

# REPORT ON MACHINERY.

Port of *Shanghai*

SAT. JUL. 25. 1914

Received at London Office

No. in Survey held at *Shanghai*

Date, first Survey *9.12.13* Last Survey *27.6.1914*

g. Book. on the *Steel Screw Towboat "Kailan"*

(Number of Visits *26*)

Tons { Gross *228.99*  
Net *96.78*

ster ✓ Built at *Shanghai* By whom built *Kiangnan Dr & Eng Works* When built *1914*

ines made at *Shanghai* By whom made *Kiangnan Dr & Eng Works* when made *1914*

lers made at *Glasgow* By whom made *Lindsay Burnett & Co* when made *1914*

gistered Horse Power Owners *Kailan Towing Administration* Port belonging to *Shanghai*

n. Hors: Power as per Section 28 *63* Is Refrigerating Machinery fitted *No* Is Electric Light fitted *Yes*

**GINES, &c.** Description of Engines *Compound Surface Condensing* No. of Cylinders *2* No. of Cranks *2*

No. of Cylinders *14" x 28"* Length of Stroke *18"* Revs. per minute *184* Dia. of Screw shaft *6.22"* Lgth. of stern bush *2.8"*

as per rule *5.51"* Dia. of Crank shaft journals *5.72"* Dia. of Crank pin *6"* Size of Crank webs *3 3/4 x 12"* Dia. of thrust shaft under

ars *6* Dia. of screw *6.10"* Pitch of screw *7.6"* No. of blades *4* State whether moceable *No* Total surface *21 sq. ft*

of Feed pumps *1* Diameter of ditto *2 1/4"* Stroke *9"* Can one be overhauled while the other is at work ✓

of Bilge pumps *1* Diameter of ditto *2 1/4"* Stroke *9"* Can one be overhauled while the other is at work ✓

of Donkey Engines *Two* Sizes of Pumps *Two 5" x 3" x 5 1/2"* No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room *Two 2"* In Holds, &c. *2"*

of bilge injections *1* sizes *3"* Connected to circulating pump ✓ Is a separate donkey suction fitted in Engine room & size *Yes 2"*

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*

all connections with the sea direct on the skin of the ship *Yes* Are they Valves or Cocks *Both*

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*

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*

at pipes are carried through the bunkers *None* How are they protected ✓

all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times *Yes*

the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges *Yes*

in were stern tube, propeller, screw shaft, and all connections examined in dry dock *3.6.14* Is the screw shaft tunnel watertight *None*

**CLERS, &c.** Glasgow No *12596* worked from (Letter for record *S*) Total Heating Surface of Boilers *1500 sq. ft* Is forced draught fitted *No*

and Description of Boilers *1SB One Return tubular* Working Pressure *130 lbs* Tested by hydraulic pressure to *260 lbs*

of test *11.3.14* Can each boiler be worked separately ✓ Area of fire grate in each boiler *460"* No. and Description of safety valves to boiler *Two spring loaded* Area of each valve *8.290"* Pressure to which they are adjusted *135 lbs* Are they fitted with easing gear *Yes*

Least distance between boilers or uptakes and bunkers or woodwork *12"* Mean dia. of boilers *12.0"* Length *10.6"* Material of shell plates

kness Range of tensile strength Are they welded or flanged Descrip. of riveting: cir. seams long. seams

diameter of rivet holes in long. seams Pitch of rivets Lap of plates or width of butt straps

percentages of strength of longitudinal joint rivets Working pressure of shell by rules Size of manhole in shell plate

of compensating ring No. and Description of Furnaces in each boiler Material Outside diameter

th of plain part top Thickness of plates crown Description of longitudinal joint No. of strengthening rings bottom

Working pressure of furnace by the rules Combustion chamber plates: Material Thickness: Sides Back Top Bottom

of stays to ditto: Sides Back Top If stays are fitted with nuts or riveted heads Working pressure by rules

