

# REPORT ON MACHINERY.

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Port of **HAMBURG**

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No. in Survey held at Flensburg Date, first Survey 8<sup>th</sup> Nov 1912 Last Survey 5<sup>th</sup> Dec. 1912  
 Reg. Book. 60 on the Steel S.S. "Australia" (Number of Visits 20)  
 Master A. Hellerich Built at Flensburg By whom built Flensburger Schiffbau Ges. When built 12  
 Engines made at Flensburg By whom made Flensburger Schiffbau Ges. when made 12  
 Boilers made at Flensburg By whom made Flensburger Schiffbau Ges. when made 12  
 Registered Horse Power 836 Owners Deutsch-Austral. Dampfschiff. Ges. Port belonging to Hamburg  
 Nom. Horse Power as per Section 28 836 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

**ENGINES, &c.**—Description of Engines Quadr. Expansion No. of Cylinders 4 No. of Cranks 4  
 Dia. of Cylinders 26 3/4, 38 3/8, 56 3/4, 82 3/8 Length of Stroke 59 Revs. per minute 78 Dia. of Screw shaft 16.75 as per rule 16.32 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 no 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 no If two  
 liners are fitted, is the shaft lapped or protected between the liners no Length of stern bush 5-9 1/4  
 Dia. of Tunnel shaft 15 3/16 as per rule 15.04 Dia. of Crank shaft journals 15 3/16 as per rule 15.79 Dia. of Crank pin 16 5/16 Size of Crank webs 10 1/2 X 29 1/2 Dia. of thrust shaft under  
 collars 16 5/16 Dia. of screw 20 3/8 Pitch of Screw 16 9/16 No. of Blades 4 State whether moceable yes Total surface 97 sq. ft.  
 No. of Feed pumps 2 Diameter of ditto 4 1/8 Stroke 3 1/2 Can one be overhauled while the other is at work yes  
 No. of Bilge pumps 2 Diameter of ditto 4 3/8 Stroke 3 1/2 Can one be overhauled while the other is at work yes  
 No. of Donkey Engines 5 Sizes of Pumps See Specifications No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room 5 off 4", 1 from Well 4", 1 from recess 2", 1 from In Holds, &c. 12 off, 4", 2 from Tanks 16 off 4",  
from Fore and Aft Peaks 2 off 3 1/2".  
 No. of Bilge Injections 1 sizes 15 3/8 Connected to condenser, or to circulating pump yes Is a separate Donkey Suction fitted in Engine room & size yes, 4"  
 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 Valves & Cocks  
 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 Fore holds suction How are they protected by wood. boxes  
 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 17.10 of Stern Tube 8.11. Screw shaft and Propeller 8.11  
 Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from bylinder platform.

**BOILERS, &c.**—(Letter for record B) Manufacturers of Steel Fried. Krupp Aktiengesellschaft, Essen/Ruhr.  
Furnaces: Rheinische Stahlwerke, Duisburg  
 Total Heating Surface of Boilers 12456 sq. ft. Is Forced Draft fitted yes No. and Description of Boilers 4 Single ended multi tubular  
 Working Pressure 213 lbs Tested by hydraulic pressure to 426 lbs. Date of test 3/10+24/10/12 No. of Certificate 180, 181, 182, 183  
 Can each boiler be worked separately yes Area of fire grate in each boiler 66.8 sq. ft. No. and Description of Safety Valves to  
 each boiler 2 Spring loaded Area of each valve 12.56 sq. in. Pressure to which they are adjusted 213 lbs Are they fitted with easing gear yes  
 Smallest distance between boilers on uptakes and bunkers or woodwork 20" Mean dia. of boilers 15' 10 3/16" Length 12 3/8" Material of shell plates Steel  
 Thickness 1.4" Range of tensile strength 28-32 Tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams lap, dbl. riv.  
 long. seams dbl. lap, gas, no Diameter of rivet holes in long. seams 1.65" Pitch of rivets 20.3" Lap of plates or width of butt straps 31.87 X 1.2"  
 Per centages of strength of longitudinal joint 122% Working pressure of shell by rules 238 lbs. Size of manhole in shell 12.6 X 16.56"  
 Size of compensating ring 8.68 X 1.4" No. and Description of Furnaces in each boiler 3 horizontal Material Steel Outside diameter 49 1/4"  
 Length of plain part top 4" Thickness of plates bottom 1.67" Description of longitudinal joint welded No. of strengthening rings none  
 Working pressure of furnace by the rules 230 lbs Combustion chamber plates: Material Steel Thickness: Sides 1.67" Back 1.67" Top 1.67" Bottom 1.67"  
 Pitch of stays to ditto: Sides 7.87" Back 7.87" Top 7.87" If stays are fitted with nuts or riveted heads nuts & heads Working pressure by rules 262 lbs  
 Material of stays Steel Diameter at smallest part 1.5" Area supported by each stay 62 sq. in. Working pressure by rules 265 lbs End plates in steam space:  
 Material Steel Thickness 1.08" Pitch of stays 15" How are stays secured blank and Working pressure by rules 237.5 lbs Material of stays Steel  
 Diameter at smallest part 3" Area supported by each stay 226 sq. in. Working pressure by rules 326.8 Material of Front plates at bottom Steel  
 Thickness 1.02" Material of Lower back plate Steel Thickness .92" Greatest pitch of stays 12" Working pressure of plate by rules 290 lbs  
 Diameter of tubes 2 1/2" Pitch of tubes 3.66 X 3.74" Material of tube plates Steel Thickness: Front 1.07" Back .905" Mean pitch of stays 7.3"  
 Pitch across wide water spaces 13.56" Working pressures by rules 243 lbs Girders to Chamber tops: Material Steel Depth and  
 thickness of girder at centre 11" X 1.34" Length as per rule 7.4 Distance apart 7.5" Number and pitch of stays in each 3 X 7.87"  
 Working pressure by rules 222 lbs Superheater or Steam chest; how connected to boiler no Can the superheater be shut off and the boiler worked  
 separately no Diameter no Length no Thickness of shell plates no Material no Description of longitudinal joint no Diam. of rivet  
 holes no Pitch of rivets no Working pressure of shell by rules no Diameter of flue no Material of flue plates no Thickness no  
 If stiffened with rings no Distance between rings no Working pressure by rules no End plates: Thickness no How stayed no  
 Working pressure of end plates no Area of safety valves to superheater no Are they fitted with easing gear no

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