

## REPORT ON MACHINERY.

No. 14286.

Port of GreenockNo. in Survey held at Port Glasgow  
Reg. Book.Date, first Survey 3<sup>rd</sup> Oct. 1904 Last Survey 18<sup>th</sup> April 1905  
(Number of Visits 22)

Received at London Office

19

on the Turn screw sand pump dredger "Pioneer"Master                      Built at Port Glasgow By whom built Ferguson Bros. Tons { Gross  
NetEngines made at Port Glasgow By whom made Ferguson Bros. When built 1905Boilers made at Renfrew By whom made Babcock & Wilcox when made 1905Registered Horse Power                      Owners                      when made 1905Nom. Horse Power as per Section 28 91 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no Port belonging to                     

**ENGINES, &c.**—Description of Engines Triple expansion No. of Cylinders Three No. of Cranks Three  
Dia. of Cylinders 20" - 25" - 26" Length of Stroke 16" Revs. per minute 200 Dia. of Screw shaft as per rule Material of Steel  
Is the screw shaft fitted with a continuous liner the whole length of the stern tube no Is the after end of the liner made water tight  
in the propeller boss yes If the liner is in more than one length are the joints burned yes If the liner does not fit tightly at the part  
between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive yes If two  
liners are fitted, is the shaft lapped for protected between the liners yes Length of stern bush 1-9 1/2"  
Dia. of Tunnel shaft as per rule 4 1/2" Dia. of Crank shaft journals as per rule 4 1/2" Dia. of Crank pin 4 1/2" Size of Crank webs 9 1/2 x 3 1/2" Dia. of thrust shaft under  
collars 4 1/2" Dia. of screw 5 1/2" Pitch of screw 6 1/2" No. of blades 4 State whether moveable no Total surface 11 1/2 sq. ft.  
No. of Feed pumps one Diameter of ditto 4 1/2" Stroke 10" Can one be overhauled while the other is at work yes  
No. of Bilge pumps one Diameter of ditto 3" Stroke 15" Can one be overhauled while the other is at work yes  
No. of Donkey Engines Three Sizes of Pumps 4 1/2 x 3 1/2 (3 x 3 x 4) No. and size of Suctions connected to both Bilge and Donkey pumps  
In Engine Room, Stokehold pump Room: Four - 2" dia. In Holds, &c. Five Hold: one - 2" dia. Hopper Compst.  
No. of bilge injections 1 sizes 4" Connected to condenser, or to circulating pump no Is a separate donkey suction fitted in Engine room & size 4" - 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  
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 yes  
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 last week Is the screw shaft tunnel watertight yes  
Is it fitted with a watertight door yes worked from yes

**BOILERS, &c.**—(Letter for record                     ) Total Heating Surface of Boilers 1920 sq. ft. Is forced draft fitted no  
No. and Description of Boilers Two: Water tube Babcock & Wilcox Working Pressure 200 lb Tested by hydraulic pressure to 400 lb  
Date of test                      Can each boiler be worked separately yes Area of fire grate in each boiler 52 1/2 No. and Description of safety valves to  
each boiler 2: Direct Spring Area of each valve 3.98 Pressure to which they are adjusted 205 lb Are they fitted with easing gear yes  
Smallest distance between boilers or uptakes and bunkers or woodwork about 4 ft. Mean dia. of boilers                      Length                      Material of shell plates  
Thickness                      Range of tensile strength                      Are they welded or flanged                      Descrip. of riveting: cir. seams                      long. seams                       
Diameter of rivet holes in long. seams                      Pitch of rivets                      Lap of plates or width of butt straps                       
Per centages of strength of longitudinal joint                      Working pressure of shell by rules                      Size of manhole in shell                       
Size of compensating ring                      No. and Description of Furnaces in each boiler                      Material                      Outside diameter                       
Length of plain part                      Thickness of plates                      Description of longitudinal joint                      No. of strengthening rings                       
Working pressure of furnace by the rules                      Combustion chamber plates: Material                      Thickness: Sides                      Back                      Top                      Bottom                       
Pitch of stays to ditto: Sides                      Back                      Top                      If stays are fitted with nuts or riveted heads                      Working pressure by rules                       
Material of stays                      Diameter at smallest part                      Area supported by each stay                      Working pressure by rules                      End plates in steam space:                       
Material                      Thickness                      Pitch of stays                      How are stays secured                      Working pressure by rules                      Material of stays                       
Diameter at smallest part                      Area supported by each stay                      Working pressure by rules                      Material of Front plates at bottom                       
Thickness                      Material of Lower back plate                      Thickness                      Greatest pitch of stays                      Working pressure of plate by rules                       
Diameter of tubes                      Pitch of tubes                      Material of tube plates                      Thickness: Front                      Back                      Mean pitch of stays                       
Pitch across wide water spaces                      Working pressures by rules                      Girders to Chamber tops: Material                      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                      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—

No.

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

Dia. of donkey boiler

Length

Material of shell plates

Thickness

Range of tensile

strength

Descrip. of riveting long. seams

Dia. of rivet holes

Whether punched or drilled

Pitch of rivets

Lap of plating

Per centage of strength of joint

Rivets

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:—

1 Set Air pump valves, 1 set feed pump valves, 2 piston Rod Bolts, 2 Connecting Rod Bolts, 2 Condenser tubes, 2 Propeller shafts, and 2 propellers  
1 set Cumulating pump valves, 1 set Bilge pump valves, 1 set piston packing Ring (spring for 1  
Engine, 2 Main Bearing Bolts, 2 Eccentric Strap bolts, 2 do. Rod Bolts, 1 set Coupling Bolts, 1 set Crosshead Bolts,  
The foregoing is a correct description, 1 pair Connecting Rod trushes, 1 set Link Motion trushes, 1 Eccentric Strap,  
Air pump rod, 1 Cumulating pump rod, 1 pump shaft nut.

Jugson Bros

Manufacturer.

Dates of Survey while building

During progress of work in shops—  
During erection on board vessel—  
Total No. of visits

1905. Oct. 3. 11. 13. 27. Nov. 3. 9. 14. 23. Dec. 5. 13. 20. 30. 1905. Jan. 16. 20  
27. 30. Feb. 7. 15. 24. March 23. April 17. 18.  
22.

Is the approved plan of main boiler forwarded herewith Yes.

" " " donkey " " "

## General Remarks

(State quality of workmanship, opinions as to class, &amp;c.)

The Engines of this vessel have been built under special survey and the materials and workmanship are good.

The Glasgow report on the Boilers is forwarded herewith.

When fitted on board and completed the Machinery & Boilers were examined under steam and found to work satisfactorily. They are now in good and efficient condition and eligible in my opinion to have the record of **LMC 5,05** marked in the Society's Register Book.

It is submitted that  
this vessel is eligible for  
THE RECORD **LMC 5,05**.

4

WATERTUBE BOILERS

SUBJECT TO ANNUAL SURVEY.

Emd. Pmd. Rd.

23.5.05

23.5.05

The amount of Entry Fee..

£

1

:

:

:

When applied for,

Special

£

9

:

2

:

18/5/1905

Donkey Boiler Fee

£

4

:

11

:

19/5/1905

Travelling Expenses (if any) £

:

:

:

:

19/5/1905

Committee's Minute

Glasgow

22 MAY 1905

Assigned

Water Tube Boilers. Subject to Annual Survey

MACHINERY CERTIFICATE

WRITTEN 23/5/05



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