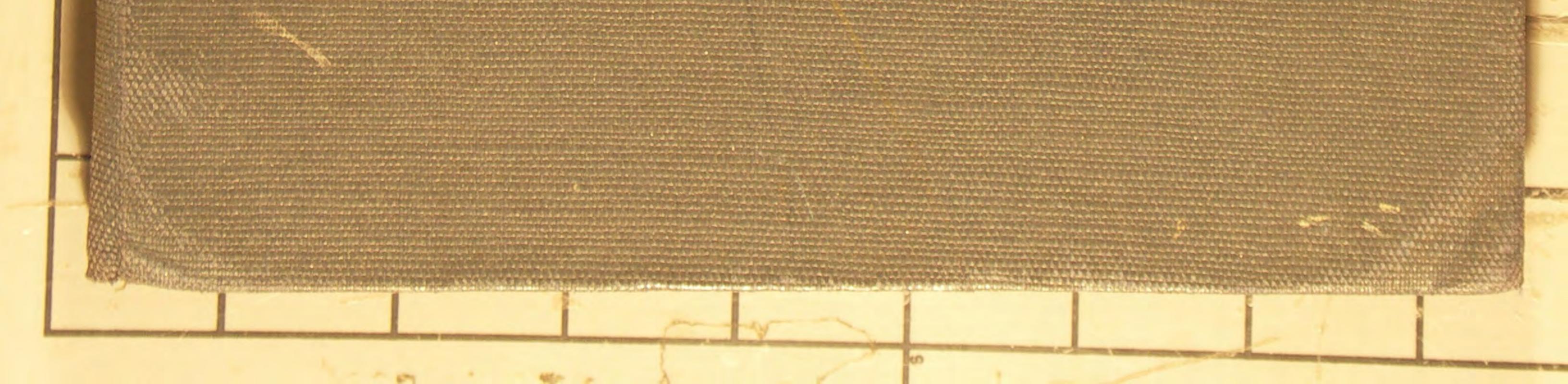
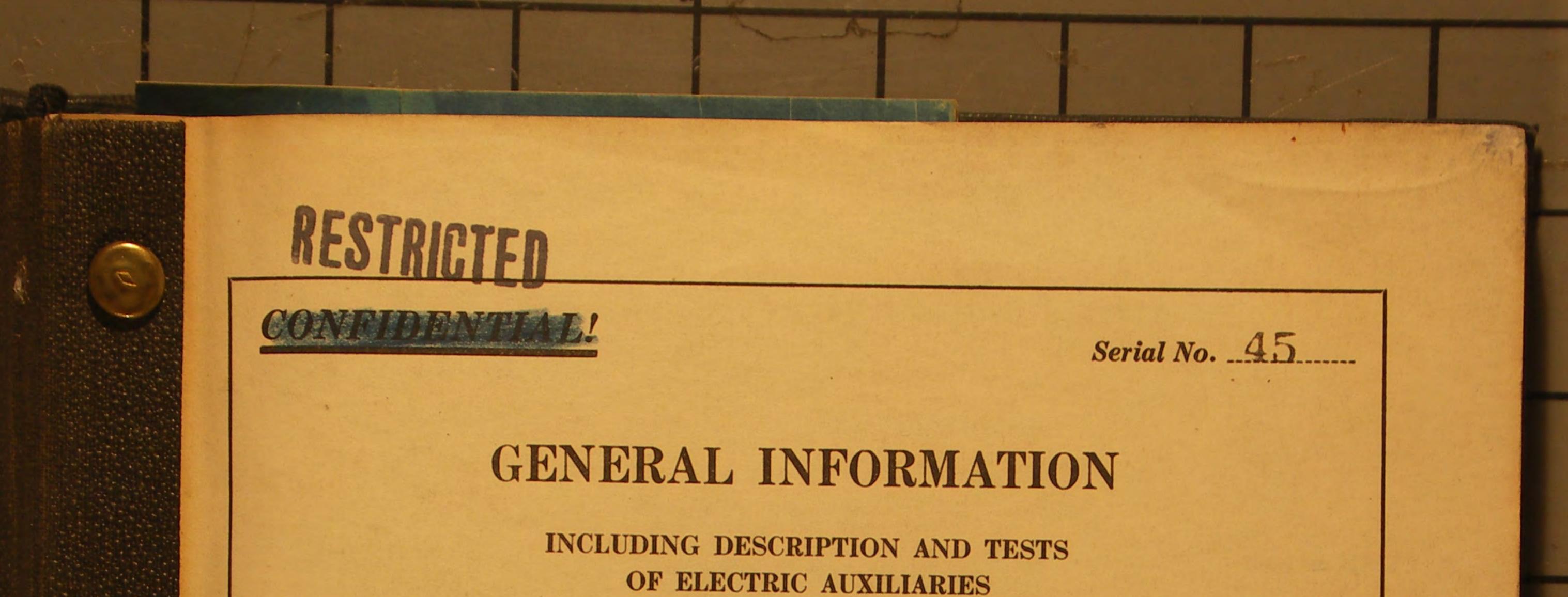


