

# REPORT ON MACHINERY.

No. 24676  
THUR, DEC 6 1906

Port of Glasgow

Received at London Office

No. in Survey held at Glasgow  
Reg. Book. on the S/S "Valbanera"

Date, first Survey 9 May Last Survey 29 Nov 1906  
(Number of Visits)

Master Built at Glasgow By whom built C. Connell & Coy When built 1906  
Engines made at Glasgow By whom made Dunsmuir, Jackson & Co when made 1906  
Boilers made at ditto By whom made ditto when made 1906  
Registered Horse Power Owners Port belonging to  
Nom. Horse Power as per Section 28 444 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

**ENGINES, &c.**—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3  
Dia. of Cylinders 29" - 46" - 74" Length of Stroke 51" Revs. per minute 65 Dia. of Screw shaft as per rule 15.6 Material of screw shaft Iron  
Is the screw shaft fitted with a continuous liner the whole length of the stern tube No Is the after end of the liner made water tight in the propeller boss Yes If the liner is in more than one length are the joints burned ✓ If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive ✓ If two liners are fitted, is the shaft lapped or protected between the liners Protected Length of stern bush 5'-3"  
Dia. of Tunnel shaft as per rule 13.6 Dia. of Crank shaft journals as per rule 14.2 Dia. of Crank pin 14 1/2" Size of Crank webs 9 1/2 x 28" Dia. of thrust shaft under collars 14 1/2" Dia. of screws 14-6 Pitch of Screw 2 1/2" No. of Blades 4 State whether moveable Yes Total surface 95 sq ft  
No. of Feed pumps 2 Diameter of ditto 4 1/2" Stroke 24" Can one be overhauled while the other is at work Yes  
No. of Bilge pumps 2 Diameter of ditto 4 1/2" Stroke 24" Can one be overhauled while the other is at work Yes  
No. of Donkey Engines 4 Sizes of Pumps 10 1/2, 8, 2 1/2, 4 1/2, 5 1/2, 6" No. and size of Suctions connected to both Bilge and Donkey pumps  
In Engine Room 2 - 3 1/2", 2 - 3 1/2", 2 - 3 1/2" In Holds, &c. No - 1 - Two 3 1/2" No. 2 Two 3 1/2" No. 3 Two 3 1/2"  
No. of Bilge Injections 1 sizes 6" Connected to condenser, or to circulating pump Yes 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 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 None How are they protected ✓  
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  
Dates of examination of completion of fitting of Sea Connections 30-10-06 of Stern Tube 30-10-06 Screw shaft and Propeller  
Is the Screw Shaft Tunnel watertight Alpharum Is it fitted with a watertight door Yes worked from Upper & R Platform

**BOILERS, &c.**—(Letter for record) Manufacturers of Steel Steel Co. of Scotland & Stewart, Lloyd  
Total Heating Surface of Boilers 4450 Is Forced Draft fitted No No. and Description of Boilers 2 Double Ended  
Working Pressure 160 lb Tested by hydraulic pressure to 320 Date of test 5-11-06 No. of Certificate 8403, 8404, 8405  
Can each boiler be worked separately Yes Area of fire grate in each boiler 115.5 No. and Description of Safety Valves to each boiler 2 Double Seating Area of each valve 14.17 Pressure to which they are adjusted 165 Are they fitted with easing gear Yes  
Smallest distance between boilers or uptakes and bunkers or woodwork Mean dia. of boilers 15' Length 17' Material of shell plates S  
Thickness 3/32" Range of tensile strength 28/32 Are the shell plates welded or flanged ✓ Descrip. of riveting: cir. seams TR  
long. seams TR Diameter of rivet holes in long. seams 1 1/16" Pitch of rivets 8 1/2" Lap of plates or width of butt straps 1-5 1/2"  
Per centages of strength of longitudinal joint 88.6 Working pressure of shell by rules 161.2 Size of manhole in shell 16 1/2"  
Size of compensating ring 9 1/2" Saddle No. and Description of Furnaces in each boiler 6 Morrison Material S Outside diameter 3'-10"  
Length of plain part top 36.4 Thickness of plates bottom 1/2" Description of longitudinal joint Weld No. of strengthening rings ✓  
Working pressure of furnace by the rules 164 lb Combustion chamber plates: Material S Thickness: Sides 7/8" Back ✓ Top 5/8" Bottom 7/8"  
Pitch of stays to ditto: Sides 8 3/4 x 9" Back 9 x 13 1/2" Top 9 x 8 3/4" If stays are fitted with nuts or riveted heads Nuts Riveted Working pressure by rules 170 lb  
Material of stays S Diameter at smallest part 1.76 Area supported by each stay 8.1 Working pressure by rules 174 lb End plates in steam space:  
Material S Thickness 1 1/16" Pitch of stays 16 x 18 1/2" How are stays secured D Nuts Working pressure by rules 164 lb Material of stays S  
Diameter at smallest part 5.268 Area supported by each stay 304 Working pressure by rules 173 lb Material of Front plates at bottom S  
Thickness 7/8" Material of Lower back plate S Thickness 7/8" Greatest pitch of stays ✓ Working pressure of plate by rules ✓  
Diameter of tubes 3 1/2" Pitch of tubes 4 7/8" Material of tube plates S Thickness: Front 1" Back 1 1/16" Mean pitch of stays 11 1/4"  
Pitch across wide water spaces 1-2 1/2" Working pressures by rules 170 lb Girders to Chamber tops: Material S Depth and thickness of girder at centre 10 x 1 (2 P 22 L) Length as per rule 3-1 Distance apart 9" Number and pitch of stays in each 3 at 8 3/4"  
Working pressure by rules 180 lb 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

