

# REPORT ON MACHINERY

SAT. JAN 5 1901

Port of Greenock

Received at London Office 18

No. in Survey held at Greenock & Port Glasgow Date, first Survey 20<sup>th</sup> Decr 1899 Last Survey 20<sup>th</sup> Decr 1900

Reg. Book. 79 on the Screw steamer, "Alberta" (Number of Visits 116)

Tons { Gross 3959.75,  
Net 2576.46.

Master A. Bussanich Built at Port Glasgow By whom built Russell & Co. When built 1900.

Engines made at Greenock By whom made Rankin & Blackmore when made 1900.

Boilers made at do By whom made do when made 1900.

Registered Horse Power Owners Frattelli Bosulich Port belonging to Trieste

Nom. Horse Power as per Section 28 346 Is Refrigerating Machinery fitted no Is Electric Light fitted no.

ENGINES, &c.—Description of Engines Inverted Direct acting Triple Expansion No. of Cylinders Three No. of Cranks Three

Dia. of Cylinders 25" 41" 67" Length of Stroke 45" Revs. per minute 68 Dia. of Screw shaft 14 3/16" Lgth. of stern bush 56 1/2"

Dia. of Tunnel shaft 12" Dia. of Crank shaft journals 12 1/2" Dia. of Crank pins 12 1/2" Size of Crank webs 17" x 8 1/2" Dia. of thrust shaft under

rollers 12 1/2" Dia. of screw 17" 9" Pitch of screw 16" 9" No. of blades Four State whether moveable no Total surface 93 sq. ft.

No. of Feed pumps Two Diameter of ditto 3 1/2" Stroke 24" Can one be overhauled while the other is at work yes.

No. of Bilge pumps Two Diameter of ditto 4 1/2" Stroke 24" Can one be overhauled while the other is at work yes.

No. of Donkey Engines Two Sizes of Pumps 12" x 10" & duplex 4 1/2" x 8" No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room Four 3 1/2" In Holds, &c. Eight 3 1/2" & one 2 1/2" in tunnel well.

No. of bilge injections One sizes 6" valve. Connected to condenser, or to circulating pump no Is a separate donkey suction fitted in Engine room & size yes 3 1/2".

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 no

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.

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 ship before Is the screw shaft tunnel watertight yes.

Is it fitted with a watertight door yes worked from Top platform.

BOILERS, &c.— (Letter for record S) Total Heating Surface of Boilers 4,534 sq. ft. Is forced draft fitted yes.

No. and Description of Boilers Two Cylindrical Multitubular Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs

Date of test 3.11.00. Can each boiler be worked separately yes Area of fire grate in each boiler 53 1/2 sq. ft. No. and Description of safety valves to

each boiler Two direct spring Area of each valve 9.62 sq. in. Pressure to which they are adjusted 184 lbs. Are they fitted with easing gear yes.

Smallest distance between boilers or uptakes and bunkers or woodwork 23" Mean dia. of boilers 14" 6" Length 11" 6" Material of shell plates Steel

Thickness 1 5/32" Range of tensile strength 29 to 32 tons Are they welded or flanged no Descrip. of riveting: cir. seams Lap double long. seams 2 B Strap table.

Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 8 3/4" x 4 3/8" Lap of plates or width of butt straps 18 1/2" Straps

Percentages of strength of longitudinal joint rivets 94.7 Working pressure of shell by rules 183 lbs Size of manhole in shell 18" x 12"

No. of compensating ring 30" x 26" x 1 5/32" No. and Description of Furnaces in each boiler Three Dightens Material Steel Outside diameter 49"

Length of plain part top 19" Thickness of plates bottom 32" Description of longitudinal joint Welded No. of strengthening rings no

Working pressure of furnace by the rules 192 lbs Combustion chamber plates: Material Steel Thickness: Sides 9/16" Back 9/16" Top 19/32" Bottom 3/4"

No. of stays to ditto: Sides 7 3/4" x 7 3/4" Back 7 1/2" x 7 3/4" Top 8" x 8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 182 to 214 lbs

Material of stays Steel Diameter at smallest part 1 1/2", 1 3/8", 1 1/2" Area supported by each stay 52 to 71 1/2 sq. in. Working pressure by rules 182 to 203 lbs End plates in steam space:

Material Steel Thickness 1" Pitch of stays 16 1/8" x 15 1/4" How are stays secured double nuts Working pressure by rules 182 lbs Material of stays Steel

