

REPORT ON MACHINERY.

Port of Greenock

MON. 10 APL 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"

Tons { Gross 1241.00
Net 772.12

Master S. von Krafow Built at Campbeltown By whom built Campbeltown S.B. Coy.

When built 1893

Engines made at Greenock By whom made Kincaid & Coy. (Lim^d) 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 Swithiod 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 17 1/2, 27 1/2 & 44 1/2 Length of Stroke 33" Revolutions per minute 84 Diameter of Screw shaft as per rule 8.37

Diameter of Tunnel shaft as per rule 7.96 Diameter of Crank shaft journals 8 1/2 Diameter of Crank pins 8 1/2 Size of Crank webs 12 1/2 x 6

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

No. of Feed pumps Two Diameter of ditto 2 1/2 Stroke 18" Can one be overhauled while the other is at work yes

No. of Bilge pumps Two Diameter of ditto 3 1/2 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 2 1/2 In Holds, &c. Two 2 1/2 in fore main Hold, one 2 1/2 in aft Hold & one 2" in bunk box in tunnel floor

No. of bilge injections one sizes 4" Connected to condenser, or to circulating pump as 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 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 feet

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 _____ 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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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 and 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 exam^d when being turned and found apparently sound. Main steam pipe tested by hydraulic pressure to 320 lbs per sq. inch 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**
10/4/93

Greenock Office

Certificate (if required) to be written by _____
 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. Heron
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.
 Greenock District.

Committee's Minute **TUES. 11 APR 1893**
 Assigned **+ LMC 4. 93**



The Stowage is required and is written on or within the space for Committee's Minutes.