

REPORT ON MACHINERY.

Port of *Middelsbro*.

Received at London Office

19

No. in Survey held at *Stockton*Date, first Survey *14th May 1900* Last Survey *Jan. 11th 1901.*

Reg. Book.

(Number of Visits

37

on the

*A. J. Germanicus.*Tons { Gross *4015.45*
Net *2623.11*Master *Max Urruch* Built at *Stockton*By whom built *Popner & Son*When built *1900.1*Engines made at *Stockton*

By whom made

*Blair & Lay Ltd*when made *1900.1*Boilers made at *Stockton*

By whom made

*Blair & Lay Ltd*when made *1900.1*Registered Horse Power *270.*

Owners

*C. Andersen*Port belonging to *Hamburg*Nom. Horse Power as per Section 28 *332.*Is Refrigerating Machinery fitted *no*Is Electric Light fitted *no*ENGINES, &c.—Description of Engines *Triple Expansion*No. of Cylinders *three*No. of Cranks *three*Dia. of Cylinders *25, 42 & 68"* Length of Stroke *45"* Revs. per minute *58* Dia. of Screw shaft *as per rule 13.07* Lgth. of stern bush *51"*Dia. of Tunnel shaft *as per rule 11.8* Dia. of Crank shaft journals *as per rule 12.4* Dia. of Crank pin *14 1/4"* Size of Crank web *22 3/4 x 9 1/4"* Dia. of thrust shaft underBlars *14 1/4"* Dia. of screw *17'-0"* Pitch of screw *18'-0"* No. of blades *4.* State whether moveable *yes* Total surface *80 sq. ft.*No. of Feed pumps *2.* Diameter of ditto *3 1/4"* Stroke *33"* Can one be overhauled while the other is at work *yes*No. of Bilge pumps *2.* Diameter of ditto *4 3/4"* Stroke *33"* Can one be overhauled while the other is at work *yes*No. of Donkey Engines *2.* Sizes of Pumps *9x10"* *4x8"* No. and size of Suctions connected to both Bilge and Donkey pumpsEngine Room *three 3 1/2" diameter*In Holds, &c. *Fore, Main, Aft and**Aftermost holds two in each all 3 1/2" dia? - Tunnel Well 2 1/2" dia? -*No. of bilge injections *1.* sizes *6 1/4"* 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 *none*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 *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*When were stern tube, propeller, screw shaft, and all connections examined in dry dock *on stocks* Is the screw shaft tunnel watertight *see ship rep.*Is it fitted with a watertight door *yes* worked from *upper platform.*BOILERS, &c.—(Letter for record *(r)*) Total Heating Surface of Boilers *5050 sq. ft.* Is forced draft fitted *no*No. and Description of Boilers *2 S.E. Multitubular* Working Pressure *180 lb.* Tested by hydraulic pressure to *360 lb.*Date of test *29.11.00* Can each boiler be worked separately *yes* Area of fire grate in each boiler *63 1/2 sq. ft.* No. and Description of safety valves toeach boiler *2 disc out-spring* Area of each valve *11.04"* Pressure to which they are adjusted *183 lb.* Are they fitted with easing gear *yes*Smallest distance between boilers or uptakes and bunkers *or woodwork 20" P. side* Mean dia. of boilers *16'-3"* Length *11'-0"* Material of shell plates *S.*Thickness *1 1/2"* Range of tensile strength *27-32* Are they welded or flanged *no* Descrip. of riveting: cir. seams *d.r.l.* long. seams *d. butt sh*Diameter of rivet holes in long. seams *1 1/2"* Pitch of rivets *9 1/2" & 4 3/4"* Lap of plates or width of butt straps *7 3/8" & 2 1/2"*Percentages of strength of longitudinal joint rivets *92.2* Working pressure of shell by rules *201 lb.* Size of manhole in *end 16"x12"*Plate *84.2* No. and Description of Furnaces in each boiler *3 Morrison's* Material *S.* Outside diameter *48"*Length of plain part *top 7'-0"* Thickness of plates *crown 1 1/32"* Description of longitudinal joint *weld.* No. of strengthening rings *—*Working pressure of furnace by the rules *196.7 lb.* Combustion chamber plates: Material *S.* Thickness: Sides *9/16"* Back *9/16"* Top *1 1/32"* Bottom *1"*Pitch of stays to ditto: Sides *7 1/4 x 7 3/8"* Back *7 1/4 x 7 3/8"* Top *7 3/8 x 7 3/4"* If stays are fitted with nuts or riveted heads *nuts* Working pressure by rules *204 lb.*Material of stays *S & C* Diameter at smallest part *1 5/16 x 1 1/16"* Area supported by each stay *53.4"* Working pressure by rules *182 lb.* End plates in steam space:Material *S* Thickness *1 3/32"* Pitch of stays *17 x 17"* How are stays secured *nuts & washers* Working pressure by rules *196 lb.* Material of stays *S*Diameter at smallest part *2 3/4"* Area supported by each stay *289.4"* Working pressure by rules *205 lb.* Material of Front plates at bottom *S.*Thickness *1 1/8"* Material of Lower back plate *S.* Thickness *1 1/8"* Greatest pitch of stays *14"* Working pressure of plate by rules *261 lb.*Diameter of tubes *3 1/2"* Pitch of tubes *4 3/4 x 4 7/8"* Material of tube plates *S.* Thickness: Front *1 1/8"* Back *7/8"* Mean pitch of stays *9 5/8"*Pitch across wide water spaces *16"* Working pressures by rules *190 lb.* Girders to Chamber tops: Material *S.* Depth andThickness of girder at centre *7 1/2 x 1 7/8"* Length as per rule *30"* Distance apart *7 3/4"* Number and pitch of Stays in each *3. 7 3/8"*Working pressure by rules *198 lb.* Superheater or Steam chest; how connected to boiler *none* Can the superheater be shut off and the boiler workedseparately *—* Diameter *—* Length *—* Thickness of shell plates *—* Material *—* Description of longitudinal joint *—* Diam. of rivetPitch of rivets *—* Working pressure of shell by rules *—* Diameter of flue *—* Material of flue plates *—* Thickness *—*Fitted 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 *—*

