

# REPORT ON MACHINERY

No. 4853

MONDAY 21 MARCH 1884

Received at London Office

No. in Survey held at  
Reg. Book.

Glasgow

Date, first Survey 10<sup>th</sup> Oct 1886

Last Survey March 18<sup>th</sup> 1887

(Number of Visits 34)

832.51

Tons 536.36

on the Screw Steamer "Harold"

Master J. Miller

Built at Belfast

By whom built Workman & Clark

When built 1884

Engines made at Glasgow

By whom made Hutson & Corbett

when made 1884

Boilers made at

By whom made

when made 1884

Registered Horse Power 98

Owners G. & H. Lowden & Co.

Port belonging to Glasgow

## ENGINES, &c.—

Description of Engines Triple Expansion

Diameter of Cylinders 14" 24" 44" Length of Stroke 36" No. of Rev. per minute 84 Point of Cut off, High Pressure 3/8 Low Pressure 1/2

Diameter of Screw shaft 9" Diam. of Tunnel shaft 8 3/8" Diam. of Crank shaft journals 9" Diam. of Crank pin 9" size of Crank webs 10 3/4" x 6"

Diameter of screw 11" x 4" Pitch of screw 13" x 6" No. of blades Four state whether moveable Yes total surface 34.5 ft

No. of Feed pumps Two diameter of ditto 2 1/4" Stroke 18" Can one be overhauled while the other is at work Yes

No. of Bilge pumps Two diameter of ditto 2 3/4" Stroke 18" Can one be overhauled while the other is at work Yes

Where do they pump from All Compartments

No. of Donkey Engines One Size of Pumps 8" x 3 3/4" x 10" Where do they pump from Sea, Bilge & Hotwell & Bunks

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 3 3/4" pipe Are they connected to condenser, or to circulating pump & Circulating

How are the pumps worked By levers

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 bunks bilge pipe to fore hold How are they protected 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

When were stern tube, propeller, screw shaft, and all connections examined in dry dock On Slip previous to being launched

Is the screw shaft tunnel watertight Yes and fitted with a sluice door Yes worked from Upper platform

## BOILERS, &c.—

Number of Boilers One Description Round Horizontal Whether Steel or Iron Steel

Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs Date of test 28<sup>th</sup> January 1884

Description of superheating apparatus or steam chest none

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 54 ft Description of safety valves Direct Spring No. to each boiler Two

Area of each valve 4" 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 bunks or woodwork 9" Diameter of boilers 13" x 6"

Length of boilers 17 ft 6" description of riveting of shell long. seams double riveted circum. seams double riveted Thickness of shell plates 1 1/32"

Diameter of rivet holes 1 3/8" whether punched or drilled Drilled pitch of rivets 4 7/8" 8 7/4" Lap of plating Straps

Per centage of strength of longitudinal joint 84% working pressure of shell by rules 164 lbs size of manholes in shell 16 x 12

Size of compensating rings Doubling piece fitted No. of Furnaces in each boiler Three

Outside diameter 3' x 2" length, top 4' 1 1/2" bottom 10' 10" thickness of plates 3/16" description of joint Corrugated if rings are fitted

Greatest length between rings working pressure of furnace by the rules 164 lbs combustion chamber plating, thickness, sides 8/16" back 8/16" top 8/16"

Pitch of stays to ditto, sides 6 7/8" x 4" back 6 7/8" x 6 7/8" top 7" x 4" If stays are fitted with nuts or riveted heads nuts working pressure of plating by

rules 160" Diameter of stays at smallest part 1 1/4" working pressure of ditto by rules 160 lbs plates in steam space, thickness 15/16"

Pitch of stays to ditto 14" x 14" how stays are secured by double nuts washers working pressure by rules 160 lbs diameter of stays at

smallest part 2 1/2" Solid (iron) working pressure by rules 164 lbs Front plates at bottom, thickness 13/16" Back plates, thickness 13/16"

Greatest pitch of stays 10" x 4" working pressure by rules Diameter of tubes 3 1/2" pitch of tubes 4 3/4" x 4 3/4" thickness of tube

plates, front 14/16" back 14/16" how stayed by tubes pitch of stays 9 1/2" x 9 1/2" width of water spaces 6"

Diameter of Superheater or Steam chest length thickness of plates description of longitudinal joint diam. of rivet holes

Pitch of rivets working pressure of shell by rules 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 how stayed

Superheater or steam chest; how connected to boiler



7853 gls

DONKEY BOILER—

Description

Round Vertical

Made at Glasgow

by whom made

Hutton & Corbett

when made 1884

where fixed In Storehold

Working pressure

80 lbs

tested by hydraulic pressure to

160 lbs

No. of Certificate

1467

fire grate area

10 ft

description of safety

valves

Direct Spring

No. of safety valves

One

area of each

4 in

if fitted with easing gear

Yes

if steam from main boilers can

enter the donkey boiler

No

diameter of donkey boiler

5 ft

length

9 ft 6 in

description of riveting

Double riveted

Thickness of shell plates

6/16

diameter of rivet holes

13/16

whether punched or drilled

Drilled

pitch of rivets

3 in

lap of plating

4 in

per centage of strength of joint

40

thickness of crown plates

1/16

stayed by

Uptake + 6

2 in

Stay bars

Diameter of furnace, top

3 ft 8 in

bottom

4 ft 2 in

length of furnace

4 ft 6 in

thickness of plates

8/16

description of joint

Lap single

Thickness of furnace crown plates

9/16

stayed by

as above

working pressure of shell by rules

84 lbs

Working pressure of furnace by rules

83 lbs

diameter of uptake

12 in

thickness of plates

6/16

thickness of water tubes

6/16 x 9 1/2 dia

SPARE GEAR. State the articles supplied:

Two Connecting rod bolts & nuts (top & bottom) 2 main bearing bolts, One set Coupling bolts, 3 Piston bolts & nuts, Huffer piston spring for each piston, One feed & back pump valve also Donkey pump valves, 2 Propeller blades, assortment of bolts nuts iron &c

The foregoing is a correct description,

pp. Hutton & Corbett

Manufacturer.

General Remarks

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

These Engines & Boilers are of good workmanship & materials and are now in good order and safe working condition and eligible in my opinion to be noted in the Register Book. Lloyd's M.C. 3/87

It is submitted that this vessel is eligible to have the notification + 2 in 2 3 87 recorded

21/3/87

The amount of Entry Fee .. £ 1 : - : - received by me.

Special .. £ 14 : 14 : -

Donkey Boiler Fee .. £ - : - : -

Certificate (if required) .. £ - : - : -

To be sent as per margin.

(Travelling Expenses, if any, £ - : - : -)

Committee's Minute

TUESDAY 22 MARCH 1887

James Morrison

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

Clyde District