

REPORT ON MACHINERY.

No. 7016

Port of *Belfast*

MON. DEC. 4-1911

Received at London Office

19

No. in Survey held at
Reg. Book.*Belfast*Date, first Survey *Jan 19 1911*Last Survey *27th Nov. 1911*(Number of Visits *78*)on the *T. S. S. "Waimana"*

Master

Built at

Belfast

By whom built

Worthman, Clark & Co Ltd

Tons

Gross

Net

When built *1911*

Engines made at

Belfast

By whom made

*Worthman, Clark & Co Ltd (N-309)*when made *1911*

Boilers made at

Do

By whom made

*Do*when made *1911*

Registered Horse Power

Owners *Mr. Farrell & Albion Cold*Port belonging to *Southampton*Nom. Horse Power as per Section 28 *943*Is Refrigerating Machinery fitted for cargo purposes *Yes*Is Electric Light fitted *Yes*ENGINES, &c.—Description of Engines *3 in Triple Expansion*No. of Cylinders *6 each*No. of Cranks *6 each*Dia. of Cylinders *23 1/2", 30", 66 1/2"*Length of Stroke *48"*Revs. per minute *88*

Dia. of Screw shaft

as per rule *1 1/4"*Material of *Steel*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 *Yes*

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 *Yes*liners are fitted, is the shaft lapped or protected between the liners *Yes*Length of stern bush *5'-1 1/2"*

Dia. of Tunnel shaft

as per rule *13 1/2"*

Dia. of Crank shaft journals

as per rule *13 1/4"*Dia. of Crank pin *1 1/8"*Size of Crank webs *19 1/2" x 9 1/2"*

Dia. of thrust shaft under

collars *1 1/8"*Dia. of screw *16' 9"*Pitch of Screw *19' 6"*No. of Blades *3*State whether moveable *Yes*Total surface *77.5 sq ft*No. of Feed pumps *2*Diameter of ditto *5 3/4"*Stroke *24"*Can one be overhauled while the other is at work *Yes*No. of Bilge pumps *2*Diameter of ditto *5 1/2"*Stroke *24"*Can one be overhauled while the other is at work *Yes*No. of Donkey Engines *7*Sizes of Pumps *Plase on over*

No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room & bilge room *4-3 1/2": 2-2 1/2": 2-3 1/2"*In Holds, &c. *N^o 1-2-3 1/2": N^o 2-2-3 1/2": N^o 3-2-3 1/2"**N^o 4-2-3 1/2": 1-2 1/2": N^o 5-2-3 1/2": 1-2 1/2": N^o 6-1-2 1/2": Jannet Wells 2-2 1/2"*No. of Bilge Injections *2*sizes *10"*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 *Yes*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 *Both*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 *Bilge 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*Dates of examination of completion of fitting of Sea Connections *25.8.11*of Stern Tube *30.8.11*Screw shaft and Propeller *11.9.11*Is the Screw Shaft Tunnel watertight *Yes*Is it fitted with a watertight door *Yes*

worked from Engine Room top platform

BOILERS, &c.—(Letter for record *S.*)Manufacturers of Steel *Wm. Bairdmore & Steel Co of Scotland*Total Heating Surface of Boilers *14,000 sq ft*Forced Draft fitted *Yes*No. and Description of Boilers *5 Single Ended*Working Pressure *205 lbs*Tested by hydraulic pressure to *410 lbs*Date of test *19.8.11*No. of Certificate *444*Can each boiler be worked separately *Yes*Area of fire grate in each boiler *70 sq ft*

No. and Description of Safety Valves to

each boiler *Double opening loaded*Area of each valve *11.04 sq in*Pressure to which they are adjusted *210 lbs*Are they fitted with easing gear *Yes*Smallest distance between boilers or uptakes and bunkers or woodwork *18"*Mean dia. of boilers *15' 6"*Length *12' 0"*Material of shell plates *Steel*Thickness *1 5/8"*Range of tensile strength *28/32 tons*Are the shell plates welded or flanged *No*Descrip. of riveting: cir. seams *D. & T. A.*long. seams *T. R. O. B. S.*Diameter of rivet holes in long. seams *1 5/8"*Pitch of rivets *10 1/2"*Lap of plates or width of butt straps *23 1/4"*

Per centages of strength of longitudinal joint

rivets *90*plate *84.5*Working pressure of shell by rules *240 lbs*Size of manhole in shell *16" x 12"*Size of compensating ring *W. E. Mills*No. and Description of Furnaces in each boiler *4 Harrison*Material *Steel*Outside diameter *43 1/4"*

Length of plain part

top *5 1/8"*

Thickness of plates

crown *5 1/8"*Description of longitudinal joint *Weld*

No. of strengthening rings

Working pressure of furnace by the rules *23 1/2"*Combustion chamber plates: Material *Steel*Thickness: Sides *4 1/4"*Back *5 1/4"*Top *4 1/4"*Bottom *1 1/2"*Pitch of stays to ditto: Sides *8 1/4" x 8"*Back *9 1/4" x 8 1/2"*Top *8 1/4" x 7 1/2"*If stays are fitted with nuts or riveted heads *Nuts*Working pressure by rules *207*Material of stays *Steel*Diameter at smallest part *1 7/8"*Area supported by each stay *65 sq in*Working pressure by rules *285*

End plates in steam space:

