

REPORT ON MACHINERY

No. 25377

TUES. 11 JUN 1907

Port of Glasgow

Received at London Office

19

No. in Survey held at GlasgowDate, first Survey 14 JanLast Survey 31 May

1907

Reg. Book.

166 on the

Steam Tug "Avestruz"

(Number of Visits)

Master

Built at GreenockBy whom built Greenock & Langmuir

Tons

Gross

Net

Engines made at GlasgowBy whom made David Rowan & Cowhen made 1907Boilers made at doBy whom made dowhen made 1907

Registered Horse Power

Owners

Port belonging to Buenos AyresNom. Horse Power as per Section 28 64Is Refrigerating Machinery fitted for cargo purposes NoIs Electric Light fitted Yes2 Holmes

ENGINES, &c.—Description of Engines

Triple ExpansionNo. of Cylinders 3No. of Cranks 3Dia. of Cylinders 11 1/8 30Length of Stroke 22

Revs. per minute

Dia. of Screw shaft

as per rule 6 7/8Material of IronIs 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 yes 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 PaintedLength of stern bush 2 1/4Dia. of Tunnel shaft as per rule 5 1/2Dia. of Crank shaft journals as per rule 5 1/2Dia. of Crank pin 6Size of Crank webs 4

Dia. of thrust shaft under

collars 6 3/4Dia. of screw 8 1/8Pitch of Screw 8 1/2No. of Blades 3State whether moveable NoTotal surface 2 1/2No. of Feed pumps 1Diameter of ditto 2 1/2Stroke 11Can one be overhauled while the other is at work —No. of Bilge pumps 1Diameter of ditto 2 1/2Stroke 11Can one be overhauled while the other is at work —No. of Donkey Engines 3Sizes of Pumps 5 x 5 x 65 1/2 x 3 1/2 x 54 x 2 1/2 x 3

No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 32In Holds, &c. 12 1/2

each hold

No. of Bilge Injections 1sizes 3Connected to condenser, or to circulating pump —Is a separate Donkey Suction fitted in Engine room & size Yes 2Are all the bilge suction pipes fitted with roses YesAre the roses in Engine room always accessible YesAre the sluices on Engine room bulkheads always accessible —Are all connections with the sea direct on the skin of the ship YesAre they Valves or Cocks BothAre they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates YesAre the Discharge Pipes above or below the deep water line AboveAre they each fitted with a Discharge Valve always accessible on the plating of the vessel YesAre the Blow Off Cocks fitted with a spigot and brass covering plate YesWhat pipes are carried through the bunkers Four SuctionsHow are they protected Under RibsAre all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times YesAre the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges YesDates of examination of completion of fitting of Sea Connections 9of Stern Tube 8Screw shaft and Propeller In GreenockReport ReportIs the Screw Shaft Tunnel watertight None, but space under cabinIs it fitted with a watertight door —worked from —BOILERS, &c.—(Letter for record 5)Manufacturers of Steel The Clyde Bridge Steel WorksTotal Heating Surface of Boilers 1260Is Forced Draft fitted NoNo. and Description of Boilers One Single EndedWorking Pressure 180 lbTested by hydraulic pressure to 360 lbDate of test 19/4/07No. of Certificate 8926Can each boiler be worked separately —Area of fire grate in each boiler 49.8(49.5)

No. and Description of Safety Valves to

each boiler 2 SpringArea of each valve 5.9Pressure to which they are adjusted 185 lbAre they fitted with easing gear YesSmallest distance between boilers or uptakes and bunkers or woodwork 26 1/2Mean dia. of boilers 12.0Length 10.0Material of shell plates steelThickness 1 1/2Range of tensile strength 28.25-31.7Are the shell plates welded or flanged NoDescrip. of riveting: cir. seams D. R. Llong. seams D. B. S.Diameter of rivet holes in long. seams 1 1/8Pitch of rivets 7 3/16Gap of plates or width of butt straps 15 3/4

Per centages of strength of longitudinal joint

rivets 88.8Working pressure of shell by rules 195 lbSize of manhole in shell 16 x 12Size of compensating ring 2 7/8 x 2 3/8No. and Description of Furnaces in each boiler 3 plainMaterial steelOutside diameter 2 10 5/8Length of plain part 6 8Thickness of plates 1 1/2Description of longitudinal joint weldNo. of strengthening rings noneWorking pressure of furnace by the rules 205Combustion chamber plates: Material steelThickness: Sides 19/32Back 7/8Top 19/32Bottom 15/16Pitch of stays to ditto: Sides 7 x 7 7/8Back 7 1/2 x 7 7/8Top 7 x 7 7/8If stays are fitted with nuts or riveted heads nutsWorking pressure by rules 220 lbMaterial of stays steelDiameter at smallest part 1 1/4Area supported by each stay 57Working pressure by rules 230

End plates in steam space:

Material steelThickness 17/32Pitch of stays 19 1/2 x 15 1/2How are stays secured D. ruleWorking pressure by rules 215 lbMaterial of stays steelDiameter at smallest part 6 1/4Area supported by each stay 310Working pressure by rules 205Material of Front plates at bottom steelThickness 7/8Material of Lower back plate steelThickness 13/16Greatest pitch of stays 13 1/2Working pressure of plate by rules 187 lbDiameter of tubes 3 1/4Pitch of tubes 4 1/2 x 4 3/8Material of tube plates steelThickness: Front 7/8Back 13/16Mean pitch of stays 8 7/8Pitch across wide water spaces 13 1/4Working pressures by rules 190Girders to Chamber tops: Material steel

Depth and

thickness of girder at centre 8 x 3 1/4 x 2Length as per rule 28Distance apart 7 7/8Number and pitch of stays in each 3-7Working pressure by rules 192Superheater or Steam chest; h/w 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

———

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Lloyd's Register
Foundation
W1305-0290
W1305-0241

VERTICAL DONKEY BOILER—

Manufacturers of Steel

No. *Cochran* Description *See Rpt. 5*
 Made at *Amman* By whom made *Cochran & Co* When made *1907* Where fixed *St. Rethold*
 Working pressure *80* tested by hydraulic pressure to *160* Date of test *12/4/07* No. of Certificate *8888* Fire grate area *85 1/2* Description of Safety
 Valves *Spring* No. of Safety Valves *2* Area of each *3 1/4* Pressure to which they are adjusted *85 1/2* Date of adjustment *18/5/07*
 If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Dia. of donkey boiler *20* Length *20*
 Material of shell plates *Iron* Thickness *3/16* Range of tensile strength *30,000* Descrip. of riveting long. seams *Longitudinal*
 Dia. of rivet holes *1/4* Whether punched or drilled *Drilled* Pitch of rivets *2 1/2* Lap of plating *1 1/2* Per centage of strength of joint *85*
 Working pressure of shell by rules *80* Thickness of shell crown plates *3/16* Radius of do. *12* No. of stays to do. *12* Dia. of stays *1 1/2*
 Diameter of furnace Top *20* Bottom *20* Length of furnace *20* Thickness of furnace plates *3/16* Description of joint *Longitudinal*
 Working pressure of furnace by rules *80* Thickness of furnace crown plates *3/16* Stayed by *Stays*
 Diameter of uptake *20* Thickness of uptake plates *3/16* Thickness of water tubes *3/16* Dates of survey *14/6/07*

SPARE GEAR. State the articles supplied:— *Propeller, Tail shaft, Crank shaft, 2 top end bolts, 2 bottom end bolts, 2 main bearing bolts, set of coupling bolts, feed & bridge valves, etc.*

The foregoing is a correct description,

To David Howard Manufacturer.

Dates of Survey while building *During progress of work in shops - 1907 Jan 14 16 21 24 Feb 12 15 22 Mar 12 22 April 19 26 30 May 14 18 21*
 During erection on board vessel - *15*
 Total No. of visits *15*

Is the approved plan of main boiler forwarded herewith *Yes*

Dates of Examination of principal parts—Cylinders *22/3/07* Slides *22/3/07* Covers *22/3/07* Pistons *22/3/07* Rods *22/3/07*
 Connecting rods *22/3/07* Crank shaft *28/2/07* Thrust shaft *28/2/07* Tunnel shafts *28/2/07* Screw shaft *28/2/07* Propeller *28/2/07*
 Stern tube *28/2/07* Steam pipes tested *30/4/07* Engine and boiler seatings *18/5/07* Engines holding down bolts *18/5/07*
 Completion of pumping arrangements *24/5/07* Boilers fixed *18/5/07* Engines tried under steam *18/5/07*
 Main boiler safety valves adjusted *18/5/07* Thickness of adjusting washers *2 1/2* B. *3/8* 5/16 *2 3/4* 9/16
 Material of Crank shaft *Iron* Identification Mark on Do. *HS* Material of Thrust shaft *Iron* Identification Mark on Do. *HS*
 Material of Tunnel shafts *Iron* Identification Marks on Do. *HS* Material of Screw shafts *Iron* Identification Marks on Do. *HS*
 Material of Steam Pipes *Copper* Test pressure *360 lb.*

General Remarks (State quality of workmanship, opinions as to class, &c.)

The engines & boilers of this vessel have been constructed under Special Survey & are of good materials & workmanship. They have been securely fitted on board & satisfactorily tried under steam.

This vessel is in my opinion eligible to have notation
** L M C 5.07 in the Register Book.*

It is submitted that this vessel is eligible for this notation L.M.C. 5.07

The amount of Entry Fee... £ *1* : *12* : *0*
 Special ... £ *9* : *12* : *0*
 Donkey Boiler Fee ... £ *1* : *12* : *0*
 Travelling Expenses (if any) £ *1* : *12* : *0*

When applied for, *10 JUN 1907*

When received, *12 JUN 1907*

Committee's Minute

Assigned

C. Asgore 10 JUN 1907

L. M. C. 5.07

MACHINE CERTIFICATE

WRITTEN 11.6.07

H. Gardner-Smith
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.