NAVY DEPARTMENT

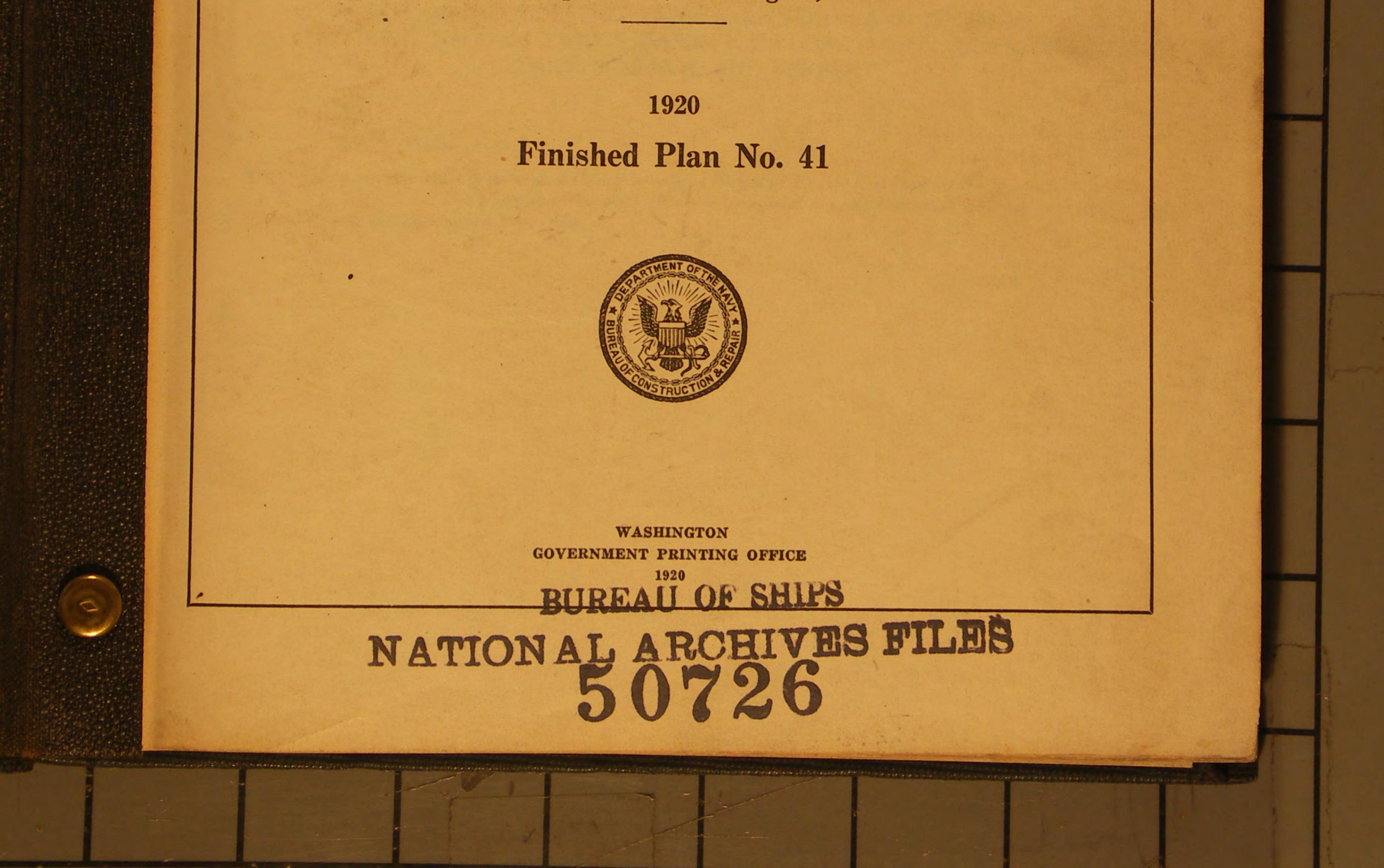




No. 125-U. S. S. TATTNALL No. 126-U. S. S. BADGER No. 127-U. S. S. TWIGGS No. 128-U. S. S. BABBITT No. 129-U. S. S. DE LONG

No. 130-U. S. S. JACOB JONES No. 157-U. S. S. DICKERSON No. 158-U. S. S. LEARY No. 159-U. S. S. SCHENCK No. 160-U. S. S. HERBERT

Information relative to items under cognizance of **Bureau of Construction and Repair** Navy Department, Washington, D. C.



INTRODUCTION.

HISTORICAL DATA.

Authorized by act of Congress, August 29, 1916, and March 4, 1917.

Vessel built by New York Shipbuilding Corporation, Camden, N. J. Contract signed July 11, 1917. Contract date of completion to be constructed as expeditiously as practicable.

U. S. S. Tattnall, torpedo boat destroyer No. 125.

Keel laid December 1, 1917.

Vessel launched September 5, 1918.

Christened by Miss Sara C. Kollock, descendant of Commodore Josiah Tattnall, United States Navy.

Date of delivery to Government, June 26, 1919. Date of official preliminary trial, June 19, 1919. Vessel commissioned June 26, 1919.

U. S. S. Badger, torpedo boat destroyer No. 126.

Keel laid January 9, 1918.

