

REPORT ON MACHINERY

No. 33525

Lth 8220

Port of Newcastle

THUR. AUG 27 1896

No. in Survey held at South Shields Date, first Survey 31st March Last Survey 11th June 896
 Reg. Book. SS "Guardian" (Number of Visits 8)
 on the SS "Guardian" Tonnage { Gross 380.93
 Net 161.93
 Master A Greenlade Built at Inverkeithing By whom built Cumming & Ellis When built 1896
 Engines made at Aberdeen By whom made Clyne Mitchell & Co when made 1896
 Boilers made at South Shields By whom made J. P. Eltringham & Co when made 1896
 Registered Horse Power 64 Owners D. W. Bain & Co Port belonging to Penyance
 Nom. Horse Power as per Section 28

ENGINES, &c.— Description of Engines No. of Cylinders
 Diameter of Cylinders Length of Stroke Revolutions per minute Diameter of Screw shaft as per rule.
 Diameter of Tunnel shaft as per rule Diameter of Crank shaft journals Diameter of Crank pin Size of Crank webs as fitted.
 Diameter of screw Pitch of screw No. of blades State whether moveable Total surface
 No. of Feed pumps Diameter of ditto Stroke Can one be overhauled while the other is at work
 No. of Bilge pumps Diameter of ditto Stroke Can one be overhauled while the other is at work
 No. of Donkey Engines Sizes of Pumps No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room In Holds, &c.
 No. of bilge injections sizes Connected to condenser, or to circulating pump Is a separate donkey suction fitted in Engine room & size
 Are all the bilge suction pipes fitted with roses Are the roses in Engine room always accessible Are the sluices on Engine room bulkheads always accessible
 Are all connections with the sea direct on the skin of the ship Are they Valves or Cocks
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Are the discharge pipes above or below the deep water line
 Are they each fitted with a discharge valve always accessible on the plating of the vessel Are the blow off cocks fitted with a spigot and brass covering plate
 What pipes are carried through the bunkers How are they protected
 Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times
 Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock Is the screw shaft tunnel watertight
 Is it fitted with a watertight door worked from

OILERS, &c.— (Letter for record S) Total Heating Surface of Boilers 1268 $\frac{ft^2}{ft}$
 No. and Description of Boilers One Multi-Single ended Working Pressure 125 $\frac{lbs}{sq\ in}$ Tested by hydraulic pressure to 250 $\frac{lbs}{sq\ in}$
 Date of test 14.6.96 Can each boiler be worked separately Area of fire grate in each boiler 31 $\frac{ft^2}{ft}$ No. and Description of safety valves to
 each boiler 2 Spring Area of each valve 7.06 $\frac{sq\ in}{ft}$ Pressure to which they are adjusted 125 Are they fitted
 with easing gear Yes Smallest distance between boilers or uptakes and bunkers or woodwork 5'-0" Mean diameter of boilers 11'-11 1/2"
 Length 10'-0" Material of shell plates Steel Thickness 15/16" Description of riveting: circum. seams lap d. 7 long. seams lap 4 rows
 Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 4 3/4" Lap of plates or width of butt straps 10 1/2"
 Per centages of strength of longitudinal joint rivets 76 Working pressure of shell by rules 126 1/2 Size of manhole in shell 16x12
 Size of compensating ring 7 1/2 x 15/16" No. and Description of Furnaces in each boiler 3 plain Material steel Outside diameter 35 1/2"
 Length of plain part top 6'-4" bottom 8'-9" Thickness of plates crown 7/8" bottom 1/2" Description of longitudinal joint lap single riveted No. of strengthening rings none
 Working pressure of furnace by the rules 125 $\frac{lbs}{sq\ in}$ Combustion chamber plates: Material steel Thickness: Sides 3/32" Back 3/32" Top 1/32" Bottom 1/16"
 Pitch of stays to ditto: Sides 9 1/2 x 9 1/2" Back 9 1/2 x 9 1/2" Top palms If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 125 $\frac{lbs}{sq\ in}$
 Material of stays steel Diameter at smallest part 1 15/32" Area supported by each stay 95.5 $\frac{sq\ in}{ft}$ Working pressure by rules 137 $\frac{lbs}{sq\ in}$ End plates in steam space:
 Material steel Thickness 53/64" Pitch of stays 17 1/2 x 15" How are stays secured D.N.W. Working pressure by rules 125 $\frac{lbs}{sq\ in}$ Material of stays steel
 Diameter at smallest part 2 7/16" Area supported by each stay 232-75 $\frac{sq\ in}{ft}$ Working pressure by rules 129 1/2 $\frac{lbs}{sq\ in}$ Material of Front plates at bottom steel
 Thickness 27/32" Material of Lower back plate steel Thickness 25/32" Greatest pitch of stays 13" Working pressure of plate by rules 125 $\frac{lbs}{sq\ in}$
 Diameter of tubes 3 1/2" Pitch of tubes 4 1/2 x 4 3/8" Material of tube plates steel Thickness: Front 27/32" Back 13/16" Mean pitch of stays 10"
 Pitch across wide water spaces 14 1/2" Working pressures by rules 125 $\frac{lbs}{sq\ in}$ Girders to Chamber tops: none Depth and
 thickness of girder at centre Length as per rule Distance apart Number and pitch of Stays in each
 Working pressure by rules 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
 of 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 _____
 Made at _____ By whom made _____ When made _____ Where fixed _____
 Working pressure _____ tested by hydraulic pressure to _____ No. of Certificate _____ Fire grate area _____ Description of safety valves _____
 No. of safety valves _____ Area of each _____ Pressure to which they are adjusted _____ If fitted with easing gear _____ If steam from main boilers can enter the donkey boiler _____ Diameter of donkey boiler _____ Length _____ Material of shell plates _____ Thickness _____
 Description of riveting long. seams _____ Diameter of rivet holes _____ Whether punched or drilled _____ Pitch of rivets _____
 Lap of plating _____ Per centage of strength of joint _____ Rivets _____ Plates _____ Thickness of shell crown plates _____ Radius of do. _____ No. of Stays to do. _____
 Dia. of stays _____ Diameter of furnace Top _____ Bottom _____ Length of furnace _____ Thickness of furnace plates _____ Description of joint _____ Thickness of furnace crown plates _____ Stayed by _____ Working pressure of shell by rules _____
 Working pressure of furnace by rules _____ Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____

SPARE GEAR. State the articles supplied:—

The foregoing is a correct description,

W. Chapman Manufacturer of Main boiler

General Remarks (State quality of workmanship, opinions as to class, &c. *This main boiler has been*)

Dates of Survey while building
 During progress of work in shops - -
 During erection on board vessel - -
 Total No. of visits

This main boiler has been constructed under special survey the workmanship being sound & good throughout.

Certificate (if required) to be sent to _____

The amount of Entry Fee.	£	:	:	When applied for,
Special	£	4	:	3. 7. 1896
Donkey Boiler Fee	£	:	:	When received,
Travelling Expenses (if any) £	:	:	:	13. 8. 1896

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

Committee's Minute **FRI. AUG 28 1896**

Assigned _____

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

