

## REPORT ON MACHINERY.

No. 46768

Port of *Newcastle-on-Tyne*

IMUR. 7 APR 1904

Received at London Office

19

No. in Survey held at *Newcastle*  
Reg. Book.Date, first Survey *Nov 4*Last Survey *Mar 26*

1904

(Number of Visits *23*)Gross *1049.34*Tons Net *637.09*When built *1904*Master *N. Nielsen*Built at *Newcastle*By whom built *Wood Minnie & Co*Engines made at *Newcastle*By whom made *With Eastern Mar. Eng. Co*when made *1904*Boilers made at *Newcastle*By whom made *With Eastern Mar. Eng. Co*when made *1904*

Registered Horse Power

Owners *Aktieselskabet Dampskibsselskabet*Port belonging to *Copenhagen*Nom. Horse Power as per Section 28 *133*Is Refrigerating Machinery fitted *no*Is Electric Light fitted *no*ENGINES, &c.—Description of Engines *Triple*No. of Cylinders *3*No. of Cranks *3*Dia. of Cylinders *17" 28" 46"* Length of Stroke *33*Revs. per minute *80*

Dia. of Screw shaft

as per rule *10.4*Material of screw shaft *Iron*Is the screw shaft fitted with a continuous liner the whole length of the stern tube *no liners*

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 *3-9"*

Dia. of Tunnel shaft

as per rule *8.67*

Dia. of Crank shaft journals

as per rule *9.251*Dia. of Crank pin *9 1/4*Size of Crank webs *5 1/2 x 18*

Dia. of thrust shaft under

collars *9 1/4*Dia. of screw *12-6*Pitch of screw *13-9*No. of blades *4*State whether moveable *no*Total surface *469*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 *6 x 8 1/2 x 8, 5 1/2 x 3 1/2 x 5*

No. and size of Suctions connected to both Bilge and Donkey pumps

in Engine Room *Two 2" Two 2 1/2"*In Holds, &c. *Two in fore hold 2" One in tunnel*Will it run in hold well *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*When were stern tube, propeller, screw shaft, and all connections examined in dry dock *now*Is the screw shaft tunnel watertight *yes*Is it fitted with a watertight door *yes*worked from *upper platform*

## BOILERS, &amp;c.—

(Letter for record *5*)Total Heating Surface of Boilers *2073 1/2*Is forced draft fitted *no*No. and Description of Boilers *One Single Ended*Working Pressure *180 lbs*Tested by hydraulic pressure to *360 lbs*Date of test *24/3/04*Can each boiler be worked separately *yes*Area of fire grate in each boiler *575*

No. and Description of safety valves to

each boiler *Two spring valves*Area of each valve *7.07"*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 *14-10 1/4*Length *10-0*Material of shell plates *S*Thickness *1 1/2*Range of tensile strength *29/32*Are they welded or flanged *no*Descrip. of riveting: cir. seams *Lap 1 1/2"*long. seams *d 1 1/2" at riv.*Diameter of rivet holes in long. seams *1 1/8*Pitch of rivets *9 1/2"*Lap of plates or width of butt straps *17 1/2*

Percentages of strength of longitudinal joint

rivets *82*Working pressure of shell by rules *182*Size of manhole in *12 x 16*Size of compensating ring *flanged in*No. and Description of Furnaces in each boiler *4 Plain*Material *S*Outside diameter *35 1/2*

Length of plain part

top *6-0*

Thickness of plates

crown *3 1/2*Description of longitudinal joint *weld*No. of strengthening rings *1*Working pressure of furnace by the rules *181*Combustion chamber plates: Material *S*Thickness: Sides *1/2*Back *1/2*Top *1/2*Bottom *3/4*Pitch of stays to ditto: Sides *9 1/2 x 9 1/2*Back *9 x 9 1/2*Top *9 1/2 x 9 1/2*If stays are fitted with nuts or riveted heads *nuts*Working pressure by rules *183*Material of stays *S*Diameter at smallest part *1 1/2*Area supported by each stay *90"*Working pressure by rules *180*

