

# REPORT ON MACHINERY.

No. 28004

Received at London Office WFT. 18 AUG 1909

Date of writing Report 2-8-1909 When handed in at Local Office 13/8/1909 Port of Glasgow

No. in Survey held at Glasgow Date, First Survey 22<sup>nd</sup> October 1908 Last Survey 14<sup>th</sup> August 1909  
Reg. Book. on the S/S "Glenshield" (Number of Visits 64)

Master A. Ellis Built at Glasgow By whom built E. Coumell & Co. L<sup>ds</sup> When built 1909  
Tons { Gross 4798.13  
Net 3054.21

Engines made at Glasgow By whom made Dunsen & Jackson L<sup>ds</sup> when made 1909

Boilers made at ditto By whom made ditto when made 1909

Registered Horse Power Owners Jas. Gardner & Co. Port belonging to Glasgow

Nom. Horse Power as per Section 28 513 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 24"-43"-42" Length of Stroke 48" Revs. per minute 127 1/2 Dia. of Screw shaft as per rule 14 1/2" Material of screw shaft Iron  
as fitted 15"

Is the screw shaft fitted with a continuous liner the whole length of the stern tube Yes 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 — Length of stern bush 5'-0 1/2"

Dia. of Tunnel shaft as per rule 13-1/2" Dia. of Crank shaft journals as per rule 13-4/8" Dia. of Crank pin 14 1/4" Size of Crank webs 28x9 1/2" Dia. of thrust shaft under collars 14 1/4" Dia. of screw 14-6" Pitch of Screw 18-6" No. of Blades 4 State whether moveable Yes Total surface 95 sq ft

No. of Feed pumps 2 Diameter of ditto 4" Stroke 26" Can one be overhauled while the other is at work Yes  
No. of Bilge pumps 2 Diameter of ditto 4 1/2" Stroke 26" Can one be overhauled while the other is at work Yes  
No. of Donkey Engines 5 Sizes of Pumps 2 1/2", 3", 4", 5", 6" No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 2-3 1/2" Stokhold 2-3 1/2" In Holds, &c. 2-3 1/2" in each hold  
9 1/2" H-1-3 1/2", Tunnel Well 2 1/2"

No. of Bilge Injections 1 sizes 5 1/2" 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 —  
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 Aug 2<sup>nd</sup> of Stern Tube Aug 2<sup>nd</sup> Screw shaft and Propeller Aug 2<sup>nd</sup>

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Upper Eng Room Platform

## BOILERS, &c.—(Letter for record S) Manufacturers of Steel Babcock

Total Heating Surface of Boilers 4680 Is Forced Draft fitted Yes No. and Description of Boilers 3 Single Ended  
Working Pressure 180 Tested by hydraulic pressure to 360 lbs Date of test 14-6-09 No. of Certificate 9967

Can each boiler be worked separately Yes Area of fire grate in each boiler 49.84 sq ft No. and Description of Safety Valves to each boiler Double Spring Area of each valve 8.29 sq ft Pressure to which they are adjusted 180 Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 12" Mean dia. of boilers 15-13 1/8" Length 12-6" Material of shell plates S  
Thickness 3/8" Range of tensile strength 28-32 Are the shell plates welded or flanged Yes Descrip. of riveting: cir. seams DR  
long. seams TR & DBS Diameter of rivet holes in long. seams 17/16" Pitch of rivets 9 1/8" Lap of plates or width of butt straps 1-9 1/4"

Per centages of strength of longitudinal joint rivets 88-5/8% plate 85.3 Working pressure of shell by rules 201 Size of manhole in shell 16x12"

Size of compensating ring McNeil No. and Description of Furnaces in each boiler 3 Morrison Material S Outside diameter 3-10"

Length of plain part top / bottom Thickness of plates crown 7/16" bottom Description of longitudinal joint weld No. of strengthening rings —  
Working pressure of furnace by the rules 184 Combustion chamber plates: Material S Thickness: Sides 2 1/8" Back 5/8" Top 2 1/32" Bottom 29/32"

Pitch of stays to ditto: Sides 8x9 1/2" Back 7 1/8x9 1/8" Top 9 1/8x8 5/8" If stays are fitted with nuts or riveted heads Yes Working pressure by rules 190  
Material of stays S Diameter at smallest part 1 1/2" Area supported by each stay 7845 Working pressure by rules 197 End plates in steam space:

