

## REPORT ON MACHINERY.

No. 10410

Received at London Office

TUE. 24 JUL. 1919

Date of writing Report 21<sup>st</sup> June 1919 When handed in at Local Office 23<sup>rd</sup> June 1919 Port of MIDDLESBROUGHNo. in Survey held at Middlesbrough Date, First Survey 28<sup>th</sup> May 1919 Last Survey 12<sup>th</sup> June 1919  
Reg. Book. on the S.S. TAIKOO WAN YI. (S.S. N<sup>o</sup> 617)Master Built at Middlesbrough By whom built Sir Railton Dixon & Co Tons { Gross 3143  
Net 1873  
When built 1919Engines made at Stockton By whom made Messrs Blair & Co Lim<sup>d</sup> No 1900 when made 1919Boilers made at Stockton By whom made Messrs Blair & Co Lim<sup>d</sup> when made 1919.

Registered Horse Power Owners Port belonging to

Nom. Horse Power as per Section 28 359.412 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes.

ENGINES, &amp;c.—Description of Engines Tri-compound No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 25-41-68 Length of Stroke 45 Revs. per minute 78 Dia. of Screw shaft as per rule 13.58 Material of Eng Steel  
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

in the propeller boss yes If the liner is in more than one length are the joints burned in one 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 tight fit If two

liners are fitted, is the shaft lapped or protected between the liners Length of stern bush 5'-0 1/2"

Dia. of Tunnel shaft as per rule 13.42 Dia. of Crank shaft journals as per rule 13.04 Dia. of Crank pin 13 1/4 Size of Crank webs 24 1/2 x 8 3/4 Dia. of thrust shaft under

collars 13 1/4 Dia. of screw 16'-0" Pitch of Screw 16'-3" No. of Blades 4 State whether moveable no Total surface 75 sq ft

No. of Feed pumps 2 Diameter of ditto 3 1/2" Stroke 24 Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 Diameter of ditto 3 1/2" Stroke 24 Can one be overhauled while the other is at work yes

No. of Donkey Engines 3 Sizes of Pumps 14 x 18 Ballast 7 cu ft 2 @ 7 x 18 x 9 1/2 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 4 @ 3" In Holds, &amp;c. 2 @ 3" each hold except Aftermost where

2 @ 2 1/2" &amp; one @ 3 1/2" Tunnel well one @ 2 1/2"

No. of Bilge Injections 1 sizes 13" Connected to centrifugal circulating pump yes Is a separate Donkey Suction fitted in Engine room &amp; size yes 3 1/2"

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 Suctions to forward holds How are they protected Wood casing

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 see hull report Is it fitted with a watertight door yes worked from Top platform

OILERS, &c.—(Letter for record S) Manufacturers of Steel Messrs J. Spencer & Sons Lim<sup>d</sup> Hudders Cold Air Zented by B.C. Surveyors

Total Heating Surface of Boilers 5925 Is Forced Draft fitted yes No. and Description of Boilers 3 Single Ended

Working Pressure 180 lbs Tested by hydraulic pressure to 360 Date of test 7-3-19. No. of Certificate 1975

Can each boiler be worked separately yes Area of fire grate in each boiler 47 sq ft No. and Description of Safety Valves to

each boiler 2 direct Spring Area of each valve 8.290" Pressure to which they are adjusted 180 lbs. Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 5'-0" External dia. of boilers 14'-0" Length 11'-8 5/16" Material of shell plates Steel

Thickness 1 1/8" Range of tensile strength 28 3/4 - 33 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams 2-R. Lab.

long. seams 2B-3 Riv Diameter of rivet holes in long. seams 1 3/16 Pitch of rivets 8 1/2 Lap of plates or width of butt straps 18" x 1 1/8" in

Per centages of strength of longitudinal joint rivets 86.3 Working pressure of shell by rules 187 180 Size of manhole in shell 16" x 12"

Size of compensating ring flanged No. and Description of Furnaces in each boiler 3 Deighton Material Steel Outside diameter 43"

Length of plain part top Thickness of plates crown 1 1/2" Description of longitudinal joint Weld No. of strengthening rings

Working pressure of furnace by the rules 190 Combustion chamber plates: Material Steel Thickness: Sides 1/6" Back 3/4" Top 1/6" Bottom 1/6"

