

REPORT ON MACHINERY.

Port of WEST HARTLEPOOL.

Received at London Office 18

No. in Survey held at West Hartlepool Date, first Survey Oct 18 1895 Last Survey May 5 1896
 Reg. Book. on the Steel S.S. "Inchmona" (Number of Visits 101)
 Master H. Ashby Built at West Hartlepool By whom built Messrs N. Gray & Co. Ltd. When built 1896
 Engines made at West Hartlepool By whom made Central Marine Eng. Works when made 1896
 Boilers made at West Hartlepool By whom made Central Marine Eng. Works when made 1896
 Registered Horse Power ✓ Owners Hamilton Fraser & Co. Port belonging to Liverpool
 Nom. Horse Power as per Section 28 225.7

ENGINES, &c.— Description of Engines Mudd's patent quadruple expansion, Scraper No. of Cylinders Five
 Diameter of Cylinders 14-24-34-42-42 Length of Stroke 42 Revolutions per minute 68 Diameter of Screw shaft as per rule
 Diameter of Tunnel shaft as fitted 11 Diameter of Crank shaft journals 11 Diameter of Crank pin 11 Size of Crank webs 14 x 6 5/8
 Diameter of screw 15-6 Pitch of screw Differential No. of blades 4 State whether moveable no Total surface 94 sq. ft.
 No. of Feed pumps 2 Diameter of ditto 3 Stroke 33 Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 2 Diameter of ditto 3 1/2 Stroke 33 Can one be overhauled while the other is at work Yes
 No. of Donkey Engines Four Sizes of Pumps Feed duplex 4x8, Neirs 6x18, Special 6x6, Hallast 10x9 No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room Three - 3 1/2" dia In Holds, &c. Eight - one 2 1/2" dia to fore Peak, two 3 1/2" dia to No. 1 hold, two 3 1/2" dia to No. 2 hold, one 3 1/2" dia in No. 3 hold, one 3 1/2" dia in No. 4 hold, and one 2 1/2" dia to after Peak
 No. of bilge injections one sizes 5" Connected to condenser, or to circulating pump is a separate donkey suction fitted in Engine room & size 3 1/2"
 Are all 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 none
 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 and all boiler mountings accessible at all times Yes
 Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges Yes
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock not docked Is the screw shaft tunnel watertight Yes
 Is it fitted with a watertight door Yes worked from top platform of Engine Room
 OILERS, &c.— (Letter for record ✓) Total Heating Surface of Boilers 2060 sq. ft.
 No. and Description of Boilers 2 single ended, with induced draught Working Pressure 255 lbs Tested by hydraulic pressure to 510 lbs
 Date of test 10.3.96 Can each boiler be worked separately Yes Area of fire grate in each boiler 24 1/2 sq. ft. No. and Description of safety valves to each boiler 2 Spring direct Area of each valve 4.04 sq. in. Pressure to which they are adjusted 260 lbs. Are they fitted with easing gear Yes Smallest distance between boilers or uptakes and bunkers or woodwork 35" Mean diameter of boilers 11' 0"
 Length 10' 6" Material of shell plates steel Thickness 1 3/8" Description of riveting: circum. seams treble long. seams treble
 Diameter of rivet holes in long. seams 1 3/8" Pitch of rivets 9" Lap of plates or width of butt straps 20 1/8"
 Per centages of strength of longitudinal joint 89.18 % Working pressure of shell by rules 256.7 lbs Size of manhole in shell 16" x 12"
 Size of compensating ring 4" doubling plate No. and Description of Furnaces in each boiler 2 Purves' Material steel Outside diameter 34"
 Length of plain part 4-3 Thickness of plates 4 1/4" Description of longitudinal joint weld No. of strengthening rings ✓
 Working pressure of furnace by the rules 259.16 lbs Combustion chamber plates: Material steel Thickness: Sides 2 1/32" Back 2 1/32" Top 2 1/32" Bottom 1 1/32"
 Pitch of stays to ditto: Sides 7 1/2" Back 7" Top 6" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 255.9 lbs
 Material of stays steel Diameter at smallest part 1.5" off Area supported by each stay 52.5 sq. in. Working pressure by rules 262.9 lbs End plates in steam space: Material steel Thickness 1" with 3" doubling plate Pitch of stays 16" x 14" How are stays secured double nuts & washers Working pressure by rules 268 lbs Material of stays steel
 Diameter at smallest part 2.9" off Area supported by each stay 228 sq. in. Working pressure by rules 262.5 lbs Material of Front plates at bottom steel
 Thickness 1" Material of Lower back plate steel Thickness 1" Greatest pitch of stays 12 1/2" Working pressure of plate by rules 419 lbs
 Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates steel Thickness: Front 1" Back 1 1/16" Mean pitch of stays 9"
 Pitch across wide water spaces 14 1/2" Working pressures by rules 442 lbs Girders to Chamber tops: Material steel Depth and thickness of girder at centre 7 1/4" x 1 1/4" Length as per rule 22 1/2" Distance apart 4 1/2" Number and pitch of Stays in each Two 6"
 Working pressure by rules 266.9 lbs Superheater or Steam chest; how connected to boiler by pipes Can the superheater be shut off and the boiler worked separately Yes Diameter 2" internal Length 14" Thickness of shell plates 1" Material iron Description of longitudinal joint lap welded Diam. of rivet holes ✓ Pitch of rivets ✓ Working pressure of shell by rules 1000 lbs Diameter of flue ✓ Material of flue plates ✓ Thickness ✓
 If 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 3.14 sq. in. Are they fitted with easing gear no

