

REPORT ON MACHINERY.

Received at London Office

TUE. AUG. - 4. 1914

Date of writing Report 16th July 1914 When handled in at Local Office 18th July 1914 Port of Cleveland Ohio

No. in Survey held at Detroit Mich. at Antabula. O. Date, First Survey February 15, 1914 Last Survey 7th July 1914
Reg. Book. on the S.S. "WILLIAM-H-DONNER" (Number of Visits 23) Tons Gross 6311
Net 4843

Master J. Antterson Built at Detroit By whom built Great Lakes Engineering Works When built 1914

Engines made at Detroit By whom made Do when made 1914

Boilers made at Lorain By whom made American Shipbuilding Co. when made 1914

Registered Horse Power 388 Owners Mahoning Steamship Co. Port belonging to FAIRPORT, OHIO.

Nom. Horse Power as per Section 28 388 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Triple expansion No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 23 1/2 - 38 - 63 Length of Stroke 42 Revs. per minute 83 Dia. of Screw shaft 13 1/2 Material of screw shaft A.S.

Is the screw shaft fitted with a continuous liner the whole length of the stern tube no liner Is the after end of the liner made water tight

in the propeller boss yes If the liner is in more than one length are the joints burned yes 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 yes If two

liners are fitted, is the shaft lapped or protected between the liners yes Length of stern bush 4' 7"

Dia. of Tunnel shaft 11.55 Dia. of Crank shaft journals 12.4 Dia. of Crank pin 12 1/4 Size of Crank webs 9 Dia. of thrust shaft under

collars 12 1/4 Dia. of screw 14 - 6 Pitch of Screw 14 - 3 No. of Blades 4 State whether moveable yes Total surface 78.5

No. of Feed pumps independent Diameter of ditto 10 x 6 Stroke 12 Can one be overhauled while the other is at work yes

No. of Bilge pumps 1 Diameter of ditto 5 Stroke 12 Can one be overhauled while the other is at work yes

No. of Donkey Engines 6 Sizes of Pumps 10 x 6 x 10 duplex 1-2 1/2 x 3 1/2 x 3 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room BILGE PUMP 1-4 SUCTION 1-6 BALLAST 1-6 TO ENG ROOM. In Holds, &c. 2-8" pipes from aft hold to ballast pumps.

No. of Bilge Injections — sizes — Connected to condenser, or to circulating pump yes Is a separate Donkey Suction fitted in Engine room & size 4"

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 valves

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 no

What pipes are carried through the bunkers Sanitary line steam & exhaust to forward How are they protected Am. close to sharp deck outboard & not 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

Dates of examination of completion of fitting of Sea Connections 7th May 14 of Stern Tube 28th April 14 Screw shaft and Propeller 28th April 14

Is the Screw Shaft Tunnel watertight none Is it fitted with a watertight door worked from

BOILERS, &c.—(Letter for record S) Manufacturers of Steel Worth Brothers, Philadelphia.

Total Heating Surface of Boilers 5998 Is Forced Draft fitted yes No. and Description of Boilers 2 single ended multitubular

Working Pressure 180 lbs. Tested by hydraulic pressure to 240 lbs. Date of test 23rd March 14 No. of Certificates 34 & 35

Can each boiler be worked separately yes Area of fire grate in each boiler 63.25 No. and Description of Safety Valves to

each boiler two 4 1/2" spring loaded Area of each valve 14.18 Pressure to which they are adjusted 180 lbs. Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 4' - 0" Mean dia. of boilers 15' - 4 1/2" Length 11' - 6" Material of shell plates steel

Thickness 1 3/4" Range of tensile strength 28-32 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams single & double lap.

long. seams double butt Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 4 5/8" Lap of plates or width of butt straps 15 1/2"

Per centages of strength of longitudinal joint rivets 82.9 Working pressure of shell by rules 181.3 lbs. Size of manhole in shell 15" x 11"

Size of compensating ring 9" x 1 1/2" No. and Description of Furnaces in each boiler 3 Morrison Material steel Outside diameter 48"

Length of plain part Lowley Thickness of plates 19 Description of longitudinal joint welded No. of strengthening rings —

Working pressure of furnace by the rules 186 lbs. Combustion chamber plates: Material steel Thickness: Sides 5/8" Back 5/8" Top 5/8" Bottom 5/8"

Pitch of stays to ditto: Sides 4 7/8" x 7 7/8" Back 4 7/8" x 7 7/8" Top 4 7/8" x 7 7/8" If stays are fitted with nuts or riveted heads thus riveted heads Working pressure by rules 180.8 lbs.

