

# REPORT ON MACHINERY.

No. 17563

Received at London Office

Date of writing Report Oct. 15 1919 When handed in at Local Office 27/10 1919 Port of New York  
 No. in Survey held at Kearny, N.J. Date, First Survey 4 June Last Survey Oct. 16 1919  
 on the S.S. "ANACONDA" (Number of Visits \_\_\_\_\_) Tons { Gross 6517  
 Net 4045  
 Master N.W. Reed Built at Kearny, N.J. By whom built Federal S. B. Co. When built 1919-10  
 Engines made at Indianapolis Ind. By whom made Midwest Engine Co. when made 1919-10  
 Boilers made at Kearny, N.J. By whom made Federal S. B. Co. when made 1919-10  
 Registered Horse Power 645.6 Owners U.S. Shipping Board Port belonging to Kearny  
 Shaft Horse Power at Full Power 2800 Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes.

**TURBINE ENGINES, &c.**—Description of Engines Geared Turbines Turbine No. 32795 No. of Turbines Two  
 Diameter of Rotor Shaft Journals, H.P. 4" L.P. 4" Diameter of Pinion Shaft 5"  
 Diameter of Journals 5" Distance between Centres of Bearings H.S. PINION - 28 1/2" Diameter of Pitch Circle GEAR - 51.25"  
 Diameter of Wheel Shaft 16 1/4" to 14 1/4" Distance between Centres of Bearings 44" Diameter of Pitch Circle of Wheel L.S. PINION - 15.5"  
 Width of Face 26" Diameter of Thrust Shaft under Collars 4" 13/8" per approved plan Diameter of Tunnel Shaft as per rule 12.94"  
 as fitted 13"  
 No. of Screw Shafts One Diameter of same as per rule 12.3 14.23" Diameter of Propeller 17'0" Pitch of Propeller 13'1"  
 FITTED WITH CONTINUOUS ONE PIECE LINER as fitted 14.25"  
 No. of Blades 4 State whether Moveable No. Total Surface 77.17' Diameter of Rotor Drum, H.P. 13 1/16" L.P. 22" HP 22 1/2" 24 1/4"  
 Thickness at Bottom of Groove, H.P. Solid L.P. Solid Astern 11 1/16" - 13 1/16" Revs. per Minute at Full Power, Turbine 3600 Propeller 90  
 LP 7 7/8" - 1"

## PARTICULARS OF BLADING.

	H.P.			L.P.			ASTERN.		
	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF H.P. BLADES.	L.P.	NO. OF ROWS.
1ST EXPANSION	5 7/8"	14 1/4"	6.	2 1/4"	26 1/2"	2.	19 1/16" - 29 7/8"	27 3/8" - 28"	1. - 1.
2ND "	13/16"	14 5/8"	6.	2 3/4"	27 1/2"	2.	29 1/16" - 4 1/4"	28 5/8" - 29"	1. - 1.
3RD "	1 1/16"	15 1/8"	5.	3 1/2"	29"	2.	3 3/8" - 5 3/4"	29" - 31	1. - 1.
4TH "	1 3/8"	15 3/4"	5.	4 3/8"	30 3/4"	2.			
5TH "	1 1/8"	18 1/4"	3.	5"	32"	4.			
6TH "	17/16"	18 7/8"	3.						
7TH "	1 7/8"	19 3/4"	3.						
8TH "	2 3/8"	20 3/4"	3.						

No. and size of Feed pumps Two 10" x 7" x 24" Davidson type  
 No. and size of Bilge pumps Three - 6" x 5 3/4" x 6" - 14" x 8 1/2" x 12" - 12" x 10 1/4" x 12"  
 No. and size of Bilge suction in Engine Room Three 3 1/2" Tunnel well. One 3"  
 In Holds, &c. No. 1. One 3" No. 2. One 3" No. 3. Two 3" No. 4. Two 3"  
No. 5. Two 3" & Two 3" Emergency screw-down non return valves in fore holds  
 No. of Bilge Injections One size 10" Connected to condenser, or to circulating pump Yes Is a separate Donkey Suction fitted in Engine Room & size Yes 3 1/2"  
 Are all the bilge suction pipes fitted with roses Yes Are the roses in Engine room 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 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 Yes How are they protected Yes  
 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  
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Top platform

