

# REPORT ON MACHINERY.

To. 2697

No. in Survey held at Glasgow & Belfast

Reg. Book.

Date, first Survey 25<sup>th</sup> March Last Survey July 1<sup>st</sup> 1880

on the Screw Steamer "Whitehead"

Tons 1192 1/2  
742 1/2

Master J. Mc Calmonah

Built at Belfast

When built 1880

Engines made at Glasgow

By whom made J. Howden & Co when made 1880

Boilers made at Glasgow

By whom made J. Howden & Co when made 1880

Registered Horse Power 130

Owners Ulster Steam Ship Co Ltd

Port belonging to Belfast

## ENGINES, &c.—

Description of Engines Compound Inverted, direct acting, 2 Cylinders.  
Diameter of Cylinders 28" x 53" Length of Stroke 38" No. of Rev. per minute — Point of Cut off, High Pressure — Low Pressure —  
Diameter of Screw shaft 10" Diameter of Tunnel shaft 9" Diameter of Crank shaft journals 10" Diameter of Crank pin 10" size of Crank webs 12 x 6 1/2  
Diameter of screw 13 1/16 Pitch of screw 17 ft at 4 ft of blade No. of blades 4 state whether moveable no total surface 62 sq. ft.  
No. of Feed pumps 2 diameter of ditto 3" Stroke 24" Can one be overhauled while the other is at work Yes  
No. of Bilge pumps 2 diameter of ditto 3 1/2" Stroke 24" Can one be overhauled while the other is at work Yes.  
Where do they pump from Fore, Main & After Holds  
No. of Donkey Engines 2 Size of Pumps 9 x 7 + 9 x 5 Where do they pump from Sea, Bilge, Hotwell and Ballast Tanks

Are all the bilge suction pipes fitted with roses Yes Are the roses always accessible Yes Are the sluices on Engine room bulkheads always accessible Yes  
No. of bilge injections one and sizes 5" dia. Are they connected to condenser, or to circulating pump Circulating pump.  
How are the pumps worked By levers from the piston rod crosshead.  
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  
That pipes are carried through the bunkers Bilge pipes to Fore hold How are they protected By wood casing  
Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times Yes  
Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges Yes  
Then were stern tube, propeller, screw shaft, and all connections examined in dry dock Previous to being launched by Mr. Hoddart  
the screw shaft tunnel watertight Yes and fitted with a sluice door Yes worked from Stepper platform

## BOILERS, &c.—

Number of Boilers 2 Description Cylindrical multitubular  
Working Pressure 75 lbs. Tested by hydraulic pressure to 140 lbs Date of test 15<sup>th</sup> April 1880.  
Description of superheating apparatus or steam chest Cylindrical Steam chest.  
Can each boiler be worked separately Can the superheater be shut off and the boiler worked separately  
No. of square feet of fire grate surface in each boiler 36 Description of safety valves Spring  
No. to each boiler 2 area of each valve 9.62 Are they fitted with easing gear Yes  
No. of safety valves to superheater — area of each valve — are they fitted with easing gear —  
Smallest distance between boilers and bunkers or woodwork About 3 ft 6 in  
Diameter of boilers 12.0" Length of boilers 9.6" description of riveting of shell long. seams double lap circum. seams double lap  
Thickness of shell plates 7/8" diameter of rivet holes 1 1/8" whether punched or drilled drilled pitch of rivets 4 7/8"  
No. of plating 7 3/4" per centage of strength of longitudinal joint 65 working pressure of shell by rules 75 lbs.  
No. of manholes in shell 15" x 11 1/2" size of compensating rings 3 1/2 x 3 1/2 angles x 5/8  
No. of Furnaces in each boiler 2 outside diameter 3. 3 7/8" length, top 3. 4 1/2" between flanges bottom 3. 4 1/2" between flanges  
Thickness of plates 7/16" description of joint welded if rings are fitted flanges greatest length between rings —  
Working pressure of furnace by the rules 127 lbs.  
Combustion chamber plating, thickness, sides 7/16" back 7/16" top 7/16"  
Pitch of stays to ditto sides 8" x 8" back 9 1/2" x 6 3/4" top 10" x 8"  
Stays are fitted with nuts or riveted heads nuts working pressure of plating by rules 75 lbs  
Diameter of stays at smallest part 1 1/8" working pressure of ditto by rules 75 lbs  
End plates in steam space, thickness 11/16" pitch of stays to ditto 18" x 15" how stays are secured double nuts & continuous washers.  
Working pressure by rules — diameter of stays at smallest part 2 3/8" working pressure by rules 98 lbs.  
Front plates at bottom, thickness 3/4" bottom middle & top 11/16" Back plates, thickness 3/4" bottom middle & top 11/16" greatest pitch of stays 10" x 8" working pressure by rules —

