

# REPORT ON MACHINERY

No. 8768.  
TUE. DEC. 15, 1914

Received at London Office

Date of writing Report 19 When handed in at Local Office Dec 14 1914 Port of MIDDLESBRO'  
 No. in Survey held at Stockholm Date, First Survey May 21 1914 Last Survey December 7 1914.  
 Reg. Book. on the STEEL S.S. STEAMER "GABRIEL" (Number of Visits 43)  
 Master Stockholm Built at Stockholm By whom built Messrs J. J. J. & Sons (No 491) Tons { Gross / Net }  
 Engines made at Stockholm By whom made Messrs Salain & Co (No 180) When built 1914  
 Boilers made at Stockholm By whom made Messrs Salain & Co when made 1914  
 Registered Horse Power \_\_\_\_\_ Owners \_\_\_\_\_ Port belonging to London  
 Nom. Horse Power as per Section 28 362 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No

**ENGINES, &c.**—Description of Engines Triple Expansion No. of Cylinders three No. of Cranks 3  
 Dia. of Cylinders 25-42-68 Length of Stroke 49 Revs. per minute 60 Dia. of Screw shaft as per rule 4.33 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 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 liners are fitted, is the shaft lapped or protected between the liners \_\_\_\_\_ Length of stern bush 5'-4"  
 Dia. of Tunnel shaft as per rule 12.94 Dia. of Crank shaft journals as per rule 13.38 Dia. of Crank pin 14.5 Size of Crank webs 24.2 x 9.2 Dia. of thrust shaft under collars 14.5 Dia. of screw 1.6 Pitch of Screw 1.0 No. of Blades 4 State whether moveable No Total surface 98#  
 No. of Feed pumps 2 Diameter of ditto 3.75 Stroke 3.4 Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 Diameter of ditto 4.25 Stroke 3.4 Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines 2 Sizes of Pumps B-10" x 10" ; F-4" x 8" No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room 3 at 3.5" and dry tank one at 3.5" In Holds, &c. 2 at 3.5" in ea. hold Yummel well  
 one at 2.5"  
 No. of Bilge Injections 1 sizes 4" Connected to condenser 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 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 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 Suctions to fire holds How are they protected Wood covering  
 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 23-9-14 of Stern Tube 23-9-14 Screw shaft and Propeller 5-11-14  
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from top platform

**BOILERS, &c.**—(Letter for record 5) Manufacturers of Steel J. Salain & Sons  
 Total Heating Surface of Boilers 5460# Is Forced Draft fitted No No. and Description of Boilers 3 S.S. Multitubular  
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 13-10-14 No. of Certificate 5402  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 54.2# No. and Description of Safety Valves to each boiler two Spring loaded  
 Pressure of each valve 4.06 Pressure to which they are adjusted 185 lbs Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 2'-0" Mean dia. of boilers 14'-3" Length 11'-0" Material of shell plates Steel  
 Thickness 1.32 Range of tensile strength 29.5-33 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams 2 R. lap  
 long. seams 2 B-3 R Diameter of rivet holes in long. seams 1.316 Pitch of rivets 9.5/16 5 R of plates or width of butt straps 18.5 x 1.32  
 Per centages of strength of longitudinal joint rivets 92.6 Working pressure of shell by rules 183 lbs Size of manhole in shell 16 x 12  
 plate 95.44  
 Size of compensating ring 4.5 x 1.32 No. and Description of Furnaces in each boiler 3 Morrison Material Steel Outside diameter 41.48  
 Length of plain part top \_\_\_\_\_ Thickness of plates crown 3.33/64 Description of longitudinal joint weld No. of strengthening rings \_\_\_\_\_  
 bottom \_\_\_\_\_  
 Working pressure of furnace by the rules 189 lbs Combustion chamber plates: Material Steel Thickness: Sides 1/16 Back 1/16 Top 1/16 Bottom 1/16  
 Pitch of stays to ditto: Sides 9.2 x 9.2 Back 9.2 x 9.2 Top 9.2 x 9 If stays are fitted with nuts or riveted heads Yes Working pressure by rules 19 lbs  
 Material of stays Steel Diameter at smallest part 1.09 Area supported by each stay 85.5 sq Working pressure by rules 210 lbs End plates in steam space:  
 Material Steel Thickness 1.7/32 Pitch of stays 19.5 x 18 How are stays secured Weld Working pressure by rules 214 lbs Material of stays Steel  
 Diameter at smallest part 6.1 Area supported by each stay 324 sq Working pressure by rules 196 lbs Material of Front plates at bottom Steel  
 Thickness 1.16 Material of Lower back plate Steel Thickness 1" Greatest pitch of stays 14.5 x 9.5/8 Working pressure of plate by rules 238 lbs  
 Diameter of tubes 3.5 Pitch of tubes 4.25 x 4.1/8 Material of tube plates Steel Thickness: Front 1.16 Back 1.16 Mean pitch of stays 11"  
 Pitch across wide water spaces 14.5 Working pressures by rules 192 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 4.5 x 1.3/4 Length as per rule 29" Distance apart 9.2 Number and pitch of stays in each 209"  
 Working pressure by rules 190 lbs Superheater or Steam chest; how connected to boiler Weld 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 \_\_\_\_\_