**BOILERS, &c.**—(Letter for record S.) Manufacturers of Steel Carnegie & Illinois Steel Co.  
 Total Heating Surface of Boilers 8934 Is Forced Draft fitted Yes No. and Description of Boilers 3, S.E. Scotch Marine  
 Working Pressure 210 lbs. Tested by hydraulic pressure to 315 lbs. Date of test 19-7-19 - 25-9-19 No. of Certificate 238-239-240  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 61.80' No. and Description of Safety Valves to each boiler Two 3 1/2" brane Area of each valve 9.62" Pressure to which they are adjusted 210 lbs. per sq. in. Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 14" Mean dia. of boilers 15'6" Length 11'6" Material of shell plates Steel  
 Thickness 1 1/16" Range of tensile strength 60/71680 lbs. per sq. in. Are the shell plates welded or flanged Yes Descrip. of riveting: cir. seams D.P. Lap  
 long. seams J. N. D. B. S. Diameter of rivet holes in long. seams 1 5/8" Pitch of rivets 9 3/8" Lap of plates or width of butt straps 2 3/8"  
 rivets 100.1 Working pressure of shell by rules 237 lbs. Size of manhole in shell 23 x 19"  
 plates 82.6  
 Size of compensating ring 38" x 34" x 1 1/4" No. and Description of Furnaces in each Boiler 3 Morrison Material Steel Outside diameter 49 9/16"  
 Length of plain part top 2 1/2" Thickness of plates bottom 2 1/32" Description of longitudinal joint Welded No. of strengthening rings 600  
 Working pressure of furnace by the rules 217 lbs. Combustion chamber plates: Material Steel Thickness: Sides 5/8" Back 5/8" Top 3/8" Bottom 1"  
 Pitch of stays to ditto: Sides 6 1/2" x 7" Back 6 1/2" x 7" Top 8" x 7" If stays are fitted with nuts or riveted heads Riv. heads Working pressure by rules 240 lbs.  
 Material of stays Steel Diameter at smallest part 1.26" Area supported by each stay 6 1/2" x 7" Working pressure by rules 221 lbs. End plates in steam space  
 Material Steel Thickness 1 3/16" Pitch of stays 17 1/2" x 16" How are stays secured Double nuts Working pressure by rules 225 lbs. Material of stays Steel  
 Diameter at smallest part 3" Area supported by each stay 17 1/2" x 16" Working pressure by rules 227 lbs. Material of Front plates at bottom Steel  
 Thickness 25/32" Material of Lower back plate Steel Thickness 1 1/16" 5/8" Greatest pitch of stays 13" x 7" Working pressure of plate by rules 235 lbs.  
 Diameter of tubes 2 3/4" Pitch of tubes 3 3/4" x 4" Material of tube plates Steel Thickness: Front 25/32" Back 25/32" Mean pitch of stays 12" x 7 1/2"  
 Pitch across wide water spaces 13" Working pressures by rules 230 lbs. Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 10" x 1 3/4" Length as per rule 2'10" Distance apart 8" Number and pitch of stays in each Four 7"  
 Working pressure by rules 262 lbs. Steam dome: description of joint to shell \_\_\_\_\_ % of strength of joint \_\_\_\_\_ Diameter \_\_\_\_\_  
 Thickness of shell plates \_\_\_\_\_ Material \_\_\_\_\_ Description of longitudinal joint \_\_\_\_\_ Diameter of rivet holes \_\_\_\_\_ Pitch of rivets \_\_\_\_\_  
 Working pressure of shell by rules \_\_\_\_\_ Crown plates: Thickness \_\_\_\_\_ How stayed \_\_\_\_\_

SUPERHEATER. Type *Milne* Date of Approval of Plan *26-12-17* Tested by Hydraulic Pressure to *630 lbs. per sq. in.*

Date of Test *FINAL - 22-9-19* Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler *Yes*