Material of stays steel Area at smallest part 1.26 Area supported by each stay 55.3 Working pressure by rules 182.2 lbs. End plates in steam space:

Material steel Thickness 1" Pitch of stays 15 3/4" x 15 3/4" How are Stays secured double nuts Working pressure by rules 180.6 lbs. Material of stays steel

Area at smallest part 5.41 Area supported by each stay 248 Working pressure by rules 227 lbs. Material of Front plates at bottom steel

Thickness 1 3/8" Material of Lower back plate steel Thickness 3 1/2" Greatest pitch of stays 2 1/4" x 6 1/8" Working pressure of plate by rules 245 lbs.

Diameter of tubes 3" Pitch of tubes 4 1/4" x 4 1/8" Material of tube plates steel Thickness: Front 3/4" Back 1 1/16" Mean pitch of stays 8 1/2" x 8 1/4"

Pitch across wide water spaces 13 1/2" Working pressures by rules 222 lbs. Girders to Chamber tops: Material steel Depth and

thickness of girder at centre 8 1/2" x 1 1/2" Length as per rule 2' 6 1/4" Distance apart 7 7/8" Number and pitch of stays in each 3 - 7 1/2"

Working pressure by rules 213 lbs. Superheater or Steam chest; how connected to boiler none Can the superheater be shut off and the boiler worked

separately yes 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 —

Are they 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 —

VERTICAL DONKEY BOILER— Manufacturers of Steel

No.	Description				
Made at	By whom made	When made	Where fixed		
Working pressure	tested by hydraulic pressure to	Date of test	No. of Certificate	Fire grate area	Description of Safety
Valves	No. of Safety Valves	Area of each	Pressure to which they are adjusted	Date of adjustment	
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 Plates
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	Radius of do.	Stayed by		
Diameter of uptake	Thickness of uptake plates	Thickness of water tubes	Dates of survey		

SPARE GEAR. State the articles supplied:—

Two propeller blades and one set of studs and nuts.

The foregoing is a correct description,
Great Lakes Engineering Works,
Manufacturer.

Dates of Survey while building	During progress of work in shops ---	(Boilers Feb. 25 th March 6 th 14 th 23 rd) (Engine March 12 th 24 th April 15 th)	
	During erection on board vessel ---	(F+B April 28 th May 7, 12, 28, June 3, 9, 19, 22, 24, 26, 30, July 1, 2, 6, 7)	
	Total No. of visits	23	Is the approved plan of main boiler forwarded herewith <i>Yes</i> .

Dates of Examination of principal parts—	Cylinders 24 th March	Slides 24 th March	Covers 24 th March	Pistons 4 th March	Rods 4 th March
Connecting rods 4 th March	Crank shaft 4 th March	Thrust shaft 4 th March	Tunnel shafts	Screw shaft 4 th March	Propeller 28 th April
Stern tube 28 th April	Steam pipes tested 30 th June	Engine and boiler seatings 28 th April	Engines holding down bolts 28 th May		
Completion of pumping arrangements 26 th June	Boilers fixed 28 th May	Engines tried under steam 1 st July			
Main boiler safety valves adjusted 1 st July	Thickness of adjusting washers	<i>fitted with lock nuts.</i>			
Material of Crank shaft <i>Steel</i>	Identification Mark on Do. 28-4-14	Material of Thrust shaft <i>Steel</i>	Identification Mark on Do. 28-4-14		
Material of Tunnel shafts	Identification Marks on Do. ✓	Material of Screw shafts <i>Steel</i>	Identification Marks on Do. 28-4-14		
Material of Steam Pipes	<i>Steel</i>	Test pressure	540 lbs.		

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

The machinery and boilers of this vessel have been built under Special Survey, in accordance with the rules and approved plans. The safety valves have been adjusted under steam and the engines tried under working conditions with satisfactory results. The workmanship and materials are of good quality, and the machinery is in our opinion, eligible for classification with record + L.M.C. 7.14.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 7.14 F.D.

J.F.L.
G.P.S.

The amount of Entry Fee	£ 15.00	When applied for	
Special	£ 197.00	When received	
Donkey Boiler Fee	£ Includ. with Hull.		
Travelling Expenses (if any)	£ with Hull.		

Gran Edwards, Asst. Mgr.
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute FRI. AUG. -7. 1914
Assigned + L.M.C. 7.14 F.D.



Certificate (if required) to be sent to (The Surveyors are requested not to write on or below the space for Committee's Minute.)