

REPORT ON MACHINERY. 21546

Port of *Newcastle*

THU 7 JUN 88

No. 21546

No. in Survey held at
Reg. Book.

Date, first Survey *9th Sept 187* Last Survey *31st May 1888*

Received at London Office

28

on the *Screw Steamer "Thei Shio"*

(Number of Visits *34*)

Tons *1394*

Master *R. Gordon*

Built at *Newcastle*

By whom built *Hawthorn Leslie & Co. Ld.*

When built *1888*

Engines made at *Newcastle*

By whom made *R. W. Hawthorn Leslie & Co. Ld.*

when made *1888*

Boilers made at *Do*

By whom made *Do*

Do

when made *1888*

Registered Horse Power *300*

Owners *Formosa Trading Corporation*

Port belonging to *Formosa*

ENGINES, &c.—

Description of Engines *Four screws triple expansion surface condensing*
Diameter of Cylinders *19. 30. 3. 50* Length of Stroke *33* No. of Rev. per minute *✓* Point of Cut off, High Pressure *25* Low Pressure *25*
Diameter of Screw shaft *9 1/2* Diam. of Tunnel shaft *9* Diam. of Crank shaft journals *9 1/2* Diam. of Crank pin *9 1/2* size of Crank webs *10 1/2 x 6 1/2*
Diameter of screw *10. 0* Pitch of screw *16. 6* No. of blades *3* state whether moveable *20* total surface *36. 5. 8*
No. of Feed pumps *2* diameter of ditto *3* Stroke *18* Can one be overhauled while the other is at work *yes*
No. of Bilge pumps *2* diameter of ditto *3* Stroke *18* Can one be overhauled while the other is at work *yes*
Where do they pump from *Each hot well. both holds. Engine space. after wells & Sea*
No. of Donkey Engines *1* Size of Pumps *4" x 8"* Where do they pump from *Each hot well. both Engine space. after wells & Sea*

Are all the bilge suction pipes fitted with roses *yes* Are the roses always accessible *yes* Are the sluices on Engine room bulkheads always accessible *yes*
No. of bilge injections *One* and sizes *4"* Are they connected to condenser, or to circulating pump *Circulating pump*
How are the pumps worked *Screws over condensers*
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 *none* How are they protected *✓*

Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times *yes*
Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges *yes*
When were stern tube, propeller, screw shaft, and all connections examined in dry dock *now*
Is the screw shaft tunnel watertight *yes* and fitted with a sluice door *yes* worked from *Deck.*

BOILERS, &c.—

Number of Boilers *Two* Description *Cylindrical double ended* whether Steel or Iron *Steel*
Working Pressure *160* Tested by hydraulic pressure to *320* Date of test *13. 2. 88. H. of C. 24 21*
Description of superheating apparatus or steam chest *none*
Can each boiler be worked separately *yes* Can the superheater be shut off and the boiler worked separately *✓*
No. of square feet of fire grate surface in each boiler *99* Description of safety valves *Spring* No. to each boiler *2*
Area of each valve *12. 56* Are they fitted with easing gear *yes* No. of safety valves to superheater *✓* area of each valve *✓*
Are they fitted with easing gear *✓* Smallest distance between boilers and bunkers or woodwork *16"* Diameter of boilers *12. 9 5/8*
Length of boilers *17. 0* description of riveting of shell long. seams *R. Butt. R. riveted circum. seams Lap double* Thickness of shell plates *1 3/16*
Diameter of rivet holes *1 7/16* whether punched or drilled *Drilled* pitch of rivets *7 3/16* Lap of plating *15. 3/8*
Percentage of strength of longitudinal joint *80* working pressure of shell by rules *161* size of manholes in shell *16 x 12*
Size of compensating rings *1 3/16 x 6* No. of Furnaces in each boiler *6*
Outside diameter *3. 0* length, top *3. 0"* bottom *3. 0"* thickness of plates *7* description of joint *Welded Admiralty* If rings are fitted *yes*
Greatest length between rings *3. 0"* working pressure of furnace by the rules *160* combustion chamber plating, thickness, sides *3/16* back *✓* top *3/16*
Pitch of stays to ditto, sides *7 3/4* back *✓* top *7 3/4* If stays are fitted with nuts or riveted heads *Nuts* working pressure of plating by rules *162* Diameter of stays at smallest part *1 1/4"* working pressure of ditto by rules *164* end plates in steam space, thickness *15 1/16*
Pitch of stays to ditto *15 1/2 x 14 1/2* how stays are secured *R. nuts & washers* working pressure by rules *160* diameter of stays at smallest part *2 1/4"* working pressure by rules *165* Front plates at bottom, thickness *13 1/16* Back plates, thickness *✓*
Greatest pitch of stays *✓* working pressure by rules *✓* Diameter of tubes *2 3/8"* pitch of tubes *4 1/4"* thickness of tube plates, front *1"* back *3/8"* how stayed *Stay tubes* pitch of stays *9"* width of water spaces *7"*
Diameter of Superheater or Steam chest *None* length *✓* thickness of plates *✓* description of longitudinal joint *✓* diam. of rivet holes *✓*
Pitch of rivets *✓* working pressure of shell by rules *✓* diameter of flue *✓* thickness of plates *✓* If stiffened with rings *✓*
Distance between rings *✓* working pressure by rules *✓* end plates of superheater, or steam chest; thickness *✓* how stayed *✓*
Superheater or steam chest; how connected to boiler *✓*