Diameter of Safety Valve *1"* Pressure to which each is adjusted *225 lbs. per sq. in.* Is Easing Gear fitted *Yes*

IS A DONKEY BOILER FITTED? *No.* If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—*Two studs & nuts H.L.P. Rotor Bearings. Two studs & nuts each size Pinion & Gear Bearing. Complete set of coupling bolts, set of Bearing bushes for each Rotor, Pinion & Gear shaft. Set of shoes for H.P.L.P. & main Thrust bearings. Set of Liners. Set of Labynth rings (packing) Three carbon packing rings One H.S. Pinion Five per cent of Turbine & Gear casing joints, studs, bolts & nuts. One set of Feed-Bidge & Lubr. oil pump valves. Two thermometers for oil circ. system. Bkt & rod Lubr. oil pump. Escape valve springs for each size used. 6.5 Propellor, Number of Blk. superheater, oil cooler & condenser tubes. Two Blk. feed check valves. Quantity of assorted bolts, studs, nuts, bars & plates of iron & steel.*

The foregoing is a correct description,

*Federal Shipbuilding Co.* Manufacturer.  
*Per pro. Duns. Gardner Ch. Eng. Drafts.*

Dates of Survey while building: During progress of work in shops -- *1919 Jun 4 July 16 17 22 28 Aug 5 9 11 13 14 20 27 Sep 4 5 6 8 17 22 24 25 26*  
During erection on board vessel --- *Feb 15 8 9 11 16*  
Total No. of visits *28*

Is the approved plan of main boiler forwarded herewith *Retained for Reference.*

Is the approved plan of donkey boiler forwarded herewith

Dates of Examination of principal parts—Casings  Rotors  Blading  Gearing

Rotor shaft  Thrust shaft  Tunnel shafts *3-9-19* Screw shaft *12-8-19* Propeller *12-8-19*

Stern tube *11-8-19* Steam pipes tested *10-10-19* Engine and boiler seatings *22-7-19* Engines holding down bolts *8-10-19*

Completion of pumping arrangements *15-10-19* Boilers fired *8-10-19* Engines tried under steam *15-10-19*

Main boiler safety valves adjusted *16-10-19* Thickness of adjusting washers *not used.*

Material and tensile strength of Rotor shaft  Identification Mark on Do.

Material and tensile strength of Pinion shaft  Identification Mark on Do.

Material of Wheel shaft *Steel* Identification Mark on Do. *WL 1739* Material of Thrust shaft *Steel* Identification Mark on Do. *WL*

Material of Tunnel shafts *Steel* Identification Marks on Do. *C.F.M. 436* Material of Screw shafts *Steel* Identification Marks on Do. *C.F.M. 436*

Material of Steam Pipes *Steel* Test pressure *630 lbs. per sq. in.*

Is an installation fitted for burning oil fuel *No.* Is the flash point of the oil to be used over 150°F.

Have the requirements of Section 49 of the Rules been complied with

Is this machinery a duplicate of a previous case *Yes* If so, state name of vessel *S/S. Belfort. N.Y. Rept.*

General Remarks (State quality of workmanship, opinions as to class, &c. *The Turbines & Gears have been built under survey of the American Bureau of Shipping. The Gear materials have been tested & examined by Lloyd's Surveyors. The Boilers have been built under special survey in accordance with approved plans (12-1-18). The workmanship & materials are good & efficient. On completion the Boilers satisfactorily withstood a hydrostatic test of 315 lbs. The whole of the machinery has now been efficiently placed on board & examined under working conditions & proved satisfactory. The case is submitted for the notation of L.M.C (1919-10) in the Register Book.*

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

The amount of Entry Fee *£ 15.00* : When applied for, *30 Oct 1919*  
Special *£ 261.40* :  
Donkey Boiler Fee *£ :* : When received, *31 Oct 1919*  
Travelling Expenses (if any) *£ :* :

*C. F. Macdonald.*  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *New York OCT 28 1919*

Assigned *L.M.C. 10.19*

RECEIVED  
OCT 27 1919

