

# REPORT ON MACHINERY.

No. 81859

Received at London Office

WED. FEB. 9 1921

Survey held at *Liverpool & Birkenhead* Date, First Survey *Dec 13<sup>th</sup> 1920* Last Survey *Jan 24<sup>th</sup> 1921*  
 on the *S.S. "City of Alexandria" & "Rio Pardo"* (Number of Vents *9*) Gross *4621* Tons  
 Built at *Geestmünde* By whom built *J.C. Tecklenburg A.G.* When built *1905*  
 Engines made at *Geestmünde* By whom made *J.C. Tecklenburg A.G.* when made *05*  
 Boilers made at *Geestmünde* By whom made *J.C. Tecklenburg A.G.* when made *05*  
 Registered Horse Power *445* Owners *Ellerman Line Ltd* Port belonging to *London*  
 Is Refrigerating Machinery fitted for cargo purposes *No* Is Electric Light fitted *Yes*

## ENGINES, &c.—Description of Engines

*Vertical Triple Expansion* No. of Cylinders *3* No. of Cranks *3*  
 Dia. of Cylinders *23", 39", 65 3/4"* Length of Stroke *48"* Revs. per minute *143* as per rule *143* Material of *as fitted 14 1/2"* screw shaft  
 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  
 Is 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 *Yes* Length of stern bush *5' 9"*  
 Dia. of Tunnel shaft *as per rule 12.685* Dia. of Crank shaft journals *as fitted 13 3/8"* Dia. of Crank pin *13 3/4"* Size of Crank webs *28 1/2 x 9 1/2"* Dia. of thrust shaft under  
 collars *13 3/4"* Dia. of screw *17' 9"* Pitch of Screw *18' 4"* No. of Blades *4* State whether moveable *Yes* Total surface *89' 3 0"*  
 No. of Feed pumps *Two* Diameter of ditto *4 1/2"* Stroke *23 5/8"* Can one be overhauled while the other is at work *Yes*  
 No. of Bilge pumps *Two* Diameter of ditto *4 1/2"* Stroke *23 5/8"* Can one be overhauled while the other is at work *Yes*  
 No. of Donkey Engines *Two* Sizes of Pumps *Series 11 1/2" x 7 1/8" x 2 1/2"* No. and size of Suctions connected to bilge and Donkey pumps  
 in Engine Room *Four* *4" Int. dia.* *10 1/2" x 7 1/8" x 2 1/2"* In Holds, &c. *Hold two, No 2 3 4 5 holds two*  
 Is a separate Donkey Suction fitted in Engine room & size *Yes 5"*  
 No. of Bilge Injections *One* sizes *8"* Connected to condenser, or to circulating pump *Yes* Are the sluices on Engine room bulkheads always accessible *Yes*  
 Are all the bilge suction pipes fitted with roses *Yes* Are the roses in Engine room always accessible *Yes* Are they Valves or Cocks *both*  
 Are all connections with the sea direct on the skin of the ship *Yes* Are the Discharge Pipes above or below the deep water line *Yes*  
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates *Yes* Are the Blow Off Cocks fitted with a spigot and brass covering plate *Yes*  
 Are they each fitted with a Discharge Valve always accessible on the plating of the vessel *Yes* How are they protected *lumber boards*  
 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*  
 Is the Screw Shaft Tunnel watertight *Yes* Is it fitted with a watertight door *Yes* worked from *Upper Deck*