DONKEY BOILER— Description *Ordinary vertical three crop tubes*
Made at *Skegton* by whom made *Riley 1875* when made *18-2-88* where fixed *Skegton*
Working pressure *7 1/2* tested by hydraulic pressure to *15-0* No. of Certificate *15-26* fire grate area *14.19* description of safety valves *Spring*
enter the donkey boiler *4* No. of safety valves *one* area of each *7.68* if fitted with easing gear *yes* if steam from main boilers *no*
Thickens of shell plates *7/16* diameter of donkey boiler *5-0* length *9-0* description of riveting *Lap double*
per centage of strength of joint *70* thickness of crown plates *7/16* stayed by *uptake & 5 Stay 1 1/2" diam.*
Diameter of furnace, top *3-11* bottom *4-5* length of furnace *3-8* thickness of plates *1 1/2* description of joint *Lap Single*
Thickens of furnace crown plates *7/16* stayed by *Same as Crown* working pressure of shell by rules *7 1/2*
Working pressure of furnace by rules *7 1/2* diameter of uptake *13* thickness of plates *7/16* thickness of water tubes *3/8*

SPARE GEAR. State the articles supplied:— *12 Main bearing bushes, 2 Main bearing bolts & nuts, 2 top end bolts & nuts, 2 bottom end bolts & nuts, 3rd part crank Shaft, propeller Shaft & 2 propellers, 3 baloe Spindles, Pump Crankhead, piston rod complete, connecting rod complete, head valves for Air & Circulating, pump, 1 Set of feed valves, 1 Set of bilge, 10 boiler tubes & Stay tubes, piston Spring, bolts & nuts iron assorted.*
For The foregoing is a correct description, *R. & W. HAWTHORN, LESLIE & CO., LIMITED, MANUFACTURERS, SHEFFIELD.*

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

The machinery of this vessel has been specially surveyed during construction the material & workmanship good and renders the vessel eligible in my opinion to have the notification
L. No 65, 88 in the Register Book of the Society.

It is submitted that this vessel is eligible to have LMC 5.88. recorded

RFJ
7.6.88.

The amount of Entry Fee *£ 3* : — : — *received by me.*
Special Certificate *£ 35* : — : —
Donkey Boiler Fee *£* : — : —
Certificate (if required) *£ gratis* : — : — *9/6/88*
(Travelling Expenses, if any, £)

Committee's Minute *FRI 18 JUN 88.*

+ dm 6 5/88

Richard Knox
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Newcastle

Continuation of Report No. 21546 dated June/88 on the

S.S. "Kei Shih"

namely 6" 10" from the upper side of wood deck and to be entered in the Register book & on the classification certificate

The approved tracing of midship section was forwarded on the 14th May/88 Particulars of tests of shaft cracker enclosed herewith

James Liburn