

# REPORT ON MACHINERY.

Port of **GRIMSBY**

Received at London Office

FRI. JAN. 17. 1913

No. in Survey held at Reg. Book.

**GRIMSBY**

Date, first Survey **16/1/12**

Last Survey **8/1/1913**

(Number of Visits **64**)

on the **S.S. Fentonian (Cochrane's No. 1)**

Master **Selby** Built at **Selby** By whom built **Cochrane Howo** Tons } Gross } Net } When built **1912**

Engines made at **Grimsby** By whom made **G. Central Co. of E. & R.C.H.** when made **1913**

Boilers made at **do.** By whom made **do.** when made **1913**

Registered Horse Power Owners **G. Central Co. of E. & R.C.H.** Port belonging to **Grimsby**

Nom. Horse Power as per Section 28 **75** Is Refrigerating Machinery fitted for cargo purposes **no** Is Electric Light fitted **no**

ENGINES, &c.—Description of Engines **Triple Expansion Inverted** No. of Cylinders **3** No. of Cranks **3**

Dia. of Cylinders **12 2 1/2 3 1/4** Length of Stroke **24** Revs. per minute **112** Dia. of Screw shaft as per rule **7.05** Material of screw shaft **Iron**

Is the screw shaft fitted with a continuous liner the whole length of the stern tube **yes** Is the after end of the liner made water tight in the propeller boss **yes**

If the liner is in more than one length are the joints burned **yes** If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive **yes**

If two liners are fitted, is the shaft lapped or protected between the liners **yes** Length of stern bush **35**

Dia. of Tunnel shaft as per rule **6.3** Dia. of Crank shaft journals as per rule **6.61** Dia. of Crank pin **7** Size of Crank webs **4 1/4 x 13** Dia. of thrust shaft under collars **7**

Dia. of screw **8-6** Pitch of Screw **10-9** No. of Blades **4** State whether moveable **no** Total surface **280**

No. of Feed pumps **1** Diameter of ditto **2 1/8** Stroke **24** Can one be overhauled while the other is at work **yes**

No. of Bilge pumps **1** Diameter of ditto **2 1/8** Stroke **24** Can one be overhauled while the other is at work **yes**

No. of Donkey Engines **1** Sizes of Pumps **6 x 3 1/2 x 6** No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room **2 ea. hotwell bilge** In Holds, &c. **2 forehold, upstroom**

No. of Bilge Injections **1** sizes **3** Connected to condenser, or to circulating pump **pump** Is a separate Donkey Suction fitted in Engine room & size **2 1/2 ejector**

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 **steam to windlass** How are they protected **wood casings**

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**

Dates of examination of completion of fitting of Sea Connections **Seen at Hull 25/11/12** of Stern Tube **at Hull 25/11/12** Screw shaft and Propeller **at Hull 25/11/12**

Is the Screw Shaft Tunnel watertight **none** Is it fitted with a watertight door **worked from** See Hull Sta 22/1/13

BOILERS, &c.—(Letter for record **S**) Manufacturers of Steel **Phoenix A.G. Abt. Hörde Verein**

Total Heating Surface of Boilers **1340** Is Forced Draft fitted **no** No. and Description of Boilers **one SE return tube**

Working Pressure **180 lb.** Tested by hydraulic pressure to **360 lb.** Date of test **14.12.12** No. of Certificate **107**

Can each boiler be worked separately **yes** Area of fire grate in each boiler **35** No. and Description of Safety Valves to each boiler **2 direct spring**

Area of each valve **3.98** Pressure to which they are adjusted **185** Are they fitted with easing gear **yes**

Smallest distance between boilers on uptakes and bunkers or woodwork **7** Mean dia. of boilers **12-6** Length **10-0** Material of shell plates **S**

Thickness **1 3/32** Range of tensile strength **28/32** Are the shell plates welded or flanged **no** Descrip. of riveting: cir. seams **double**

long. seams **double butt** Diameter of rivet holes in long. seams **1 1/8** Pitch of rivets **7 3/4** Lap of plates or width of butt straps **16 5/8**

Per centages of strength of longitudinal joint rivets **87.0** Working pressure of shell by rules **194** Size of manhole in shell **12 x 16**

plate **85.5** Size of compensating ring **16 x 16 x 1 1/8** No. and Description of Furnaces in each boiler **2 plain** Material **S** Outside diameter **4 1/2**

Length of plain part top **70** Thickness of plates crown **3/4** Description of longitudinal joint **welded** No. of strengthening rings **none**

bottom **70** Working pressure of furnace by the rules **181** Combustion chamber plates: Material **S** Thickness: Sides **2/32** Back **2/32** Top **2/32** Bottom **13/16**

Pitch of stays to ditto: Sides **9 1/4 x 8 3/4** Back **9 x 8 3/4** Top **9 1/4 x 8 3/4** If stays are fitted with nuts or riveted heads **nuts** Working pressure by rules **184**

Material of stays **S** Diameter at smallest part **2.1** Area supported by each stay **81** Working pressure by rules **207** End plates in steam space:

Material **S** Thickness **1 1/8** Pitch of stays **17 1/2 x 18** How are stays secured **washers** Working pressure by rules **190** Material of stays **S**

Diameter at smallest part **6.6** Area supported by each stay **320** Working pressure by rules **215** Material of Front plates at bottom **S**

