

## REPORT ON MACHINERY.

Port of Newcastle

THURS. 29 MAR 1894

No. in Survey held at South Shields  
Reg. Book. Suppl.Date, first Survey 11 Oct. 93 Last Survey March 16 1894(Number of Visits 19)15 on the S.S. Winifred

Master R. Lunn Built at South Shields By whom built J. P. Bennoldson & Son Tons { Gross 288.62  
Net 149.27  
When built 1894

Engines made at South Shields By whom made J. P. Bennoldson & Son when made 1894

Boilers made at South Shields By whom made J. J. Ellingham & Co when made 1894

Registered Horse Power 45 H.P. Owners E. Packman & Co Port belonging to Exmouth

Nom. Horse Power as per Section 28 46 H.P.

ENGINES, &c.— Description of Engines Compound Surface Condensing No. of Cylinders 2

Diameter of Cylinders 17" x 34" Length of Stroke 22" Revolutions per minute 6 1/8 Diameter of Screw shaft as per rule 6 1/8  
as fitted 6 1/8

Diameter of Tunnel shaft as fitted 6" Diameter of Crank shaft journals 6 1/8" Diameter of Crank pin 6 1/8" Size of Crank webs 4 x 7 1/2"

Diameter of screw 4-9" Pitch of screw 12-0" No. of blades 4 State whether moveable no Total surface 18.9 sq ft

No. of Feed pumps one Diameter of ditto 3" Stroke 11" Can one be overhauled while the other is at work ✓

No. of Bilge pumps one Diameter of ditto 3" Stroke 11" Can one be overhauled while the other is at work ✓

No. of Donkey Engines one Sizes of Pumps 4 1/2 x 2 1/4 x 6" No. and size of Suctions connected to both Bilge and Donkey pumps  
In Engine Room 2 - 2" In Holds, &c. 3 - 2"

No. of bilge injections one sizes 3 1/4" Connected to condenser to circulating pump yes Is a separate donkey suction fitted in Engine room & size yes 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 Valves and cocks

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 ✓

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: Is the screw shaft tunnel watertight no tunnel

Is it fitted with a watertight door worked from -

BOILERS, &c.— (Letter for record ✓) Total Heating Surface of Boilers 864 sq ft

No. and Description of Boilers One cyl. Multiple Single ended Working Pressure 100 lbs Tested by hydraulic pressure to 200 lbs

Date of test 22-12-93 Can each boiler be worked separately ✓ Area of fire grate in each boiler 30 sq ft No. and Description of safety valves to  
each boiler two Spring Area of each valve 4.07" Pressure to which they are adjusted 105 lbs Are they fitted  
with easing gear yes Smallest distance between boilers or uptakes and bunkers or woodwork 10" Mean diameter of boilers 10-0"

Length 9-4" Material of shell plates Steel Thickness 1 1/16" Description of riveting: circum. seams lap double long. seams lap treble

Diameter of rivet holes in long. seams 1 1/16" Pitch of rivets 4 1/4" Lap of plates width of butt straps 7 1/2"

Per centages of strength of longitudinal joint 75 Working pressure of shell by rules 104 lbs Size of manhole in shell 12 x 16"

Size of compensating ring 4 x 1 1/4" No. and Description of Furnaces in each boiler 2 plain Material Steel Outside diameter 37"

Length of plain part 6-0" Thickness of plates 19/32" Description of longitudinal joint lap single rivet No. of strengthening rings none

Working pressure of furnace by the rules 101 lbs Combustion chamber plates: Material Steel Thickness: Sides 9/16" Back 9/16" Top 9/16" Bottom 19/32"

Pitch of stays to ditto: Sides 10" Back 9 1/4" Top plain If stays are fitted with nuts or riveted heads nuts Working pressure by rules 109 lbs

Material of stays Steel Diameter at smallest part 1 3/8" Area supported by each stay 97.5 sq in Working pressure by rules 121 lbs End plates in steam space:

Material Steel Thickness 2 1/32" Pitch of stays 17 x 17 1/2" How are stays secured D. & W. Working pressure by rules 110 lbs Material of stays Steel

Diameter at smallest part 2 1/8" Area supported by each stay 297.5 sq in Working pressure by rules 105 lbs Material of Front plates at bottom Steel

