

## REPORT ON MACHINERY.

Port of Sunderland

Received at London Office

JUL 18 JUL 1899

No. in Survey held at Sunderland Date, first Survey 13<sup>th</sup> March Last Survey 12<sup>th</sup> July 1899  
 Book. S.S. "Norman" late "Albert Dumois" (Number of Visits 14)  
 up) on the S.S. "Norman" late "Albert Dumois" Tons { Gross 1058  
 ter W. Hawthorn Built at Grangemouth By whom built Grangemouth Dryd. Co Net 662  
 nes made at Glasgow By whom made Dunsmuir & Jackson When built 1891  
 ers made at D<sup>o</sup> By whom made D<sup>o</sup> when made 1891  
 ized Horse Power Owners E. Hawthorn Port belonging to London  
 Horse Power as per Section 28 175 Is Electric Light fitted No.

INES, &c.—Description of Engines Tri Compound No. of Cylinders 3 No. of Cranks 3  
 eter of Cylinders 19" 31" 50" Length of Stroke 33" Revolutions per minute 65 Diameter of Screw shaft as per rule 9 1/2  
 eter of Tunnel shaft as per rule 8 1/2 as fitted 9 1/4 Diameter of Crank shaft journals 9 1/2 Diameter of Crank pin 9 1/2 Size of Crank webs 13 1/2 x 8  
 eter of screw 10'-9" Pitch of screw 16'-0" No. of blades 4 State whether moveable not Total surface 40"  
 of Feed pumps 2 Diameter of ditto 2 3/4 Stroke 18 Can one be overhauled while the other is at work yes  
 of Bilge pumps 2 Diameter of ditto 3 1/4 Stroke 18 Can one be overhauled while the other is at work yes  
 of Donkey Engines 2 Sizes of Pump 3x10 duplex 3 1/2 x 8 feed No. and size of Suctions connected to both Bilge and Donkey pumps  
 Engine Room Two of 3" In Holds, &c. Fore Hold two of 3"; After Hold  
Two of 3" Aftermost Well 3, Tunnel Well 3  
 of bilge injections 1 sizes 4 Connected to condenser, or to circulating pump C.P. Is a separate donkey suction fitted in Engine room & size yes 3"  
 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  
 all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks both  
 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  
 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  
 t pipes are carried through the bunkers none How are they protected ✓  
 all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times yes  
 the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges yes  
 n were stern tube, propeller, screw shaft, and all connections examined in dry dock 27<sup>th</sup> March 1899 Is the screw shaft tunnel watertight yes  
 fitted with a watertight door yes worked from Top Platform

ELERS, &c.— (Letter for record S) Total Heating Surface of Boilers 3220 Is forced draft fitted No  
 and Description of Boilers One Double Ended Working Pressure 150 lbs Tested by hydraulic pressure to 240 lbs  
 of test 7.6.99 Can each boiler be worked separately only one Area of fire grate in each boiler 102 sq No. and Description of safety valves to  
 boiler Two direct spring Area of each valve 70 Pressure to which they are adjusted 150 lbs Are they fitted  
 easing gear yes Smallest distance between boilers or uptakes and bunkers or woodwork 20" Mean diameter of boilers 14'-6"  
 th 16'-0" Material of shell plates S Thickness 1 1/2 Description of riveting: circum. seams middle treble ends double long. seams J. R. D. B. S.  
 eter of rivet holes in long. seams 1 9/32 Pitch of rivets 8 1/2 ~~Top of plates~~ width of butt straps 18 7/8  
 percentages of strength of longitudinal joint plate 87 Working pressure of shell by rules 189 lbs Size of manhole in shell 16" x 13"  
 of compensating ring 8 x 1 9/32 No. and Description of Furnaces in each boiler 6 Purves Material S Outside diameter 40"  
 th of plain part top ✓ Thickness of plates crown 1/2 Description of longitudinal joint welded No. of strengthening rings ✓  
 bottom ✓ Working pressure of furnace by the rules 174 lbs Combustion chamber plates: Material S Thickness: Sides 9/16 Back ✓ Top 7/8 Bottom 3/4  
 h of stays to ditto: Sides 7 1/4 x 7 1/4 Back ✓ Top 8 x 7 1/4 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 157 lbs  
 rial of stays S Diameter at smallest part 1 3/8 Area supported by each stay 620" Working pressure by rules 170 lbs End plates in steam space:  
 rial S Thickness 7/8 Pitch of stays 18 7/8 How are stays secured nuts Working pressure by rules 177 lbs Material of stays S  
 eter at smallest part 3 Area supported by each stay 356 Working pressure by rules 217 lbs Material of Front plates at bottom S  
 kness 3/4 Material of Lower back plate ✓ Thickness ✓ Greatest pitch of stays ✓ Working pressure of plate by rules ✓  
 eter of tubes 3/4 Pitch of tubes 4 1/4 x 4 1/2 Material of tube plates S Thickness: Front 13/16 Back 7/8 Mean pitch of stays 9 1/2  
 across wide water spaces 15 Working pressures by rules 160 lbs Girders to Chamber tops: Material S Depth and  
 ness of girder at centre 8 x 1 1/2 x 2 Length as per rule 3'-0" Distance apart 8 Number and pitch of Stays in each 3 stays 7 3/4 x 8  
 king pressure by rules 230 lbs Superheater or Steam chest; how connected to boiler none Can the superheater be shut off and the boiler worked  
 ately 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  
 ftened with rings Distance between rings Working pressure by rules End plates: Thickness How stayed  
 king pressure of end plates Area of safety valves to superheater Are they fitted with easing gear



