

REPORT ON MACHINERY.

No. 1431

Received at London Office

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of writing Report 30th Sept 1913 When handed in at Local Office 10 Port of Shanghai Date, First Survey 26th Oct 1913 Last Survey 20th Sept 1913

in Survey held at Shanghai g. Book. on the Steel screw Icebreaker "Tung-Ling"

ster Built at Shanghai By whom built Kiengnan Dk & Eng Works When built 1913-9

ines made at Shanghai By whom made Kiengnan Dk & Eng Works when made 1913-9

rs made at Glasgow By whom made Lindsay Burnett & Co. when made 1913.

stered Horse Power Owners Hai Ho Bonuway Commission Port belonging to Tientsin

Horse Power as per Section 28 119 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

INES, &c.—Description of Engines Triple Surface Condensing No. of Cylinders 3 No. of Cranks 3

of Cylinders 12 1/2", 21", 36" Length of Stroke 24" Revs. per minute 135 Dia. of Screw shaft as per rule 7 1/2" as fitted 8" Material of screw shaft fitted with a continuous liner the whole length of the stern tube No liner fitted Is the after end of the liner made water tight

e propeller boss — If the liner is in more than one length are the joints burned — If the liner does not fit tightly at the part

en the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive — If two

are fitted, is the shaft lapped or protected between the liners — Length of stern bush 2'-8 3/4"

of Tunnel shaft as per rule 6 5/8" as fitted 6 3/4" Dia. of Crank shaft journals as per rule 6 9/16" as fitted 7 1/4" Dia. of Crank pin 7 1/4" Size of Crank webs 13 1/2" x 5" Dia. of thrust shaft under

s 7 Dia. of screw 8'-6" Pitch of Screw 10'-6" No. of Blades 4 State whether moveable No Total surface 26 sq ft

of Feed pumps 3 aux Diameter of ditto 2, 5 x 3" Stroke 12" Can one be overhauled while the other is at work Yes (Kept pumps for main engines.

of Bilge pumps 2 Diameter of ditto 2 1/4" Stroke 10 1/2" Can one be overhauled while the other is at work Yes

of Donkey Engines Seven Sizes of Pumps 5' x 3' x 4 1/2" No. and size of Suctions connected to both Bilge and Donkey pumps

ngine Room One each port & starboard 2" In Holds, &c. One 2".

Bilge Injections 1 sizes 4" Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size Yes 2"

l 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

l connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Valves

ey 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

ey 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

pipes are carried through the bunkers ballast & forehold bilge How are they protected wood casing.

l Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes

e Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges Yes

of examination of completion of fitting of Sea Connections 16th May of Stern Tube 16th May. Screw shaft and Propeller 20th May

Screw Shaft Tunnel watertight not tunnel Is it fitted with a watertight door — worked from —

ERS, &c.—(Letter for record) Manufacturers of Steel 2454

Heating Surface of Boilers 2457 Is Forced Draft fitted No No. and Description of Boilers 2 Scotch Return tubular

ing Pressure 195 lb/sq in Tested by hydraulic pressure to 390 lb/sq in Date of test 12th & 19th April 1913 No. of Certificates 12062-12077

ch boiler be worked separately Yes Area of fire grate in each boiler 46 No. and Description of Safety Valves to

iler 2 Spring loaded Area of each valve 4.9 Pressure to which they are adjusted 195 Are they fitted with easing gear Yes

st distance between boilers or uptakes and bunkers or woodwork 5" Mean dia. of boilers 12'-1" Length 10'-0" Material of shell plates

ess Range of tensile strength Are the shell plates welded or flanged Descrip. of riveting: cir. seams

