

REPORT ON MACHINERY.

No. 4255

Received at London Office TUE. JUL. 15. 1913

Date of writing Report 11th July 1913 When handed in at Local Office 12th July 1913 Port of Belfast
 Date, First Survey 11th Decr 1911 Last Survey 11th July 1913
 in Survey held at Belfast (Number of Visits 128)
 Name of Ship S.S. "Katoomba" Gross Tons 9424
 Name of Master E. L. D. McElduff Net Tons 5499
 Built at Belfast By whom built Harland & Wolff L^o When built 1913
 Engines made at Belfast By whom made - when made -
 Makers made at - By whom made - when made -
 Registered Horse Power 1422 Owners M^{rs} M. H. M. & Co. Casham Road belonging to Melbourne
 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Twin 4 Cylinder Triple Expansion Cylinders 8 No. of Cranks 8
 No. of Cylinders 24-38 1/2-44-44 Length of Stroke 48 Revs. per minute 86 Dia. of Screw shaft as per rule 14.0 Material of screw shaft Steel
 as fitted 14.75
 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
 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 If two
 shafts are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 6'-10"
 Dia. of Tunnel shaft as per rule 13.0 Dia. of Crank shaft journals as per rule 13.625 Dia. of Crank pin 15 Size of Crank web 24 1/2 x 10 1/2 Dia. of thrust shaft under
 bars 14 1/2 Dia. of screw 16'-0" Pitch of Screw 19'-6" No. of Blades 3 State whether moveable Yes Total surface 68 sq ft.

No. of Feed pumps } Diameter of ditto Stroke Engines Can one be overhauled while the other is at work
 No. of Bilge pumps } Diameter of ditto Stroke Engines Can one be overhauled while the other is at work
 No. of Donkey Engines See other sheet No. and size of Suctions connected to both Bilge and Donkey pumps
 Engine Room 6-3 1/2 In Holds, &c. 9-3 1/2 + 6-2 1/2

No. of Bilge Injections 2 sizes 10" Connected to condenser, or to circulating pump Pump Is a separate Donkey Suction fitted in Engine room & size 2'-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
 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 Fore hold suction 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 20-3-13 of Stern Tube 5-4-13 Screw shaft and Propeller 9-4-13
 Is the Screw Shaft Tunnel watertight Stated to be Is it fitted with a watertight door Yes worked from turning wheel

BOILERS, &c.—(Letter for record 50) Manufacturers of Steel D. Calville & Sons L^o
 Total Heating Surface of Boilers 20574 sq ft Forced Draft fitted Yes No. and Description of Boilers 6 Single End Cylindrical
 Working Pressure 215 lbs Tested by hydraulic pressure to 430 lbs Date of test 10-2-13 No. of Certificate 452
 Can each boiler be worked separately Yes Area of fire grate in each boiler 78 1/2 sq ft. No. and Description of Safety Valves to
 each boiler Two Direct Springs Area of each valve 9.62 sq in Pressure to which they are adjusted 215 lbs Are they fitted with easing gear Yes
 Smallest distance between boilers or uptakes and bunkers or woodwork About 8 ft Mean dia. of boilers 17'-0" Length 12'-0" Material of shell plates Steel
 Thickness 1 1/4" Range of tensile strength 31-35 Tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seam Lap Double
 g. seam Butt Lap Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 10 1/2" Lap of plates or width of butt straps 24"
 Percentages of strength of longitudinal joint
 rivets 98.7 Working pressure of shell by rules 252 lbs Size of manhole in shell 16" x 12"
 plate 83.7
 No. of compensating rings Nil No. and Description of Furnaces in each boiler 4-Monicon Material Steel Outside diameter 47 1/2"