Material S Thickness 13/32" Pitch of stays 18 3/4x15 1/4" How are stays secured DN Working pressure by rules 188 Material of stays S  
Diameter at smallest part 5/8" Area supported by each stay 284 Working pressure by rules 205 Material of Front plates at bottom S

Thickness 3/32" Material of Lower back plate S Thickness 7/8" Greatest pitch of stays 19 1/2" Working pressure of plate by rules 193  
Diameter of tubes 2 1/2" Pitch of tubes 33/4x3 1/16" Material of tube plates S Thickness: Front 31/32" Back 13/16" Mean pitch of stays at 93/8"

Pitch across wide water spaces 13 1/2" Working pressures by rules 197 Girders to Chamber tops: Material Iron Depth and thickness of girder at centre 11x1 (2) Length as per rule 3-3 Distance apart 8 5/8" Number and pitch of stays in each 3 at 9 1/8"

Working pressure by rules 201 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

If not, state whether, and when, one will be sent? In a Report also sent on the Hull of the Ship?



**VERTICAL DONKEY BOILER—** Manufacturers of Steel

No. \_\_\_\_\_ Description *Please see attached Report.*

Made at \_\_\_\_\_ By whom made \_\_\_\_\_ When made \_\_\_\_\_ Where fixed \_\_\_\_\_

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:—

Propeller shaft, 2 Connecting Rod Bolts & Nuts for each ind. 2 Main Bearing Bolts 1 Set of Coupling Bolts, 1 Set of Feed & Ridge Pump Gaskets, 1 Set of Piston Rings for HP & IP. A quantity of assorted Bolts & Nuts, Iron of various sizes.

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

Dates of Survey while building	During progress of work in shops -	1908. Oct. 22, 26, 28, 30. Nov. 4, 9, 12, 17, 19, 27. Dec. 3, 7, 9, 14, 19, 23, 29. 1909: Jan. 12, 14, 19, 26, 29.
	During erection on board vessel -	Feb. 1, 4, 9, 11, 13, 22, 24, 27. Mar. 1, 11, 15, 17, 22, 29. Apr. 6, 8, 10, 17, 23, 27. May 6, 13, 19, 26, 27. June 1, 2, 10, 10.
	Total No. of visits	64

Dates of Examination of principal parts -	Cylinders	10-6-09	Slides	29-3-09	Covers	10-6-09	Pistons	4-6-09	Rods	4-6-09	
Connecting rods	4-6-09	Crank shaft	13-5-09	Thrust shaft	25-4-09	Tunnel shafts	6-5-09	Screw shaft	24-6-09	Propeller	24-6-09
Stern tube	19-5-09	Steam pipes tested	14-4-09	Engine and boiler seatings	15-6-09	Engines holding down bolts	4-8-09				
Completion of pumping arrangements	4-8-09	Boilers fixed	9-7-09	Engines tried under steam	14-8-09						
Main boiler safety valves adjusted	4-8-09	Thickness of adjusting washers	PV 3/8 1/2 SV 3/8 full PV 5/16 full SV 5/16								
Material of Crank shaft	6	Identification Mark on Do.	W.G.M	Material of Thrust shaft	5	Identification Mark on Do.	W.G.M				
Material of Tunnel shafts	5	Identification Marks on Do.	ditto	Material of Screw shafts	9	Identification Marks on Do.	ditto				
Material of Steam Pipes	5 Full			Test pressure	540 lbs						

**General Remarks** (State quality of workmanship, opinions as to class, &c. These engines & boilers have been constructed & fitted on board under special survey in accordance with the approved plan. They have been securely fitted on board & the workmanship & material are of good quality.

The Machinery is in my opinion eligible for the record of  
**LMC 8-09**  
 This vessel is a duplicate of the S/S "Glenclun" & S/S "Dunedin"  
 Glasgow Rep't N: 2448 & 24910

It is submitted that this vessel is eligible for THE RECORD, + LMC 8,09

FD.  
 APR 4th  
 19-8-09 19-8-09

*Wm Gordon Muir*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

The amount of Entry Fee	£ 3 : -	When applied for,	16/8/09
Special	£ 45 : 13	When received,	18-8-09
Donkey Boiler Fee	£ :		
Travelling Expenses (if any)	£ :		

Committee's Minute  
 Assigned + LMC 8.09  
 7. D.  
 MACHINERY CERTIFICATE  
 WRITER 18/8/09



GLASGOW

Certificate (if required) to be sent to

The Surveyors are requested not to write on or below the space for Committee's Minute.

In a report also sent on the hull of the ship

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