

REPORT ON MACHINERY.

No. 16766

Port of Sunderland

No. in Survey held at Sunderland
eg. Book.

Date, first Survey 14 April 92 Last Survey 26 Nov 1892
(Number of Visits 33)

Received at London Office THURS. 1 DEC 1892

on the S/S. "Constance"

Master J.B. Rose Built at Sland

By whom built Short Bros

Tons { Gross 3930.15
Net 2486.56

Engines made at Sland

By whom made G. Clark & Co

When built 1892

Wheels made at Sland

By whom made G. Clark & Co

when made 1892

when made 1892

Registered Horse Power 300

Owners E. J. Gourlay & J. Y. Short

Port belonging to Sunderland

m. Horse Power as per Section 28 320

GINES, &c.—

Description of Engines

Tri compound 3 cranks

No. of Cylinders 3

Diameter of Cylinders 26" 4 2" 6 8" Length of Stroke 45" Revolutions per minute 65 Diameter of Screw shaft as per rule 12 5/32"

Diameter of Tunnell shaft as fitted 12 1/4" Diameter of Crank shaft journals 12 3/4" Diameter of Crank pin 12 3/4" Size of Crank webs 9" x 25"

Diameter of screw 1 7/8" Pitch of screw 1 7/8" No. of blades 4 State whether moveable f Total surface 98 sq

No. of Feed pumps 2 Diameter of ditto 3 3/4" Stroke 2 1/2" Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 Diameter of ditto 4 1/2" Stroke 2 1/2" Can one be overhauled while the other is at work yes

No. of Donkey Engines 2 Sizes of Pumps 8" x 10" 16" x 4" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room C 3 1/2" D 3 1/2" S 3 1/2" In Holds, &c. R 1 - 2 of 3 1/2" R 2 - 2 of 3 1/2"

No. of bilge injections 1 sizes 6" Connected to condenser, or to circulating pump C.P. Is a separate donkey suction fitted in Engine room & size 5"

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 yes

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

Are all pipes 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

CLERS, &c.—

(Letter for record R.)

Total Heating Surface of Boilers 4959 sq

and Description of Boilers 2 double ended

Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs

Can each boiler be worked separately yes Area of fire grate in each boiler 43.5 sq No. and Description of safety valves to

boiler 2 Spring Area of each valve 8.29 sq Pressure to which they are adjusted 165 lbs Are they fitted

easing gear yes Smallest distance between boilers or uptakes and bunkers or woodwork 2 feet Mean diameter of boilers 12-9"

Length 15-6" Material of shell plates S Thickness 1 3/4" Description of riveting: circum. seams 2 r. r. lap long. seams 7. r. butt

Diameter of rivet holes in long. seams 1 3/16" Pitch of rivets 7 1/2" Lap of plates or width of butt straps 18 1/4" straps

Percentages of strength of longitudinal joint rivets 93.5 Working pressure of shell by rules 160 lbs Size of manhole in shell 16" x 13"

No. of compensating ring 8 1/2" x 1 3/16" No. and Description of Furnaces in each boiler 6 plain Material S Outside diameter 3 feet

Length of plain part top 5-6" bottom 5-10" Thickness of plates crown 3 1/16" Description of longitudinal joint welded No. of strengthening rings —

Working pressure of furnace by the rules 166 Combustion chamber plates: Material S Thickness: Sides 9/16" Back — Top 7/8" Bottom 1 1/16"

No. of stays to ditto: Sides 8 1/2" x 8" Back — Top 8 x 9 1/8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 160 lbs

Material of stays Iron Diameter at smallest part 1 5/8" Area supported by each stay 73 sq Working pressure by rules 211 lbs End plates in steam space:

Material S Thickness 1 1/8" Pitch of stays 19 1/4" x 14 1/4" How are stays secured d nuts Working pressure by rules 160 lbs Material of stays S

Diameter at smallest part 2-6 1/2" Area supported by each stay 28 sq Working pressure by rules 176 lbs Material of Front plates at bottom S

Thickness 1 1/8" Material of Lower back plate — Thickness — Greatest pitch of stays — Working pressure of plate by rules —

Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates S Thickness: Front 3/4" 32 Back — Mean pitch of stays 9"

Distance across wide water spaces 14 3/4" Working pressures by rules 232 lbs Girders to Chamber tops: Material S Depth and

Thickness of girder at centre 10 3/4" x 1 1/4" Length as per rule 40" Distance apart 9 1/8" Number and pitch of Stays in each 4 of 8"

Working pressure by rules 190 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

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 —

575984-0073

DONKEY BOILER—

Description

Vertical, 4 cross tubes

Made at *Shekton*

By whom made

*Riley Bros.*When made *8/92*

Where fixed

*Shekton*Working pressure *80 lbs* tested by hydraulic pressure to *160 lbs* No. of Certificate *499* Fire grate area *25 sq* Description of safety valves *Spring*No. of safety valves *2* Area of each *9.6* Pressure to which they are adjusted *80 lbs* If fitted with casing gear *yes* If steam from main boilerenter the donkey boiler *no* Diameter of donkey boiler *7 feet* Length *15 feet* Material of shell plates *Steel* Thickness *7/16*Description of riveting long. seams *Vert. lap double* Diameter of rivet holes *3/16* Whether punched or drilled *punched* Pitch of rivets *2*Lap of plating *4 1/4* Per centage of strength of joint Rivets *41.8* Thickness of shell crown plates *9/16* Radius of do. *5 feet* No. of Stays to do. *12*Dia. of stays *1 1/2* eff. Diameter of furnace Top *5'-5"* Bottom *6'-0 1/2"* Length of furnace *5' 9"* Thickness of furnace plates *3/8* Descripjoint *lap single* Thickness of furnace crown plates *9/16* Stayed by *Same as shell crown* Working pressure of shell by rules *7*Working pressure of furnace by rules *80 lbs* Diameter of uptake *14"* Thickness of uptake plates *3/8* Thickness of water tubes *3/8*

SPARE GEAR.

State the articles supplied:—

*1 Set of connecting rod top & bottom end bar
and nuts. 1 Set of main bearing bolts & nuts. 1 Set of coupling bolts & nuts.
1 Set of valves for feed & bilge pumps. propeller*

The foregoing is a correct description,

FOR GEORGE CLARK LIMITED

George Clark & Co.

Manufacturer.

main engines & boilers

General Remarks

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

*The machinery of this vessel
has been constructed under special survey. Materials & workm
good and efficient. The engines & boilers have been examined
under steam and in my opinion are in good & safe working
condition eligible for the notation in the Register of L.M.C.*

*for
+ L.M.C.
11/92
12/92*

Certificate (if required) to be sent to

The amount of Entry Fee. . . £ *3* : -Special £ *36* : -

Donkey Boiler Fee £ : -

Travelling Expenses (if any) £ : -

When applied for,

When received,

J. J. Findlay

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

Committee's Minute

Assigned

FRI 2 DEC 1892

+ L.M.C. 11/92

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Foundation