plate	Working pressure of shell by rules	Size of manhole in shell
Size of compensating ring	No. and Description of Furnaces in each boiler	Material
Length of plain part	Material	Outside diameter
top	Thickness of plates	No. of strengthening rings
bottom	Description of longitudinal joint	
Working pressure of furnace by the rules	Combustion chamber plates: Material	Thickness: Sides
Pitch of stays to ditto: Sides	Back	Top
Back	Top	Bottom
Material of stays	If stays are fitted with nuts or riveted heads	Working pressure by rules
Diameter at smallest part	Area supported by each stay	Working pressure by rules
Thickness	Working pressure by rules	End plates in steam space
Pitch of stays	How are stays secured	Material of stays
Diameter at smallest part	Area supported by each stay	Working pressure by rules
Thickness	Material of Front plates at bottom	
Material of Lower back plate	Thickness	Greatest pitch of stays
Thickness	Working pressure of plate by rules	
Diameter of tubes	Pitch of tubes	Material of tube plates
Pitch across wide water spaces	Working pressures by rules	Thickness: Front
thickness of girder at centre	Length as per rule	Back
Working pressure by rules	Distance apart	Mean pitch of stays
separately	Number and pitch of stays in each	
Diameter	Superheater or Steam chest; how connected to boiler	Can the superheater be shut off and the boiler worked
Length	Material	Description of longitudinal joint
Thickness of shell plates	Material	Diam. of rivet
Pitch of rivets	Working pressure of shell by rules	Material of flue plates
Working pressure of shell by rules	Diameter of flue	Thickness
If stiffened with rings	Distance between rings	Working pressure by rules
Working pressure of end plates	Area of safety valves to superheater	End plates: Thickness
	Are they fitted with easing gear	How stayed

IS A DONKEY BOILER FITTED? No If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— 4 main bearing bolts & nuts, 4 connecting rod bottom end bolts & nuts, 4 connecting rod top end bolts & nuts, one set of coupling bolts & nuts, one set of feed & bilge pump valves, one set of piston rings & springs, one eccentric strap, one top & bottom end brass, tailend shaft, 2 bronze propeller blades bolts & nuts & iron of various sizes.

The foregoing is a correct description,
HOBBS & SHIELDS ENGINEERS & DRY DOCK CO., LIMITED

E. P. Bradshaw

Manufacturer. June 16th 1915

Dates of Survey while building { During progress of work in shops - - } Aug 8, 9, 21, 25, 28, 30, Oct 7, 8, 9, 16, 20, 23, 27, 28, Nov 9, 10, 12, 14, 18, 23, 25, 26, 30, Dec 2, 7, 9, 12, 22, Jan 22
{ During erection on board vessel - - - } Feb 1, Mar 13, 14, 20, Apr 7, 12, 17, 26, 28, May 6, 13, 22, 27, Jun 1
Total No. of visits 44 Is the approved plan of main boiler forwarded herewith yes

Dates of Examination of principal parts—Cylinders 18.11.14 Slides 9.12.14 Covers 10.10.14 Pistons 9.12.14 Rods 10.10.14
Connecting rods 5.12.14 Crank shaft 22.12.14 Thrust shaft 22.12.14 Tunnel shafts 22.12.14 Screw shaft 22.12.14 Propeller 22.12.14
Stern tube 18.11.14 Steam pipes tested 4.5.15 Engine and boiler seatings 30.3.15 Engines holding down bolts 7.11
Completion of pumping arrangements 13.5.15 Boilers fixed 7.4.15 Engines tried under steam 1.6.15
Main boiler safety valves adjusted 1.6.15 Thickness of adjusting washers Port Blr $V \frac{3}{8}$ SV $\frac{3}{8}$ Star Blr $V \frac{3}{8}$ SV $\frac{3}{8}$
Material of Crank shaft steel Identification Mark on Do. 1849 FC Material of Thrust shaft steel Identification Mark on Do. 1849 FC
Material of Tunnel shafts stal Identification Marks on Do. LGS 16.10.14 Material of Screw shafts stal Identification Marks on Do. 1849
Material of Steam Pipes Copper solid drawn Test pressure 360 lbs
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 no If so, state name of vessel ✓

General Remarks (State quality of workmanship, opinions as to class, &c. The engines of this vessel have been built under special survey & the material & workmanship are good. They have been efficiently fitted on board, tried under steam and found satisfactory.
In our opinion the vessel is eligible to have the notation of
* LMC 6.15

It is submitted that
this vessel is eligible for
THE RECORD, + LMC 6.15.

Added H.P. & C. 26/7/15 Subd for oil fuel 6.15 F.P. above 150°F J.P.P.

The amount of Entry Fee ... £ 2 : 0 0 When applied for JUN 17 1915
Special ... £ 24 12 6 19
Donkey Boiler Fee ... £
Travelling Expenses (if any) £

Reginald Bain & L. J. Shallcross
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute FRI. JUL 2 - 1915
Assigned + LMC 6.15
Subd for oil fuel 6.15 F.P. above 150°F
MACHINERY CERTIFICATE



NEWCASTLE-ON-TYNE.

The Surveys are required to be written in or below the space for Committee's Minutes.