

# REPORT ON MACHINERY.

TUES MAR 2 1897

Port of Glasgow

Received at London Office \_\_\_\_\_

No. in Survey held at Supplementary Report ~~on~~ 1st Survey Last Survey 18  
Reg. Book. \_\_\_\_\_ (Number of Visits \_\_\_\_\_)

on the 2 Single ended boilers. S.S. Hakata Maru. Tons { Gross \_\_\_\_\_  
Net \_\_\_\_\_

Master \_\_\_\_\_ Built at \_\_\_\_\_ By whom built \_\_\_\_\_ When built \_\_\_\_\_

Engines made at \_\_\_\_\_ By whom made \_\_\_\_\_ when made \_\_\_\_\_

Boilers made at Glasgow By whom made D & W Henderson & Co when made 1896

Registered Horse Power \_\_\_\_\_ Owners \_\_\_\_\_ Port belonging to \_\_\_\_\_

Nom. Horse Power as per Section 28 \_\_\_\_\_ Is Electric Light fitted \_\_\_\_\_

## ENGINES, &c.—Description of Engines

No. of Cylinders \_\_\_\_\_ No. of Cranks \_\_\_\_\_

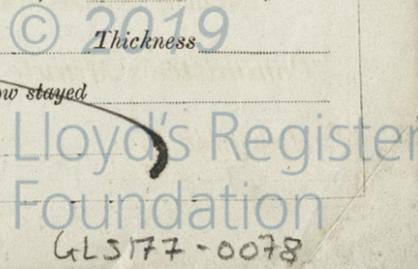
Diameter of Cylinders	Length of Stroke	Revolutions per minute	Diameter of Screw shaft
<i>as per rule</i>			<i>as per rule</i>
<i>as fitted</i>			<i>as fitted</i>
Diameter of Tunnel shaft	Diameter of Crank shaft journals	Diameter of Crank pin	Size of Crank webs
Diameter of screw	Pitch of screw	No. of blades	State whether moveable
No. of Feed pumps	Diameter of ditto	Stroke	Can one be overhauled while the other is at work
No. of Bilge pumps	Diameter of ditto	Stroke	Can one be overhauled while the other is at work
No. of Donkey Engines	Sizes of Pumps	No. and size of Suctions connected to both Bilge and Donkey pumps	
In Engine Room	In Holds, &c.		
No. of bilge injections	sizes	Connected to condenser, or to circulating pump	Is a separate donkey suction fitted in Engine room & size
Are all the bilge suction pipes fitted with roses	Are the roses in Engine room always accessible		Are the sluices on Engine room bulkheads always accessible
Are all connections with the sea direct on the skin of the ship	Are they Valves or Cocks		
Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates	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	Are the blow off cocks fitted with a spigot and brass covering plate		
What pipes are carried through the bunkers	How are they protected		
Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times			
Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges			
When were stern tube, propeller, screw shaft, and all connections examined in dry dock	Is the screw shaft tunnel watertight		
Is it fitted with a watertight door	worked from		

## BOILERS, &c.— (Letter for record S) Total Heating Surface of Boilers See other report Is forced draft fitted no

No. and Description of Boilers <u>2 Single ended boilers</u>	Working Pressure <u>200 lbs</u>	Tested by hydraulic pressure to <u>400 lbs</u>
Date of test <u>12.11.96</u>	Can each boiler be worked separately <u>yes</u>	Area of fire grate in each boiler <u>50 sq ft</u>
each boiler <u>2 Spring loaded</u>	Area of each valve <u>4.9 sq in</u>	Pressure to which they are adjusted <u>205 lbs</u>
with easing gear <u>yes</u>	Smallest distance between boilers or uptakes and bunkers or woodwork <u>stands clear</u>	Mean diameter of boilers <u>159"</u>
Length <u>10' 0"</u>	Material of shell plates <u>Steel</u>	Thickness <u>1 7/16"</u>
Diameter of rivet holes in long. seams <u>1 7/16"</u>	Pitch of rivets <u>9 5/8"</u>	Lap of plates or width of butt straps <u>2 1/4 x 1 7/16"</u>
Per centages of strength of longitudinal joint	rivets <u>87.3</u>	Working pressure of shell by rules <u>225 lbs</u>
Size of compensating ring <u>McNeil</u>	No. and Description of Furnaces in each boiler <u>3 Mercurials</u>	Material <u>Steel</u>
Length of plain part	top <u>7.1"</u>	Thickness of plates
bottom <u>7.1"</u>	bottom <u>9 1/16"</u>	Description of longitudinal joint <u>weld</u>
Working pressure of furnace by the rules <u>213 lbs</u>	Combustion chamber plates: Material <u>Steel</u>	Thickness: Sides <u>45/64"</u>
Pitch of stays to ditto: Sides <u>9"</u>	Back <u>8 1/2"</u>	Top <u>9 x 7 1/2"</u>
Material of stays <u>Steel</u>	Diameter at smallest part <u>2.31 sq in</u>	Area supported by each stay <u>89.2 sq in</u>
Thickness <u>7/16"</u>	Pitch of stays <u>18 x 17 1/4"</u>	How are stays secured <u>double nuts &amp; wedging strips</u>
Diameter at smallest part <u>7.5 sq in</u>	Area supported by each stay <u>311 sq in</u>	Working pressure by rules <u>214 lbs</u>
Thickness <u>7/8"</u>	Material of Lower back plate <u>Steel</u>	Thickness <u>1/2"</u>
Diameter of tubes <u>3 1/4"</u>	Pitch of tubes <u>4 1/8 to 4 1/16 x 4 3/8"</u>	Material of tube plates <u>Steel</u>
Pitch across wide water spaces <u>14"</u>	Working pressures by rules <u>approved</u>	Girders to Chamber tops: Material <u>Steel</u>
thickness of girder at centre <u>8" x 2 x 1"</u>	Length as per rule <u>25 3/4"</u>	Distance apart <u>9"</u>
Working pressure by rules <u>299 lbs</u>	Superheater or Steam chest; how connected to boiler <u>none</u>	Can the superheater be shut off and the boiler worked separately
holes	Diameter	Length
holes	Pitch of rivets	Working pressure of shell by rules
If stiffened with rings	Distance between rings	Working pressure by rules
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? Is a Report also sent on the Hull of the Ship?

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**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 easing 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 of 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,

*David Henderson* & Co. Manufacturer.

Dates of Survey while building

During progress of work in shops - - -

During erection on board vessel - - -

Total No. of visits

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

Certificate (if required) to be sent to  
(The Surveyors are requested not to write on or below the space for Committee's Minute.)

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

*C. J. Stevenson*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

TUES MAR 2 1897

Assigned



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