

REPORT ON MACHINERY.

No. 20533

No. in Survey held at
Reg. Book.

Newcastle

Date, first Survey 1st April

Last Survey 29th July 1887

(Number of Visits 17)

Tons 504

on the

S. S. Starling

Master

Built at Newcastle By whom built

Palmer S & Co When built 1887

Engines made at

Newcastle

By whom made

Palmer S & Co

when made 1887

Boilers made at

—

By whom made

—

when made 1887

Registered Horse Power

120

Owners

General Steam Nav. Co

Port belonging to

London

ENGINES, &c.—

Description of Engines

Triple expansion in three cranks

Diameter of Cylinders 18.29.47 Length of Stroke 33 No. of Rev. per minute 75 Point of Cut off, High Pressure .6 Low Pressure .6

Diameter of Screw shaft 9 3/4 Diam. of Tunnel shaft 9 3/4 Diam. of Crank shaft journals 9 3/4 Diam. of Crank pin 9 3/4 size of Crank webs 6 1/2 x 13 1/2

Diameter of screw 12.6 Pitch of screw 13.6 No. of blades 4 state whether moveable no total surface 450

No. of Feed pumps 2 diameter of ditto 3 Stroke 16 1/2 Can one be overhauled while the other is at work 75

No. of Bilge pumps 2 diameter of ditto 3 1/2 Stroke 16 1/2 Can one be overhauled while the other is at work 75

Where do they pump from Engine bilges, tunnel & after hold.

No. of Donkey Engines Two Size of Pumps 11 x 11 + 8 x 3 1/2 Where do they pump from Both pumps from bilge hold, tunnel, tanks and sea - feed donkey from hotwell.

Are all the bilge suction pipes fitted with roses yes Are the roses always accessible 75 Are the sluices on Engine room bulkheads always accessible 75

No. of bilge injections one and sizes 4 Are they connected to condenser, or to circulating pump circ pumps

How are the pumps worked by levers over condenser from middle engine

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 75 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 75 Are the blow off cocks fitted with a spigot and brass covering plate 75

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 75

Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges 75

When were stern tube, propeller, screw shaft, and all connections examined in dry dock now

Is the screw shaft tunnel watertight ✓ and fitted with a sluice door 75 worked from top platform.

OILERS, &c.—

Number of Boilers One Description Single ended multitubular Whether Steel or Iron steel

Working Pressure 150 Tested by hydraulic pressure to 300 Date of test 9.7.87 No 2290

Description of superheating apparatus or steam chest none

Can each boiler be worked separately ✓ Can the superheater be shut off and the boiler worked separately ✓

No. of square feet of fire grate surface in each boiler 65.2 Description of safety valves spring No. to each boiler two

Area of each valve 8.30 Are they fitted with easing gear 75 No. of safety valves to superheater — area of each valve —

Are they fitted with easing gear ✓ Smallest distance between boilers and bunkers or woodwork 13 Diameter of boilers 14 6

Length of boilers 10.9 description of riveting of shell long. seams double butt welded circum. seams double riveted Thickness of shell plates 1 1/2

Diameter of rivet holes 1 3/8 whether punched or drilled drilled pitch of rivets 7 1/4 Lap of plating 1 1/8 x 1 1/8

Percentage of strength of longitudinal joint 83 working pressure of shell by rules 150 size of manholes in shell 12 x 15

Size of compensating rings ✓ No. of Furnaces in each boiler four

Outside diameter 38 length, top ✓ bottom ✓ thickness of plates 1/2 description of joint cross flue if rings are fitted —

Greatest length between rings ✓ working pressure of furnace by the rules 157 combustion chamber plating, thickness, sides 7/16 back 7/16 top 7/16

Pitch of stays to ditto, sides 7 1/2 back 8 top 200 If stays are fitted with nuts or riveted heads nuts working pressure of plating, by

rules 152 Diameter of stays at smallest part 1 1/2 working pressure of ditto by rules 166 end plates in steam space, thickness 1

Pitch of stays to ditto 16 how stays are secured drawn working pressure by rules 150 diameter of stays at

smallest part 2 3/8 working pressure by rules 150 Front plates at bottom, thickness 3/4 Back plates, thickness 3/4

Greatest pitch of stays 12 working pressure by rules 150 Diameter of tubes 3 1/4 pitch of tubes 4 1/2 thickness of tube

plates, front 3/8 back 3/4 how stayed tubes pitch of stays 9 width of water spaces 6

Shipping diameter of Superheater or Steam chest — 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 ✓

Lloyd's Register
Foundation
NW6797-0271

Report recd 2/8/87 sent to Com. 8/8/87

Boiler drawing & shell details not forwarded

DONKEY BOILER— Description *Stub - Vertical*
 Made at *Gateshead* by whom made *Clark Chapman Furnace Co.* when made *18.6.87* where fixed *Stockshead*
 Working pressure *70 lb* tested by hydraulic pressure to *140* No. of Certificate *2282* fire grate area *20 sq* description of safety
 valves *spring* No. of safety valves *two* area of each *8.32* if fitted with easing gear *yes* if steam from main boilers can
 enter the donkey boiler *no* diameter of donkey boiler *7.0* length *14.0* description of riveting *double lap*
 Thickness of shell plates *3/16* diameter of rivet holes *3/8* whether punched or drilled *no* pitch of rivets *3 3/16* lap of plating *4 1/4*
 per centage of strength of joint *70* thickness of crown plates *9/16* stayed by *7 steel slaps 1 3/8 off. dia.*
 Diameter of furnace, top *5.8* bottom *6.0* length of furnace *5.6* thickness of plates *5/8* description of joint *sl*
 Thickness of furnace crown plates *1/2* stayed by *same as crown* working pressure of shell by rules *78*
 Working pressure of furnace by rules *70* diameter of uptake *18* thickness of plates *7/16* thickness of water tubes *3/8*

SPARE GEAR. State the articles supplied:— *An pump bucket, circulating pump, bucket, eccentric strap, 2 main bearing bolts, valve spindle, 2 top end bolts, pair of main bearing brasses, 2 bottom end brasses, 6 coupling bolts, 2 bottom end bolts, feed & help pump valves & ordinary engine room*

The foregoing is a correct description,

Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c. *The machinery of this vessel has been constructed under special survey the materials and workmanship are sound and good and eligible, in my opinion to be classed L. M. C. 7. 87 in the Register Book.*

is submitted that this vessel is eligible to have the classification L.M.C. 7.87 recorded

9/8/87

Large blue circular stamp, possibly a surveyor's mark or seal.

The amount of Entry Fee .. £ 2 : - : *48 48 at Nav*
 Special .. £ 18 : - : *received by me.*
 Donkey Boiler Fee .. £ - : - :
 Certificate (if required) .. £ *gratis* : - : *18 87*
 (To be sent as per margin.)
 (Travelling Expenses, if any, £)

Committee's Minute **FRIDAY 12 AUGUST 1887**
+ L M C

John H. Waller
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.