

## REPORT ON MACHINERY.

Port of LeithReceived at London Office. THUR, 19 MAY 1898No. in Survey held at Leith  
Reg. Book.Date, first Survey 16<sup>th</sup> Sept 1897 Last Survey 16<sup>th</sup> May 1898(Number of Visits 36)29 on the S.S. "Katumu"Master Knud Pahl Built at LeithBy whom built Ramage & Ferguson Ltd.Tons { Gross 758.45  
Net 476.43When built 1898Engines made at LeithBy whom made Ramage & Ferguson Ltd.when made 1898Boilers made at doBy whom made dowhen made 1898

Registered Horse Power

Owners East Asiatic Steamship Co Port belonging to CopenhagenHorse Power as per Section 28 88

## ENGINES, &amp;c.—

Description of Engines Two screw, compoundNo. of Cylinders 2Diameter of Cylinders 15" + 30"Length of Stroke 21"Revolutions per minute 135

Diameter of Screw shaft

as per rule 5.429

Diameter of Tunnel shaft

as fitted 5.78"Diameter of Crank shaft journals 6.4"Diameter of Crank pin 6.4"Size of Crank webs 10.38" x 4.2"Diameter of screw 8' 3"Pitch of screw 8' 3"No. of blades 3State whether moveable noTotal surface 15.6No. of Feed pumps 2Diameter of ditto 2Stroke 12"Can one be overhauled while the other is at work yesNo. of Bilge pumps 2Diameter of ditto 2.2"Stroke 12"Can one be overhauled while the other is at work yesNo. of Donkey Engines 2Sizes of Pumps 8" x 10" x 10" + 6" x 4" x 6"

No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room One centre 2.4" + two wing 2"In Holds, &c. Two to each hold 2.2", one to tunnelNo. of bilge injections 2sizes 3"Connected to condenser or to circulating pump yesIs a separate donkey suction fitted in Engine room & size yes 2.4"Are all the bilge suction pipes fitted with roses yesAre the roses in Engine room always accessible yesAre the sluices on Engine room bulkheads always accessible yesAre all connections with the sea direct on the skin of the ship yesAre they Valves or Cocks BothAre they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates yesAre the discharge pipes above or below the deep water line aboveAre they each fitted with a discharge valve always accessible on the plating of the vessel yesAre the blow off cocks fitted with a spigot and brass covering plate yesAre all pipes carried through the bunkers noneHow are they protected yesAre all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times yesAre the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges yesWhen were stern tube, propeller, screw shaft, and all connections examined in dry dock new vesselIs the screw shaft tunnel watertight yesIs it fitted with a watertight door yesworked from Lap platform

## BOILERS, &amp;c.—

(Letter for record S)Total Heating Surface of Boilers 1638 sqand Description of Boilers One multitubular single endedWorking Pressure 120 lbsTested by hydraulic pressure to 240 lbsDate of test 17/1/98Can each boiler be worked separately yesArea of fire grate in each boiler 5.7 sq

No. and Description of safety valves to

boiler Two, springArea of each valve 8.29 sqPressure to which they are adjusted 125 lbs

Are they fitted

Easing gear yesSmallest distance between boilers or uptakes and bunkers on woodwork 12"Mean diameter of boilers 13' 6"Length 10' 0"Material of shell plates SteelThickness 7/8"Description of riveting: circum. seams Lap & Rivetlong. seams S.B.S. & RivetDiameter of rivet holes in long. seams 1.76"Pitch of rivets 8.2"Lap of plates or width of butt straps 16.4"

Percentages of strength of longitudinal joint

rivets 88.4plate 87.5Working pressure of shell by rules 135 lbsSize of manhole in shell 16" x 12"No. and Description of Furnaces in each boiler 3, plainMaterial of compensating ring Mc KailsNo. and Description of Furnaces in each boiler 3, plainMaterial SteelOutside diameter 41.3/16"Thickness of plain part top 1.76"Thickness of plates bottom 1.9/32"Description of longitudinal joint S.B.S. & RivetNo. of strengthening rings yesWorking pressure of furnace by the rules 121 lbsCombustion chamber plates: Material SteelThickness: Sides 2.1/32"Back 1/2"Top 9/16"Bottom 2.1/32"No. of stays to ditto: Sides 8" x 10"Back 8"Top 7.2" x 9.2"If stays are fitted with nuts or riveted heads nutsWorking pressure by rules 120 lbsMaterial of stays SteelDiameter at smallest part .96"Area supported by each stay 64 sqWorking pressure by rules 120 lbs