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Diameter of tubes  $3\frac{1}{2}$ "  $1\frac{1}{4}$ " pitch of tubes  $4\frac{3}{4}$ "  $4\frac{3}{4}$ " thickness of tube plates, front  $1\frac{1}{16}$ " back  $1\frac{1}{16}$ "  
 How stayed *Stay tubes* pitch of stays  $14\frac{1}{4}$ "  $9\frac{1}{2}$ " width of water spaces  $1\frac{1}{4}$ "  
 Diameter of Superheater or Steam chest  $2\frac{1}{2}$ " length  $9\frac{1}{2}$ "  
 Thickness of plates  $7\frac{1}{16}$ " description of longitudinal joint *double lap* diameter of rivet holes  $13\frac{1}{16}$ " pitch of rivets  $3\frac{3}{16}$ "  
 Working pressure of shell by rules  $157\frac{1}{2}$  lbs. Diameter of flue thickness of plates

If stiffened with rings distance between rings Working pressure by rules

End plates of superheater, or steam chest; thickness  $8\frac{1}{16}$ " How stayed *by bar stay 2" dia*

Superheater or steam chest; how connected to boiler *by hook pieces*

## DONKEY BOILER—

Description

*Vertical with four transverse water tubes.*Made at *Liverpool*

By whom made

*John Wilson & Co. when made (dated) 1<sup>st</sup> May 1880*

Where fixed

working pressure

*70 lbs.*Tested by hydraulic pressure to (dated) *140 lbs.* No. of CertificateFire grate area *13.6*

Description of safety valves

*Spring*

No. of safety valves

*one*area of each *7.068*If fitted with easing gear *yes*

If steam from main boilers can enter the donkey boiler

Diameter of donkey boiler

*5' 3"*

height

*10' 9"*

description of riveting

*double lap*

thickness of shell plates

*7/16"*

diameter of rivet holes

*3/4"*

whether punched or drilled

*punched*

pitch of rivets

*2 1/2"*

lap of plating

*5"*

per centage of strength of joint

*70*

thickness of crown plates

*1/2"*

stayed by

*uptake**spherical crown*

Diameter of furnace, top

*3' 10 1/4"*

bottom

*4' 7 1/8"*

height

length of furnace

*7' 4"*

thickness of plates

*1/2"*

description of joint

*double lap*

thickness of furnace crown plates

*1/2"*

stayed by

*uptake**spherical crown*

Working pressure of shell by rules

*70 lbs.*

working pressure of furnace by rules

diameter of uptake

*1' 2"*

thickness of plates

*7/16"*

thickness of water tubes

*3/8"*

The foregoing is a correct description,

*James Rowden & Co. Manufacturer.**John H. Wilson & Co.*

## General Remarks

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

*The Engines & Boilers of this vessel have been carefully inspected and examined by us. The workmanship is good and they are now in good order and safe working condition and eligible in our opinion to be noted in the Register Book. Lloyds M.C. 7.80*

*This submitted that this vessel is eligible to have the notification of Lloyd's Register recorded in the Register Book. Mc 16/7/80*

The amount of Entry Fee *£ 2 : 0 : 0* received by me,

Special

*£ 19 : 10 : 0**12/7/80*

Certificate (if required) .. £

*gratis**July 1880*

To be sent as per margin.

(Travelling Expenses, if any, £ *6-6-0*.)

Committee's Minute

*Friday, July, 16th 1880*

James Morrison &amp; Co. Engineer Surveyors to Lloyd's Register of British &amp; Foreign Shipping

*Clyde district*

Lloyd's Register Foundation