

REPORT ON MACHINERY.

No. 718

Received at London Office

TUE. MAR. 11. 1913

Date of writing Report July 20th 1913 When handed in at Local Office

Port of Boston

No. in Survey held at Quincy Mass.
Reg. Book.Date, First Survey April 8th 1912 Last Survey February 18-19 1913

37 Supp. on the

S/S "FRIEDA"

(Number of Visits 30)

Gross 2993.61

Net 1633.

Master Arthur H. Dr. Jr. Built at Quincy

By whom built Joe River Shipbuilding Co. When built 1913.

Engines made at Quincy Mass. By whom made Joe River Shipbuilding Co. when made 1912

Boilers made at Bath Me By whom made Bath Iron Works when made 1912

Registered Horse Power - Owners Union Sulphur Co. Port belonging to New York

Nom. Horse Power as per Section 28 372

Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

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

Dia. of Cylinders 22 1/2 - 39 - 63 Length of Stroke 48 Revs. per minute 75 Dia. of Screw shaft as per rule 13 1/4 Material of Hub as fitted 13 1/4 screw shaft

Is the screw shaft fitted with a continuous liner the whole length of the stern tube Yes 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 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 If two

liners are fitted, is the shaft lapped or protected between the liners Length of stern bush 4' 6 3/4"

Dia. of Tunnel shaft as per rule 12 3/4 Dia. of Crank shaft journals as per rule 12 8/2 Dia. of Crank pin 13 Size of Crank webs 9 x 26 Dia. of thrust shaft under

collars 13 Dia. of screw 16 0 Pitch of Screw 17 0 No. of Blades 4 State whether moveable Yes Total surface 79.50

No. of Feed pumps 2 Diameter of ditto 9 x 6 Stroke 10 Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 4 1/2 Stroke 18 Can one be overhauled while the other is at work Yes

No. of Donkey Engines 2 Sizes of Pumps 10 x 12 x 10 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 5 1/2 In Holds, &c. Seven 3 1/2

No. of Bilge Injections 1 sizes 8 Connected to condenser or to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size Yes 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

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 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 Same 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

Dates of examination of completion of fitting of Sea Connections October 21st of Stern Tube October 22nd Screw shaft and Propeller October 22nd

Is the Screw Shaft Tunnel watertight Is it fitted with a watertight door worked from

BOILERS, &c.—(Letter for record) Manufacturers of Steel Report on boilers enclosed

Total Heating Surface of Boilers Is Forced Draft fitted Yes No. and Description of Boilers Two S.E. Multitubular

Working Pressure Tested by hydraulic pressure Date of test No. of Certificate 3.

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

each boiler Duplex spring 5 1/2 Area of each valve 9.62 Pressure to which they are adjusted 190 lbs Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 8' 6" Mean dia. of boilers Length Material of shell plates

Thickness Range of tensile strength Are the shell plates 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 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

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

W1334-0051

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: Tail shaft. Crank section. Propeller boss and ² blades. One set of top end brasses and bolts. One set of bottom end brasses and two sets of bolts. Two sets of main bearing bolts. One set of coupling bolts. One set of piston rings for each cylinder. Set of valve seats and valves for each pump. Thirty spare condenser tubes. Eighteen boiler tubes and assorted bolts and nuts.

Dates of Survey while building	{ During progress of work in shops -- } { During erection on board vessel -- } Total No. of visits	April 8, 12, 25, 30. May 2. June 12, 18. Aug 2. Sept. 10, 12, 13, 27, 28. Oct. 10, 14, 21, 22.
		Oct. 29, 31. Nov. 1, 4, 11, 26. Dec. 3, 9, 21, 23, 26, 30. Jan. 3, 9, 15, 23. Feb. 18.
		34.

Is the approved plan of main boiler forwarded herewith Yes

Is the approved plan of main boiler forwarded herewith Yes

Dates of Examination of principal parts—Cylinders Sept. 13 Slides Sept. 10 Covers Sept. 10 Pistons Sept. 13 Rods Sept. 27
Connecting rods Sept. 27 Crank shaft Sept. 28 Thrust shaft Aug. 2 Tunnel shafts — Screw shaft Oct. 10 Propeller Oct. 14
Stern tube Sept. 13 Steam pipes tested Nov. 11 Engine and boiler seatings Oct. 21 Engines holding down bolts Nov. 26 Dec. 20
Completion of pumping arrangements Dec. 21 Boilers fixed Nov. 4 Engines tried under steam Dec. 21
Main boiler safety valves adjusted Dec. 30 Thickness of adjusting washers P.B. 1 1/2 (1 9/32 S 1 1/32) S. Boiler (1 9/16 S 7/16)
Material of Crank shaft Steel Identification Mark on Do. 48 Material of Thrust shaft Steel Identification Mark on Do. 48
Material of Tunnel shafts — Identification Marks on Do. 3. 11. Material of Screw shaft Steel Identification Marks on Do. 12 11. 12.
Material of Steam Pipes Steel Test pressure 380 pounds per square inch

General Remarks (State quality of workmanship, opinions as to class, &c. *Am extra pump has been fitted to pump the copper dam and 103 feet ^{amended and} as requested by Mr. Simpson the Naval Architect for the Union Sulphur Company. The vessel is fitted to burn Liquid Fuel, and a record of the same should be made in the Register Book. The machinery and boilers have been built under special survey, the materials and workmanship throughout are good and in my opinion eligible for the record of + L. M. C. 2. 13. and Liquid Fuel.*

It is submitted that
this vessel is eligible for
THE RECORD + LMC 2.13

Fitted for Oil fuel 2.13 F.P. above 150°F

F.D

The amount of Entry Fee	8/10 ⁰⁰	When applied for	Feb 21 st 1913
Special	2/93 ⁰⁰	When received,	23. 3. 13
Donkey Boiler Fee	—		
Travelling Expenses (if any)	8/18 ⁰⁰		

Committee's Minute

FRI. APR. 11 1913

Assigned

June 2. 13

Filled for oil fuel 2-13

FP above 150°F

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

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Foundation