

## REPORT ON MACHINERY.

No. 9441

Received at London Office TUES. 18 FEB 1908

Date of writing Report 19 When handed in at Local Office 14-2-1908 Port of Aberdeen  
 No. in Survey held at Aberdeen Date, First Survey Aug. 30-1904 Last Survey 14-2-1908  
 Reg. Book. on the S.S. "Portlethen" (Number of Visits 24)  
 Master J. Godman Built at Dundee By whom built The Dundee S.B.C. (R-196) Tons { Gross Net  
 Engines made at Aberdeen By whom made Jas. Abornethy & Co. when made 1908  
 Boilers made at --- By whom made bits --- when made 1908  
 Registered Horse Power Owners The Aberdeen Line Co. Ltd. Port belonging to Aberdeen  
 Nom. Horse Power as per Section 28 38 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted

ENGINES, &c.—Description of Engines Compound No. of Cylinders 2 No. of Cranks 2  
 Dia. of Cylinders 11", 24" Length of Stroke 18 Revs. per minute ✓ Dia. of Screw shaft as per rule 5.6/3 Material of screw shaft Iron  
 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 24 3/4"  
 Dia. of Tunnel shaft as per rule 5.105 Dia. of Crank shaft journals as per rule 5.363 Dia. of Crank pin 5 3/8" Size of Crank webs 10" x 3 3/8" Dia. of thrust shaft under  
 collars 5 3/8" Dia. of screw 6-8" Pitch of Screw 4'-6" No. of Blades 4 State whether moveable No Total surface 20 1/2"  
 No. of Feed pumps 1 Diameter of ditto 2" Stroke 8" Can one be overhauled while the other is at work ✓  
 No. of Bilge pumps 1 Diameter of ditto 2" Stroke 8" Can one be overhauled while the other is at work ✓  
 No. of Donkey Engines 1 Sizes of Pumps 4 1/2" x 2 3/4" x 4" No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room Two 2" In Holds, &c. No 2"  
 No. of Bilge Injections 1 sizes 2 1/2" Connected to condenser or to circulating pump C.P. Is a separate Donkey Suction fitted in Engine room & size Yes 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 No  
 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 ✓ of Stern Tube ✓ Screw shaft and Propeller ✓  
 Is the Screw Shaft Tunnel watertight No Is it fitted with a watertight door ✓ worked from ✓

BOILERS, &c.—(Letter for record S) Manufacturers of Steel W. Beardmore & Co. - The Lanarkshire Steel Co.  
 Total Heating Surface of Boilers 4035 Is Forced Draft fitted No No. and Description of Boilers 1 Single ended  
 Working Pressure 150 lbs Tested by hydraulic pressure to 300 lbs Date of test 29.11.04 No. of Certificate 523  
 Can each boiler be worked separately ✓ Area of fire grate in each boiler 247 No. and Description of Safety Valves to  
 each boiler 2 Spring loaded Area of each valve 3.14" Pressure to which they are adjusted 155 lbs Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 10" Mean dia. of boilers 10'-0" Length 9'-0" Material of shell plates S  
 Thickness 23/32 Range of tensile strength 28-32 Are the shell plates welded or flanged ✓ Descrip. of riveting: cir. seams double  
 long. seams treble Diameter of rivet holes in long. seams 15/16 Pitch of rivets 6 7/8 Lap of plates or width of butt straps 15 1/2"  
 Per centages of strength of longitudinal joint rivets 86 Working pressure of shell by rules 151 Size of manhole in shell 16" x 12"  
 Size of compensating ring McNeil's No. and Description of Furnaces in each boiler 2: plain Material S Outside diameter 36"  
 Length of plain part top 64" Thickness of plates crown 19" bottom 32" Description of longitudinal joint Weld No. of strengthening rings ✓  
 Working pressure of furnace by the rules 154 Combustion chamber plates: Material S Thickness: Sides 5/8 Back 2 1/2 Top 5/8 Bottom 5/8  
 Pitch of stays to ditto: Sides 4 1/2" x 10" Back 10" x 9 3/4" Top 10" x 4 1/2" If stays are fitted with nuts or riveted heads Nuts & Washers Working pressure by rules 152  
 Material of stays S Area at smallest part 2.06 Area supported by each stay 99.9 Working pressure by rules 180 End plates in steam space:  
 Material S Thickness 3 1/4" + 5 double Pitch of stays 22" x 14" How are stays secured Nuts & Washers Working pressure by rules 154 Material of stays S  
 Area at smallest part 4.5 Area supported by each stay 308 Working pressure by rules 152 Material of Front plates at bottom S  
 Thickness 3/4" Material of Lower back plate S Thickness 3/4" Greatest pitch of stays 13 1/2" x 8" Working pressure of plate by rules 153  
 Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" Material of tube plates S Thickness: Front 3/4" + 2 1/2 Back 3/4" Mean pitch of stays 10"  
 Pitch across wide water spaces 15" Working pressures by rules F159 B. 201 Girders to Chamber tops: Material S Depth and  
 thickness of girder at centre 4 1/2" x 1 1/2" Length as per rule 28 Distance apart 10" Number and pitch of stays in each 2: 4 1/2"  
 Working pressure by rules 156 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 ✓

