

# REPORT ON MACHINERY.

Port of Leith

MUN 10 APL 1899

Received at London Office

No. in Survey held at Leith Date, first Survey 12<sup>th</sup> Apr 1898 Last Survey 5<sup>th</sup> April 1899  
Reg. Book. (Number of Visits 25)

on the S.S. "Aurora" Tons { Gross 158.58  
Net 38.37

Master George Linton Built at Leith By whom built Ramage & Ferguson When built 1899

Engines made at Leith By whom made Ramage & Ferguson when made 1899

Boilers made at do By whom made do when made 1899

Registered Horse Power 54 Owners The Newhaven Hawkers (Limited) Port belonging to Leanton

Nom. Horse Power as per Section 28 54

ENGINES, &c.— Description of Engines Triple expansion No. of Cylinders 3

Diameter of Cylinders 12-19-30 Length of Stroke 21 Revolutions per minute 130 Diameter of Screw shaft as per rule 6.1"  
as fitted 6.5"

Diameter of Tunnel shaft as per rule 4.5" Diameter of Crank shaft journals 6.4" Diameter of Crank pin 6.4" Size of Crank webs 10.5" x 4.5"  
as fitted 6.1"

Diameter of screw 8' 0" Pitch of screw 9' 9" No. of blades 4 State whether moveable no Total surface 19.5 sq

No. of Feed pumps 1 Diameter of ditto 2" Stroke 12" Can one be overhauled while the other is at work

No. of Bilge pumps 1 Diameter of ditto 2.5" Stroke 12" Can one be overhauled while the other is at work

No. of Donkey Engines 1 Sizes of Pumps 5" x 3.75" x 5" No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room One 2' dia + gaiter 2' dia In Holds, &c. One 2' dia

No. of bilge injections 1 sizes 3" Connected to condenser, or to circulating pump yes Is a separate donkey suction fitted in Engine room & size yes 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 section to hold 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 new vessel Is the screw shaft tunnel watertight none

Is it fitted with a watertight door  worked from

OILERS, &c.— (Letter for record S.) Total Heating Surface of Boilers 970.5 sq

No. and Description of Boilers One multitubular single ended Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs

Date of test 18-1-99 Can each boiler be worked separately  Area of fire grate in each boiler 30.6 sq No. and Description of safety valves to

each boiler Two, Spring Area of each valve 3.98 sq Pressure to which they are adjusted 18.5 lbs Are they fitted

with easing gear yes Smallest distance between boilers or uptakes and bunkers or woodwork 9" Mean diameter of boilers 11' 0.5"

Length 9' 0" Material of shell plates steel Thickness 3/32 Description of riveting: circum. seams Lap & Rivet long. seams B.S. Rivet

Diameter of rivet holes in long. seams 1 1/8" Pitch of rivets 8 1/2" Lap of plates or width of butt straps 17 1/2"

Per centages of strength of longitudinal joint rivets 89.2 Working pressure of shell by rules 184 lbs Size of manhole in shell 16" x 12"  
plate 86.7

Size of compensating ring 32" x 28" No. and Description of Furnaces in each boiler 2-plain Material steel Outside diameter 36 1/2"

Length of plain part top 170" Thickness of plates crown 3/16 Description of longitudinal joint B.S. Rivet No. of strengthening rings   
bottom 170"

Working pressure of furnace by the rules 212 lbs Combustion chamber plates: Material Steel Thickness: Sides 2 1/32 Back 2 1/32 Top 2 1/32 Bottom 2 1/32

Pitch of stays to ditto: Sides 9" Back 9" Top 8 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 184 lbs

Material of stays Steel Diameter at smallest part 2.03" Area supported by each stay 81 sq Working pressure by rules 200 lbs End plates in steam space:

Material Steel Thickness 1" Pitch of stays 16" x 15 1/2" How are stays secured kn. W. Working pressure by rules 190 lbs Material of stays Steel

Diameter at smallest parts 5.05" Area supported by each stay 248 sq Working pressure by rules 204 lbs Material of Front plates at bottom Steel

Thickness 3/4" Material of Lower back plate Steel Thickness 1 5/16" Greatest pitch of stays 12 7/8" Working pressure of plate by rules 184 lbs

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

Pitch across wide water spaces 14 1/2" Working pressures by rules 192 lbs Girders to Chamber tops: Material Steel Depth and

thickness of girder at centre 7" x 1 5/8" Length as per rule 23" Distance apart 8" Number and pitch of Stays in each 1-11 1/2"

Working pressure by rules 248 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

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*

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:— *As per Rule.*

The foregoing is a correct description,

**RAMAGE & FERGUSON, Limited.** Manufacturer.

*Wm. Ramage*

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

Dates of Survey while building  
During progress of work in shops— 1899 Sep. 12. 22. 28. Oct. 4. 7. 13. 19. 27. 31. Nov. 8. 14. 22. Dec. 1. 7. 19. 22. 28. Jan. 10. 18. 26. 27. 30.  
During erection on board vessel— Feb. 6. 10. 17. 20. 22. Mar. 1. 6. 13. 15. 24. 28. Ap. 1. 5.  
Total No. of visits 35

The engines & boiler of this vessel have been constructed under special survey & the materials & workmanship are found & good. The engines have been tried under steam & the boiler safety valves adjusted at the working pressure. The machinery is now in good & safe working condition & eligible in my opinion to have the notation of + L.M.C. 4, 99. Kindly return the enclosed boiler tracing for reference in dealing with the sister vessel.

It is submitted that this vessel is eligible for THE RECORD. L.M.C. 4, 99.

A.C.H.

*Ed.* 11.4.99  
11.4.99

Certificate (if required) to be sent to

The amount of Entry Fee. . . £ 1 : - : -  
Special . . . . . £ 8 : 2 : -  
Donkey Boiler Fee . . . . . £ - : - : -  
Travelling Expenses (if any) £ - : - : -  
When applied for, 18/4/99  
When received, 8/4/99

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

Committee's Minute TUES. 11 APR 1899

Assigned + L.M.C. 4, 99

MACHINERY CERTIFICATE WRITTEN.



© 2019

Lloyd's Register Foundation