Material *Steel*Thickness *1 3/32"*Pitch of stays *19 1/2" x 15 1/2"*How are stays secured *D. N. & W. L.*Working pressure by rules *209 lbs*Material of stays *Steel*Diameter at smallest part *1 1/2"*Area supported by each stay *262.5 sq in*Working pressure by rules *263*Material of Front plates at bottom *Steel*Thickness *1"*Material of Lower back plate *Steel*Thickness *7/8"*Greatest pitch of stays *13 1/2" x 8"*Working pressure of plate by rules *214*Diameter of tubes *2 1/2"*Pitch of tubes *3 3/4" x 3 5/8"*Material of tube plates *Steel*Thickness: Front *1"*Back *1 1/8"*Mean pitch of stays *7 3/32"*Pitch across wide water spaces *13 1/2"*Working pressures by rules *210 lbs*Girders to Chamber tops: Material *Steel*

Depth and

thickness of girder at centre *9 1/2" x 20 3/4"*Length as per rule *32 1/2"*Distance apart *8 1/4"*Number and pitch of stays in each *3 @ 7 1/2"*Working pressure by rules *214*Superheater or Steam chest; how connected to boiler *Yes*

Can the superheater be shut off and the boiler worked

separately *Yes*Diameter *Yes*Length *Yes*Thickness of shell plates *Yes*Material *Yes*Description of longitudinal joint *Yes*

Diam. of rivet

holes *Yes*Pitch of rivets *Yes*Working pressure of shell by rules *Yes*Diameter of flue *Yes*Material of flue plates *Yes*Thickness *Yes*If stiffened with rings *Yes*Distance between rings *Yes*Working pressure by rules *Yes*End plates: Thickness *Yes*How stayed *Yes*Working pressure of end plates *Yes*Area of safety valves to superheater *Yes*Are they fitted with easing gear *Yes*

Lloyd's Register

Foundation

2100-66012

VERTICAL DONKEY BOILER— Manufacturers of Steel

No.	Description				
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	rence
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 connecting rod top and bolts & nuts: 2 connecting rod bottom end bolts & nuts: 2 main bearing bolts: 2 sets of coupling bolts: 1 set of feed and bilge pump valves: a quantity of assorted bolts & nuts: iron of various sizes: spare propeller shaft: 2 propeller blades: 1 propeller boss: 1 third crank shaft: 1 pair of crank pin & cross head bushes

The foregoing is a correct description,
FOR WORKMAN, CLARK & CO., LIMITED

M. H. Bell

Manufacturer.

Dates of Survey while building	During progress of work in shops - -	Jan 19. 34. 2. 6. 10. 22. 27. March 2. 6. 8. 16. 23. 28. 30. 31. April 3. 6. 14. 24. 26 etc up to the 11 th Sept
	During erection on board vessel - -	Sept 13. 18. 21. 25. 29. Oct 2. 3. 4. 7. 12. 18. 23. 28. 30. Nov 1. 6. 7. 9. 13. 15. 16. 20. 22. 25. 28. 27
	Total No. of visits	78

Is the approved plan of main boiler forwarded herewith ☒

" " " donkey " " " ☒

Dates of Examination of principal parts—Cylinders	22. 2. 11	Slides	19. 6. 11	Covers	19. 6. 11	Pistons	3. 7. 11	Rods	24. 6. 11
Connecting rods	19. 6. 11	Crank shaft	23. 5. 11	Thrust shaft	9. 8. 11	Tunnel shafts	3. 5. 11	Screw shaft	12. 6. 11
Propeller	30. 6. 11	Stern tube	9. 8. 11	Steam pipes tested	2. 10. 11	Engine and boiler seatings	11. 9. 11	Engines holding down bolts	3. 10. 11
Completion of pumping arrangements	20. 11. 11	Boilers fixed	28. 10. 11	Engines tried under steam	27. 11. 11				
Main boiler safety valves adjusted	9. 11. 11	Thickness of adjusting washers	S.A. {A 4/16" CA {P 5/16" PA {F 5/32" S.F. {A 1/4" PF {F 9/32"						
Material of Crank shaft	Steel	Identification Mark on Do.	309	Material of Thrust shaft	Steel	Identification Mark on Do.	309		
Material of Tunnel shafts	Steel	Identification Marks on Do.	309	Material of Screw shafts	Steel	Identification Marks on Do.	309		
Material of Steam Pipes	WHT iron	Test pressure	615 lbs per sq"						

General Remarks (State quality of workmanship, opinions as to class, &c. Donkey Engines: 2 General Service 9 1/2" x 7" x 21" 1 Dryd Wkly 4" x 4" x 5": 1 Ballast 10" x 12" x 12": 2 Wtd 13 1/2" x 10" x 24": 1 Discharging Pump 8" x 9" x 10"

The machinery of this vessel has been built under special survey: the material and workmanship being good, and satisfactorily tested under steam

It is submitted that above vessel is eligible for a record of + L.M.C. 11. 11 in the Register Book.

It is submitted that
this vessel is eligible for
THE RECORD + L.M.C. 11. 11.

F.D.

J.W.D.
4/12/11

J. R. D.

The amount of Entry Fee..	£ 3 - 0 - 0	When applied for,	
Special	£ 67 - 3 - 0	29-11-1911	
Donkey Boiler Fee	£ : : :	When received,	
Travelling Expenses (if any) £	: : :	7.12.1911	

Committee's Minute

TUE. DEC. 5-1911

Assigned

MACHINERY CERTIFICATE
WRITTEN.

+ L.M.C. 11. 11

F.D.

A. J. Thomas.
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



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