

REPORT ON MACHINERY

No. 88.

(Received at London Office)

MONDAY 30 JUNE 1884

No. in Survey held at Bergen Date, first Survey 3^d November 83 Last Survey 18th June 1884
 Reg. Book. on the (N^o 8) S.S. "Wethaven" (Number of Visits 26) Tons 678.20
 Master R. Servald Built at Bergen When built 1884.
 Engines made at Bergen By whom made Martens, Olsen & Co When made 1884.
 Boilers made at Bergen By whom made Martens, Olsen when made 1884.
 Registered Horse Power 75 Owners S. M. Kuhnle and others Port belonging to Bergen

ENGINES, &c.—

Description of Engines Inverted, direct acting, compound, Surface Condensing
 Diameter of Cylinders 23" x 41" Length of Stroke 28" No. of Rev. per minute 78 Point of Cut off, High Pressure 0.5 Low Pressure 0.6
 Diameter of Screw shaft 7 1/2" Diameter of Tunnel shaft 7 1/4" Diameter of Crank shaft journals 7 1/2" Diameter of Crank pin 7 5/8" size of Crank webs 4 1/2 x 9
 Diameter of screw 10' 9" Pitch of screw 12' 4" No. of blades 4 state whether moveable no total surface 42.5
 No. of Feed pumps two diameter of ditto 2 1/2" Stroke 17" Can one be overhauled while the other is at work yes
 No. of Bilge pumps two diameter of ditto 2 1/2" Stroke 17" Can one be overhauled while the other is at work yes
 Where do they pump from each compartment
 No. of Donkey Engines two Size of Pumps 3' x 6" & 4 1/2' x 2' Where do they pump from holds, ballast tanks on deck and into boilers
 Are all the bilge suction pipes fitted with roses yes Are the roses always accessible yes Are the sluices on Engine room bulkheads always accessible yes
 No. of bilge injections one and sizes 5 3/4" Are they connected to condenser, or to circulating pump circulating pump
 How are the pumps worked levers worked from low pressure crosshead
 Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks Valves and cocks
 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 below
 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 accessible at all times yes
 Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges yes
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock 12th June 1884.
 Is the screw shaft tunnel watertight yes and fitted with a sluice door yes worked from main deck

BOILERS, &c.—

Number of Boilers One Description cylindrical, tubular single ended.
 Working Pressure eighty Tested by hydraulic pressure to 160 lbs Date of test 19th March 1884.
 Description of superheating apparatus or steam chest flanged, contract neck, rivetted to top of boiler
 Can each boiler be worked separately — Can the superheater be shut off and the boiler worked separately —
 No. of square feet of fire grate surface in each boiler 45 Description of safety valves Spring Safety
 No. to each boiler two area of each valve 150" Are they fitted with easing gear yes
 No. of safety valves to superheater — area of each valve — are they fitted with easing gear —
 Smallest distance between boilers and bunkers or woodwork 14"
 Diameter of boilers 12' 10" Length of boilers 9' 0" description of riveting of shell long. seams double butt strap double rivetted circum. seams double rivetted
 Thickness of shell plates 13/16" diameter of rivet holes 1 1/6" whether punched or drilled punched pitch of rivets 5 1/4"
 Lap of plating — per centage of strength of longitudinal joint 80.95 working pressure of shell by rules 81.14
 Size of manholes in shell 11" x 16 size of compensating rings —
 No. of Furnaces in each boiler three outside diameter 3' 1" length, top 6' 3" bottom 8' 3"
 Thickness of plates top 3/16" description of joint single lap if rings are fitted at bottom greatest length between rings —
 Working pressure of furnace by the rules 83
 Combustion chamber plating, thickness, sides 1/2" back 3/16" top 1/2"
 Pitch of stays to ditto, sides 2" back 7 3/8" top —
 If stays are fitted with nuts or riveted heads rivetted heads working pressure of plating by rules 82
 Diameter of stays at smallest part 1 1/8" working pressure of ditto by rules 135.
 End plates in steam space, thickness 13/16" pitch of stays to ditto 16" how stays are secured rivetted washers double nuts
 Working pressure by rules 105 diameter of stays at smallest part 2 1/6" working pressure by rules 86
 Front plates at bottom, thickness 3/4" Back plates, thickness 3/4" greatest pitch of stays 7 3/8" working pressure by rules over 80

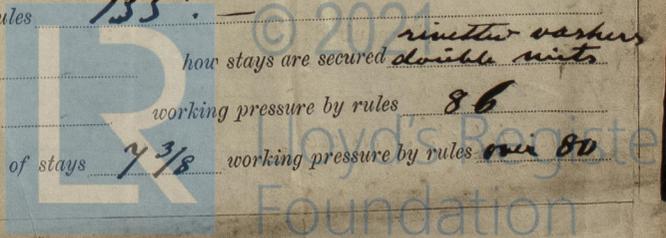
on the Hull of the Ship

30/6/84

ship provided requires keels

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[Form No. 8-21/6/82] 1000.