End plates in steam space:

Material SteelThickness 2.7/32"Pitch of stays 16"How are stays secured S.N.Working pressure by rules 124 lbsMaterial of stays SteelDiameter at smallest part 3.26"Area supported by each stay 25.6 sqWorking pressure by rules 127 lbsMaterial of Front plates at bottom SteelThickness 1.1/16"Material of Lower back plate SteelThickness 1.1/16"Greatest pitch of stays 14"Working pressure of plate by rules 125 lbsDiameter of tubes 3.2"Pitch of tubes 4.3/4"Material of tube plates SteelThickness: Front 1.1/16"Back 3/4"Mean pitch of stays 11.7/8"Working pressures by rules 120 lbsGirders to Chamber tops: Material Steel

Depth and

Distance apart 7.2"Number and pitch of Stays in each 1-12"Working pressure by rules 193 lbsSuperheater or Steam chest; how connected to boiler none

Can the superheater be shut off and the boiler worked

separately yes

Diameter

Length

Thickness of shell plates

Material

Description of longitudinal joint

Diam. of rivet

Pitch of rivets

Working pressure of shell by rules

Diameter of flue

Material of flue plates

Thickness

End plates: Thickness

How stayed

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

Working pressure of end plates

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Area of safety valves to superheater

Are they fitted with easing gear

Working pressure



**DONKEY BOILER—** Description *vertical with two cross tubes.*  
 Made at  *Gateshead* By whom made *Clarke Chapman & Co* When made *25/3/98* Where fixed *St. d*  
 Working pressure *80 lbs* tested by hydraulic pressure to *160 lbs* No. of Certificates *233* Fire grate area *8 1/2 sq* Description of safety valves *1*  
 No. of safety valves *1* Area of each *4.9 sq* Pressure to which they are adjusted *80 lbs* If fitted with easing gear *yes* If steam from *boilers*  
 enter the donkey boiler *no* Diameter of donkey boiler *4' 6"* Length *9 ft* Material of shell/plates *Steel* Thick *1 1/32"*  
 Description of riveting long. seams *Lap & Rivet* Diameter of rivet holes *1 1/16"* Whether punched or drilled *drilled* Pitch of rivets *2 1/2"*  
 Lap of plating *3 3/8"* Per centage of strength of joint *73* Rivets *73* Thickness of shell crown plates *1/2"* Radius of do. *5 ft* No. of Stays *do 3*  
 Dia. of stays. *1 3/8"* Diameter of furnace Top *3' 5 3/8"* Bottom *3' 9 1/2"* Length of furnace *4 ft* Thickness of furnace plates *29/64"* Descript<sup>n</sup>  
 joint *Lap & Rivet* Thickness of furnace crown plates *7/16"* Stayed by *As above* Working pressure of shell by rules *87 lbs*  
 Working pressure of furnace by rules *85 lbs* Diameter of uptake *12"* Thickness of uptake plates *3/8"* Thickness of water tubes *3/8"*

**SPARE GEAR.** State the articles supplied:— *As per Rule & in addition a propeller shaft 2 spare propellers, H.P. & L.P. piston rods, H.P. & L.P. slide valve spindles, H.P. & L.P. pistons, air & circulating pump rods & crank shaft.*

*The foregoing is a correct description.*  
*Ramage & Ferguson Ltd*  
*Alex. J. Ferguson* Manufacturer.  
*Secy*

**General Remarks** (State quality of workmanship, opinions as to class, &c. *The engines & boiler vessel have been constructed under special survey & the materials & workmanship are found to be good. The engines have been tried under steam and the safety valves of main donkey boilers adjusted at the working pressures. The machine is now in good & safe working condition & eligible in my opinion to have the notation of + L M C 5, 98*

*It is submitted that  
 this vessel is eligible for  
 THE RECORD. + L M C 5, 98*

*TL*  
*20/5/98*

Certificate (if required) to be sent to

The amount of Entry Fee..	£ 1	: -	+	When applied for,
Special .. .. .	£ 13	: 4	-	18 <sup>th</sup> May 1898
Donkey Boiler Fee .. .	£ -	: -	-	When received,
Travelling Expenses (if any) £	-	: -	-	24/5/98

*Thomas Field*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

Committee's Minute

**FRI. 20 MAY 1898**

Assigned

*+ L M C 5, 98*



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 Foundation