

# REPORT ON MACHINERY.

No. 24630

Port of Glasgow

Received at London Office TUES. NOV 20 1906

No. in Survey held at Renfrew Date, first Survey 8 April Last Survey 15 Nov 1906

Reg. Book. on the Twin Screw Steam Pump & Bucket Hooper Dredger "Karnafuti I." (Number of Visits 1)

Master Renfrew Built at Renfrew By whom built Tom Simons & Co Lim When built 1906

Engines made at Renfrew By whom made Tom Simons & Co Lim when made 1906

Boilers made at Renfrew By whom made Tom Simons & Co Lim when made 1906

Registered Horse Power 108 Owners ✓ Port belonging to Chittagon

Nom. Horse Power as per Section 28 148 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted yes

## ENGINES, &c.—Description of Engines Twin Compound No. of Cylinders 4 No. of Cranks 4

Dia. of Cylinders 18" x 36" Length of Stroke 24" Revs. per minute 130 Dia. of Screw shaft 2" Material of screw shaft steel

Is the screw shaft fitted with a continuous liner the whole length of the stern tube no liners 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'-6"

Dia. of Tunnel shaft 7 1/2" Dia. of Crank shaft journals 7 1/2" Dia. of Crank pin 7 1/2" Size of Crank webs 5" x 13" Dia. of thrust shaft under collars 7 1/2" Dia. of screw 8-0 Pitch of Screw 10' 0" No. of Blades 4 State whether moveable no Total surface 359

No. of Feed pumps 2 Diameter of ditto 3 1/2" Stroke 12" Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 Diameter of ditto 3 1/2" Stroke 12" Can one be overhauled while the other is at work yes

No. of Donkey Engines 2 Sizes of Pumps 6x6x6 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room two 2 1/4" & two 2" bilge ejectors In Holds, &c. two 2 1/4" in pump engine room

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

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 no

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 iron casing

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 18/10/06 of Stern Tube 18/10/06 Screw shaft and Propeller 18/10/06

Is the Screw Shaft Tunnel watertight no Is it fitted with a watertight door no worked from no

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

Total Heating Surface of Boilers 2920 sq ft Is Forced Draft fitted no No. and Description of Boilers 2 cylindrical

Working Pressure 120 lbs Tested by hydraulic pressure to 240 lbs Date of test 5/9/06 No. of Certificate 8344

Can each boiler be worked separately yes Area of fire grate in each boiler 144 sq ft No. and Description of Safety Valves to each boiler 1 pair direct spring

Smallest distance between boilers or uptakes and bunkers or woodwork 12" Mean dia. of boilers 13'-0" Length 10'-0" Material of shell plates steel

Thickness 3/32" Range of tensile strength 37/32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams double lap

long. seams butt Diameter of rivet holes in long. seams 7/8" Pitch of rivets 6 3/8" Lap of plates or width of butt straps 13 7/8"

Per centages of strength of longitudinal joint 84 Working pressure of shell by rules 123 lbs Size of manhole in shell 16" x 12"

Size of compensating ring 24 1/2" x 28 1/2" No. and Description of Furnaces in each boiler 3 Morrison Material steel Outside diameter 42"

Length of plain part top 3/8" Thickness of plates bottom 3/8" Description of longitudinal joint welded No. of strengthening rings 5

Working pressure of furnace by the rules 120 lbs Combustion chamber plates: Material steel Thickness: Sides 9/16" Back 1/2" Top 9/16" Bottom 5/8"

Pitch of stays to ditto: Sides 8 1/2" x 9 1/2" Back 8" x 7 1/8" Top 9 1/2" x 8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 135/126 lbs

Material of stays steel Diameter at smallest part 9/16" Area supported by one stay 61 sq in Working pressure by rules 125 lbs End plates in steam space:

Material steel Thickness 3/32" Pitch of stays 14 1/2" x 16" How are stays secured 2 x 1/2" Working pressure by rules 124 Material of stays steel

Diameter at smallest part 3-26 Area supported by each stay 232 sq in Working pressure by rules 140 lbs Material of Front plates at bottom steel

Thickness 1/16" Material of Lower back plate steel Thickness 5/8" Greatest pitch of stays 12 1/2" Working pressure of plate by rules 126 lbs

Diameter of tubes 3 1/4" Pitch of tubes 4 3/8" x 4 3/8" Material of tube plates steel Thickness: Front 1/16" Back 1/16" Mean pitch of stays 10.9

Pitch across wide water spaces 14 1/4" with 1/2" double Working pressures by rules 140 lbs Borders to Chamber tops: Material steel Depth and thickness of girder at centre 7 x 1/16"

Length as per rule 32" Distance apart 8 Number and pitch of stays in each two 9 1/2"

Working pressure by rules 120 lbs Superheater or Steam chest; how connected to boiler no Can the superheater be shut off and the boiler worked separately no

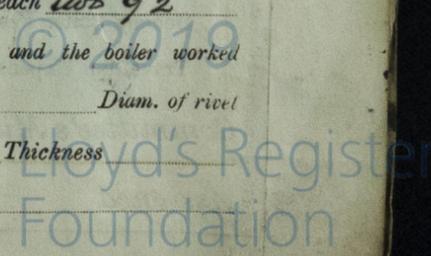
Diameter no Length no Thickness of shell plates no Material no Description of longitudinal joint no Diam. of rivet holes no