## BOILERS, &c.—(Letter for record)

Manufacturers of Steel *Three S.E. Multitubular*  
 Total Heating Surface of Boilers *5813* Is Forced Draft fitted *Yes* No. and Description of Boilers *Three S.E. Multitubular*  
 Working Pressure *205 lb* Tested by hydraulic pressure to *307 lb* Date of test *5/1/21* No. of Certificate *1*  
 Can each boiler be worked separately *Yes* Area of fire grate in each boiler *307 lb* No. and Description of Safety Valves to *Yes*  
 each boiler *Two Spring loaded* Area of each valve *3 1/2"* Pressure to which they are adjusted *205 lb* Are they fitted with easing gear *Yes*  
 Smallest distance between boilers or uptakes and bunkers or woodwork *Some feet* Mean dia. of boilers *13' 0"* Length *11' 8"* Material of shell plates *Steel*  
 Thickness *1 1/32"* Range of tensile strength *27,9-31,7 lb* Are the shell plates welded or flanged *No* Descrip. of riveting: cir. seams *DR lap*  
 long. seams *4 rows D.R.* Diameter of rivet holes in long. seams *1 5/16"* Pitch of rivets *14 5/8"* Lap of plates or width of butt straps *2 1/2" inner strap*  
 Per centages of strength of longitudinal joint *87 1/2%* Working pressure of shell by rules *220 lb* Size of manhole in shell *12 x 16"*  
 Size of compensating ring *10 1/2" x 1 3/8"* No. and Description of Furnaces in each boiler *Three corrugated* Material *Steel* Outside diameter *3' 0"*  
 Length of plain part *top 1 1/2"* Thickness of plates *bottom 3/32"* Description of longitudinal joint *weld* No. of strengthening rings *29*  
 Working pressure of furnace by the rules *207 lb* Combustion chamber plates: Material *Steel* Thickness: Sides *1 1/16"* Back *1 1/16"* Top *1 1/16"* Bottom *3/32"*  
 Pitch of stays to ditto: Sides *7 1/8" x 7 1/8"* Back *7 1/8" x 8"* Top *7 1/8" x 7 1/8"* If stays are fitted with nuts or riveted heads *Nuts* Working pressure by rules *240 lb* End plates in steam space: *Steel*  
 Material of stays *Steel* Area at smallest part *1 9/16"* Area supported by each stay *64"* Working pressure by rules *250 lb* Material of stays *Steel*  
 Material *Steel* Thickness *1"* Pitch of stays *16 x 14 7/8"* How are stays secured *Nuts* Working pressure by rules *265 lb* Material of Front plates at bottom *Steel*  
 Area at smallest part *2 3/4"* Area supported by each stay *235"* Working pressure by rules *265 lb* Working pressure of plate by rules *255 lb*  
 Thickness *1 1/16"* Material of Lower back plate *Steel* Thickness *1"* Greatest pitch of stays *1 1/16"* Back *29/32"* Mean pitch of stays *7 7/8"*  
 Diameter of tubes *2 3/4"* Pitch of tubes *3 1/16"* Material of tube plates *Steel* Thickness: Front *1 1/16"* Back *29/32"* Mean pitch of stays *7 7/8"*  
 Pitch across wide water spaces *14"* Working pressures by rules *207 lb* Girders to Chamber tops: Material *Steel* Depth and  
 thickness of girder at centre *10 3/8" x 2 3/4"* Length as per rule *33"* Distance apart *7 7/8"* Number and pitch of stays in each *3 @ 7 7/8"*  
 Working pressure by rules *260 lb* Steam dome: description of joint to shell *None* % of strength of joint *-*  
 Diameter *-* Thickness of shell plates *-* Material *-* Description of longitudinal joint *-* Diam. of rivet holes *-*  
 Pitch of rivets *-* Working pressure of shell by rules *-* Crown plates *-* Thickness *-* How stayed *-*  
 SUPERHEATER. Type *None* Date of Approval of Plan *-* Tested by Hydraulic Pressure to *-*  
 Date of Test *-* Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler *-*  
 Diameter of Safety Valve *-* Pressure to which each is adjusted *-* Is Easing Gear fitted *-*

W601 - 0141



IS A DONKEY BOILER FITTED?

no

If so, is a report now forwarded?

✓

SPARE GEAR. State the articles supplied:—

one screw shaft, propeller box and two bladed  
set of coupling bolts, top & bottom end bolts & nuts, one set of crank pin bolts,  
one piston rod, reek bush, air pump bucket rod & head valve seat & guards  
feed & bilge pump valves.

The foregoing is a correct description,

Manufacturer.

Dates of Survey which building  
During progress of work in shops -- 1920 Dec 13. 22. 31.  
During erection on board vessel --- 1921 Jan 4. 5. 12. 17. 21. 24.  
Total No. of visits 9

Is the approved plan of main boiler forwarded herewith

Yes

" " " donkey " " "

Dates of Examination of principal parts—Cylinders	✓	Slides	✓	Covers	✓	Pistons	✓	Rods	✓
Connecting rods	✓	Crank shaft	✓	Thrust shaft	✓	Tunnel shafts	✓	Screw shaft	✓
Stern tube	✓	Steam pipes tested	✓	Engine and boiler seatings	✓	Engines holding down bolts	✓		
Completion of pumping arrangements	✓	Boilers fixed	✓	Engines tried under steam	✓				
Completion of fitting sea connections	✓	Stern tube	✓	Screw shaft and propeller	✓				
Main boiler safety valves adjusted	✓	Thickness of adjusting washers	✓						
Material of Crank shaft	✓	Identification Mark on Do.	✓	Material of Thrust shaft	✓	Identification Mark on Do.	✓		
Material of Tunnel shafts	✓	Identification Marks on Do.	✓	Material of Screw shafts	✓	Identification Marks on Do.	✓		
Material of Steam Pipes	Steel			Test pressure	615 lbs				
Is an installation fitted for burning oil fuel	no			Is the flash point of the oil to be used over 150° F.	✓				
Have the requirements of Section 49 of the Rules been complied with	✓								
Is this machinery duplicate of a previous case	no			If so, state name of vessel	✓				

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

The Mach<sup>y</sup> of this vessel has now been examined with a  
view to Classification. — For particulars of Exam<sup>n</sup> see attached  
Report. The sizes of cylinders & shafting have been verified  
and scantling of boilers found to be in accordance with plan,  
and as recommended in attached Report the Mach<sup>y</sup> is in  
my opinion eligible for record LMC 1.21. Subject to after water  
End of Condenser being renewed at first opportunity.

TUES. 7 JUL 1925

FRI. 23 OCT 1925

TUES. 2 MAR 1926

THURS. 8 MAR 1925

TUES. 2 JUN 1925

The amount of Entry Fee	£	:	:	When applied for,
Special	£	30	:-	19.
Donkey Boiler Fee	£	:	:	When received,
Travelling Expenses (if any)	£	:	:	15-2-21

Committee's Minute

Assigned

J. J. Milton A. P. Southwell  
Engineer Surveyor for Lloyd's Register of Shipping.

TUE. SEP. 27 1921

TUE. 27 FEB 1923

FRI. AUG. 11 1922

FRI. JUN. 29 1923

FRI. MAR. 13 1922

TUE. AUG. 21 1923

TUE. 11 MAR. 1924

9/2/21

Lloyd's Register  
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