

REPORT ON MACHINERY.

EST. JAN 11 1896

Port of Sunderland

SAT. JAN 11 1896

Received at London Office

No. in Survey held at Sunderland

Date, first Survey 27 August 95 Last Survey 2 Dec 1895

Reg. Book.

on the S/S. "Sui Sang"

(Number of Visits) 5th Dec 96 4 Dec 96
Gross 2490.24
Net 1446.14

Master J. F. Galsworthy Built at Middlesbrough By whom built Sir R. Dixon & Co

Tons
When built 1895

Engines made at Sunderland By whom made N. E. M. Eng Co Ltd when made 1895

Boilers made at Sunderland By whom made N. E. M. Eng Co Ltd when made 1895

Registered Horse Power 300 Owners Indo China S. N. Co Ltd Port belonging to London

Nom. Horse Power as per Section 28 295

ENGINES, &c.— Description of Engines Tri compound, 3 crank No. of Cylinders 3

Diameter of Cylinders 23" 36" 59" Length of Stroke 42" Revolutions per minute 65 Diameter of Screw shaft as per rule 10 2/32

Diameter of Tunnel shaft as per rule 10 3/16 Diameter of Crank shaft journals 11 1/4" Diameter of Crank pin 11 1/4" Size of Crank webs 17 1/2"

Diameter of screw 15 6" Pitch of screw 15 6" No. of blades 4 State whether moveable f Total surface 64 6/8

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

No. of Bilge pumps 2 Diameter of ditto 4" Stroke 24" Can one be overhauled while the other is at work yes

No. of Donkey Engines 2 Sizes of Pumps 6 x 4 x 6 + 7 x 9 x 9 No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room P. 3. C. 2 of 3. S. 3" In Holds, &c. h. 1 - 2 of 3. h. 2 - 2 of 3"

No. of bilge injections 1 sizes 5 Connected to condenser, or to circulating pump C.P. Is a separate donkey suction fitted in Engine room & size 4 2/8 3 3/8

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 none How are they protected ✓

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

When were stern tube, propeller, screw shaft, and all connections examined in dry dock new vessel Is the screw shaft tunnel watertight yes

Is it fitted with a watertight door yes worked from top platform

BOILERS, &c.— (Letter for record S.) Total Heating Surface of Boilers 3906 6/8 of forced draught

No. and Description of Boilers 2 Cyl. Multib. S. ended Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs

Date of test 7/11/95 Can each boiler be worked separately yes Area of fire grate in each boiler 48 3/4 6/8 No. and Description of safety valves to

each boiler 2 direct Spring Area of each valve 9.6 0 Pressure to which they are adjusted 165 lbs Are they fitted

with easing gear yes Smallest distance between boilers or uptakes and bunkers or woodwork 12" Mean diameter of boilers 13.6"

Length 11 1/4" Material of shell plates S. Thickness 1 1/16" Description of riveting: circum. seams d. r. lap long. seams T. r. butt

Diameter of rivet holes in long. seams 1 1/16" Pitch of rivets 7/4" Lap of plates or width of butt straps 15 5/8"

Percentages of strength of longitudinal joint 85.6 Working pressure of shell by rules 160 lbs Size of manhole in shell 16" x 12"

Area of compensating ring 8 1/2 x 1 1/16 No. and Description of Furnaces in each boiler 3 horizontal Material S. Outside diameter 3 7/14"

Length of plain part top 1 1/2" Thickness of plates bottom 1 1/32" Description of longitudinal joint welded No. of strengthening rings —

Working pressure of furnace by the rules 160 lbs Combustion chamber plates: Material S. Thickness: Sides 1 1/32" Back 1 1/32" Top 1 1/32" Bottom 3/4 7/8"

Pitch of stays to ditto: Sides 8 1/2 x 8 1/2" Back 8 1/2 x 8 1/2" Top 8 1/2 x 8 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 160 lbs

Material of stays S. Diameter at smallest part 1 3/8 full Area supported by each stay 72 1/4" Working pressure by rules 166 lbs and plates in steam space:

Material S. Thickness 1 5/32" Pitch of stays 19 1/4 x 19 1/8" How are stays secured d nuts Working pressure by rules 160 lbs Material of stays S.

Diameter at smallest part 3 3/32" Area supported by each stay 382; Working pressure by rules 170 lbs Material of Front plates at bottom S.

