

# REPORT ON MACHINERY.

5502

No. 5502

(Received in London Office)

No. in Survey held at Reynoe & Glasgow

Date, first Survey July 29<sup>th</sup>

Last Survey Sept 26<sup>th</sup> 1881

Reg. Book. 594 on the Screw Steam Ship "Gorm"

Tons 1133  
753

Master Carl Built at Reynoe When built 1871

Engines made at Reynoe By whom made Henderson & Co. Ltd. when made "

Boilers made at do. By whom made Robnity & Co. when made 12<sup>th</sup> 1879

Registered Horse Power 150 Owners Steamship Coy. Gorm. Port belonging to Copenhagen

**ENGINES, &c.—**

Description of Engines Compound surface Condensing. R. P. Cylinder-Vertical. H. P. Cylinder Diagonal

Diameter of Cylinders 30" & 60" Length of Stroke 36" No. of Rev. per minute 56 Point of Cut off, High Pressure 18" Low Pressure 20"

Diameter of Screw shaft 9 1/4" Diameter of Tunnel shaft 8 1/2" Diameter of Crank shaft journals 9" Diameter of Crank pin 9" size of Crank webs 9 1/2" x 8"

Diameter of screw 13" 0" Pitch of screw 16" 0" No. of blades 4 state whether moveable Yes total surface 51 Sq' ft.

No. of Feed pumps 2 diameter of ditto 4" Stroke 9" Can one be overhauled while the other is at work Yes

No. of Bilge pumps 1 diameter of ditto 6" Stroke 12" Can one be overhauled while the other is at work —

Where do they pump from Engine Room, Main, Fore Hold, After Hold, & After Well.

No. of Donkey Engines Two Size of Pumps 4" x 8" x 9" x 9" Where do they pump from Sea, Tank, bottoms

of boilers, Engine Room, Mags and all Compartments of Vessel.

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 one and sizes 1 1/2" Are they connected to condenser, or to circulating pump Circulating

How are the pumps worked By Lever Attached to Low Pressure Crosshead

Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Stop 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 Yes

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 Tank & Hold. suction How are they protected Wood Casing

Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times Yes except in Tanks & Holds

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 20/9/81.

Is the screw shaft tunnel watertight Yes and fitted with a sluice door Kept worked from Engine Room.

**BOILERS, &c.—**

Number of Boilers Two Description Cylindrical & Multitubular

Working Pressure 65 lb Tested by hydraulic pressure to 140 lb Date of test 20/12/78

Description of superheating apparatus or steam chest Horizontal some between boilers

Can each boiler be worked separately Yes Can the superheater be shut off and the boiler worked separately Yes

No. of square feet of fire grate surface in each boiler 39 Sq' ft. Description of safety valves Wich Spring by Robnity & Co

No. to each boiler Two area of each valve 9.62 Sq'in Are they fitted with easing gear Yes

No. of safety valves to superheater one area of each valve 7 Sq'in are they fitted with easing gear No

Smallest distance between boilers and bunkers or woodwork No side members about 5 feet to deck

Diameter of boilers 12" 0" Length of boilers 8' 9" description of riveting of shell long. seams Double Butt circum. seams Double Lap

Thickness of shell plates 3/4" diameter of rivet holes 1 1/8" whether punched or drilled drilled pitch of rivets 4 1/2"

Lap of plating 14 3/4" Staps per centage of strength of longitudinal joint Plate 45% Riv 94% working pressure of shell by rules 40 lb

Size of manholes in shell 14" x 13" size of compensating rings 18" x 3/4"

No. of Furnaces in each boiler Two outside diameter 3' 4" length, top 6' 8" bottom 4' 9"

Thickness of plates 1/2" description of joint Double Butt Staps if rings are fitted No greatest length between rings —

Working pressure of furnace by the rules 40 lb

Combustion chamber plating, thickness, sides 1/2" back 1/2" top 1/2"

Pitch of stays to ditto sides 9" x 9" back 9" x 9" top Circular 18" radius

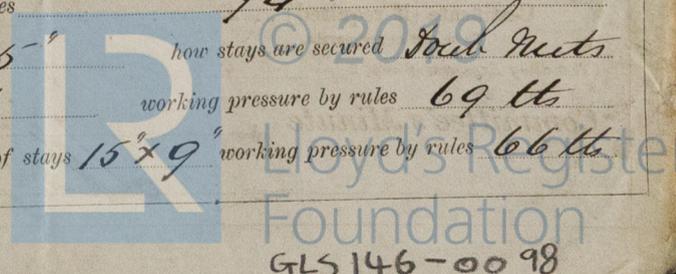
If stays are fitted with nuts or riveted heads Riveted working pressure of plating by rules 49 lb