Diameter of tubes $3\frac{1}{4}$ " pitch of tubes $4\frac{1}{2}$ thickness of tube plates, front $\frac{11}{16}$ " back $\frac{3}{4}$
 How stayed *Stay tubes* pitch of stays 15×9 width of water spaces 14 to $4\frac{1}{2}$
 Diameter of ~~Superheater~~ or Steam chest $3'0"$ length $4'0"$
 Thickness of plates $\frac{1}{2}$ " description of longitudinal joint *double rivet* diameter of rivet holes $\frac{13}{16}$ pitch of rivets $2\frac{1}{16}$
 Working pressure of shell by rules 145 Diameter of flue — thickness of plates —
 If stiffened with rings — distance between rings — Working pressure by rules —
 End plates of ~~superheater~~ or steam chest; thickness $\frac{9}{16}$ How stayed *By end*
~~Superheater~~ or steam chest; how connected to boiler *neck flanged and rivetted to boiler*

DONKEY BOILER—

Description *Upright, circular, two cross tubes*
 Made at *Gateshead* By whom made *Clark Chapman & Co* made *1883*
 Where fixed *Stokehold* working pressure *eighty* Tested by hydraulic pressure to *160* No. of Certificate *1550*
 Fire grate area — Description of safety valves *spring* No. of safety valves *one* area of each $3\frac{1}{2}$ "
 If fitted with casing gear *yes* If steam from main boilers can enter the donkey boiler *by opening valves*
 Diameter of donkey boiler — length — description of riveting —
 thickness of shell plates — diameter of rivet holes — whether punched or drilled —
 pitch of rivets — lap of plating — per centage of strength of joint —
 thickness of crown plates — stayed by —
 Diameter of furnace, top — bottom — length of furnace —
 thickness of 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 plates — thickness of water tubes —

Mark on Donkey boiler
 No-1550
 Lloyds Test
 160 lbs
 J.F.VI - 31.12.84

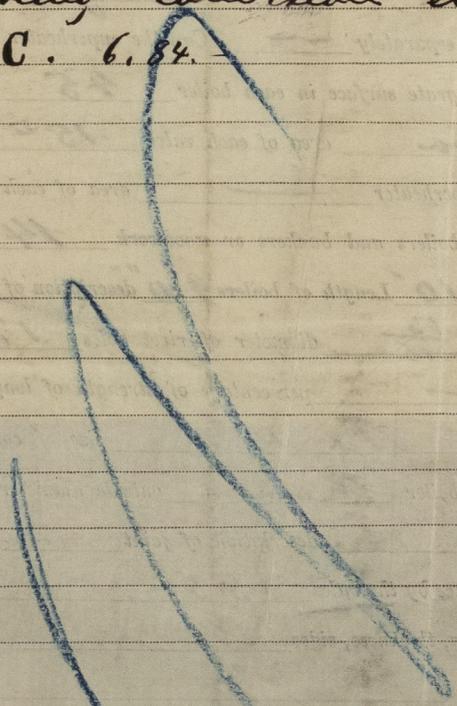
The foregoing is a correct description,
Arthur Cherry Manufacturer.

1. Donkey (State quality of workmanship, opinions as to class, &c.)

The workmanship and material of Machinery and boilers are good, and the Engines worked very well on the trial trip. — The safety valves was set by me at 80 to 60" and they worked well. —

It is my opinion that the Boilers and Machinery of the S.S. "Welhaven" this day the 18th of June 1884 is in a good safe working condition eligible to receive the report of +LMC. 6.84.

*No put in the
 the vessel is eligible to
 have the notification
 & LMC recorded
 J.M. 30/6/84*



Donkey boiler . . . £ 1 : 0 : 0
 The amount of Entry Fee . . . £ 1 : 0 : 0 received by me,
 Special . . . £ 11 : 5 : 0 } £ 13.7.6
 Certificate (if required) . . . £ 0 : 2 : 6 $\frac{18}{6}$ 1884
 To be sent as per margin.

Committee's Minute TUESDAY 1 JULY 1884 18

Haugland
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



Lloyd's Register Foundation