

Inve. No. 37912  
Sta. 19571.

# REPORT ON MACHINERY.

Port of *Newcastle*

MON 27 FEB 1899

Survey held at *North Shields & W Hartlepool* Date, first Survey *198 Aug 19* Last Survey *July 14 1899*  
(Number of Visits *10*)

on the *SS Fremington* Tons <sup>Gross</sup> *344* <sub>Net</sub> *87*  
*J. Kelly* Built at *Sunderland* By whom built *R Thompson & Co* When built *2-1899*

made at *North Shields* By whom made *Mr. Hedley & Bouge* when made *2-1899*  
made at *West Hartlepool* By whom made *Central Marine Engineering Co* when made *2-1899*

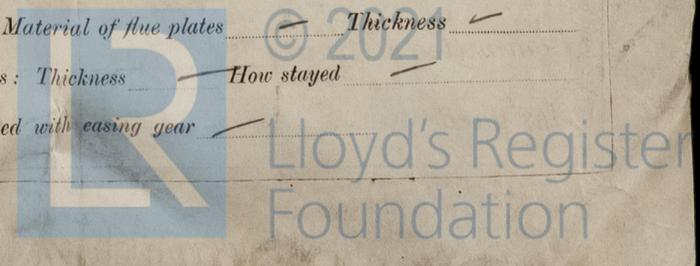
rated Horse Power \_\_\_\_\_ Owners *Liverpool & North Devon S.S. Co Ltd* Port belonging to *Liverpool*  
Horse Power as per Section 28 *43* Is Electric Light fitted *yes*

ENGINES, &c.—Description of Engines *Compound* No. of Cylinders *2* No. of Cranks *2*  
Diameter of Cylinders *16 1/2 x 37* Length of Stroke *24* Revolutions per minute *100* Diameter of Screw shaft *7 1/2*  
Diameter of Tunnel shaft \_\_\_\_\_ Diameter of Crank shaft journals *7* Diameter of Crank pin *7* Size of Crank webs *11 x 4 1/2*  
Diameter of screw *8-0* Pitch of screw *12-0* No. of blades *4* State whether moveable *no* Total surface *23 sq*  
Feed pumps *1* Diameter of ditto *3 1/2* Stroke *12* Can one be overhauled while the other is at work   
Bilge pumps *1* Diameter of ditto *3 1/2* Stroke *12* Can one be overhauled while the other is at work   
Donkey Engines *one* Sizes of Pumps *6 x 4 x 6 duplex* No. and size of Suctions connected to both Bilge and Donkey pumps  
Engine Room *two 2 1/4, one 3 1/2, one 2 1/2* In Holds, &c. *fore, two 2 1/4*

Bilge injections *1* sizes *3 1/2* Connected \_\_\_\_\_ to circulating pump *yes* Is a separate donkey suction fitted in Engine room & size *yes 2 1/2*  
Are 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 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*  
How are the pipes carried through the bunkers *bilge tank suction* How are they protected *heavily caulked with wood*  
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 *no*  
Were stern tube, propeller, screw shaft, and all connections examined in dry dock before launch *yes* Is the screw shaft tunnel watertight *no tunnel*  
Is the screw shaft tunnel fitted with a watertight door *worked from*

BOILERS, &c.—(Letter for record *S*) Total Heating Surface of Boilers *1400* Is forced draft fitted *no*  
Description of Boilers *One Mult Single ended* Working Pressure *120 lbs* Tested by hydraulic pressure to *240 lbs*  
Can each boiler be worked separately *—* Area of fire grate in each boiler *35 sq* No. and Description of safety valves to  
boiler *two spring loaded* Area of each valve *7.07 sq* Pressure to which they are adjusted *125 lbs* Are they fitted  
with easing gear *yes* Smallest distance between boilers or uptakes and bunkers *woodwork 5-0* Mean diameter of boilers *12-6*  
Material of shell plates *steel* Thickness *3/4* Description of riveting: circum. seams *none* long. seams *D.B straps*  
Diameter of rivet holes in long. seams *7/8* Pitch of rivets *6 1/4* Lap of plates \_\_\_\_\_ width of butt straps *13 3/8*  
Percentages of strength of longitudinal joint \_\_\_\_\_ Working pressure of shell by rules *120 lbs* Size of manhole in shell *end 16 x 12*  
Description of Furnaces in each boiler *two plain* Material *steel* Outside diameter *3-7 1/2*  
Thickness of plates \_\_\_\_\_ Description of longitudinal joint *Double butt straps* No. of strengthening rings *none*  
Working pressure of furnace by the rules *129 lbs* Combustion chamber plates: Material *steel* Thickness: Sides *9/16* Back *9/16* Top *9/16* Bottom *5/8*  
Diameter of stays to ditto: Sides *10 x 8 1/4* Back *10 x 9* Top *9 1/2* If stays are fitted with nuts or riveted heads *nuts* Working pressure by rules *121 lbs*  
Material of stays *steel* Diameter at smallest part *1-3 5/8* Area supported by each stay *90 sq* Working pressure by rules *133 lbs* End plates in steam space:  
Material *steel* Thickness *7/8* Pitch of stays *17 1/2 x 16 1/4* How are stays secured *D N x W* Working pressure by rules *120 lbs* Material of stays *steel*  
Diameter at smallest part *1-28* Area supported by each stay *284 sq* Working pressure by rules *130 lbs* Material of Front plates at bottom *steel*  
Thickness *7/8* Material of Lower back plate *steel* Thickness *7/8* Greatest pitch of stays *13 x 10* Working pressure of plate by rules *196 lbs*  
Diameter of tubes *3 1/2* Pitch of tubes *4 1/2 x 4 1/2* Material of tube plates *steel* Thickness: Front *7/8* Back *25/32* Mean pitch of stays *13 1/2*  
Girders to Chamber tops: Material *steel* Depth and  
Thickness of girder at centre *8 x 1 1/4* Length as per rule *25 1/2* Distance apart *9 1/2* Number and pitch of Stays in each *one*  
Working pressure by rules *138 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  
Pitch of rivets \_\_\_\_\_ Working pressure of shell by rules \_\_\_\_\_ Diameter of flue \_\_\_\_\_ Material of flue plates \_\_\_\_\_ Thickness \_\_\_\_\_  
Are they fitted 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 \_\_\_\_\_