Thickness **1** Material of Lower back plate **S** Thickness **15/16** Greatest pitch of stays **16** Working pressure of plate by rules **180**

Diameter of tubes **3 1/4** Pitch of tubes **4 1/2** Material of tube plates **S** Thickness: Front **1** Back **3/4** Mean pitch of stays **9**

Pitch across wide water spaces **14 1/4** Working pressures by rules **190** Girders to Chamber tops: Material **S** Depth and thickness of girder at centre **2 (9 x 3/4)** Length as per rule **31.5** Distance apart **8 1/4** Number and pitch of stays in each **2-9 1/4**

Working pressure by rules **223** Superheater or Steam chest; how connected to boiler 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



**VERTICAL DONKEY BOILER—** Manufacturers of Steel

No.	Description			
Made at	By whom made	When made	Where fixed	
Working pressure	tested by hydraulic pressure to	Date of test	No. of Certificate	Fire grate area
Valves	No. of Safety Valves	Area of each	Pressure to which they are adjusted	Date of adjustment
If fitted with easing gear	If steam from main boilers can enter the donkey boiler		Dia. of donkey boiler	Length
Material of shell plates	Thickness	Range of tensile strength	Descrip. of riveting long. seams	
Dia. of rivet holes	Whether punched or drilled	Pitch of rivets	Lap of plating	Per centage of strength of joint
Working pressure of shell by rules	Thickness of shell crown plates	Radius of do.	No. of stays to do.	Dia. of stays
Diameter of furnace Top	Bottom	Length of furnace	Thickness of furnace plates	Description of joint
Working pressure of furnace by rules	Thickness of furnace crown plates		Stayed by	
Diameter of uptake	Thickness of uptake plates	Thickness of water tubes	Dates of survey	

**SPARE GEAR.** State the articles supplied:— 200 top & bottom end & main bearing bolts & nuts, a set of coupling bolts & nuts, feed, bilge, circulating & air pump valves, safety & escape valves, safety valve springs, assorted bolts & nuts & iron.

The foregoing is a correct description,

THE GREAT CENTRAL CO-OPERATIVE ENGINEERING & SHIP REPAIRING COMPANY, LTD

*John Robinson, Acting Secretary*

Manufacturer.

Dates of Survey while building	During progress of work in shops - - -	1912	Jan 16-17-23	Feb 1-8-14-19-26	Mar 5-9-13	Apr 13-16-19-24	May 2-8-11-23-28-31	June 4-17-21-25	July 5-12-17-19	Aug 7-8-19-24-28	
		During erection on board vessel - - -	Mar 16-19-20	Apr 13-16-19-24	May 2-8-11-23-28-31	June 4-17-21-25	July 5-12-17-19	Aug 7-8-19-24-28			
			Apr 4-11-17-19-25	Oct 2-9-17-23-29	Nov 5-8-12-14-16-26	Dec 2-9-14-16					
Total No. of visits		63									

Is the approved plan of main boiler forwarded herewith **yes.**

Dates of Examination of principal parts—Cylinders	HP 24/4 MP 11/5 LP 22/3	Slides	16/4	Covers	5/3	Pistons	5/3	Rods	LP 2/10 HP MP 8/11
Connecting rods	HP MP 2/6 LP 2/10	Crank shaft	28/8	Thrust shaft	15/2	Tunnel shafts	✓	Screw shaft	16/11
Stern tube	8/11	Steam pipes tested	2/1/13	Engine and boiler seatings	at Hull	Engines holding down bolts	2/1/13		
Completion of pumping arrangements	7/1/13	Boilers fixed	2/1/13	Engines tried under steam	6/1/13				
Main boiler safety valves adjusted	6/1/13	Thickness of adjusting washers	P 3/8 5 7/16						
Material of Crank shaft	pin & steel reb journals iron	Identification Mark on Do.	28-8-12 W.H.R.	Material of Thrust shaft	Iron	Identification Mark on Do.	N° 608 15-12-13 G.M.		
Material of Tunnel shafts	✓	Identification Marks on Do.	✓	Material of Screw shafts	Iron	Identification Marks on Do.	N° 23 16-11-12 W.H.R.		
Material of Steam Pipes	Solid drawn copper - 6 SWG ✓		Test pressure	360 lbs ✓					

**General Remarks** (State quality of workmanship, opinions as to class, &c. This machinery has been built under special survey, and the materials and workmanship are good. The boiler has been built in accordance with the approved plan, and on completion was tested by water to twice the working pressure & found tight & sound.

This machinery has been fitted on board the vessel in an efficient manner, and is eligible in my opinion for record of + LMC 1.13.

This vessel is sister to the St. Elysian - Emo report N° 7816.

It is submitted that this vessel is eligible for THE RECORD, + LMC 1.13.

*J.W.D.*  
18/1/13  
*C.M. Am ed*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

The amount of Entry Fee..	£ 1 : -	When applied for,	15/1/13
Special .. .. .	£ 11 : -	When received,	19-5-13
Donkey Boiler Fee .. .	£ :		
Travelling Expenses (if any) £	:		

Committee's Minute  
Assigned

TUE. JAN. 24 1913  
+ LMC 1.13



Certificate (if required) to be sent to the Surveyors and requested not to write on or below the space for Committee's Minute.