

REPORT ON MACHINERY. 21546

Port of Newcastle

THU 7 JUN 88

No. 21546

Received at London Office

No. in Survey held at Newcastle

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

Reg. Book.

(Number of Visits 34)

1394

on the Screw Steamer "The Phil"

Tons 703

Master R. Gordon

Built at Newcastle

By whom built Hawthorn Leslie & Co. L.

When built 1888

Engines made at Newcastle

By whom made R. W. Hawthorn Leslie & Co. L.

when made 1888

Boilers made at do

By whom made do

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 no total surface 36.5 1/2

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 Levers 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 stowchold 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. 2421

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. & 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 7/8 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 x 14 1/2 how stays are secured 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 13/16 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 9

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 -

Report made 4/6/88 sent to Mr. G. G. 188

L 7800-1082MN



DONKEY BOILER— Description *Ordinary vertical three crop tubes*
 Made at *Stockton* by whom made *Riley Bros* when made *18-2-88* where fixed *Stockton*
 Working pressure *75* tested by hydraulic pressure to *150* No. of Certificate *75-26* fire grate area *14.19* description of safety valves *Spring* No. of safety valves *one* area of each *7.68* if fitted with easing gear *yes* if steam from main boilers can enter the donkey boiler *no* diameter of donkey boiler *5.0* length *9.0* description of riveting *Lap double*
 Thickness of shell plates *7/16* diameter of rivet holes *13/16* whether punched or drilled *punched* pitch of rivets *2 3/4* lap of plating *5*
 Percentage 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 *15/16* description of joint *Lap Single*
 Thickness of furnace crown plates *7/16* stayed by *Same as Crown* working pressure of shell by rules *79*
 Working pressure of furnace by rules *75* 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 balance spindles, Pump Crankhead, piston rod complete, connecting rod complete, head valves for air & circulation, pump, 1 set of feed valves, 1 set of bilge valves, 10 boiler tubes & stay tubes, piston spring bolts & nuts iron assorted.*
 For the foregoing is a correct description, *Manufacturer's name*
R. & W. HAWTHORN, LESLIE & Co., LIMITED
Director

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
H. J.
7.6.88.

Richard Hirst

The amount of Entry Fee *£ 3* : - - - *not at hand*
 Special Certificate *£ 35* : - - -
 Donkey Boiler Fee *£* : - - -
 Certificate (if required) *£ gratis* : - - - *9/6/88*
 To be sent as per margin.
 (Travelling Expenses, if any, £)
 Committee's Minute *FRI 13 JUN 88*
+ dm 6 5/88

Richard Hirst
 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 inserted 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 brackets enclosed herewith

James Sibum

