

## REPORT ON MACHINERY.

No. 69315  
THUR. MAR 21 1907

Port of London

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No. in Survey held at G<sup>o</sup> Yarmouth Date, first Survey Aug 50 Last Survey Dec 5 1906  
Reg. Book. on the Crabtree Engines No 317 (Number of Vistas 9)  
Master                      Built at                      By whom built                      When built                       
Engines made at G<sup>o</sup> Yarmouth By whom made Crabtree & Co Ltd when made 12-1906  
Boilers made at                      By whom made                      when made                       
Registered Horse Power                      Owners                      Port belonging to                       
Nom. Horse Power as per Section 28 69 Is Refrigerating Machinery fitted for cargo purposes                      Is Electric Light fitted                     

ENGINES, &c.—Description of Engines Compound surface condensing No. of Cylinders two No. of Cranks 2  
Dia. of Cylinders 16" & 32" Length of Stroke 24" Revs. per minute                      Dia. of Screw shaft                      as per rule 7 1/4" Material of steel  
Is the screw shaft fitted with a continuous liner the whole length of the stern tube no Is the after end of the liner made water tight  
in the propeller boss                      If the liner is in more than one length are the joints burned                      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                      If two  
liners are fitted, is the shaft lapped or protected between the liners                      Length of stern bush 3'-0"  
Dia. of Tunnel shaft as per rule 6 1/4" Dia. of Crank shaft journals as per rule 6 1/4" Dia. of Crank pin 7 1/2" Size of Crank webs 4 1/2" x 2 1/4" Dia. of thrust shaft under  
collars 7 1/8" Dia. of screw 8'-0" Pitch of Screw 12'-0" No. of Blades 4 State whether moveable no Total surface 27 1/2  
No. of Feed pumps one Diameter of ditto 2 1/2" Stroke 12" Can one be overhauled while the other is at work                       
No. of Bilge pumps one Diameter of ditto 2 1/2" Stroke 12" Can one be overhauled while the other is at work                       
No. of Donkey Engines one Sizes of Pumps 4 x 2 3/4 x 4 duplex No. and size of Suctions connected to both Bilge and Donkey pumps  
In Engine Room                      In Holds, &c.                     

No. of Bilge Injections                      sizes                      Connected to condenser, or to circulating pump                      Is a separate Donkey Suction fitted in Engine room & size                       
Are all the bilge suction pipes fitted with roses                      Are the roses in Engine room always accessible                      Are the sluices on Engine room bulkheads always accessible                       
Are all connections with the sea direct on the skin of the ship                      Are they Valves or Cocks                       
Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates                      Are the Discharge Pipes above or below the deep water line                       
Are they each fitted with a Discharge Valve always accessible on the plating of the vessel                      Are the Blow Off Cocks fitted with a spigot and brass covering plate                       
What pipes are carried through the bunkers                      How are they protected                     

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times                       
Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges                       
Dates of examination of completion of fitting of Sea Connections                      of Stern Tube                      Screw shaft and Propeller                       
Is the Screw Shaft Tunnel watertight                      Is it fitted with a watertight door                      worked from                     

BOILERS, &c.—(Letter for record                     ) Manufacturers of Steel                     

Total Heating Surface of Boilers 1450 Is Forced Draft fitted                      No. and Description of Boilers                       
Working Pressure 130 lb Tested by hydraulic pressure to                      Date of test                      No. of Certificate                       
Can each boiler be worked separately                      Area of fire grate in each boiler                      No. and Description of Safety Valves to  
each boiler                      Area of each valve                      Pressure to which they are adjusted                      Are they fitted with easing gear                       
Smallest distance between boilers or uptakes and bunkers or woodwork                      Mean dia. of boilers                      Length                      Material of shell plates                       
Thickness                      Range of tensile strength                      Are the shell plates welded or flanged                      Descrip. of riveting: cir. seams                       
long. seams                      Diameter of rivet holes in long. seams                      Pitch of rivets                      Lap of plates or width of butt straps                       
Per centages of strength of longitudinal joint                      Working pressure of shell by rules                      Size of manhole in shell                       
Size of compensating ring                      No. and Description of Furnaces in each boiler                      Material                      Outside diameter                       
Length of plain part                      Thickness of plates                      Description of longitudinal joint                      No. of strengthening rings                       
Working pressure of furnace by the rules                      Combustion chamber plates: Material                      Thickness: Sides                      Back                      Top                      Bottom                       
Pitch of stays to ditto: Sides                      Back                      Top                      If stays are fitted with nuts or riveted heads                      Working pressure by rules                       
Material of stays                      Diameter at smallest part                      Area supported by each stay                      Working pressure by rules                      End plates in steam space:                       
Material                      Thickness                      Pitch of stays                      How are stays secured                      Working pressure by rules                      Material of stays                       
Diameter at smallest part                      Area supported by each stay                      Working pressure by rules                      Material of Front plates at bottom                       
Thickness                      Material of Lower back plate                      Thickness                      Greatest pitch of stays                      Working pressure of plate by rules                       
Diameter of tubes                      Pitch of tubes                      Material of tube plates                      Thickness: Front                      Back                      Mean pitch of stays                       
Pitch across wide water spaces                      Working pressures by rules                      Girders to Chamber tops: Material                      Depth and  
thickness of girder at centre                      Length as per rule                      Distance apart                      Number and pitch of stays in each                       
Working pressure by rules                      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                     

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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:—

The foregoing is a correct description,

Manufacturer.

GRABTREE & CO. LIMITED:

*J. J. Power*  
SECRETARY

Dates of Survey while building	During progress of work in shops - -	1906 Aug 20 - 24	Apr 19 Oct 5 - 25 - 30	Nov 9 21 - Dec 5
	During erection on board vessel - -			
Total No. of visits		9		

Is the approved plan of main boiler forwarded herewith

" " " donkey " " "

Dates of Examination of principal parts—Cylinders	54.25/10.06	Slides	5.10.06	Covers	25.10.06	Pistons	14.12.06	Rods	25.10.06
Connecting rods	25.10.06	Crank shaft	25.10.06	Thrust shaft	25.10.06	Tunnel shafts	25.10.06	Screw shaft	25.10.06
Propeller									
Stern tube	25.10.06	Steam pipes tested		Engine and boiler seatings		Engines holding down bolts			
Completion of pumping arrangements		Boilers fixed		Engines tried under steam					
Main boiler safety valves adjusted		Thickness of adjusting washers							
Material of Crank shaft	Steel	Identification Mark on Do.	1769 A.T.C.	Material of Thrust shaft	Steel	Identification Mark on Do.	1769		
Material of Tunnel shafts	Steel	Identification Marks on Do.	1769	Material of Screw shafts	Steel	Identification Marks on Do.	1769		
Material of Steam Pipes		Test pressure							

General Remarks (State quality of workmanship, opinions as to class, &c. These engines have been built under special survey & the workmanship is good, the material for shafts has been tested. The engines have been sent to Rotterdam to be fitted on board Junker & Lamm vessel No 37 (La Plataner).

Certificate (if required) to be sent to

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

The amount of Entry Fee..	£ 1 0 0	When applied for.	22/12/06 (London)
Special 2/3 are Ret.	£ 10 7 0		
Donkey Boiler Fee	£	When received.	at Rotterdam
Travelling Expenses (if any)	£ 1 11 1		

A. J. Barrett. F. L. Sturgeon  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

FRI. 22 MAR 1907

Assigned



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