End plates in steam space:

Material *S*Thickness *1 1/2*Pitch of stays *22 1/2 x 20 1/2*How are stays secured *d.n.m.*Working pressure by rules *182*Material of stays *S*Area at smallest part *848"*Area supported by each stay *468"*Working pressure by rules *180*Material of Front plates at bottom *S*Thickness *1"*Material of Lower back plate *S*Thickness *1 1/2*Greatest pitch of stays *14 1/2*Working pressure of plate by rules *197*Diameter of tubes *3 1/4*Pitch of tubes *4 1/2 x 4 1/2*Material of tube plates *S*Thickness: Front *1"*Back *3/4*Mean pitch of stays *9"*Pitch across wide water spaces *14 1/2*Working pressures by rules *194*Girders to Chamber tops: Material *S*

Depth and

Thickness of girder at centre *8 1/2 x 1 1/2*Length as per rule *30*Distance apart *9 1/2*Number and pitch of Stays in each *2. 9 1/2*Working pressure by rules *182*Superheater or Steam chest; how connected to boiler *yes*

Can the superheater be shut off and the boiler worked

separately *yes*Diameter *yes*Length *yes*Thickness of shell plates *yes*Material *yes*Description of longitudinal joint *yes*Pitch of rivets *yes*Working pressure of shell by rules *yes*Diameter of flue *yes*Material of flue plates *yes*Thickness *yes*Stiffened with rings *yes*Distance between rings *yes*Working pressure by rules *yes*End plates: Thickness *yes*How stayed *yes*Working pressure of end plates *yes*Area of safety valves to superheater *yes*Are they fitted with easing gear *yes*Working pressure by rules *yes*End plates: Thickness *yes*How stayed *yes*Working pressure of end plates *yes*Area of safety valves to superheater *yes*Are they fitted with easing gear *yes*Working pressure by rules *yes*End plates: Thickness *yes*How stayed *yes*Working pressure of end plates *yes*Area of safety valves to superheater *yes*Are they fitted with easing gear *yes*Working pressure by rules *yes*End plates: Thickness *yes*How stayed *yes*Working pressure of end plates *yes*Area of safety valves to superheater *yes*Are they fitted with easing gear *yes*Working pressure by rules *yes*End plates: Thickness *yes*How stayed *yes*Working pressure of end plates *yes*Area of safety valves to superheater *yes*Are they fitted with easing gear *yes*Working pressure by rules *yes*End plates: Thickness *yes*How stayed *yes*Working pressure of end plates *yes*Area of safety valves to superheater *yes*Are they fitted with easing gear *yes*Working pressure by rules *yes*End plates: Thickness *yes*How stayed *yes*Working pressure of end plates *yes*Area of safety valves to superheater *yes*Are they fitted with easing gear *yes*Working pressure by rules *yes*End plates: Thickness *yes*How stayed *yes*Working pressure of end plates *yes*Area of safety valves to superheater *yes*Are they fitted with easing gear *yes*Working pressure by rules *yes*End plates: Thickness *yes*How stayed *yes*Working pressure of end plates *yes*Area of safety valves to superheater *yes*Are they fitted with easing gear *yes*Working pressure by rules *yes*End plates: Thickness *yes*How stayed *yes*Working pressure of end plates *yes*Area of safety valves to superheater *yes*Are they fitted with easing gear *yes*Working pressure by rules *yes*End plates: Thickness *yes*How stayed *yes*Working pressure of end plates *yes*Area of safety valves to superheater *yes*Are they fitted with easing gear *yes*Working pressure by rules *yes*End plates: Thickness *yes*How stayed *yes*Working pressure of end plates *yes*Area of safety valves to superheater *yes*Are they fitted with easing gear *yes*Working pressure by rules *yes*End plates: Thickness *yes*How stayed *yes*Working pressure of end plates *yes*Area of safety valves to superheater *yes*Are they fitted with easing gear *yes*Working pressure by rules *yes*End plates: Thickness *yes*How stayed *yes*Working pressure of end plates *yes*Area of safety valves to superheater *yes*Are they fitted with easing gear *yes*Working pressure by rules *yes*End plates: Thickness *yes*How stayed *yes*Working pressure of end plates *yes*Area of safety valves to superheater *yes*Are they fitted with easing gear *yes*Working pressure by rules *yes*End plates: Thickness *yes*How stayed *yes*Working pressure of end plates *yes*Area of safety valves to superheater *yes*Are they fitted with easing gear *yes*