Diameter at smallest part 2 3/16" Area supported by each stay 246 sq. in. Working pressure by rules 193 lbs Material of Front plates at bottom Steel

Thickness 3/4" Material of Lower back plate Steel Thickness 13/16" Greatest pitch of stays 12 1/2" to 13 3/4" Working pressure of plate by rules 183 lbs

Diameter of tubes 2 1/2" Pitch of tubes 3 5/8" x 3 3/4" Material of tube plates Steel Thickness: Front 3/4" x 2" double Back 3/4" Mean pitch of stays 9 3/16" & 7 3/8"

Working pressures by rules 204 lbs Girders to Chamber tops: Material Steel Depth and

Thickness of girder at centre 10 3/4" x 5" double Length as per rule 34" Distance apart 8" Number and pitch of Stays in each Three 8"

Working pressure by rules 202 lbs Superheater or Steam chest; how connected to boiler no Can the superheater be shut off and the boiler worked

separately no Diameter no Length no Thickness of shell plates no Material no Description of longitudinal joint no Diam. of rivet

holes no Pitch of rivets no Working pressure of shell by rules no Diameter of flue no Material of flue plates no Thickness no

Are they stiffened with rings no Distance between rings no Working pressure by rules no End plates: Thickness no How stayed no

Working pressure of end plates no Area of safety valves to superheater no Are they fitted with easing gear no

**DONKEY BOILER**— No. Description *see Glasgow report No 18497, attached,*  
 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 *no* 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 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 propeller. 1 screw shaft. 12 shaft coupling bolts & nuts. 2 do for top & bottom ends. 2 do for main bearings. 6 do for holding down. 6 junk ring pins 6 studs & nuts for cylinder covers. 6 do for valve chest covers. 2 feed & 2 bilge pump valves. 3 cylinder escape valves & springs. 1 do for feed pumps. 1 set safety valve & springs.*

The foregoing is a correct description,

*Ranston Macleod* Manufacturer.

Dates of Survey while building	During progress of work in shops -	1899. Dec 20-1900. Jan 9. 11. 15. 22. 25. 30 Feb 1. 6. 9. 14. 20. 22. 26. Mar. 2. 21. 23. 26. 30.	Is the approved plan of main boiler forwarded herewith <i>yes</i>
		April 4. 6. 11. 14. 26. 30. May 2. 4. 8. 10. 14. 17. 21. 23. 26. 29. 31. June. 2. 5. 7. 9. 11. 13. 15.	
		July 2. 16. 18. 20. 23. 25. 26. 28. 31. Aug. 2. 6. 8. 13. 16. 18. 22. 24. 27. 29. 30. Sept. 4. 8. 12. 14. 17. 21. 25. 27. 29. Oct 1. 4. 6. 11. 16. 18. 20. 22. 23. 25. 29. 30. 31. Nov 2. 3. 5. 6. 9. 15. 21. 22. 23. 26. 27. 28. 29. Dec. 3. 4. 5. 6. 7. 8. 10. 11. 13. 18. 19. 20.	

*GM*

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

*These Engines & Boilers have been constructed under special survey workmanship good. Thrust. intermediate & screw shafts examined when being turned and found apparently sound. Main steam pipes tested by hydraulic pressure to 400 lbs per sq. inch. tests satisfactory. The Engines & Boilers are satisfactorily fitted in vessel & have been tested under full steam. They are now in good order & safe working condition & are in our opinion eligible to be noted in Register Book. **LMC, 12.00.***

*This vessel's main boilers are fitted with Howden's system of forced draught.*

*Spare gear continued.*

*12 Condenser tubes & 120 packing ferrules. 1 set Ramsbottom rings for HP & IP pistons 1 set of air & circulating pump valves. 1 set fire bars. a quantity of bolts nuts & iron assorted*

*Greenock.*

**It is submitted that this vessel is eligible for THE RECORD. **LMC. 12.00. 7.8.****

The amount of Entry Fee... £ 3 : : : When applied for,  
 Special .. .. £ 37 : 6 : : 20.12.1900  
 Donkey Boiler Fee .. .. £ " : " : : When received,  
 Travelling Expenses (if any) £ " : " : : 21.12.1900

*A. C. Meron & R. Elliott*  
 Engineer Surveyors to Lloyd's Register of British & Foreign Shipping.  
 Greenock District.

Committee's Minute **Glasgow. 4 - JAN. 1901**

Assigned **+ LMC. 12.00**

Certificate (if required) to be sent to

