

REPORT ON MACHINERY.

No. 3024

(Received in London Office 31/5/80)

No. in Survey held at Newcastle Date, first Survey 8th Jan Last Survey 18th May 1880
 Reg. Book. 514 on the Iron Screw Steamer "Holmsides" Tons 515
 Master R. Scarfe Built at South Shields When built 1841
 Engines made at South Shields By whom made Readhead, Topley when made 1871
 Boilers made at Newcastle By whom made R & W Hawthorn when made 1880
 Registered Horse Power 98 Owners Mr. Harrison & Co Port belonging to London

ENGINES, &c.—

Description of Engines Inverted, Compound, Surface condensing.
 Diameter of Cylinders two 25" two 49" Length of Stroke 32" No. of Rev. per minute 70 Point of Cut off, High Pressure half Low Pressure half
 Diameter of Screw shaft 9" Diameter of Tunnel shaft 8" Diameter of Crank shaft journals 8 1/2" Diameter of Crank pin 8 1/2" size of Crank webs 10 1/2 x 6 1/2"
 Diameter of screw 13 1/4 - 9" Pitch of screw 14 ft No. of blades 4 state whether moveable no total surface 40 Sq ft
 No. of Feed pumps 2 diameter of ditto 3 1/4" Stroke 18" Can one be overhauled while the other is at work no
 No. of Bilge pumps 2 diameter of ditto 3 1/4" Stroke 18" Can one be overhauled while the other is at work no
 Where do they pump from Engine room 3 bilge suction, aft well, 1 suction, fore peak (1)
 No. of Donkey Engines 1 Size of Pumps 1/2" Where do they pump from Engine room, fore peak, Tanks, 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 3" dia Are they connected to condenser, or to circulating pump no
 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 no
 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 14th May 1880.
 Is the screw shaft tunnel watertight yes and fitted with a sluice door yes worked from Engine room platform

BOILERS, &c.—

Number of Boilers Two Description Cylindrical, return tubes.
 Working Pressure 70 lb Tested by hydraulic pressure to 140 lb Date of test 27th March 1880
 Description of ~~superheating apparatus~~ steam chest Cylindrical between the boilers
 Can each boiler be worked separately yes Can the superheater be shut off and the boiler worked separately no Superheater
 No. of square feet of fire grate surface in each boiler 33 Description of safety valves Spring
 No. to each boiler Two area of each valve 25" 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 13 inches
 Diameter of boilers 50" Length of boilers 10.6" description of riveting of shell long. seams Welded circum. seams Laps (double)
 Thickness of shell plates 7/8" diameter of rivet holes circ 1 1/16" whether punched or drilled drilled pitch of rivets circ 3"
 Lap of plating circ 4 3/4" per centage of strength of longitudinal joint 75% working pressure of shell by rules 70 lb
 Size of manholes in shell none size of compensating rings —
 No. of Furnaces in each boiler 2 outside diameter 37" length, top 7.4 1/2" bottom 9 ft - 9 in
 Thickness of plates 7/16" & 7/32" description of joint both Single Strap rings are fitted no greatest length between rings —
 Working pressure of furnace by the rules 71 lb
 Combustion chamber plating, thickness, sides 7/16" back 7/16" top 7/16"
 Pitch of stays to ditto sides 7 3/4" x 7 3/4" back 8 3/4" x 8 3/4" top curved
 If stays are fitted with nuts or riveted heads nuts working pressure of plating by rules 5355 lb = 78"
 Diameter of stays at smallest part 1 1/8" off working pressure of ditto by rules 70 lb
 End plates in steam space, thickness 2 1/32" pitch of stays to ditto 15" x 15" how stays are secured 2 nuts & washers
 Working pressure by rules 72 lb diameter of stays at smallest part 1 1/8" working pressure by rules 5830 lb = 72 lb
 Front plates at bottom, thickness 9/16" Back plates, thickness 7/8" greatest pitch of stays 13" working pressure by rules 94 lb

