

REPORT ON MACHINERY.

No. 6054

No. in Survey held at
Reg. Book.

Glasgow

Date, first Survey May 19th 1882 Last Survey March 29th 1883.

(Received at London Office Rec'd 2nd April 1883)

on the Screw Steamer Elbe

Tons 740
492

Master Johnson

Built at Glasgow

When built 1882-3

Engines made at Glasgow

By whom made W. Kemp when made 1882-3

Boilers made at do

By whom made D. Davidson when made 1882-3

Registered Horse Power 98

Owners Coverley & Westray

Port belonging to London

ENGINES, &c.—

Description of Engines Inverted direct acting, compound, Surface condensing
Diameter of Cylinders 26" & 49" Length of Stroke 36" No. of Rev. per minute 70 Point of Cut off, High Pressure $\frac{1}{2}$ stroke Low Pressure $\frac{1}{2}$ stroke
Diameter of Screw shaft 8 $\frac{7}{8}$ " Diameter of Tunnel shaft 8 $\frac{7}{8}$ " Diameter of Crank shaft journals 8 $\frac{7}{8}$ " Diameter of Crank pin 9" size of Crank webs 5 $\frac{3}{4}$ " x 10 $\frac{3}{4}$ "
Diameter of screw 13-0" Pitch of screw 17 feet No. of blades Four state whether moveable Solid total surface 38 sq ft.
No. of Feed pumps Two diameter of ditto 3 $\frac{1}{2}$ " Stroke 20" Can one be overhauled while the other is at work yes
No. of Bilge pumps Two diameter of ditto 3 $\frac{1}{2}$ " Stroke 20" Can one be overhauled while the other is at work yes
Where do they pump from Bilges & Holds
No. of Donkey Engines Two & hand pump Size of Pumps 6" x 3" x 8" Where do they pump from Ballast pump from tanks. Hand & Donkey from Bilges, Holds, Holdwell & 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 2 $\frac{1}{2}$ " Are they connected to condenser, or to circulating pump Circulating
How are the pumps worked By levers from overhead of each 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 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 Before launching
Is the screw shaft tunnel watertight yes and fitted with a sluice door yes worked from Main deck.

BOILERS, &c.—

Number of Boilers One Description Multitubular Cylindrical
Working Pressure 80 lbs Tested by hydraulic pressure to 160 lbs Date of test Feb 16th 1883. N^o 959.
Description of ~~superheating apparatus~~ steam chest Horizontal.
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 50 Description of safety valves Direct spring
No. to each boiler Two area of each valve 14 sq in 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 ~~on woodwork~~ 9"
Diameter of boilers 13-6" Length of boilers 11-0" description of riveting of shell long. seams Butt, bebble circum. seams Lap, double
Thickness of shell plates 7/8" diameter of rivet holes 15/16" whether punched or drilled Drill pitch of rivets 4 3/8"
Lap of plating Butt 14 1/4 x 16 per centage of strength of longitudinal joint 78 working pressure of shell by rules 84 lbs
Size of manholes in shell 11 x 15" size of compensating rings Double riveted ring
No. of Furnaces in each boiler Three outside diameter 3-3" length, top 7-0" bottom 9-9"
Thickness of plates 1/2" description of joint Butt. if rings are fitted yes greatest length between rings 7-0"
Working pressure of furnace by the rules 82 lbs
Combustion chamber plating, thickness, sides 7/16" back 7/16" top 1/2"
Pitch of stays to ditto sides 8" back 8" top 9 3/4"
If stays are fitted with nuts or riveted heads Nuts working pressure of plating by rules 84 lbs
Diameter of stays at smallest part 1 3/8" & 1 1/2" screws working pressure of ditto by rules 85 lbs
End plates in steam space, thickness 3/4" pitch of stays to ditto 14 1/2" how stays are secured Double nuts
Working pressure by rules 96 lbs diameter of stays at smallest part 2 1/8" working pressure by rules 100 lbs
Front plates at bottom, thickness 7/8" Back plates, thickness 7/8" greatest pitch of stays 11" working pressure by rules 84 lbs

6054 *gls*

Diameter of tubes $3\frac{1}{2}$ " *ext^d* pitch of tubes $4\frac{3}{4} \times 4\frac{3}{4}$ " thickness of tube plates, front $\frac{11}{16}$ " back $\frac{11}{16}$ "
 How stayed *Tubes + ribs* pitch of stays $15 \times 14\frac{1}{2}$ " width of water spaces 6"
 Diameter of ~~Superheater~~ Steam chest 3'-0" length 5'-0"
 Thickness of plates $\frac{3}{8}$ " description of longitudinal joint *Double* diameter of rivet holes $\frac{13}{16}$ " pitch of rivets 2 7/8"
 Working pressure of shell by rules 110 lbs Diameter of flue — thickness of plates —
 If stiffened with rings — distance between rings — Working pressure by rules —
 End plates of ~~superheater~~ steam chest; thickness $\frac{1}{2}$ " How stayed *One stay in centre. 2" dia*
~~Superheater~~ on steam chest; how connected to boiler *By neck 15" dia - $\frac{3}{4}$ " plate.*

DONKEY BOILER—

Description

Vertical with cross tubes.

Made at *Glasgow.* By whom made *D. Davidson* when made *Tested Feb 12th 1883.*
 Where fixed *In stockhold* working pressure 60 lbs Tested by hydraulic pressure to 120 lbs No. of Certificate 953
 Fire grate area 11 sq ft Description of safety valves *Direct spring* No. of safety valves *One* area of each 7 sq in
 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" *whal.* description of riveting *Lap - Double*
 thickness of shell plates $\frac{3}{8}$ " diameter of rivet holes $\frac{13}{16}$ " whether punched or drilled *Punched*
 pitch of rivets 2 7/8" lap of plating 3" per centage of strength of joint 70
 thickness of crown plates $\frac{7}{16}$ " stayed by *Five stays 1 1/2" dia*
 Diameter of furnace, top 4'-0" bottom 4'-3" length of furnace 3'-9"
 thickness of plates $\frac{7}{16}$ " description of joint *Lap*
 thickness of furnace crown plates $\frac{7}{16}$ " stayed by *As above*
 Working pressure of shell by rules 67 lbs working pressure of furnace by rules 70 lbs
 diameter of uptake 10" thickness of plates $\frac{3}{8}$ " thickness of water tubes $\frac{5}{16}$ " \times 8' *dia*

The foregoing is a correct description,

Manufacturer.

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

*These Engines & Boilers have been constructed in
 special survey, they are of good material & workmanship, &
 have been well fitted on board & satisfactorily tested under steam.
 I am therefore of opinion that they are eligible to be noted
 "LLOYD'S M.C." 3-83 in the Register Book.*

The amount of Entry Fee ... £ 2 : 0 : 0 received by me,

Special ... £ 14 : 14 : 0

Certificate (if required) ... £ *Gratis* 26/3/1883

To be sent as per margin.

(Travelling Expenses, if any, £)

Committee's Minute

Tuesday, 3rd April 1883.

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