

REPORT ON MACHINERY.

Port of WEST HARTLEPOOL

MON. 12 OCT 1896

No. in Survey held at West Hartlepool Date, first Survey June 2nd Last Survey Oct. 8th 1896
Reg. Book. on the Steel S.S. "Gomsborg" (Number of Visits 51)

Master W. Van Demers Built at West Hartlepool By whom built Messrs. W. Gray & Co. Ltd. Tons { Gross 1899.56
Net 1209.42 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 Dampskibsselskab. Dannebrog. Port belonging to Kjoberhavn.
Nom. Horse Power as per Section 28 184.9 B. K. Hansen, Manager

ENGINES, &c. — Description of Engines Triple expansion - 3 cranks. No. of Cylinders Three.

Diameter of Cylinders 20" 31 1/2" 53" Length of Stroke 36" Revolutions per minute 65 Diameter of Screw shaft as per rule 9.46"
Diameter of Tunnel shaft as fitted 9 1/2" Diameter of Crank shaft journals 9 1/2" Diameter of Crank pin 9 1/2" Size of Crank webs 13" x 6"

Diameter of screw 14" 3" Pitch of screw Differential No. of blades 4 State whether moveable no Total surface 63 sq. ft.

No. of Feed pumps 2 Diameter of ditto 2 1/2" Stroke 24" Can one be overhauled while the other is at work Yes.

No. of Bilge pumps 2 Diameter of ditto 3" Stroke 24" Can one be overhauled while the other is at work Yes.

No. of Donkey Engines Two Sizes of Pumps Feed 3 1/2" x 5" duplx. Ballast 8" x 8" No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room Three. — One 2 1/2" dia + Two 3" dia. In Holds, &c. Five. — Two 2 1/2" dia. to fore hold;
Two 2 1/2" dia. to Aft hold; and One 2 1/2" dia. to Aft peak with con. to Aft well.

No. of bilge injections one sizes 5" Connected to condenser, or to circulating pumps is a separate donkey suction fitted in Engine room & size 3"

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 _____ Is the screw shaft tunnel watertight Yes

Is it fitted with a watertight door Yes worked from top platform of engine Room.

BOILERS, &c. — (Letter for record S) Total Heating Surface of Boilers 3110 sq. ft.

No. and Description of Boilers 2 single ended. byl. Mult. Working Pressure 160 lbs. Tested by hydraulic pressure to 320 lbs.

Date of test 4. 9. 96 Can each boiler be worked separately Yes Area of fire grate in each boiler 31.5 sq. ft. No. and Description of safety valves to
each boiler Two. Spring direct. Area of each valve 404 sq. in. Pressure to which they are adjusted 165 lbs. Are they fitted
with easing gear Yes Smallest distance between boilers or uptakes and bunkers or woodwork 14 1/2" Mean diameter of boilers 13'-0"

Length 16'-0" Material of shell plates steel Thickness 1 1/8" Description of riveting: circum. seams treble long. seams treble

Diameter of rivet holes in long. seams 1 1/8" Pitch of rivets 7 1/4" Lap of plates or width of butt straps 16 1/2"

Per centages of strength of longitudinal joint rivets 85.4 % plate 85.4 % Working pressure of shell by rules 164 lbs. Size of manhole in shell 16" x 12"

Size of compensating ring 26" x 28" x 13 1/16" No. and Description of Furnaces in each boiler 2 Furnaces Material steel Outside diameter 43 1/2"

Length of plain part top 6'-9 1/2" bottom 6'-9 1/2" Thickness of plates crown 1/2" bottom 1/2" Description of longitudinal joint weld No. of strengthening rings ✓

Working pressure of furnace by the rules 160 lbs. Combustion chamber plates: Material steel Thickness: Sides 19/32" Back 19/32" Top 19/32" Bottom 7/8"

Pitch of stays to ditto: Sides 8 5/8" Back 8 5/8" Top 8 5/8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 165.7 lbs.

