

REPORT ON MACHINERY.

No. 543

No. in Survey held at Reg. Book.

Newcastle

Date, first Survey *3^d Nov 1880* Last Survey *18 June 1881*

(Received in London Office *21/7/81*)

on the *Screw Steamer "Darlington"*

Tons *1990*
1293

Master *James Hogg*

Built at *Newcastle*

When built *1881*

Engines made at *Newcastle*

By whom made *J Clark & Co* when made *1881*

Boilers made at *Do*

By whom made *do* when made *1881*

Registered Horse Power *250*

Owners *W Mitburn & Co*

Port belonging to *London*

ENGINES, &c.—

Description of Engines *Inverted compound surface condensing*
Diameter of Cylinders *35" & 65"* Length of Stroke *42"* No. of Rev. per minute *60* Point of Cut off, High Pressure *half* Low Pressure *half*
Diameter of Screw shaft *11 1/2"* Diameter of Tunnel shaft *10 3/4"* Diameter of Crank shaft journals *11 1/2"* Diameter of Crank pin *11 1/2"* size of Crank webs *15" x 7 1/2"*
Diameter of screw *15" — 0"* Pitch of screw *16 — 6* No. of blades *4* state whether moveable *no* total surface *574 Sq feet*
No. of Feed pumps *2* diameter of ditto *4 1/2"* Stroke *21"* Can one be overhauled while the other is at work *yes*
No. of Bilge pumps *2* diameter of ditto *4 1/2"* Stroke *21"* Can one be overhauled while the other is at work *yes*
Where do they pump from *Fore hold, 1, Engine space, 4, Well in tunnel, 1, Well in hold, 1,*
No. of Donkey Engines *2* Size of Pumps *8" x 10" & 4" x 10"* Where do they pump from *Fore hold, 1, all tanks, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100*
Well in tunnel, Well in hold Main tank, 2, Off tank, 3, 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 *1* and sizes *6"* Are they connected to condenser, or to circulating pump *in*
How are the pumps worked *Lever over Condenser*
Are all connections with the sea direct on the skin of the ship *yes* Are they Valves or Cocks *Valves & Cocks*
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 *at line*
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 *—* 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 *new*

BOILERS, &c.—

Number of Boilers *Two* Description *Cylindrical return tubes, "Steel Boilers"*
Working Pressure *90 lbs* Tested by hydraulic pressure to *180 lbs* Date of test *3^d March 1881*
Description of ~~superheating apparatus~~ or steam chest *Cylindrical between boilers fore & aft*
Can each boiler be worked separately *yes* Can the superheater be shut off and the boiler worked separately *—*
No. of square feet of fire grate surface in each boiler *48 3/4* Description of safety valves *Springs*
No. to each boiler *Two* area of each valve *12.56"* 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 or woodwork *30 inches*
Diameter of boilers *13 — 6"* Length of boilers *10 — 6"* description of riveting of shell long. seams *Double Strap* circum. seams *Double Caps*
Thickness of shell plates *13/16"* diameter of rivet holes *1 1/4"* whether punched or drilled *drilled* pitch of rivets *4 1/8"*
Pitch of plating *Staples 10 1/2"* per centage of strength of longitudinal joint *70%* working pressure of shell by rules *91 lbs*
Size of manholes in shell *15" x 12"* size of compensating rings *6" x 3/8"*
No. of Furnaces in each boiler *3* outside diameter *40"* length, top *6 — 6"* bottom *9 — 6"*
Thickness of plates *35/64"* description of joint *Butt Strap* if rings are fitted *half* greatest length between rings *2 — 6"*
Working pressure of furnace by the rules *90 lbs*
Combustion chamber plating, thickness, sides *17/32"* back *35/64"* Side furnaces. On the furnace *top 17/32"*
Pitch of stays to ditto *8 1/2"* back *9 3/4"* top *Semicircle*
Stays are fitted with nuts or riveted heads *nuts* working pressure of plating by rules *90 lbs*
Diameter of stays at smallest part *1 1/2"* working pressure of ditto by rules *125 lbs*
Plating in steam space, thickness *3/4"* pitch of stays to ditto *15"* how stays are secured *Screwed through plates & nuts*
Working pressure by rules *100* diameter of stays at smallest part *2 1/4"* working pressure by rules *127 lbs*
Plating at bottom, thickness *3/4"* Back plates, thickness *3/4"* greatest pitch of stays *11"* working pressure by rules *143 lbs*

W 778 - 0082

Report recd. 18/6/81. Sent to Lon. 24/7/81

Boiler drawing now forwarded

The foregoing is a correct description,

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

The Machinery of this vessel has been [^]Specialy surveyed during construction. The materials and workmanship are sound and satisfactory, and eligible in my opinion to have the notation + R Lloyds M.C. in the Societys Register book

It is submitted that
this record is eligible to
be classed ~~+~~ ^{as} ~~under~~ ^{with} M. S. 6. 81.
in view of the fact that the certificates
it is also submitted by the local surveyors
should be retained by the local surveyors
until the balance of fees has been paid
and that the record in the Register Book be
also deferred for this purpose.

C. P.
21/7/81

Special .. *M.V.* .. £32 : 10 : -

Certificate (if required) *Grade* - : - : - *14th July, 1881*

(Travelling Expenses, if any, £)

Committee's Minute

received by me,
£28.10.0

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

27 Dec 1888
Wm. C.