**DONKEY BOILER—** Description *Vertical with 3 cross tubes*  
 Made at *Gateshead* By whom made *Clarke, Chapman & Co* When made *1891* Where fixed *Stokehold*  
 Working pressure *60 lbs* tested by hydraulic pressure to *120 lbs* No. of Certificate *✓* Fire grate area *16 sq ft* Description of safety valves *direct spr.*  
 No. of safety valves *1* Area of each *9.6* Pressure to which they are adjusted *60 lbs* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *No* Diameter of donkey boiler *5' 3"* Length *10' 3"* Material of shell plates *S* Thickness *3/8*  
 Description of riveting long. seams *D. R. lap* Diameter of rivet holes *3/4* Whether punched or drilled *drilled* Pitch of rivets *2 1/2*  
 Lap of plating *4"* Per centage of strength of joint Rivets *80* Thickness of shell crown plates *1/2* Radius of do. *6'* No. of Stays to do. *4*  
 Dia. of stays *1 1/2* Diameter of furnace Top *3' 11"* Bottom *4' 6"* Length of furnace *5' 9 1/2"* Thickness of furnace plates *1 1/2* Description of joint *Lap riveted* Thickness of furnace crown plates *1/2* Stayed by *4 stays 1 1/2" dia. & dished* Working pressure of shell by rules *80 lb*  
 Working pressure of furnace by rules *80 lbs* Diameter of uptake *14* Thickness of uptake plates *3/8* Thickness of water tubes *3/8*

**SPARE GEAR.** State the articles supplied:— *Top and bottom end connecting rod, bolts, two main bearing bolts, one set of coupling bolts, feed & bilge pump valves, air pump rod and bucket, bolts nuts and iron assort.*

The foregoing is a correct description,  
 Manufacturer.

Dates of Survey while building  
 During progress of work in shops— *1899. March 13. 23. 27 Apr. 5. 13. 25. May 2 June 1. 3. 7. 12 July 10. 11. 12.*  
 During erection on board vessel—  
 Total No. of visits *14.*

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

**ENGINES—**Length of stern bush *3'-10"* Diameter of crank shaft journals *as per rule 8.7 as fitted 9.5* Diameter of thrust shaft under collars *9 3/4*  
**BOILERS—**Range of tensile strength *26-30* Are they welded or flanged *flanged* **DONKEY BOILERS—**No. *1* Range of tensile strength *✓*  
 Is the approved plan of main boiler forwarded herewith *Yes* Is the approved plan of donkey boiler forwarded herewith *No*

Examined sea cocks and their outside fastenings, propeller, propeller shaft, stern tube and bush, tunnel and crank shafting, cylinders, pistons, slide valves, pumps, condenser, main and donk boilers and their mountings, sluices, watertight doors, & pump arrangement.

The main boiler was retubed, and all defective stay renewed, and tested by hydraulic pressure to 240 lbs.

In the donkey boiler the top shell end plate and the top to combustion chamber top were renewed and a new length of main steam pipe was supplied, and the main steam pipes were annealed and tested to 320 lbs. The main boiler safety valves were adjusted to 150 lbs working pressure & the donkey boiler safety valves were adjusted to 60 lbs.

The tail end shaft was corroded at both ends of after liner, and this shaft should be again seen in 12 months.

In my opinion the machinery of this vessel is in good working order & eligible for the notification in the Register Book of L.M.C. 7-99 subject to the tail end shaft being again seen in 12 months

It is submitted that this vessel is eligible for THE RECORD.

subject to the screw being examined, and motion to be allowed

The amount of Entry Fee... £ 3  
 Special ... £ 10  
 Donkey Boiler Fee ... £ 10  
 Travelling Expenses (if any) £

When applied for,

17.7.99

When received,

19.7.99

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

Committee's Minute

Assigned

FRI. 4 AUG 1899

MACHINERY CERTIFICATE  
 WRITTEN.

8 MC 7.99 subject



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