

REPORT ON MACHINERY.

27 AUG 92

Port of West Hartlepool Received at London Office 18
Survey held at West Hartlepool Date, first Survey 29th Feb Last Survey 12th Aug 1892
(Number of Visits 35)
on the Screw Steamer Topaze Tons { Gross 1895
Net 1235
When built 1878-12
not appointed Built at Newcastle By whom built C. S. Swan & Co
made at Hartlepool By whom made Messrs S. Richardson & Sons when made 1878. Ripped 1892
made at Hartlepool By whom made Messrs S. Richardson & Sons when made 1892
ed Horse Power 180 Owners Christie & Co Port belonging to London
orse Power as per Section 28 184

ES, &c.— Description of Engines Inverted, Rifle Expansion, 3 Cylinders No. of Cylinders 3
of Cylinders 20" 32 7/8" 56" Length of Stroke 33" Revolutions per minute 65 Diameter of Screw shaft as per rule 9.46
of Tunnel shaft as per rule 8.99 Diameter of Crank shaft journals 10 1/4" Diameter of Crank pin 10 3/4" Size of Crank webs 16 x 6 7/8"
of screw 14.6" Pitch of screw 15.0" No. of blades 4 State whether moveable no Total surface 58.44 sq. ft.
Feed pumps 2 Diameter of ditto 3 3/4" Stroke 21" Can one be overhauled while the other is at work yes
Bilge pumps 2 Diameter of ditto 8 1/2" Stroke 21" Can one be overhauled while the other is at work yes
Donkey Engines 3 one new Sizes of Pumps (3 1/2" x 7") to pump from sea No. and size of Suctions connected to both Bilge and Donkey pumps
In Holds, &c. Original
Injections one size Orig^l Connected to condenser, or to circulating pump By pump a separate donkey suction fitted in Engine room & size original
The bilge suction pipes fitted with roses yes Are the roses in Engine room always accessible yes Are the sluices on Engine room bulkheads always accessible yes
connections with the sea direct on the skin of the ship yes Are they Valves or Cocks both
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 below
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
pipes are carried through the bunkers none How are they protected
pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times yes
bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges yes
ere stern tube, propeller, screw shaft, and all connections examined in dry dock 7th April 1892 Is the screw shaft tunnel watertight yes
ted with a watertight door yes worked from top platform of Engine room
RS, &c.— (Letter for record (S)) Total Heating Surface of Boilers 28444 sq. ft.

Description of Boilers 2 Cyl. built. 2 Single Ended Working Pressure 170 lbs. Tested by hydraulic pressure to 340 lbs.
test 28.4.92 Can each boiler be worked separately yes Area of fire grate in each boiler 29.7 sq. ft. No. and Description of safety valves to
er Two, Spring Area of each valve 5.94 Pressure to which they are adjusted 175 lbs. Are they fitted
ing gear yes Smallest distance between boilers on uptakes and bunkers on woodwork 7" Mean diameter of boilers 12.9"
2.9" Material of shell plates steel Thickness 1 1/16" Description of riveting: circum. seams double riv^d lap long. seams double butt straps
of rivet holes in long. seams 1 5/32" Pitch of rivets 12 no 7/8", 22 no 3 1/16" Lap of plates or width of butt straps 9 3/4"
ages of strength of longitudinal joint rivets 86 Working pressure of shell by rules 171 lbs. Size of manhole in shell none
compensating ring 3" No. and Description of Furnaces in each boiler 2, horizontal plates Material steel Outside diameter 3.8 3/4"
of plain part top 3" Thickness of plates crown 8" Description of longitudinal joint welded No. of strengthening rings none
bottom 7" Thickness of plates bottom 8" Working pressure of furnace by the rules 178 lbs. Combustion chamber plates: Material steel Thickness: Sides 19/32" Back 19/32" Top 19/32" Bottom 3/2"
stays to ditto: Sides 8 7/16" x 8 7/16" Back 8 x 8" Top 8 4/16" x 1 1/2" stays are fitted with nuts or riveted heads nuts Working pressure by rules 171 lbs.
l of stays steel Diameter at smallest part 1 1/8" Area supported by each stay 68.4 sq. in. Working pressure by rules 173 lbs. End plates in steam space:
l steel Thickness 1 1/16" Pitch of stays 17 3/8" x 16 3/8" How are stays secured double nuts Working pressure by rules 177 lbs. Material of stays steel
r at smallest part 2 5/8" Area supported by each stay 284 sq. in. Working pressure by rules 174 lbs. Material of Front plates at bottom steel
s 13/16" Material of Lower back plate steel Thickness 27/32" Greatest pitch of stays 11 7/8" Working pressure of plate by rules 174 lbs.
r of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 3/8" Material of tube plates steel Thickness: Front 3/32" Back 1/16" Mean pitch of stays 8 7/8"
across wide water spaces 14 1/2" Working pressures by rules 171 lbs. Girders to Chamber tops: Material steel Depth and
s of girder at centre 7 1/2" x 1 3/4" Length as per rule 28" Distance apart 7 3/4" Number and pitch of Stays in each 2, 8 1/4"
g pressure by rules 227 lbs. Superheater or Steam chest; how connected to boiler no superheater Can the superheater be shut off and the boiler worked
by — Diameter — Length — Thickness of shell plates — Material — Description of longitudinal joint — Diam. of rivet
Pitch of rivets — Working pressure of shell by rules — Diameter of flue — Material of flue plates — Thickness
ed with rings — Distance between rings — Working pressure by rules — End plates: Thickness — How stayed
g pressure of end plates — Area of safety valves to superheater — Are they fitted with easing gear