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# 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 \_\_\_\_\_

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:— *Two top end, two bottom end, two main bearing & one set of coupling bolts & nuts, one set of feed & bilge pumps & check valves, assorted bolts & nuts & iron of various sizes*

The foregoing is a correct description,

Manufacturer.

*James Libbey & Co*

Dates of Survey while building { During progress of work in shops - - 1904 Aug. 30 Sept. 6. 14. 25. Oct. 4. 10. 18. 23. 31. Nov. 4. 15. 20. 22. 29.  
During erection on board vessel - - Dec. 9. 1904 Feb. 3. 5. 6. 7. 8. 10. 11. 13. 14.  
Total No. of visits 24

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

Dates of Examination of principal parts—Cylinders 25.9.04 Slides 25.9.04 Covers 25.9.04 Pistons 25.9.04 Rods 18.4.04  
Connecting rods 18.4.04 Crank shaft 8.10.04 Thrust shaft ✓ Tunnel shafts 30.10.04 Screw shaft 18.4.04 Propeller 18.4.04  
Stern tube 25.9.04 Steam pipes tested 4.2.08 Engine and boiler seatings ✓ Engines holding down bolts 4.2.08  
Completion of pumping arrangements 13.2.08 Boilers fixed 8.2.08 Engines tried under steam 13.2.08  
Main boiler safety valves adjusted 13.2.08 Thickness of adjusting washers *Port 1/4" Starboard 9/32"*  
Material of Crank shaft *Steel* Identification Mark on Do. 322 Material of Thrust shaft ✓ Identification Mark on Do. ✓  
Material of Tunnel shafts --- Identification Marks on Do. 332 Material of Screw shafts *Iron* Identification Marks on Do. 335  
Material of Steam Pipes *Copper 3" dia. 8 W.C.* Test pressure 300 lbs

General Remarks (State quality of workmanship, opinions as to class, &c. *This machinery has been built under special survey in accordance with the Secretary's letter, the approved plan of boiler and generally in conformity with the Rules, the material and workmanship are good and efficient.*  
*After being fitted on board the Safety valves were adjusted and engines tried under steam at the movements with satisfactory results which, in my opinion, entitles them to the record of + L.R.C. 2.08 in the Register Book.*

Please return approved plan of boiler for reference in dealing with duplicates.

It is submitted that this vessel is eligible for THE RECORD. L.M.C. 2.08

J.P.R.  
18.2.08

The amount of Entry Fee.. £ 1 : 0 :  
Special .. £ 8 : 0 :  
Donkey Boiler Fee .. £ : :  
Travelling Expenses (if any) £ : :  
When applied for. 15.2.08  
When received. 29/2/08

*James C. Surpin*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute TUES. 18th FEB. 1908.

Assigned + L.M.C. 2.08.

MACHINERY CERTIFICATE  
WRITTEN. 12/3/08



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