Material of stays Diameter at smallest part Area supported by each stay Working pressure by rules End plates in steam space:

Material Thickness Pitch of stays How are stays secured Working pressure by rules Material of stays

diameter at smallest part Area supported by each stay Working pressure by rules Material of Front plates at bottom

kness Material of Lower back plate Thickness Greatest pitch of stays Working pressure of plate by rules

diameter of tubes Pitch of tubes Material of tube plates Thickness: Front Back Mean pitch of stays

h across wide water spaces Working pressures by rules Girders to Chamber tops: Material Depth and

ness of girder at centre Length as per rule Distance apart Number and pitch of Stays in each

Working pressure by rules Superheater or Steam chest; how connected to boiler Can the superheater be shut off and the boiler worked

ately 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

iffened 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. Description *None*

Made at By whom made When made Where fixed

Working pressure tested by hydraulic pressure to No. of Certificate Fire grate area Description of safety valves

No. of safety valves Area of each Pressure to which they are adjusted If fitted with easing gear If steam from main boiler

enter the donkey boiler Dia. of donkey boiler \*Length Material of shell plates Thickness Range of strength

Descrip. of riveting long. seams Dia. of rivet holes Whether punched or drilled Pitch of rivets

Lap of plating Per centage of strength of joint Rivets Thickness of shell crown plates Radius of do. No. of Stays to do.

Dia. of stays. Diameter of furnace Top Bottom Length of furnace Thickness of furnace plates Descrip

joint Thickness of furnace crown plates Stayed by Working pressure of shell by rules

Working pressure of furnace by rules Diameter of uptake Thickness of uptake plates Thickness of water tubes

SPARE GEAR. State the articles supplied:— *One pair crank pin brasses with bolts & nuts. One pair cracked bolts with bolts & nuts. One set coupling bolts, two main bearing bolts. Set of HP & LP piston rings, one eccentric strap. One valve spindle, one set feed & bilge pump valves. One spare tail shaft. Two spare propellers. Check valves. 25 condenser tubes & 50 ferrules. 12 boiler tubes. 1/2 set fire bars. A quantity of assorted bolts & nuts & iron of various sizes.*

The foregoing is a correct description,

*R. B. Marchant* Manufacturer.  
Superintendent.

Dates of Survey while building

During progress of work in shops— *1913. Dec 9. 15. 30. 1914. Jan 10. 21. Feb 12. 24. 27. March 4. 14. 17. 25. April 11.*

During erection on board vessel— *April 27. 29. May 1. 25. 29. June 3. 8. 10. 15. 20. 22. 27.*

Total No. of visits *26*

Is the approved plan of main boiler forwarded herewith *Yes*

.. .. .. donkey .. .. *Yes*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The machinery of this vessel has been built under special survey in accordance with the Rules, the material & workmanship is good and the machinery has been tried satisfactorily under steam. In my opinion the vessel is eligible for the record LMC 6-14*

Material of screw shaft *Steel* Is the screw shaft fitted with a continuous liner the whole length of the stern tube *Two liners*

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 non-corrosive *Yes* If two liners are fitted, is the shaft lapped or protected between the liners *Lapped with canvas*

It is submitted that this vessel is eligible for THE RECORD, + LMC. 6.14.

*J.W.D.*  
*28/7/14*

*H. L. Fletcher*  
Engineer Surveyor to Lloyd's Register of British & Foreign Ships

The amount of Entry Fee.. *£12* : : When applied for, *26.6.1914*

Special .. .. *£185* : : When received, *29.6.1914*

Donkey boiler Fee .. .. *£* : : *29.6.1914*

Travelling Expenses (if any) *£20* : : *29.6.1914*

Committee's Minute *WED. AUG. - 5. 1914*

Assigned *+ LMC 6.14*



Certificate (if required) to be sent to

The Surveyors are requested not to write on or below the space for Committee's Minute.

AMMUNITY CERTIFICATE WRITTEN