Diameter of stays at smallest part 1 1/8" working pressure of ditto by rules 44 "

End plates in steam space, thickness 1 1/16" pitch of stays to ditto 16" x 15" how stays are secured Double Nuts

Working pressure by rules 66 lb diameter of stays at smallest part 1 1/8" working pressure by rules 69 lb

Front plates at bottom, thickness 1 1/16" Back plates, thickness 1 1/16" greatest pitch of stays 15" x 9" working pressure by rules 66 lb



5302 gls

Diameter of tubes  $3\frac{1}{2}$ " pitch of tubes  $5" \times 4\frac{1}{4}"$  thickness of tube plates, front  $11/16"$  back  $5/8"$   
 How stayed *Rad. stays* pitch of stays  $18" \times 15"$  width of water spaces  $1\frac{1}{2} + 1\frac{1}{4}"$   
 Diameter of Superheater or Steam chest  $4' 0"$  length  $12' 6"$   
 Thickness of plates  $1/2"$  description of longitudinal joint *Lap. dr* diameter of rivet holes  $13/16"$  pitch of rivets  $2\frac{3}{4}"$   
 Working pressure of shell by rules  $113\text{ lb}$  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  $11/16"$  How stayed *Drilled to  $4' 0"$  Radius*  
 Superheater or steam chest; how connected to boiler *Stop. Valve + Copper Pipes*

DONKEY BOILER—

Description

*Circular-Vertical*

Made at *Reufers* By whom made *Lobnitz & Co* when made *1879*  
 Where fixed *Eleventh* working pressure  $55\text{ lb}$  Tested by hydraulic pressure to  $130\text{ lb}$  No. of Certificate *---*  
 Fire grate area  $12\text{ sq ft}$  Description of safety valves *Dead Spring* No. of safety valves *one* area of each  $4\text{ sq in}$   
 If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No*  
 Diameter of donkey boiler  $4' 9"$  length  $11' 6"$  description of riveting *Roug. doub. Cir. Single*  
 thickness of shell plates  $3/8"$  diameter of rivet holes  $3/4"$  whether punched or drilled *Punched*  
 pitch of rivets  $2\frac{3}{4}"$  lap of plating  $4"$  per centage of strength of joint *Plate  $1/2$ . Riv  $84$ .*  
 thickness of crown plates  $7/16"$  stayed by *Uptake*  
 Diameter of furnace, top  $3' 11"$  bottom  $4' 1"$  length of furnace  $4' 6"$   
 thickness of plates  $3/8"$  description of joint *Lap. Single*  
 thickness of furnace crown plates  $7/16"$  stayed by *Uptake*  
 Working pressure of shell by rules  $40\text{ lb}$  working pressure of furnace by rules  $40\text{ lb}$  *General Stay in Furnace*  
 diameter of uptake  $14\frac{1}{2} \times 9"$  thickness of plates  $7/16"$  thickness of water tubes  $3/8"$

The foregoing is a correct description,

*Lobnitz & Co.* Manufacturer.

Checked *DR*

General Remarks (State quality of workmanship, opinions as to class, &c. *New Main Boilers supplied*

*and fitted on board with new mountings complete.*

*The whole of the machinery opened out and examined and the undamtioned parts renewed and repaired as required. Viz High and Low pressure pistons. Low pressure slide. Piston rods. Crosshead. Top masses. Guide blocks and connecting rod bolts have been renewed. Piston rod neck rings renewed and glands rebushed. Thrust block collars renewed. Surface Condenser cleaned and tubes renewed. Expansion valve spindle renewed. High pressure Cylinder Jacket repaired.*

*Crank and Lunnel shafting examined and found good. All sea coxles on flat of ship's bottom removed to the upper turn of bilge. Air. Circulating. Feed and Bilge pumps overhauled and put in good condition.*

*The Machinery of this vessel is now in good order and safe working condition and eligible in my opinion for the notification. Lloyds M. C. N. B. 9. 01. in the Register Book.*

The amount of Entry Fee .. £ 1 : 10 : received by me,  
 Special .. £ 3 : 3 :  
 Certificate (if required) .. £ .. 5 : 28/9/1881  
 To be sent as per margin.  
 (Travelling Expenses, if any, £ 2 : 2 : 0)

*His subscription that this vessel is eligible to have the notification done M.C.N.B. 9. 01. 3/10/81*  
*J.M. Gregor*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

*Lloyd's Reg. 9. 01. 28/9/81*

Lloyd's Register Foundation