W746 - 0161

**VERTICAL DONKEY BOILER—** Manufacturers of Steel

No.	Description			When made	Where made
Made at	By whom made				
Working pressure	tested by hydraulic pressure to	Date of test	No. of Certificate	Fire grate area	Description of Safety
Valves	No. of Safety Valves	Area of each	Pressure to which they are adjusted	Date of adjustment	
If fitted with easing gear	If steam from main boilers can enter the donkey boiler		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 Plates
Working pressure of shell by rules	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	
Working pressure of furnace by rules	Thickness of furnace crown plates		Stayed by		
Diameter of uptake	Thickness of uptake plates	Thickness of water tubes	Dates of survey		

**SPARE GEAR.** State the articles supplied:— 2 Propeller Blades, 1 Air Pump Rod & Valve & 6 Valves, 1 Air pump 18 Rubber Valves, 2 Feed pump Valves, one Crank Shaft, & Tail End, Pair of Bearings for both ends, & both of course 2 on air bearing Bolts, 6 Coupling Bolts, 2 Eccentric Rod complete, & Stays 12 Piston Bolts & Nuts, 17 Cylinder Covers, 50 Boiler Tubes 40 Condenser ditto 2 Bilge, Feed & 4 Ballast Donkey Pump Valves 2 Safety Valve Springs 1 Slide Valve complete

The foregoing is a correct description,  
for **DUNSMUIR & JACKSON, Limited.**  
*James Fletcher* Manufacturer.

Dates of Survey while building	During progress of work in shops	1906. May 9 29 June 4 6 19 22 29 July 2 12 21 29 Aug 1 3 8 10 16 27 Sep 4 5 11 13	
		During erection on board vessel	15 19 21 Oct 1 9 22 30 Nov 2 5 8 20 22 29
		Total No. of visits	34

Is the approved plan of main boiler forwarded herewith **Yes**  
" " " donkey " " " **Yes**

Dates of Examination of principal parts—Cylinders 4. 6. 06 etc Slides 6. 6. 06 etc Covers 6. 6. 06 etc Pistons 8. 7. 06 etc Rods	
Connecting rods 29. 8. 06	Crank shaft 17. 9. 06 Thrust shaft 8-8-06 Tunnel shafts 29-8-06 Screw shaft 28-8-06 Propeller 28. 8. 06
Stern tube 30. 10. 06	Steam pipes tested 10. 11. 06 Engine and boiler seatings 8-8-06 Engines holding down bolts 20-8-06
Completion of pumping arrangements 2. 11. 06	Boilers fixed Engines tried under steam 29-11-06
Main boiler safety valves adjusted 23-11-06	Thickness of adjusting washers $PBSV \frac{1}{4} P^3 \frac{1}{6} F SB SV \frac{3}{16} PY \frac{1}{4} DB. SV \frac{3}{16} P \frac{3}{16}$
Material of Crank shaft $\$$	Identification Mark on Do. 27. 9. 06 9 WD Material of Thrust shaft $\$$ Identification Mark on Do. 8-8-06 9 WD
Material of Tunnel shafts $\$$	Identification Marks on Do. 9-8-06 9 WD Material of Screw shafts IRON Identification Marks on Do. 28-8-06 9 WD
Material of Steam Pipes	Copper Solid drawn. Test pressure 320lb

**General Remarks** (State quality of workmanship, opinions as to class, &c. *These Engines & Boilers have been built under survey. The materials & workmanship are of good description. They have been satisfactorily fitted & tried on board and are eligible to be noted in the Register. Book L.M.C. 11/06.*

It is submitted that this vessel is eligible for THE RECORD L.M.C. 11.06 ELEC. LIGHT.

*Ed.*  
6.12.06

The amount of Entry fee..	£ 3 :	When applied for,
Special ..	£ 42. 4 :	.....19.....
Donkey Boiler Fee ..	£ :	When received,
Travelling Expenses (if any) £	:	.....19.....

*James Morrison* *W. W. Dunsmuir*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute  
Assigned  
FRI. DEC 7 1906  
+ L.M.C. 11.06  
elec. light



Lloyd's Register Foundation

Certificate (if required) to be sent to  
(The Surveyors are requested not to write on or below the space for Committee's Minute.)