

# REPORT ON MACHINERY.

30 JUL 1904

Port of Liverpool

No. in Survey held at Garston.

Reg. Book. Supplement.

Date, first Survey 13 July

Received at London Office 31.20 AUG 1904

Last Survey 22 July 1904

(Number of Visits 3)

on the Steamer S.S. "Juverna"

Master

Built at Garston

By whom built Gardner & Co. Ltd. B.C.

Tons <sup>Gross</sup> 285.33

Engines made at Glasgow

By whom made W. & A. B. Baker

When built 1904

Boilers made at

By whom made

when made

Registered Horse Power

Owners Hugh Linn

when made

Nom. Horse Power as per Section 28

Is Refrigerating Machinery fitted

Port belonging to Liverpool

Is Electric Light fitted

## ENGINES, &c.—Description of Engines

**Dia. of Cylinders** \_\_\_\_\_ **Length of Stroke** \_\_\_\_\_ **Revs. per minute** \_\_\_\_\_ **No. of Cylinders** \_\_\_\_\_ **No. of Cranks** \_\_\_\_\_

Is the screw shaft fitted with a continuous liner the whole length of the stern tube Yes **Dia. of Screw shaft** as per rule \_\_\_\_\_ as fitted 7/4 **Material of screw shaft** Iron

in the propeller boss Yes If the liner is in more than one length are the joints burned Yes Is the after end of the liner made water tight \_\_\_\_\_

between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive Yes If the liner does not fit tightly at the part \_\_\_\_\_

liners are fitted, is the shaft lapped or protected between the liners \_\_\_\_\_ If two \_\_\_\_\_

**Dia. of Tunnel shaft** as per rule \_\_\_\_\_ as fitted \_\_\_\_\_ **Dia. of Crank shaft journals** as per rule \_\_\_\_\_ as fitted \_\_\_\_\_ **Dia. of Crank pin** \_\_\_\_\_ **Size of Crank webs** \_\_\_\_\_ **Dia. of thrust shaft under collars** 6 3/4 **Dia. of screw** 8-6" **Pitch of screw** 9-0" **No. of blades** 4 **State whether moveable** solid **Total surface** 25 sq ft

**No. of Feed pumps** \_\_\_\_\_ **Diameter of ditto** \_\_\_\_\_ **Stroke** \_\_\_\_\_ **Can one be overhauled while the other is at work** \_\_\_\_\_

**No. of Bilge pumps** \_\_\_\_\_ **Diameter of ditto** \_\_\_\_\_ **Stroke** \_\_\_\_\_ **Can one be overhauled while the other is at work** \_\_\_\_\_

**No. of Donkey Engines** \_\_\_\_\_ **Sizes of Pumps** \_\_\_\_\_ **No. and size of Suctions connected to both Bilge and Donkey pumps** \_\_\_\_\_

**In Engine Room** \_\_\_\_\_ **In Holds, &c.** \_\_\_\_\_

**No. of bilge injections** 1 **sizes** 3 3/4" **Connected to condenser, or to circulating pump** C.P. **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** 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** \_\_\_\_\_ **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** \_\_\_\_\_

**When were stern tube, propeller, screw shaft, and all connections examined in dry dock** \_\_\_\_\_

**Is it fitted with a watertight door** \_\_\_\_\_ **worked from** \_\_\_\_\_ **Is the screw shaft tunnel watertight** No tunnel

## BOILERS, &c.—

(Letter for record \_\_\_\_\_) **Total Heating Surface of Boilers** \_\_\_\_\_

**No. and Description of Boilers** \_\_\_\_\_ **Is forced draft fitted** \_\_\_\_\_

**Date of test** \_\_\_\_\_ **Can each boiler be worked separately** \_\_\_\_\_ **Working Pressure** \_\_\_\_\_ **Tested by hydraulic pressure to** \_\_\_\_\_

**each boiler** \_\_\_\_\_ **Area of fire grate in each boiler** \_\_\_\_\_ **No. and Description of safety valves to** \_\_\_\_\_

\_\_\_\_\_ **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 they 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** \_\_\_\_\_



**DONKEY BOILER** No. \_\_\_\_\_ 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 \_\_\_\_\_

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 \_\_\_\_\_ 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:—

The foregoing is a correct description,  
 \_\_\_\_\_  
 Manufacturer.

Dates of Survey while building { During progress of work in shops - - } July 13. 16. 22.  
 { During erection on board vessel - - }  
 Total No. of visits \_\_\_\_\_

Is the approved plan of main boiler forwarded herewith \_\_\_\_\_  
 " " " donkey " " "

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

This vessel has been built at Garston, and the engines and boiler are being built at Glasgow, to which port she has now been towed; the sea cocks and valves, discharge valves, stem tube, propeller, tail end and thrust shafts, have been fitted and examined at Garston.

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..	£	:	:	When applied for,
Special .. .. .	£	:	:	.....19.....
Donkey Boiler Fee .. .	£	:	:	When received,
Travelling Expenses (if any) £	✓	:	:	.....19.....

*H. H. Ashton*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute LIVERPOOL 19 AUG 1904

Assigned *Deferred for completion.*