9510-9101975



**DONKEY BOILER**— Description *None fitted*

Made at \_\_\_\_\_ By whom made \_\_\_\_\_ When made \_\_\_\_\_ Where fixed \_\_\_\_\_

Working pressure \_\_\_\_\_ tested by hydraulic pressure to \_\_\_\_\_ No. of Certificate \_\_\_\_\_ Fine grate area \_\_\_\_\_ Description of safety valves \_\_\_\_\_

No. of safety valves \_\_\_\_\_ Area of each \_\_\_\_\_ Pressure to which they are adjusted \_\_\_\_\_ If fitted with easing gear \_\_\_\_\_ If steam from main boilers can enter the donkey boiler \_\_\_\_\_ Diameter of donkey boiler \_\_\_\_\_ Length \_\_\_\_\_ Material of shell plates \_\_\_\_\_ Thickness \_\_\_\_\_

Description of riveting long seams \_\_\_\_\_ Diameter of rivet holes \_\_\_\_\_ Whether punched or drilled \_\_\_\_\_ Pitch of rivets \_\_\_\_\_

Lap of plating \_\_\_\_\_ Rivets \_\_\_\_\_ Per centage of strength of joint \_\_\_\_\_ Plates \_\_\_\_\_ 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 \_\_\_\_\_ Thickness of furnace crown plates \_\_\_\_\_ Stayed by \_\_\_\_\_ Working pressure of shell by rules \_\_\_\_\_

Working pressure of furnace by rules \_\_\_\_\_ Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_

**SPARE GEAR.** State the articles supplied:— *One set of coupling bolts, two top end, two bottom end & two main bearing bolts & nuts, one set of feed one set of lidge pump valves also one set of air & circulating pump valves bolts nuts & assorted pieces of iron.*

The foregoing is a correct description,

Manufacturer. *Hodley & Boyd, Engineers*

Dates of Survey } During progress of work in shops - - *1<sup>st</sup> Survey 19<sup>th</sup> August 1898*  
 of Survey } During erection on board vessel - - *last Survey 14<sup>th</sup> Feb 1899*  
 building } Total No. of visits *10* *old visits 1898 - Dec 13, 14 - 3 visits*

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

**ENGINES**—Length of stern bush *31"* Diameter of crank shaft journals *as per rule 6 3/4"* Diameter of thrust shaft under collars *7"*

**BOILERS**—Range of tensile strength *27-30 tons* Are they welded *and flanged* **DONKEY BOILERS**—No. *none* Range of tensile strength \_\_\_\_\_

Is the approved plan of main boiler forwarded herewith *no* Is the approved plan of donkey boiler forwarded herewith \_\_\_\_\_

*The machinery of this vessel has been constructed & fitted on board under special survey the workmanship being sound & good. The machinery has been tried under steam & found to work well which in my opinion renders the vessel eligible for the record of + L.M.C 2-99 in the Register Book.*

*It is submitted that this vessel is eligible for THE RECORD. L.M.C. 2.99. Electric Light.*

*A.G.H.*

*27.2.99.*

*28.2.99*

The amount of Entry Fee. £ : : When applied for, *21/2/99*  
 Special £ : : *18.99*  
 Donkey Boiler Fee £ : : When received, *1.3.99*  
 Travelling Expenses (if any) £ : : *28/2/99*

*Robert Haig*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

TUES. 28 FEB 1899

MACHINERY CERTIFICATE WRITTEN.

Assigned

*+ L.M.C 2,99*



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NEWCASTLE-ON-TYNE Sunderland

Certificate (if required) to be sent to

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