

# REPORT ON MACHINERY.

Port of PLYMOUTH.

Received at London Office **30 MAR 92**

No. in Survey held at PLYMOUTH.  
Reg. Book.

Date, first Survey July 22<sup>nd</sup> 1891 Last Survey March 4<sup>th</sup> 1892  
(Number of Visits 28)

on the engines & boiler of the steel screw tug Aones Feed

Tons { Gross 92.87  
Net 21.82  
When built 1892

Master \_\_\_\_\_ Built at PLYMOUTH. By whom built W. J. Loughby & Sons Ltd

Engines made at PLYMOUTH. By whom made W. J. Loughby & Sons Ltd when made 1892

Boilers made at PLYMOUTH. By whom made W. J. Loughby & Sons Ltd when made 1892

Registered Horse Power 250 Owners T. Feed Port belonging to Liverpool

Nom. Horse Power as per Section 28 35

## ENGINES, &c.—

Description of Engines Compound Inverted Surface Condensing No. of Cylinders two  
Diameter of Cylinders 14" 4.32" Length of Stroke 21" Revolutions per minute 100 Diameter of Screw shaft 4"  
Diameter of Tunnel shaft as per rule Diameter of Crank shaft journals 4" Diameter of Crank pin 4" Size of Crank webs 4" x 7 1/4"  
Diameter of screw 7' 4" Pitch of screw 12' 0" No. of blades 3 State whether moveable No Total surface 17.89 ft  
No. of Feed pumps one Diameter of ditto 3" Stroke 10 1/2" Can one be overhauled while the other is at work ✓  
No. of Bilge pumps one Diameter of ditto 3" Stroke 10 1/2" Can one be overhauled while the other is at work ✓  
No. of Donkey Engines one Sizes of Pumps 1 1/2" No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room One to each 1 1/2" diameter and a 1 1/2" in Hold, &c. fitted in engine room.  
The Donkey pumps from bilge overboard, from sea on to deck and from sea into boiler  
No. of bilge injections None sizes Connected to condenser, or to circulating pump ✓ Is a separate donkey suction fitted in Engine room & size Yes 1 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 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 while building Is the screw shaft watertight Yes  
Is it fitted with a watertight door Cock worked from cabin

## BOILERS, &c.—

(Letter for record 1/4 1/4 1/4) Total Heating Surface of Boilers 449.59 ft  
No. and Description of Boilers Horizontal Multitubular Working Pressure 100 Tested by hydraulic pressure to 200  
Date of test 23/2/91 Can each boiler be worked separately ✓ Area of fire grate in each boiler 34.59 ft No. and Description of safety valves to each boiler One double spring Area of each valve 7.0 Pressure to which they are adjusted 100 Are they fitted with easing gear Yes Smallest distance between boilers or uptakes and bunkers or woodwork 4" Mean diameter of boilers 9' 0"  
Length 10' 9" Material of shell plates Steel Thickness 3/32" Description of riveting: circum. seams double long. seams single  
Diameter of rivet holes in long. seams 1" Pitch of rivets 3 3/4" Lap of plates or width of butt straps 4 7/8"  
Per centages of strength of longitudinal joint 79 Working pressure of shell by rules 109 Size of manhole in shell 12 x 14  
Size of compensating ring 4" x 3/4" No. and Description of Furnaces in each boiler 2 upright tubes Material Steel Outside diameter 3' 0"  
Length of plain part 4' 9" Thickness of plates 7/32" Description of longitudinal joint welded No. of strengthening rings ✓  
Working pressure of furnace by the rules 118 Combustion chamber plates: Material Steel Thickness: Sides 9/16" Back 9/16" Top 9/16" Bottom 9/16"  
Pitch of stays to ditto: Sides 9 3/4" x 9 3/4" Back 9 3/4" x 9 3/4" Top 9 3/4" x 9 3/4" If stays are fitted with nuts or riveted heads none Working pressure by rules 107  
Material of stays Steel Diameter at smallest part 1 3/8" Area supported by each stay 90.18 Working pressure by rules 113 End plates in steam space: Material Steel Thickness 9/8" Pitch of stays 15 1/2" x 12 1/2" How are stays secured None Working pressure by rules 112 Material of stays Steel  
Diameter at smallest part 2" Area supported by each stay 209.25 Working pressure by rules 101 Material of Front plates at bottom Steel  
Thickness 1/4" Material of Lower back plate Steel Thickness 9/16" Greatest pitch of stays 9 3/4" x 9 3/4" Working pressure of plate by rules 106  
Diameter of tubes 3 3/4" Pitch of tubes 4 9/8" Material of tube plates Steel Thickness: Front 1/4" Back 10/16" Mean pitch of stays 9 3/4"  
Pitch across wide water spaces 9 1/4" Working pressures by rules 112 Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 8 1/2" x 1 1/2" Length as per rule 3.2 Distance apart 9 3/4" Number and pitch of Stays in each 3 - 9 3/4"  
Working pressure by rules ✓ Superheater or Steam chest; how connected to boiler ✓ 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 holes ✓ Pitch of rivets ✓ Working pressure of shell by rules ✓ Diameter of flue ✓ Material of flue plates ✓ Thickness ✓  
If stiffened 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 ✓



**DONKEY BOILER—** Description

Made at \_\_\_\_\_ By whom made \_\_\_\_\_ When made \_\_\_\_\_ Where fixed \_\_\_\_\_  
 Working pressure \_\_\_\_\_ tested by hydraulic pressure to \_\_\_\_\_ No. of Certificate \_\_\_\_\_ Fire 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 \_\_\_\_\_ Per centage of strength of joint \_\_\_\_\_ Rivets \_\_\_\_\_ 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 \_\_\_\_\_  
 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:— *Tropeller, half a set of fire bars, one hundred wood ferrules and a bundle of condenser tubes.*

**FOR WILLOUGHBY & SONS, LIMITED**

The foregoing is a correct description,

Manufacturer.

*J. Harris*

**SECRETARY,**

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

*The machinery of this vessel has been constructed under Special Survey to my entire satisfaction, the material used in the boiler has been tested as per Rule, and that in the engines of good quality, and the workmanship is of a superior description throughout.*

*The engines have been tried under steam and worked satisfactorily, and in my opinion the machinery of this vessel is eligible for the favorable consideration of the Committee to be passed and to have the notation **+LMC 3.92** recorded in the Register Book.*

*It is submitted that this vessel is eligible for THE RECORD + L.M.C. 3-92*

*H. A. 30-3-92*

Certificate (if required) to be sent to *Plymouth Office*

The amount of Entry Fee..	£ 1 0	:	When applied for,
Special .. .. .	£ 8 0	:	29 <sup>th</sup> Mar. 1892
Donkey Boiler Fee .. .. .	£	:	When received,
Travelling Expenses (if any) £	:	:	29 <sup>th</sup> Mar. 1892

Committee's Minute

**FRI 1 APR 1892**

Assigned

*+ LMC 3,92*

**MAJORITY CERTIFICATE WRITTEN.**

*H. W. Willmott*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



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