

REPORT ON MACHINERY.

NO. 11539

Port of Greenock

MON 31 AUG 1896

No. in Survey held at Port Glasgow
Reg. Book.

Date, first Survey 14th April

Last Survey 27th August 1896

(Number of Visits 4)

on the Twin Screw Steamer "Morin"

Gross 945.92
Net 565.0

Master Williams Built at Port Glasgow By whom built David J. Dunlop & Co.

When built 1896

Engines made at Port Glasgow By whom made David J. Dunlop & Co. when made 1896

Boilers made at do By whom made do when made 1896

Registered Horse Power 128 Owners African Steamship Co. Port belonging to London.

Nom. Horse Power as per Section 28 128

ENGINES, &c.— Description of Engines Inverted Direct acting Triple Expansion No. of Cylinders Six.
Diameter of Cylinders Two 13" Two 21" & Two 34" Length of Stroke 24" Revolutions per minute 130 Diameter of Screw shaft as per rule 6" 2
Diameter of Tunnel shaft as per rule 5" 2 Diameter of Crank shaft journals 6 1/2" Diameter of Crank pins 6 1/2" Size of Crank webs 8 3/4 x 4 1/2"
Diameter of screws 8" 3 Pitch of screws 12" 6 No. of blades Three State whether moveable yes Total surface in each 27 sq. ft.
No. of Feed pumps one on each engine Diameter of ditto 2 3/4" Stroke 12" Can one be overhauled while the other is at work yes
No. of Bilge pumps one on each engine Diameter of ditto 2 3/4" Stroke 12" Can one be overhauled while the other is at work yes
No. of Donkey Engines Two duplex Sizes of Pumps both 3 1/2 x 5" No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room Two 2" In Holds, &c. Four 2 1/4" & Two 2" in Holds. one 2 1/4"
in tunnel well.
No. of bilge injections Two sizes 4" Connected to condenser, or to circulating pump as pumps a separate donkey suction fitted in Engine room & size yes 2 1/4"
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 —
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 near line
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 Salt water pipes How are they protected Wood casing
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 on slip before launching. Is the screw shaft tunnel watertight yes.
Is it fitted with a watertight door yes worked from Lap platform.

BOILERS, &c.— (Letter for record S.) Total Heating Surface of Boilers 2150 sq. ft.
No. and Description of Boilers Two cylindrical Multitubular Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs
Date of test 4.8.96 Can each boiler be worked separately yes Area of fire grate in each boiler 34.5 sq. ft. No. and Description of safety valves to
each boiler Two direct spring Area of each valve 4.9 sq. in. Pressure to which they are adjusted 165 lbs. Are they fitted
with easing gear yes Smallest distance between boilers or uptakes and bunkers or woodwork 9" Mean diameter of boilers 11' 0"
Length 9' 6" Material of shell plates Steel Thickness 1" Description of riveting: circum. seams Lap double long. seams D.B. strap treble
Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 7 1/2" & 3 3/4" Lap of plates or width of butt straps 16" straps
Per centages of strength of longitudinal joint 93 Working pressure of shell by rules 182 lbs Size of manhole in shell 16 1/2 x 12 3/4"
Size of compensating ring 31 x 31 x 1" No. and Description of Furnaces in each boiler Two horizontal Material Steel Outside diameter 40"
Length of plain part top 1' 6" bottom 1' 6" Thickness of plates top 3/2" bottom 3/2" Description of longitudinal joint Welded No. of strengthening rings —
Working pressure of furnace by the rules 173 lbs Combustion chamber plates: Material Steel Thickness: Sides 7/16" Back 9/16" Top 9/16" Bottom 3/4"
Pitch of stays to ditto: Sides 7 1/2 x 7 1/2" Back 7 1/2 x 7 1/2" Top 8 x 7 1/2" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 170.6 to 194 lbs
Material of stays Steel Diameter at smallest part 1 1/2" to 1 1/2" Area supported by each stay 56 to 80 sq. in. Working pressure by rules 164 to 188 lbs End plates in steam space:
Material Steel Thickness 13/16" & 12/16" Pitch of stays 16 1/2 x 16 1/2" How are stays secured Double nuts Working pressure by rules 292 lbs Material of stays Steel
Diameter at smallest part 2 1/2" Area supported by each stay 272 sq. in. Working pressure by rules 161 lbs Material of Front plates at bottom Steel
Thickness 7/8" Material of Lower back plate Steel Thickness 3/4" & 1/2" Greatest pitch of stays 14" Working pressure of plate by rules 187 lbs
Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" Material of tube plates Steel Thickness: Front 13/16" & 9/16" Back 13/16" Mean pitch of stays 11 1/2"
Pitch across wide water spaces 14" Working pressures by rules 215 lbs Girders to Chamber tops: Material Steel Depth and
thickness of girder at centre 7 3/8" & 13/16" Length as per rule 29 Distance apart 8" Number and pitch of Stays in each Three 7 1/2"
Working pressure by rules 175 lbs 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 *none fitted in this vessel*

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 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:— *Six steel propeller blades. 1 slide valve spindle. 1 pair Crank bushes. 3 top and 2 3 bottom end bolts & nuts. 2 main bearing bolts & nuts. 6 coupling bolts. 1 air pump rod. 1 set air pump valves. 1 do circulating pump valves. 1 do for feed & bilge pumps. 2 safety valve springs. 30 Condenser tubes & 30 ferrules.*

The foregoing is a correct description,
David J. Dunlop Manufacturer.

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

These Engines and Boilers have been specially surveyed during construction quality of workmanship good. Shafts examined when being turned and found apparently sound. Main steam pipes tested by hydraulic pressure to 320 lbs per sq. inch, tests satisfactory. The Engines and boilers are satisfactorily fitted in vessel, and have been tested under full steam they are now in good order and safe working condition and are in my opinion eligible to be noted in Register Book. LMC. 8.96

*Spare gear continued
 12 tubes for main boilers. 150 fire bars. 1 set of bar bearers, and a quantity of bolts, studs nuts & iron assorted.*

*It is submitted that
 this vessel is eligible for
 THE RECORD. L.M.C. 8.96.*

AS
 31.8.96

Emil
 31.8.96

Certificate (if required) to be sent to *Greenock*

The amount of Entry Fee..	£	10: 0: 0	When applied for,
Special	£	14: 4: 0	27.8.96
Donkey Boiler Fee .. .	£	1: 0: 0	When received,
Travelling Expenses (if any) £	£	1: 0: 0	1.9.96

DRUM
 2.9
 MACHINERY CERTIFICATE
 WRITTEN.

A. L. Heron
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.
 Greenock District.

Committee's Minute **TUES 1 SEP 1896**

Assigned

+ LMC 8.96



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 Foundation