Diameter of tubes $3\frac{1}{2}$ " pitch of tubes $4\frac{3}{4} \times 4\frac{3}{4}$ " thickness of tube plates, front $5\frac{1}{8}$ " back $1\frac{1}{16}$ "
 How stayed *Tubes* pitch of stays $14\frac{1}{4} \times 9\frac{1}{2}$ " width of water spaces $10\frac{1}{2}$ "
 Diameter of Superheater Steam chest $4\frac{1}{2}$ " length $8\frac{1}{2}$ "
 Thickness of plates $7\frac{1}{16}$ " description of longitudinal joint *2 Lap* diameter of rivet holes $3\frac{1}{4}$ " pitch of rivets $2\frac{5}{8}$ "
 Working pressure of shell by rules $84\frac{1}{2}$ lbs 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 $1\frac{1}{16}$ " How stayed *disked to 4 1/2 radius & Central Sta*
~~Superheater~~ or steam chest; how connected to boiler *Stop valves*

DONKEY BOILER— Description *Upright Cylindrical*
 Made at *Gateshead* By whom made *Clarke Chapman & Co* when made *25th March 1880.*
 Where fixed *Stockholm* working pressure *60 lbs loaded to 44 lbs* Tested by hydraulic pressure to *120* No. of Certificate *371*
 Fire grate area *12 Sq feet* Description of safety valves *dead weight* No. of safety valves *one* $2\frac{3}{8}$ " area of each *4.5"*
 If fitted with casing gear _____ eyes _____ If steam from main boilers can enter the donkey boiler *no*
 Diameter of donkey boiler $4\frac{1}{2}$ " length $10\frac{1}{2}$ " description of riveting *Laps. Long double. Cur Sing*
 thickness of shell plates $3\frac{1}{8}$ " diameter of rivet holes $3\frac{1}{4}$ " whether punched or drilled *punched*
 pitch of rivets *Long 3" Cur 2"* lap of plating *Long 1" Cur 3/4"* per centage of strength of joint *75 per cent*
 thickness of crown plates $7\frac{1}{16}$ " stayed by *uptake & disked to 5 1/2 radius*
 Diameter of furnace, top $3\frac{1}{2}$ " bottom $3\frac{1}{2}$ " length of furnace $5\frac{1}{2}$ "
 thickness of plates $7\frac{1}{16}$ " description of joint *Single riveted Laps*
 thickness of furnace crown plates $7\frac{1}{16}$ " stayed by *uptake & disked to 5 1/2 radius*
 Working pressure of shell by rules $84\frac{1}{2}$ lbs working pressure of furnace by rules $73\frac{1}{2}$ lbs
 diameter of uptake $1\frac{1}{2}$ " thickness of plates $3\frac{1}{8}$ " thickness of water tubes $3\frac{1}{8}$ "

The foregoing is a correct description,
W. Hawthorn Manufacturer. *but not as signed Donkey boiler*

General Remarks (State quality of workmanship, opinions as to class, &c. *The machinery of this vessel has been examined for Special Survey 1702, Two new main boilers have been fitted on board, which were examined during construction, and satisfactorily tested to the Society's requirements, New Donkey boiler has been fitted and tested satisfactorily to the Society's requirements, Sluce valves on engine room bulkheads made accessible, and two extra bilge sections fitted in engine space, New Tanks and bilge pipes fitted throughout vessel, Sea cocks removed from flat of bottom aft turn of bilge, Engines thoroughly overhauled, crank shafts satisfactory, and new stem length fitted, also new ligament bits fitted into stern bush, The machinery of this vessel is now in good order and safe in condition and eligible in my opinion to have the notation Lloyds M.C in red in the Society's Register book—*

The amount of Entry Fee .. £ 2 : - : - received by me,
 Special *W.S.* .. £ 4 : 10 : -
 Certificate (if required) .. £ - : 2 : 6 *26th May 1880*
 To be sent as per margin.
 (Travelling Expenses, if any, £ _____)

W.S. This vessel is eligible for M.C. 5.80 and recorded in the Register Book 31/5/80

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

Committee's Minute _____ 18