DONKEY BOILER— Description *Mult. with two plain furnaces.*

Made at *Stockton* By whom made *Riley Bros.* When made *1896* Where fixed *Queen deck,*
Working pressure *90 lbs* tested by hydraulic pressure to *180 lbs.* No. of Certificate *1226* Fire grate area *28 sq'* Description of safety valves *Spring*
No. of safety valves *two* Area of each *4 sq' ft* Pressure to which they are adjusted *90 lbs.* If fitted with easing gear *yes* If steam from main
enter the donkey boiler *no* Diameter of donkey boiler *8'-0"* Length *9'-0"* Material of shell plates *steel* Thickness
Description of riveting long. seams *lap treble* Diameter of rivet holes *15/16"* Whether punched or drilled *drilled* Pitch of riv
Lap of plating *6 1/2"* Per centage of strength of joint Rivets *8 1/2 %* Thickness of shell *end* plates *1/4"* Radius of do. *Pitch* No. of Stays to do
Dia. of stays. *2" off* Diameter of furnace Top *2'-4"* Bottom *✓* Length of furnace *6 feet* Thickness of furnace plates *3/8" 15/32"* Des
joint *lap single* Thickness of furnace crown plates *1/2"* Stayed by *1 1/2" 1 1/4" off stays riveted.* Working pressure of shell by rule
Working pressure of furnace by rules *102 lbs.* Diameter of ^{tubes} uptake *3"* Thickness of uptake plates *3/8" F. 1/4"* Thickness of ^{stay} water tubes *5/16"*

SPARE GEAR. State the articles supplied:—*2 bon. rod top end bolts + nuts; 2 bon. rod bottom end bolts + nuts; 2 main bearings + nuts; 1 set of coupling bolts + nuts; 1 set of feed + bilge pump valves; 1 set of springs for H.P. piston; 120 bolts + nuts; 6 bars of iron; 1 propeller; 1 tail end shaft; 1 eccentric sheave + strap; 1 H.P. valve spindle; 1 cir. pump rod; 1 pump rod + bucket; 1 set of cir. pump + ballast donkey valves; 2 safety valve springs; 1 spring for each feed + cyl. e*
The foregoing is a correct description, *3 patent + 3 permanent tube stoppers*

OR THE CENTRAL MARINE ENGINE WORKS,

Manufacturers of *Main Engines Boilers*

Thomson & Co.

General Remarks (State quality of workmanship, opinions as to class, &c. *"The main steam pipes, have been tested by hydraulic pressure to 510 lbs per sq. in. and found tight."*

The Boilers are fitted with Ellis + Barnes induced draught, driven by fan engine 4 1/2" dia } 6" stroke. Steam driers are fitted in the uptake consisting of coils of iron pipes, these have been tested by hydraulic pressure to 1000 lbs per sq. in. + found tight.

Three circular feed heaters and one water meter are fitted, these have been tested by water to 510 lbs per sq. in. + found tight. Four of n Edmondson's patent filters; and Mudds patent evaporator also fitted.

The Engines + Boilers of this vessel, have been constructed under Special Survey of a good quality of workmanship they have been tried under steam, safety valves adjusted, and found to work well, and are now in a safe working condition + eligible in our opinion to have L.M.C. 5.96 recorded in the Register Book.

Certificate (if required) to be sent to

The amount of Entry Fee..	£ 2 : 0 :	When applied for,
Special	£ 31 : 6 :	13.5.96
Donkey Boiler Fee	£ :	When received,
Travelling Expenses (if any) £	:	13.5.96

Committee's Minute

FRI. MAY 15 1896

Assigned

+ L.M.C. 5.96

MACHINERY CERTIFICATE
WRITTEN.

Wm & Richard St
Engineer Surveyors to Lloyd's Register of British & Foreign Shipping



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Foundation