Material of stays steel Diameter at smallest part 1.38" Area supported by each stay 44.4 sq. in. Working pressure by rules 161.3 lbs. End plates in steam space:
Material steel Thickness 1 1/2" Pitch of stays 18" x 16 1/2" How are stays secured double nut washers. Working pressure by rules 165.6 lbs. Material of stays steel

Diameter at smallest part 2.46" Area supported by each stay 301.5 sq. in. Working pressure by rules 161.6 lbs. Material of Front plates at bottom steel

Thickness 3/4" Material of Lower back plate steel Thickness 1" Greatest pitch of stays 13 5/8" Working pressure of plate by rules 186 lbs.

Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates steel Thickness: Front 15/16" Back 5/8" Mean pitch of stays 9"

Pitch across wide water spaces 14 1/4" Working pressures by rules F. 166 lbs. B. 142 lbs. Girders to Chamber tops: Material steel Depth and
thickness of girder at centre 8" x 1 1/2" Length as per rule 23" Distance apart 8 5/8" Number and pitch of Stays in each one 8 5/8"

Working pressure by rules 183.3 lbs. Superheater or Steam chest; how connected to boiler none Can the superheater be shut off and the boiler worked
separately ✓ Diameter _____ Length _____ Thickness of shell plates _____ Material _____ Description of longitudinal joint _____ Diam. of rivet
holes _____ Pitch of rivets _____ Working pressure of shell by rules _____ 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 _____ Are they fitted with easing gear _____

DONKEY BOILER— Description *Vertical, with six cross tubes.*
 Made at *Nest Hartlepool* By whom made *H. Gray & Co. Ltd.* When made *1896* Where fixed *Stoke hold*
 Working pressure *80 lb.* tested by hydraulic pressure to *160 lb.* No. of Certificate *2532* Fire grate area *21.65* Description of safety valves *Spring direct*
 No. of safety valves *2* Area of each *4.07* Pressure to which they are adjusted *82 lb.* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Diameter of donkey boiler *6'-0"* Length *13'-0"* Material of shell plates *steel* Thickness *1 1/2"*
 Description of riveting long seams *Lap double* Diameter of rivet holes *1 3/16"* Whether punched or drilled *punched* Pitch of rivets *2 3/4"*
 Lap of plating *4 1/2"* Per centage of strength of joint Rivets *18-14* Thickness of shell crown plates *1/2"* Radius of do. *8'-6"* No. of Stays to do. *6*
 Dia. of stays *2" off* Diameter of furnace Top *4'-4"* Bottom *5'-0"* Length of furnace *5'-6"* Thickness of furnace plates *1 1/2"* Description of joint *Lap single* Thickness of furnace crown plates *1 1/2"* Stayed by *same as shell* Working pressure of shell by rules *81.4*
 Working pressure of furnace by rules *84 lb.* Diameter of uptake *15 1/4"* Thickness of uptake plates *3/8"* Thickness of water tubes *3/8"*

SPARE GEAR. State the articles supplied:— *2 Con. rod top end bolts & nuts; 2 con. rod bottom end bolts & nuts; 2 Main bearing bolts & 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 slide valve rod; 1 air pump rod; 1 circ. pump rod; 1 set of valves for circ. pump; 6 valves for air pump; 20 condense & 18 boiler tubes.*

The foregoing is a correct description,
 FOR THE CENTRAL MARINE ENGINE WORKS, Manufacturers of Main Engines & Boilers *Thomas Mudd*

General Remarks (State quality of workmanship, opinions as to class, &c. *The main steam pipes have been tested by hydraulic pressure to 320 lbs. per sq. in. and found tight.*
The engines and Boilers of this vessel, have been constructed under Special Survey, of a good quality of workmanship, they have been tried under steam, the safety valves adjusted and found to work well, and are now in safe & efficient working condition, and, in my opinion, eligible to have L.M.C. 10,96 recorded in the Register Book.

It is submitted that
 this vessel is eligible for
 THE RECORD + L.M.C. 10.96
H.S.
 12.10.96

Certificate (if required) to be sent to *here*
 The amount of Entry Fee.. £ 2 : 0 : } When applied for,
 Special £ 28 : 4 : } 9.10.18.96.
 Donkey Boiler Fee £ 2 : 2 : } When received,
 Travelling Expenses (if any) £ : : } 10.10.96

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

Committee's Minute **TUES. 13 OCT 1896**
 Assigned *+ L.M.C. 10,96*



The Surveyors are requested not to write on or below the space for Committee's Minute.