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

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

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

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

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

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

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

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

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

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

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

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

ickness 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

eparately Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet

oles Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness

f 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

VERTICAL DONKEY BOILER—

Manufacturers of Steel

No.	Description				
Made at	By whom made	When made	Where fixed		
Working pressure	tested by hydraulic pressure to	Date of test	No. of Certificate	Fire grate area	Description of
Valves	No. of Safety Valves	Area of each	Pressure to which they are adjusted	Date of adjustment	
If fitted with easing gear	If steam from main boilers can enter the donkey boiler	Dia. of donkey boiler	Length		
Material of shell plates	Thickness	Range of tensile 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 Plates
Working pressure of shell by rules	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	Description of joint	
Working pressure of furnace by rules	Thickness of furnace crown plates	Radius of do.	Stayed by		
Diameter of uptake	Thickness of uptake plates	Thickness of water tubes	Dates of survey		

SPARE GEAR. State the articles supplied:—One pr crank pin bushes complete with bolts & nuts. 1 pair crosshead brass plates. 1 set coupling bolts. 4 main bearing bolts. 1 set of rings for H.P. M.P. & L.P. pistons. 1 eccentric shaft complete. 1 pair eccentric rod top end bushes complete. one valve spindle complete. one fold & bidge pump valves. one spare length crank shaft. One spare propeller shaft. one spare propeller. 1 set safety valve springs. 12 feed check valves. 12 gauge glasses. 25 condenser tubes. 50 girths. 24 boiler half set fire bars for one boiler. Assorted sheet & bar iron & bolts and nuts

The foregoing is a correct description,

Manufacturer.

R. B. Manchaw

Dates of Survey while building	During progress of work in shops—	1912 Oct 26. 31. Nov 2. 7. 11. 16. 20. 28. Dec 3. 5. 11. 24. 1913. Jan 22. 23. 28. Feb 10. 17. 25. March 4. 11.
	During erection on board vessel—	April 3. 15. 24. May 1. 5. 9. June 13. 16. 20. 21. 24. July 17. 18. 23. Aug 10. 14. Sept 20. 26. Oct 18. 20.
	Total No. of visits	41.

Is the approved plan of main boiler forwarded herewith No

Dates of Examination of principal parts—	Cylinders 13 th March	Slides 17 th Feb	Covers 4 th March	Pistons 17 th Feb	Rods 17 th Feb
Connecting rods	17 th Feb	Crank shaft	17 th Feb	Thrust shaft	26 th March
Tunnel shafts	26 th March	Screw shaft	1 st May	Propeller	1 st May
Stern tube	16 th May	Steam pipes tested	20 th Aug	Engine and boiler seatings	20 th May
Engines holding down bolts	23 rd June	Engines tried under steam	20 th Sept	Completion of pumping arrangements	18 th Sept
Boilers fixed	23 rd June	Engines tried under steam	20 th Sept	Main boiler safety valves adjusted	20 th Sept
Thickness of adjusting washers	Start 13. to 1/16" AV 9/32. PB 7/16" A	Material of Crank shaft	In Steel	Identification Mark on Do.	Shi 202
Material of Thrust shaft	In Steel	Identification Mark on Do.	Shi 202	Material of Tunnel shafts	In Steel
Identification Marks on Do.	Shi 202	Material of Screw shafts	In Steel	Identification Marks on Do.	Shi 202
Material of Steam Pipes	Copper	Test pressure	390 lbs per sq. in.		

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

A bederwall gland, to Owner's drawings, has been fitted to the stern tube. The vessel is fitted with two Weir feed pumps & which are fitted with float tanks. 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 9.13.

It is submitted that this vessel is eligible for THE RECORD. + LMC 9.13.

The amount of Entry Fee	£12 :	When applied for,	25. 9. 1913
Special	£185 :	When received,	22/10/13
Donkey Boiler Fee	£ :		
Travelling Expenses (if any)	£20 :		

Committee's Minute FRI. OCT. 24. 1913

Assigned

+ LMC 9.13

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



Lloyd's Register Foundation

MACHINERY CERTIFICATE WRITTEN.

Certificate (if required) to be sent to the Surveyor and to be kept by the Committee's Minute.