Pitch of rivets no Working pressure of shell by rules no Diameter of flue no Material of flue plates no Thickness no

If stiffened with rings no Distance between rings no Working pressure by rules no End plates: Thickness no How stayed no

Working pressure of end plates no Area of safety valves to superheater no Are they fitted with easing gear no

If not stated whether, and when, one will be sent



VERTICAL DONKEY BOILER— Manufacturers of Steel

No. 1 Description Vertical cross tube  
 Made at Annan By whom made Cochran & Co Annan When made 1906 Where fixed in Stothold  
 Working pressure 100 tested by hydraulic pressure to 200 Date of test 21/6/06 No. of Certificate 8170 Fire-grate area 11 1/4 Description of Safety  
 Valves Spring Loaded No. of Safety Valves 2 Area of each 3-1/4 Pressure to which they are adjusted \_\_\_\_\_ Date of adjustment \_\_\_\_\_  
 If fitted with easing gear yes If steam from main boilers can enter the donkey boiler no Dia. of donkey boiler see Report 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 \_\_\_\_\_ Rivets \_\_\_\_\_  
 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:— 2 top end bolts & nuts, 2 bottom end bolts & nuts, 1 set of coupling bolts & nuts, 2 main bearing bolts & nuts, 1 set of yard & bidge pump valves, iron bolts & nuts assorted, 1 crank shaft, 1 propeller shaft, 2 propellers

The foregoing is a correct description,

FOR WM. SIMONS & CO., LTD.

*J. M. C. Murray*  
 SECRETARY.

Dates of Survey while building  
 During progress of work in shops— 1906: Apr. 8, 9, 19, 25, May 2, 4, 18, Jun. 2, 4, 11, 18, 21, 25, 29, July 2, 10, Aug. 30, Sep. 5, 12  
 During erection on board vessel— 20, 22, Oct. 4, 10, 22, 23, 27, 31, Nov. 6, 12, 13, 15  
 Total No. of visits 31

Is the approved plan of main boiler forwarded herewith yes  
 " " " donkey " " " no

Dates of Examination of principal parts—Cylinders 9/4/06 Slides 25/4/06 Covers 25/4/06 Pistons 26/4/06 Rods 28/4/06  
 Connecting rods 25/4/06 Crank shaft 18/5/06 Thrust shaft 18/5/06 Tunnel shafts 18/5/06 Screw shaft 18/5/06 Propeller 27/6/06  
 Stern tube 12/9/06 Steam pipes tested 28/9/06 Engine and boiler seatings 12/9/06 Engines holding down bolts 28/9/06  
 Completion of pumping arrangements 27/10/06 Boilers fixed 20/9/06 Engines tried under steam 27/10/06  
 Main boiler safety valves adjusted 16/11/06 Thickness of adjusting washers Pat. Bolts 7/16 3/16 Pat. Bolts 9/16 9/32  
 Material of Crank shaft Steel Identification Mark on Do. 185/06 2 shafts Material of Thrust shaft Steel Identification Mark on Do. Q.M.C. 2/7/06  
 Material of Tunnel shafts Steel Identification Marks on Do. see report Material of Screw shafts Steel Identification Marks on Do. Q.M.C. 2/7/06  
 Material of Steam Pipes Solid drawn copper 6" bore 8 W.G. Test pressure 240 lbs.

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

In account of damage to stem frame when launching, the Port stern tube & propeller shaft were drawn in, after the repair to stem port was completed the stern tube was put in place and the nut screwed up, the shaft put out and found fair with coupling of intermediate shaft before the stem port was riveted.

These engines and boilers have been built under special survey the materials and workmanship are of good description they have been well fitted on board and tried under steam.

In my opinion the machinery of this vessel is eligible to have notification of **L.M.C. 11.06** in the Register Book.

It is submitted that this vessel is eligible for **THE RECORD L.M.C. 11.06 ELEC. LIGHT.**

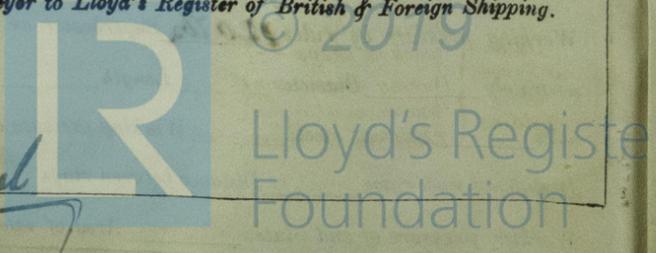
The amount of Entry Fee.. £ 2 : :  
 Special .. .. £ 22 : 4 :  
 Donkey Boiler Fee .. .. £ : :  
 Travelling Expenses (if any) £ : :  
 When applied for, 19 NOV 1906  
 When received, 22/11/06

*A. McLeod*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

Assigned + L.M.C. 11.06

MACHINERY CERTIFICATE  
 NOV 20 11 06



Certificate (if required) to be sent to

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

If not, state whether, and when, one will be sent? Is a Report also sent on the Hull of the Ship?

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