Thickness 3/4" Material of Lower back plate Steel Thickness 2 1/32" Greatest pitch of stays 12" Working pressure of plate by rules 103 lbs

Diameter of tubes 3 1/2" Pitch of tubes 4 3/4 x 4 1/8" Material of tube plates Steel Thickness: Front 3/32" & 3/16" Back 1/16" Mean pitch of stays 13"

Pitch across wide water spaces 14" Working pressures by rules 106 lbs Girders to Chamber tops: Material none Depth and  
thickness of girder at centre ✓ Length as per rule ✓ Distance apart ✓ Number and pitch of Stays in each ✓

Working pressure by rules ✓ Superheater or Steam chest; how connected to boiler neck Can the superheater be shut off and the boiler worked  
separately no Diameter 3-0" Length 3-9" Thickness of shell plates 3/8" Material Steel Description of longitudinal joint lap double diam. of rivet  
holes 7/8" Pitch of rivets 3" Working pressure of shell by rules 146 lbs Diameter of flue ✓ Material of flue plates ✓ Thickness ✓

If stiffened with rings ✓ Distance between rings ✓ Working pressure by rules ✓ End plates: Thickness 9/16" How stayed diagonal 30 in

Working pressure of end plates ✓ Area of safety valves to superheater ✓ Are they fitted with easing gear ✓



**DONKEY BOILER—** Description *Genetic (Patent)*  
 Made at *Newcastle* By whom made *J. Howard & Co.* When made *1894* Where fixed *S.S. Hampshire*  
 Working pressure *80 lb* tested by hydraulic pressure to *160 lb* No. of Certificate *4192* Fire grate area *6 ft* Description of safety valve *Spring*  
 No. of safety valves *one* Area of each *3.14* Pressure to which they are adjusted *85 lb* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no* Diameter of donkey boiler *3.6"* Length *8.1"* Material of shell plates *Steel* Thickness *3/8"*  
 Description of riveting long. seams *Double riveted* Diameter of rivet holes *3/4"* Whether punched or drilled *punched* Pitch of rivets *2 1/2"*  
 Lap of plating *4 1/2"* Per centage of strength of joint *69.3* Rivets *78.9* Thickness of shell crown plates *7/16"* Radius of do. *3.6"* No. of Stays to do. *nine*  
 Dia. of stays *1/2"* Diameter of furnace Top *3.0"* Bottom *3.0"* Length of furnace *1.9"* Thickness of furnace plates *7/16"* Description of joint *Single riveted* Thickness of furnace crown plates *9/16"* Stayed by *Radius 5.11"* Working pressure of shell by rules *120 lb*  
 Working pressure of furnace by rules *94 lb* Diameter of uptake *1"* Thickness of uptake plates *1/16"* Thickness of water tubes *1/16"*

**SPARE GEAR.** State the articles supplied:— *Two connecting rod bolts, two crank pin bolts, two main bearing bolts, one set-coupling bolts, one set of pins & bridge pins, valves, six piston bolts & 56 lbs of bolts nuts, washers & assortment size of iron, copper span propeller shaft.*  
*The foregoing is a correct description,*  
*J. Renoldson Thos* Manufacturer. *W. S. Eltingham & Co* Manufacturer of

**General Remarks** (State quality of workmanship, opinions as to class, &c.) *The Machinery of this vessel has been constructed under Special Survey, the materials & workmanship being sound and good throughout. In our opinion under the vessel eligible for the award of LMC 3.94 in the Register Book*

It is submitted that this vessel is eligible for THE RECORD + L.M.C 3.94

N.A.  
29-3-94

MACHINERY CERTIFICATE WRITTEN

Certificate (if required) to be sent to *Newcastle Office*  
 The amount of Entry Fee.. £ 1 : 0 : 0 When applied for,  
 Special .. £ 8 : 0 : 0 2.9.3.18.94  
 Donkey Boiler Fee .. £ " : " : " When received,  
 Travelling Expenses (if any) £ " : " : " 31/3/94

*Robert Haigh & J. W. Pitt*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **TUES, 3 APR 1894**

Assigned *L.M.C 3.94*