Thickness 1 3/16" Material of Lower back plate S. Thickness 7/8" Greatest pitch of stays 12 9/16" Working pressure of plate by rules 190 lbs

Diameter of tubes 2 1/2" Pitch of tubes 3 3/4 x 3 3/4" Material of tube plates S. Thickness: Front 3/4" Back 3/4" Mean pitch of stays 7 1/2"

Pitch across wide water spaces 13 1/4" Working pressures by rules 258 lbs Girders to Chamber tops: Material S. Depth and

Thickness of girder at centre 6 3/4 1 3/4" Length as per rule 28 2 1/32" Distance apart 8 3/16" Number and pitch of Stays in each 2 of 8 5/8"

Working pressure by rules 166 lbs Superheater or Steam chest; how connected to boiler none Can the superheater be shut off and the boiler worked

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

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

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 —

DONKEY BOILER— Description *Vertical with 4 cross water tubes.*
 Made at *Stockton* By whom made *Kiley Bros* When made *10/95* Where fixed *Stonefield*
 Working pressure *80 lbs* Tested by hydraulic pressure to *160 lbs* No. of Certificate *1147* Fire grate area *24* Description of safety valves *Direct Spring*
 No. of safety valves *2* Area of each *4.06* Pressure to which they are adjusted *85 lbs* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No*
 Diameter of donkey boiler *6' 6"* Length *13' 6"* Material of shell plates *Steel* Thickness *1/16"*
 Description of riveting long seams *Lap Double* Diameter of rivet holes *7/8"* Whether punched or drilled *Punched* Pitch of rivets *3/8"*
 Lap of plating *1 1/4"* Per centage of strength of joint Rivets *74.7* Thickness of shell crown plates *1 1/32"* Radius of do. *5 ft.* No. of Stays to do. *7*
 Dia. of stays *1 1/2"* Diameter of furnace Top *4' 10"* Bottom *5' 5 1/4"* Length of furnace *5' 3"* Thickness of furnace plates *19/32"* Description of joint *Lap Single* Thickness of furnace crown plates *1 1/32"* Stayed by *Same as shell crown* Working pressure of shell by rules *85 lbs*
 Working pressure of furnace by rules *84 lbs* Diameter of uptake *16"* Thickness of uptake plates *1/16"* Thickness of water tubes *3/8"*

SPARE GEAR. State the articles supplied:— *1 set of connecting rod top & bottom end bolts & nuts. 2 main bearing bolts & nuts. 1 set of coupling bolts & nuts. 1/3 crank & propeller shaft. 1 set of feed & bilge pump valves.*

The foregoing is a correct description,
J. M. Smith *Easton Marine Engineering Co*
100 North Bond Street Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c.)
 Dates of Survey while building
 During progress of work in shops: 1895 August 24, 29, 31, Sept. 2, 5, 6, 9, 10, 11, 12, 13, 16, 19, 18, 21, 24, 26, 27, 30, October 2, 4, 7, 8, 9, 11
 During erection on board vessel: 11, 14, 16, 19, 19, 21, 22, 23, 24, 28, 29, 30, 31, Nov. 14, 17, 18, 19, 21, 22, 25, 26, 29, Dec 2
 Total No. of visits: 52 1895 Oct 12, 19 Dec 10, 19, 27 4 times

Machinery and boilers constructed under special survey. Materials & workmanship good & efficient. Steam pipes tested by hydraulic to 320 lbs. Engines & boiler examined under steam & found satisfactory.

In my opinion this vessel will be eligible for the record of **L.M.C. 196** in the Register Book when the following work has been completed.
 Donkey boiler stayed in place. Mounted with safety valve adjusted to the U.P. Spare gear examined & electric lighting installation fitted.

The vessel has sailed for Sunderland where the survey will be completed and spare gear put on board. The donkey boiler has now been examined under steam and its safety valves adjusted. Work finished.

Electrical installation fitted by J.H. Holmes of Newcastle

It is submitted that this vessel is eligible for **THE RECORD** of L.M.C. 196. F.D.

Certificate (if required) to be sent to *Electric Light*
 The amount of Entry Fee... £ 2 : : : : When applied for, *11.1.96*
 Special ... £ 33 : 15 : : : :
 Donkey Boiler Fee ... £ : : : :
 Travelling Expenses (if any) £ : : : :
 When received, *Paid at Huddersfield 31.12.1895*
 J. J. Lindley
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **TUES. JAN 14 1896**
 Assigned **L.M.C. 196 F.D.**
 Elec. light

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

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