Length of plain part top 3 1/2" Thickness of plates crown 3 1/2" Description of longitudinal joint Weld No. of strengthening rings 0
 bottom 3 1/2"
 Working pressure of furnace by the rule 238 lbs Combustion chamber plates: Material Steel Thickness: Sides 3/32" Back 3/32" Top 3/32" Bottom 1/32"
 No. of stays to ditto: Side 8 1/2 x 7 1/2 Back Various Top 8 1/2 x 7 1/2 Are stays fitted with nuts or riveted heads Yes Working pressure by rules 238 lbs
 Material of stays Steel Diameter at smallest part 1 1/2 + 1 1/8 Area supported by each stay 65 1/2 Working pressure by rules 241 lbs End plates in steam space:
 Material Steel Thickness 1 1/16" Pitch of stays 19 x 15 1/2 How are stays secured Screwed into plate Working pressure by rules 222 lbs Material of stays Steel
 Diameter at smallest part 3" Area supported by each stay 294 1/2 Working pressure by rules 249 lbs Material of Front plates at bottom Steel
 Thickness 7/8" Material of Lower back plate Steel Thickness 7/8" Greatest pitch of stays 16 x 7 1/2 Working pressure of plate by rules 308 lbs
 Diameter of tubes 2 1/2" Pitch of tube 3 3/4 x 3 3/4 Material of tube plate Steel Thickness: Front 7/8" Back 1/2" Mean pitch of stays 7 1/2 x 7 1/2

Pitch across wide water spaces 13 1/2" Working pressures by rule 92 lbs Girders to Chamber tops: Material Iron Depth and
 thickness of girder at centre 11" (7/8 x 2) Length as per rule 37 1/2" Distance apart 8 1/2 x 8" Number and pitch of stays in each 4-7 1/2"
 Working pressure by rules 218 lbs Superheater or Steam chest; how connected to boiler Nil Can the superheater be shut off and the boiler worked
 separately Yes
 Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet
 Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness
 No. of Visits 109 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



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
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
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		Radius of do.	Stayed by
Diameter of uptake	Thickness of uptake plates	Thickness of water tubes	Dates of survey	

SPARE GEAR. State the articles supplied:— *See other sheet*

The foregoing is a correct description,

For *Harfang & Wolff Ltd.* Manufacturer.

Dates of Survey: During progress of work in shops— 1911-12 Dec 11, 13, 1912, Jan 8, 15, Feb 5, 7, 13, 21, Mar 14, 27, April 11, 24
 During erection on board vessel— May 7, 9, 15, June 3, 11, 14, 19, July 2, 5, 9 up to July 11, 1913
 Total No. of visits 128

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

Dates of Examination of principal parts—Cylinders 14-6-13 Covers 5 Pistons Rods
 Connecting rods 19-3-13 Crank shaft 24-19-13 Tunnel shafts 5 Screw 21-3-13 Propeller 4-3-13
 Stern tube 4-3-13 Steam pipes tested 2-4-13 Engine and boiler seatings 5-5-13 Engines holding down bolts 10-5-13
 Completion of pumping arrangements 10-7-13 Boilers fixed 25-4-13 Engines tried under steam 19-6-13
 Main boiler safety valves adjusted 9-6-13 Thickness of adjusting washers 8-12/32
 Material of Crank shaft *L. Steels* Identification Mark on Do. *LLOYDS 7.7.B 31-3-13* Material of Thrust shaft *Do* Identification Mark on Do. *Do*
 Material of Tunnel shafts *Do* Identification Marks on Do. *Do* Material of Screw shafts *Do* Identification Marks on Do. *Do*
 Material of Steam Pipes *W. Iron & Solid drawn Steel* Test pressure 645 lb.

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

The machinery of this vessel has been constructed under Special Survey, and in accordance with the Rules. The workmanship and the materials are of good description throughout, and on trial under steam in Belfast Lough, the machinery worked satisfactorily. In my opinion it is eligible for record + L.M.C. 7-13 with notations "Forced Draft" "Electric Light" "Refrigerating Machinery"; "one Low Pressure Turbine".

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 7.13.

F.D.

T 8CY (2) 24" (2) 38 1/2" (4) 44" - 48" 2.15 1/2
 24cf. G.S.B. 95472 H.S. 20376
 1 low pressure turbine.

The amount of Entry Fee .. £ 3 : 0 :	When applied for,
Special .. £ 80 : 11 :	8-4-13
Donkey Boiler Fee .. £ :	When received,
Travelling Expenses (if any) £ :	12-7-13

J.M. 15.7.13.
R. F. Beveridge
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

Committee's Minute

Assigned

FRI. JUL. 18. 1913

+ L.M.C. 7.13