DONKEY BOILER— No. 1 Description *Cyl. Multar 2 plain furnaces*
 Made at *Starkton* By whom made *Riley Brothers* When made *29.10.00* Where fixed *Stokehold*
 Working pressure *80lb* tested by hydraulic pressure to *160lb* No. of Certificate *2330* Fire grate area *28* Description of safety valves *d. spring*
 No. of safety valves *2* Area of each *7.07* Pressure to which they are adjusted *80lb* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no* Dia. of donkey boiler *9'-6"* Length *9'-0"* Material of shell plates *S* Thickness *17/32* Range of tensile strength *24/32* Descrip. of riveting long. seams *treble riv. lap* Dia. of rivet holes *15/16* Whether punched or drilled *dr.* Pitch of rivets *4 1/8"*
 Lap of plating *6 1/2"* Per centage of strength of joint Rivets *80.2* Thickness of shell plates *15/32* Radius of do. *3"* Pitch of Stays to do. *18"*
 Dia. of stays *2 1/2"* Diameter of furnace Top *33"* Bottom *—* Length of furnace *7'-9"* Thickness of furnace plates *15/32* Description of joint *weld* Thickness of furnace plates *15/32* Stayed by *1 1/8" 5.3 7' 6" 7 1/8" p. nuts & ch.* Working pressure of shell by rules *85.8lb*
 Working pressure of furnace by rules *80lb* Diameter of uptake tubes *3 1/4"* Thickness of uptake plates *F 3/4" B 7/8"* Thickness of water tubes *7/16"*

SPARE GEAR. State the articles supplied:— *Cast iron propeller boss and one bronze blade. Top and bottom end bolts & nuts. Main bearing and coupling bolts & nuts. Feed bilge and donkey pump valves. Bolts nuts & iron etc.*

The foregoing is a correct description,

For BLAIR & Co., LIMITED.

Manufacturers of Engines and Main boilers. —

SECRETARY.
 Dates { During progress of work in shops — 1900 May 14. 23. June 14. 14. 24. July 3. 4. 16. 14. 24. Aug 9. 12. 28. Sept 6. 13. 14. 25
 of Survey { During erection on board vessel — Oct 2. 24. 30. Nov 1. 2. 12. 13. 15. 16. 21. 23. 26. 24. 30. Dec 4. 10. 14. 24. 1901 Jan 4. 11
 while building { Total No. of visits *34*

Is the approved plan of main boiler forwarded herewith *Blair's no plans yes*
 " " " donkey " " " "

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

These engines and boilers have been built and tested as required by the Society's Rules for Special Survey and are of good workmanship and materials. They have been well fitted on board the vessel, and on completion, tried under steam with satisfactory results at moorings. —

*The vessel's machinery is now in my opinion in a good and efficient working condition and eligible to the notation of: **✠. L.M.C. 1. 01.** in the Society's Register Book. —*

It is submitted that this vessel is eligible for THE RECORD, ✠ L.M.C. 1.01

AS 21.1.01 *SD.* 21.1.01

The amount of Entry Fee. £ 3 : 0 : 0 When applied for, 18-1-1901
 Special £ 36 12 : 0
 Donkey Boiler Fee £ : : : When received, 18-1-1901
 Travelling Expenses (if any) £ : : : 18-1-1901

Committee's Minute

Assigned

JAN. 22 JAN 1901

+ L.M.C. 1.01

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



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MACHINERY CERTIFICATE WRITTEN.