DONKEY BOILER— Description *Cylindrical, Vertical, Blake's Patent*
 Made at *Manchester* By whom made *James Blake* When made *21.7.92* Where fixed *In stockhole*
 Working pressure *70 lb.* tested by hydraulic pressure to *180 lb.* No. of Certificate *1102* Fire grate area *1809.4* Description of safety valves *Spring*
 No. of safety valves *one* Area of each *14.19* Pressure to which they are adjusted *70 lb.* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no* Diameter of donkey boiler *7.0* Length *17.0* Material of shell plates *steel* Thickness *1/2*
 Description of riveting long. seams *Double riv lap joint* Diameter of rivet holes *15/16* Whether punched or drilled *drilled* Pitch of rivets *3 1/4*
 Lap of plating *4* Per centage of strength of joint Rivets *72* Thickness of shell crown plates *7/16* Radius of do. *hemispherical* No. of Stays to do. *—*
 Dia. of stays. *—* Diameter of furnace Top *2.6* Bottom *5.1* Length of furnace *4.9* Thickness of furnace plates *5/8* Description of joint *single riv lap* Thickness of furnace crown plates *7/16* *Front Back* Stayed by *stay tubes* Working pressure of shell by rules *93 lb.*
 Working pressure of furnace by rules *90 lb.* Diameter of uptake *2.6* Thickness of uptake plates *—* Thickness of water tubes *as exp. by P. M. Ferguson*
SPARE GEAR. State the articles supplied:— *Original.*

The foregoing is a correct description,

P. & T. RICHARDSON & SONS Manufacturer.

of main boilers & parts of engines renewed

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

Main steam pipes tested by hydraulic pressure to 340 lb. per square inch and found tight.

The main engines and all the boilers removed from the vessel. Main engines taken to the Works of Messrs. T. Richardson & Sons. Foundation plate extended at the forward end and a new high pressure engine, complete, erected on the extended foundation. All main bearing brasses, caps, and bolts renewed. New double throw crank shaft fitted to the forward engines, after crank shaft refitted. New liners fitted in the intermediate & low pressure cylinders. Pistons overhauled. New slide valves fitted. Intermediate cylinder face renewed. 2 Guide columns renewed. Feed pump renewed, and an additional feed donkey engine fitted. All pumps overhauled and the glands rebushed. Condenser, and Link motion overhauled. Thrust and tunnel shafts in satisfactory condition. Vessel placed in the North Eastern graving dock, new propeller fitted. Screw shaft and stern bush renewed. Sea-connections overhauled.

Two new main boilers and one new donkey boiler together with the repaired engines have been fitted on board this vessel, and the whole of the work of renewal and alteration has been executed under Special Survey, and of a good quality of workmanship. The engines and boilers have been examined under steam, the safety valves adjusted and found to work well, and are now in safe and efficient working condition and, in my opinion, eligible to have

Certificate (if required) to be sent to L.M.C. 8.92. T.B. 13.92. and T.p.d. 92. recorded in the Register.

The amount of Entry Fee.. £ : : When applied for.
 Special £ 20 : 14 : 26.8.18.92
 Donkey Boiler Fee £ : : When received.
 Travelling Expenses (if any) £ : : 5/9/92

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

Committee's Minute

TUES. 30 AUG 1892

Assigned

*L.M.C. 8.92 + W.B. 8.92
 T.p.d. 92*



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