

# REPORT ON MACHINERY.

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No. 24150 Port of Newcastle Received at London Office SAT 10 MAY 1890  
 No. in Survey held at Newcastle Date, first Survey 12th Dec 1889 Last Survey 12th May 1890  
 Reg. Book. on the Twin screw Eliza Cerama (Number of Visits 460) Tons 321  
 Master Mc Nab Built at Middlesborough By whom built Harkness & Co When built 1890  
 Engines made at Arbroath By whom made A. Shanks & Son when made 1890  
 Boilers made at Newcastle By whom made Lynn Bolton Works Co when made 1890  
 Registered Horse Power 120 Owners A. Shanks & Son Port belonging to Arbroath

ENGINES, &c.—  
 Description of Engines Twin Triple expansion, Surface Condensing  
 Diameter of Cylinders 13 1/2 x 21 x 35 Length of Stroke 22 No. of Rev. per minute 130 Point of Cut off, High Pressure 12 1/2 Low Pressure 13 3/4  
 Diameter of Screw shaft 6 1/2 Diam. of Tunnel shaft 6 1/2 Diam. of Crank shaft journals 6 1/2 Diam. of Crank pin 6 1/2 size of Crank webs 5 x 8  
 Diameter of screw 6' 0 Pitch of screw 10' 0 No. of blades 3 state whether moveable No total surface 13 sqft.  
 No. of Feed pumps One diameter of ditto 2 1/4 Stroke 11 Can one be overhauled while the other is at work ✓  
 No. of Bilge pumps One diameter of ditto 2 1/2 Stroke 11 Can one be overhauled while the other is at work ✓  
 Where do they pump from from all holds and engine room.  
 No. of Donkey Engines One Size of Pumps 6" x 12" x 4" Where do they pump from from all holds, engine room, to boiler - from sea, from hotwell, on deck and overboard.  
 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 Two and sizes 2 1/2 Are they connected to condenser, or to circulating pump Circulating pumps.  
 How are the pumps worked by lever of low pressure cylinder.  
 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 22nd May 1890.  
 Is the screw shaft tunnel watertight No tunnel and fitted with a sluice door ✓ worked from ✓

OILERS, &c.—  
 Number of Boilers Two Description Cyl. Single ended Whether Steel or Iron Steel  
 Working Pressure 160lb Tested by hydraulic pressure to 320lb Date of test Feb'y 26th 1890 by 3146  
 Description of superheating apparatus or steam chest none  
 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 34.5 sqft. Description of safety valves Springs No. to each boiler Two  
 Area of each valve 3.98 sq. i. 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 20 in Diameter of boilers 10.6  
 Length of boilers 10.3 description of riveting of shell long. seams lap (8 rows) circum. seams lap (2 rows) Thickness of shell plates 1  
 Diameter of rivet holes 1 3/16 whether punched or drilled drilled pitch of rivets 7 1/2 Lap of plating 12 3/8  
 Percentage of strength of longitudinal joint 84.6 working pressure of shell by rules 160 size of manholes in shell 12 x 16  
 Size of compensating rings 6 x 1 1/8 No. of Furnaces in each boiler two  
 Outside diameter 36 length, top ✓ bottom ✓ thickness of plates 9/16 description of joint ✓ if rings are fitted ✓  
 Greatest length between rings ✓ working pressure of furnace by the rules 144 combustion chamber plating, thickness, sides 3/8 back 3/8 top 5/8  
 Pitch of stays to ditto, sides 8 x 8 1/16 back 8 1/16 top 8 1/16 If stays are fitted with nuts or riveted heads nut working pressure of plating by rules 160 Diameter of stays at smallest part 1 1/8 working pressure of ditto by rules 180 end plates in steam space, thickness 3/8  
 Pitch of stays to ditto 13 1/2 how stays are secured draw working pressure by rules 161 diameter of stays at smallest part 2 working pressure by rules 156 Front plates at bottom, thickness 3/4 Back plates, thickness 3/4  
 Greatest pitch of stays 12 working pressure by rules 160 Diameter of tubes 3 1/4 pitch of tubes 4 1/2 thickness of tube plates, front 3/4 back 3/4 how stayed tubes pitch of stays as plan width of water spaces 5 3/4  
 Diameter of Superheater or Steam chest ✓ length ✓ thickness of plates ✓ description of longitudinal joint ✓ diam. of rivet holes ✓  
 Pitch of rivets ✓ working pressure of shell by rules ✓ 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 ✓ how stayed ✓  
 Superheater or steam chest; how connected to boiler ✓

Description of furnaces Parsons

