

# Auxiliary single ended Boiler

# REPORT ON MACHINERY.

No. 4107

Port of Belfast

No. in Survey held at Belfast

Received at London Office

Date, first Survey Dec 10<sup>th</sup> 1891 Last Survey May 28<sup>th</sup> 1892

1 JUN 1892

on the Steel Twin Screw Steamer "Lord Erne"

(Number of Visits 22)

Master James Dunn Built at Belfast

By whom built Harland & Wolff Ltd

Tons } Gross 5609  
Net 3647

Engines made at Belfast

By whom made Harland & Wolff Ltd

When built 1892

Motors made at Belfast

By whom made Harland & Wolff Ltd

when made 1892-5

Registered Horse Power 418

Owners Irish Shipowners Co Ltd

when made 1892-5

Net Horse Power as per Section 28 418

Port belonging to Belfast

## ENGINES, &c.—

Description of Engines

No. of Cylinders	Length of Stroke	Revolutions per minute	Diameter of Screw shaft as per rule	No. of Cylinders
as per rule			as fitted	
Diameter of Crank shaft journals	Diameter of Crank pin	Size of Crank webs		
Pitch of screw	No. of blades	State whether moveable	Total surface	
Diameter of ditto	Stroke	Can one be overhauled while the other is at work		
Diameter of ditto	Stroke	Can one be overhauled while the other is at work		
Sizes of Pumps	No. and size of Suctions connected to both Bilge and Donkey pumps			
In Holds, &c.				
Connected to condenser, or to circulating pump	Is a separate donkey suction fitted in Engine room & size			
Are the roses in Engine room always accessible	Are the sluices on Engine room bulkheads always accessible			
Are they Valves or Cocks	Are the discharge pipes above or below the deep water line			
Are the blow off' cocks fitted with a spigot and brass covering plate	How are they protected			
All pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times				
The bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges				
The stern tube, propeller, screw shaft, and all connections examined in dry dock				
Is the screw shaft tunnel watertight				

## BOILERS, &c.—

(Letter for record S)

Total Heating Surface of Boilers

Description of Boiler	Working Pressure	Tested by hydraulic pressure to	Area of fire grate in each boiler	No. and Description of safety valves to
<u>Single ended boiler</u>	<u>180</u>	<u>360</u>	<u>32 3/8</u>	
Can each boiler be worked separately	<u>Yes</u>			
Area of each valve	<u>3.98</u>	Pressure to which they are adjusted	<u>180</u>	Are they fitted
<u>Two: Cockburn's</u>				
Smallest distance between boilers or uptakes and bunkers or woodwork		Mean diameter of boiler	<u>11" 0"</u>	
Material of shell plates	<u>Steel</u>	Thickness	<u>1 3/32</u>	Description of riveting: circum. seams
				<u>Centre treble</u> long. seams <u>double butts</u>
Pitch of rivets	<u>8" 8 4"</u>	Lap of plates or width of butt straps	<u>1" 7" x 7/8 thick</u>	
Working pressure of shell by rules	<u>181</u>	Size of manhole in shell	<u>16 x 12</u>	
No. and Description of Furnaces in each boiler	<u>2 ribbed</u>	Material	<u>steel</u>	Outside diameter
				<u>3' 2"</u>
Thickness of plates	<u>1/2</u>	Description of longitudinal joint	<u>welded</u>	No. of strengthening rings
				<u>9 ribs</u>
Combustion chamber plates	Material <u>steel</u>	Thickness: Sides	<u>19/32</u>	Back <u>19/32</u> Top <u>5/8</u> Bottom <u>13/16</u>
Working pressure by rules	<u>195</u>	Material	<u>steel</u>	Thickness: Sides <u>19/32</u> Back <u>19/32</u> Top <u>5/8</u> Bottom <u>13/16</u>
Working pressure by rules	<u>203</u>	Material of stays	<u>steel</u>	
Diameter at smallest part	<u>1 3/8</u>	Area supported by each stay	<u>63</u>	Working pressure by rules
				<u>188</u>
End plates in steam space:				
Working pressure by rules	<u>193</u>	Material of stays	<u>steel</u>	
Working pressure by rules	<u>188</u>	Material of Front plates at bottom	<u>steel</u>	
Working pressure of plate by rules	<u>180</u>			
Material of tube plates	<u>steel</u>	Thickness: Front	<u>7/8</u>	Back <u>3/4</u> Mean pitch of stays
				<u>9"</u>
Working pressures by rules	<u>180</u>	Girders to Chamber tops: Material	<u>W. I.</u>	Depth and
Length as per rule	<u>2' 4"</u>	Distance apart	<u>8' 8"</u>	Number and pitch of Stays in each
				<u>3 pit 7 3/4</u>
Superheater or Steam chest; how connected to boiler	<u>none</u>	Can the superheater be shut off and the boiler worked		
Thickness of shell plates		Description of longitudinal joint		Diam. of rivet
Working pressure of shell by rules		Diameter of flue		Material of flue plates
				Thickness
Working pressure by rules		End plates: Thickness		How stayed
Area of safety valves to superheater		Are they fitted with easing gear		



**DONKEY BOILER—** Description

Made at \_\_\_\_\_ By whom made \_\_\_\_\_ When made \_\_\_\_\_ Where fixed \_\_\_\_\_  
 Working pressure \_\_\_\_\_ tested by hydraulic pressure to \_\_\_\_\_ No. of Certificate \_\_\_\_\_ Fire grate area \_\_\_\_\_ Description of safety valves \_\_\_\_\_  
 No. of safety valves \_\_\_\_\_ Area of each \_\_\_\_\_ Pressure to which they are adjusted \_\_\_\_\_ If fitted with casing gear \_\_\_\_\_ If steam from main boilers can  
 enter the donkey boiler \_\_\_\_\_ Diameter of donkey boiler \_\_\_\_\_ Length \_\_\_\_\_ Material of shell plates \_\_\_\_\_ Thickness \_\_\_\_\_  
 Description of riveting long seams \_\_\_\_\_ Diameter of rivet holes \_\_\_\_\_ Whether punched or drilled \_\_\_\_\_ Pitch of rivets \_\_\_\_\_  
 Lap of plating \_\_\_\_\_ Per centage of strength of joint \_\_\_\_\_ Rivets \_\_\_\_\_ 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  
 joint \_\_\_\_\_ Thickness of furnace crown plates \_\_\_\_\_ Stayed by \_\_\_\_\_ Working pressure of shell by rules \_\_\_\_\_  
 Working pressure of furnace by rules \_\_\_\_\_ Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_

**SPARE GEAR.** State the articles supplied:—

The foregoing is a correct description,

*Holland & Co. Ltd.* Manufacturer.

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



Certificate (if required) to be sent to \_\_\_\_\_

The amount of Entry Fee..	£	:	:	When applied for,
Special .. .. .	£	:	:	.....18.....
Donkey Boiler Fee .. .. .	£	:	:	When received,
Travelling Expenses (if any) £	:	:	:	.....18.....

*A. L. Jones*

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

FRI 3 JUN 1892

Committee's Minute

Assigned



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