**DONKEY BOILER—** No. *One* Description *Vertical, Blakes Patent*  
 Made at *Widnes* By whom made *Richardson West Park Rd* When made *3/2/04* Where fixed *Stothelm*  
 Working pressure *80lb* tested by hydraulic pressure to *160lb* No. of Certificate *3147* Fire grate area *169* Description of safety valves *spring*  
 No. of safety valves *2* Area of each *4.91* Pressure to which they are adjusted *80lb* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no* Dia. of donkey boiler *5'-9"* Length *10'-2"* Material of shell plates *S* Thickness *3/32* Range of tensile strength *27/32* Descrip. of riveting long. seams *lap dth* Dia. of rivet holes *13/16* Whether punched or drilled *dr* Pitch of rivets *2 5/8*  
 Lap of plating *4 1/4* Per centage of strength of joint *87.8* Rivets *89* Thickness of shell crown plates *5/8* Radius of do. *6'-0"* No. of Stays to do. *✓*  
 Dia. of stays. *✓* Diameter of furnace Top *3'-0"* Bottom *4'-6"* Length of furnace *3'-4 1/4* Thickness of furnace plates *3/16* Description of joint *lap dth* Thickness of *l. ch.* *3/16* *2 1/2* Stayed by *richd 3.9 rad* Working pressure of shell by rules *86*  
 Working pressure of furnace by rules *84* Diameter of *back* *3/16* *2 1/2* Thickness of *l. ch.* *3/16* *2 1/2* Thickness of *back* *3/16* *2 1/2* Thickness of water tubes *3/8*

**SPARE GEAR.** State the articles supplied:— *Two top end and two bottom end con. rod bolts & nuts. two main bearing bolts. one set coupling bolts. one set fuel & bilge pump valves assorted bolts & nuts. Iron of various sizes*

The foregoing is a correct description,

FOR THE NORTH EASTERN MARINE ENGINEERING CO. LD.

Manufacturer.

*J. J. Harrison*  
 During progress of work in shops— *1903* *Nov. 12. 18. Dec. 7. 11. 16. 23. 24. 1904. Jan. 7. 11. 14. 26. 27. Feb. 28. 11. 24. M. L. 2. 3. 5. 12. 25. 26*  
 Dates of Survey while building *During erection on board vessel—*  
 Total No. of *s 23* Is the approved plan of main boiler forwarded herewith *yes*  
 " " " donkey " " " *no*

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

*The machinery of this vessel has been built under special survey, the materials and workmanship are sound and good and under the vessel shipth in my opinion to have record of + L.M.C. 3.04*

*It is submitted that this vessel is eligible for THE RECORD* *L.M.C. 3.04*

*Ans*  
*12.4.04*

*12.4.04*

The amount of Entry Fee. £ *2* : : : When applied for, *6 APR 1904*  
 Special £ *19* : *19* : : :  
 Donkey Boiler Fee £ : : : : When received, *8/11/04*  
 Travelling Expenses (if any) £ : : : : *9/4/04*

Committee's Minute

TUES. 12 APR 1904

Assigned

*+ L.M.C. 3.04*

MACHINERY CERTIFICATE  
 WRITTEN.



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Lloyd's Register  
 Foundation

*Newcastle-on-Tyne*

*Certificate (if required) to be sent to*

*(The Surveyors are requested not to write on or below the space for Committee's Minute.)*