

# REPORT ON MACHINERY.

Port of Leith

Received at London Office **THUR. 12 SEP 1895**

No. in Survey held at Leith  
Reg. Book.

Date, first Survey 25th April Last Survey 5th Sept 1895

(Number of Visits 20)

on the Steam Tug "Gwenie"

Tons { Gross 32.31  
Net 3.45  
When built 1895

Master J Mitchell 95 Built at Leith By whom built John Cean & Co

Engines made at Leith By whom made John Cean & Co when made 1895

Boilers made at do By whom made do when made 1895

Registered Horse Power 20 Owners The Manchester Ship Canal Co Port belonging to Manchester

Nom. Horse Power as per Section 28  23

**ENGINES, &c.** — Description of Engines Compound inverted No. of Cylinders 2

Diameter of Cylinders 11" & 23" Length of Stroke 18" Revolutions per minute 130 Diameter of Screw shaft as per rule 4.35"  
 Diameter of Tunnel shaft as per rule 4.13" Diameter of Crank shaft journals 4 1/2" Diameter of Crank pin 4 1/2" Size of Crank webs 6 1/4" x 2 3/4"  
 Diameter of screw 5' 9" Pitch of screw 9' 6" No. of blades 3 State whether moveable no Total surface 10.8 sq

No. of Feed pumps one Diameter of ditto 2" Stroke 10" Can one be overhauled while the other is at work

No. of Bilge pumps one Diameter of ditto 2" Stroke 10" Can one be overhauled while the other is at work

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

No. of bilge injections 1 sizes 2 1/2" Connected to condenser,  to circulating pump yes 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 none

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

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 new vessel Is the screw shaft tunnel watertight none

Is it fitted with a watertight door  worked from

**BOILERS, &c.** — (Letter for record S) Total Heating Surface of Boilers 460.7 sq

No. and Description of Boilers one, multitubular single ended Working Pressure 100 lbs Tested by hydraulic pressure to 200 lbs

Date of test 21-8-95 Can each boiler be worked separately  Area of fire grate in each boiler 20.4 sq No. and Description of safety valves to each boiler two - spring-loaded Area of each valve 3.9 sq" Pressure to which they are adjusted 105 lbs Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers on woodwork 4 1/2" Mean diameter of boilers 8' 2 1/2"

Length 8' 6 1/4" Material of shell plates steel Thickness 1 1/2" Description of riveting: circum. seams Lap & Rivet long. seams S.B.S. S. Rivet

Diameter of rivet holes in long. seams 1 3/8" Pitch of rivets 4 1/4" Lap of plates or width of butt straps 9 1/4"

Per centages of strength of longitudinal joint rivets 102 Working pressure of shell by rules 106 lbs Size of manhole in shell 16" x 12"

Size of compensating ring 6" x 1 1/2" No. and Description of Furnaces in each boiler 2 - plain Material steel Outside diameter 29 1/8"

Length of plain part top 6' 0" bottom 6' 0" Thickness of plates crown 1 1/2" bottom 3/2" Description of longitudinal joint S.B.S. S. Rivet No. of strengthening rings

Working pressure of furnace by the rules 109 lbs Combustion chamber plates: Material steel Thickness: Sides 1/2" Back 1/2" Top 1/2" Bottom 1/2"

Pitch of stays to ditto: Sides 8 1/8" Back 8 1/4" Top laced yes If stays are fitted with nuts or riveted heads nuts Working pressure by rules 113 lbs

Material of stays steel Diameter at smallest part 96" Area supported by each stay 63 sq" Working pressure by rules 122 lbs End plates in steam space: Material steel Thickness 7/8" Pitch of stays 16 1/2" How are stays secured S.N. & W. Working pressure by rules 130 lbs Material of stays steel

Diameter at smallest part 3.49" Area supported by each stay 273 sq" Working pressure by rules 115 lbs Material of Front plates at bottom steel Thickness 9/16" Material of Lower back plate steel Thickness 9/16" Greatest pitch of stays 10 1/8" Working pressure of plate by rules 106 lbs

Diameter of tubes 3 1/2" Pitch of tubes 4 3/4" Material of tube plates steel Thickness: Front 9/16" Back 4/16" Mean pitch of stays 9 1/2"

Pitch across wide water spaces 1/4" 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 none Can the superheater be shut off and the boiler worked separately

Diameter  Length  Thickness of shell plates  Material  Description of longitudinal joint  Diameter 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

CTH565-0146



**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 casing 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 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:— *As per Rule*

The foregoing is a correct description,  
*John Brant* Manufacturer.

**General Remarks** (State quality of workmanship, opinions as to class, &c. *The engines + boiler of this vessel have been constructed under special survey, the materials + workmanship all good. The engines have been tried + the boiler safety valves adjusted under steam at the working pressure. The machinery is now in good + safe working condition + eligible in my opinion to have the notation of + LMC 9,95-*

It is submitted that this vessel is eligible for  
**THE RECORD + L.M.C. 9.95.**  
*J.S.*  
 14.9.95.

*Law*

Certificate (if required) to be sent to \_\_\_\_\_

The amount of Entry Fee..	£ / : -	When applied for,	
Special .. .. .	£ 8 : -	11th Sep 95	
Donkey Boiler Fee .. .. .	£ - : -	When received,	
Travelling Expenses (if any) £	- : -	13/9/95	16

*Thomas Field*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute  
 Assigned  
 TUES. 17 SEP 1895  
 + LMC 9,95

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