

## REPORT ON MACHINERY.

Port of *Greenock*

MON. 10 APR 1893

Received at London Office

18

No. in Survey held at *Greenock & Campbeltown* Date, first Survey *28th Decr. 1891* Last Survey *5th April 1893*

Reg. Book.

(Number of Visits *108*)*13* on the *S.S. "Varland"*Gross *1241.00*  
Tons Net *772.12*Master *B. von Kefau* Built at *Campbeltown* By whom built *Campbeltown S.B. Coy.* When built *1893*Engines made at *Greenock* By whom made *Kincaid & Coy. (Lim<sup>d</sup>)* when made *1892 & 3*Boilers made at *Glasgow* By whom made *H. Wallace & Coy.* when made *1892 & 3*Registered Horse Power *115* Owners *Angfartygs Aktiebolaget Swithod* Port belonging to *Göteborg*Nom. Horse Power as per Section 28 *112*

ENGINES, &c.— Description of Engines *Inverted Direct Acting Triple Expansion* No. of Cylinders *Three*

Diameter of Cylinders *17½, 27½ & 44½* Length of Stroke *33"* Revolutions per minute *84* Diameter of Screw shaft *as per rule 8.37*  
*as fitted 8½*

Diameter of Tunnel shaft *as per rule 7.96* Diameter of Crank shaft journals *8½* Diameter of Crank pins *8½* Size of Crank webs *12½ x 6*  
*as fitted 8½*

Diameter of screw *12.3* Pitch of screw *14.6* No. of blades *Four* State whether moveable *no* Total surface *50 sq. ft.*

No. of Feed pumps *Two* Diameter of ditto *2½* Stroke *18"* Can one be overhauled while the other is at work *yes*

No. of Bilge pumps *Two* Diameter of ditto *3½* Stroke *18"* Can one be overhauled while the other is at work *yes*

No. of Donkey Engines *Two* Sizes of Pumps *10" x 9" & Duplex 3" x 5"* No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room *& Stokehold. Three 2½* In Holds, &c. *Two 2½ in fore Main Hold, one 2½*  
*in after Hold & one 2" in bunk box in tunnel floor*

No. of bilge injections *one* sizes *4"* Connected to condenser, or to circulating pump *C pump* Is a separate donkey suction fitted in Engine room & size *yes 2½*

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 *yes*

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 *Awash*

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 *—*

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*

When were stern tube, propeller, screw shaft, and all connections examined in dry dock *on ship before launching* Is the screw shaft tunnel watertight *yes*

Is it fitted with a watertight door *yes* worked from *Engine Room*

BOILERS, &c.— (Letter for record) Total Heating Surface of Boilers *1665 sq. ft.*

No. and Description of Boilers *See Glasgow Report attached* Working Pressure Tested by hydraulic pressure to

Date of test 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 diameter of boilers

Length Material of shell plates Thickness Description of riveting: circum. 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 rivets 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 top Thickness of plates crown Description of longitudinal joint No. of strengthening rings

bottom Thickness of plates bottom

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



# DONKEY BOILER— Description

Made at \_\_\_\_\_ By whom made \_\_\_\_\_ When made \_\_\_\_\_ Where fixed \_\_\_\_\_

Working pressure \_\_\_\_\_ tested by hydraulic pressure to \_\_\_\_\_ No. of Certificate \_\_\_\_\_ Fire grate area \_\_\_\_\_ Description of safety valves \_\_\_\_\_

No. of safety valves \_\_\_\_\_ Area of each \_\_\_\_\_ Pressure to which they are adjusted \_\_\_\_\_ If fitted with easing gear \_\_\_\_\_ If steam from main boilers can enter the donkey boiler \_\_\_\_\_

Diameter of donkey boiler \_\_\_\_\_ Length \_\_\_\_\_ Material of shell plates \_\_\_\_\_ Thickness \_\_\_\_\_

Description of riveting long. seams \_\_\_\_\_ Diameter of rivet holes \_\_\_\_\_ Whether punched or drilled \_\_\_\_\_ Pitch of rivets \_\_\_\_\_

Lap of plating \_\_\_\_\_ Per centage of strength of joint \_\_\_\_\_ Rivets \_\_\_\_\_ 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 \_\_\_\_\_

Thickness of furnace crown plates \_\_\_\_\_ Stayed by \_\_\_\_\_ Working pressure of shell by rules \_\_\_\_\_

Working pressure of furnace by rules \_\_\_\_\_ Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_

SPARE GEAR. State the articles supplied:— 2 top & 2 bottom end bolts & nuts for connecting rods  
2 main bearing bolts. a set of coupling bolts. a set of bilge & feed pump valves  
a set of air pump valves. a set of oil pump valves. a spring for feed pump escape valves.  
spare propeller. a packing ring for HP & IP pistons. a quantity of bolts nuts & iron assorted.  
The foregoing is a correct description,

Pro KINCAID & CO LIMITED

Manufacturer.

John G. Kincaid

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

This vessel's Engines have been specially surveyed during construction, quality of workmanship good, shafts examined when being turned and found apparently sound. Main steam pipe tested by hydraulic pressure to 320 lbs per sq. in. test satisfactory. The Engines and Boilers are satisfactorily fitted on board, and have been tested under full steam. They are now in good order and safe working condition, and are in my opinion eligible to be noted in the Register Book. **LMC. 4. 93.**

This vessel's propeller shaft is fitted with Beddall's patent protective lubricating box, as approved.

It is submitted that  
this vessel is eligible for  
THE RECORD + LMC 4. 93

Ref 10/4/93 -

Certificate (if required) to be sent to \_\_\_\_\_

Greenock Office

The amount of Entry Fee.. £ 2 : - : -

Special .. .. £ 16 : 13 : -

Donkey Boiler Fee .. .. £ - : - : -

Travelling Expenses (if any) £ 2 : 4 : -

When applied for,

5th April 1893

When received,

8th April 1893

A. B. Meron  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Greenock District.

Committee's Minute

TUES. 11 APR 1893

Assigned

+ LMC 4. 93



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Foundation