Pitch of stays to ditto: Sides 9 3/8" x 9" Back 10 1/2" x 9" Top 9 3/8" x 9" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 193

Material of stays Steel Area at smallest part 2.31 Area supported by each stay 84.3 Working pressure by rules 213 End plates in steam space:

Material Steel Thickness 1 1/32" Pitch of stays 28 3/4" x 19 1/2" How are stays secured nuts &amp; washers Working pressure by rules 182 Material of stays Steel

Area at smallest part 8.29 Area supported by each stay 45.2 Working pressure by rules 191 Material of Front plates at bottom Steel

Thickness 3/32" Material of Lower back plate Steel Thickness 27/32 Greatest pitch of stays 13 1/2" x 9" Working pressure of plate by rules 183

Diameter of tubes 3 1/2" Pitch of tubes 4 3/4" x 4 3/4" Material of tube plates Steel Thickness: Front 31/32" Back 3/4" Mean pitch of stays 10 1/2"

Pitch across wide water spaces 14 1/4" Working pressures by rules 189 Girders to Chamber tops: Material Steel Depth and

Thickness of girder at centre 10 1/2" x 1 1/2" Length as per rule 35 1/2" Distance apart 9 3/8" Number and pitch of stays in each 3 @ 9"

Working pressure by rules 200 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 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



IS A DONKEY BOILER FITTED?

No

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— Two each of top end, Bottom end & main bearing Bolts & Nuts. 3 Crank shaft & 3 tunnel shaft coupling bolts & nuts. One set each of feed & Bilge pump Valves. 3 each of main and donkey feed check valves. One set H.P. & M.P. ramsbottom piston rings assorted Bolts & Nuts. Iron of various sizes. One Cast Iron propeller. and minor gear as per specification.

The foregoing is a correct description,  
FOR BLAIR & CO. LIMITED

*Geo. Withers*

Manufacturer.

Dates of Survey while building  
During progress of work in shops -- 1919 May 22, 29 Jun. 2, 5, 6, 11, 12  
During erection on board vessel --  
Total No. of visits 9.

Is the ~~plan~~ plan of main boiler forwarded herewith *YIS*, also  
List of test marks on Boiler plates.

" " " " " "

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	Propeller
Completion of pumping arrangements	Boilers fixed	Engines tried under steam	12-6-19.	
Completion of fitting sea connections	Stern tube	Screw shaft and propeller		
Main boiler safety valves adjusted	12-6-19.	Thickness of adjusting washers	P. 13h S-13h P-3/8 S-3/8 S-13h S-3/8	P-7/8 S-7/8
Material of Crank shaft	Ing Steel Identification Mark on Do. 3033	Material of Thrust shaft	Ing Steel Identification Mark on Do. 3033	
Material of Tunnel shafts	Ing Steel Identification Marks on Do. 3033	Material of Screw shafts	Ing Steel Identification Marks on Do. 3033	
Material of Steam Pipes	Lap Welded Steel	Test pressure	Tested by B.C. Surveyors	
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

If so, state name of vessel Standard "C"

General Remarks (State quality of workmanship, opinions as to class, &c. See Secretary's letter M. 19<sup>th</sup> 22<sup>nd</sup> & 28<sup>th</sup> May 19

The machinery of this vessel has been built under the supervision of the Surveyors of the British Corporation, and at the request of the Owners the following has now been done with a view to classification with this Society.

Examined all Cylinders, pistons, Slide Valves, pumps; crank, thrust & tunnel shafting Auxiliaries, pumping arrangements, spare gear & details and found all in good condition.  
Examined 3 main boilers and their mountings and found all in good condition.  
Main boilers, engines, and Auxiliaries examined under steam and found satisfactory and Safety Valves adjusted.

The machinery is now in a good and safe working condition and renders the vessel eligible in our opinion to have the notation of L.M.C. 6-19. in the Register Book.

Note:— This vessel is fitted with electric light, but not with Wireless.

The amount of Entry Fee ... £	:	:	When applied for,
Special (per spec. 22/5/19)	£ 27-0-0	:	19
Donkey Boiler Fee ... £	:	:	When received,
Travelling Expenses (if any) £	:	:	28-6-1919

*Wm Morrison & Hamish McF. Paton*  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE. JUL. 1 - 1919

Assigned

*L.M.C. 6-19*

*L.D.*



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Foundation