Vessel launched August 24, 1918.

Christened by Mrs. Henry F. Bryan, granddaughter of Commodore Oscar Badger, United States Navy.

Date of official preliminary trial, May 15, 1919. Vessel commissioned May 29, 1919.

U. S. S. Twiggs, torpedo boat destroyer No. 127.

Keel laid January 23, 1918.
Vessel launched September 28, 1918.
Christened by Miss Lillie S. Getchell, granddaughter of Maj. Levi Twiggs.
Date of delivery to Government, July 28, 1919.
Date of preliminary trial, July 22, 1919.
Vessel commissioned July 28, 1919.

U. S. S. Babbitt, torpedo boat destroyer No. 128.

Keel laid February 19, 1918.
Vessel launched September 30, 1918.
Christened by Miss Lucile Burlin.
Date of delivery to Government, October 24, 1919.
Date of official preliminary trial, September 23, 1919.
Vessel commissioned October 24, 1919.



U. S. S. Herbert, torpedo boat destroyer No. 160.

Keel laid April 9, 1918.
Vessel launched May 8, 1919.
Christened by Mrs. Benjamin Micou, daughter of former Secretary of the Navy, Hilary Herbert.
Date of delivery to Government, November 21, 1919.
Date of official preliminary trial, November 10, 1919.
Vessel commissioned November 21, 1919.

DIMENSIONS AND DISTANCES.

Length over all, 314 feet 4½ inches. Length between perpendiculars (9 feet ½ inch W. L.), 310 feet. Breadth, molded, 30 feet 11½ inches. Breadth, over guards, 31 feet 7¾ inches. Depth, molded at side (frame No. 89), 20 feet 7¾ inches. Depth, molded at center (frame No. 89), 21 feet 95% inches. Tons per inch (9 feet 4 inches W. L.), 15.50 tons. Displacement (designed 9 feet 4 inches W. L.), 1,215 tons. Wetted surface (9 feet 4 inches W. L.), 10,150 square feet. Coefficient block (designed 9 feet 4 inches W. L.), 0.478. Coefficient prismatic (designed 9 feet 4 inches W. L.), 0.628. Coefficient midship (designed 9 feet 4 inches W. L.), 0.762. Coefficient waterline (designed 9 feet 4 inches W. L.), 0.683. Area of rudder, 68 square feet.

Length of buoyancy (9 feet 4 inches W. L.) above bottom of keel, 5 feet 9 inches. Center of buoyancy (9 feet 4 inches W. L.) forward of middle perpendicular, 0.83 foot. Transverse metacenter above C. B. (9 feet 4 inches W. L.), 8.64 feet. Longitudinal metacenter above C. B. (9 feet 4 inches W. L.), 738 feet. Center of gravity of 9-foot 4-inch water line abaft middle perpendicular, 5.18 feet. Center of gravity of full-load water line abaft middle perpendicular, 5.80 feet. Frame spacing, 21 inches.

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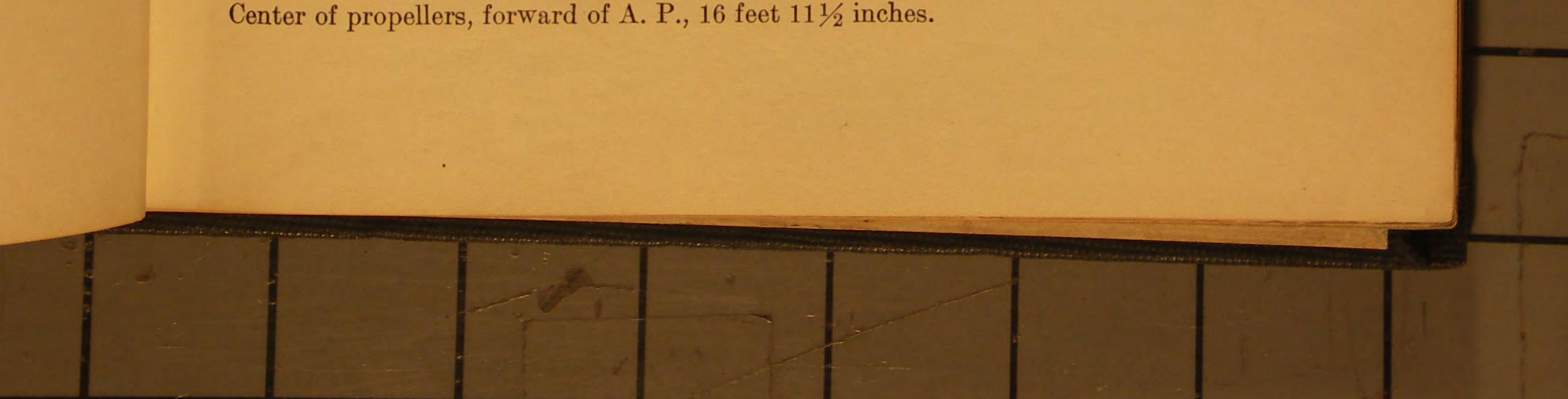
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LONGITUDINAL DISTANCES.

Projection of stern at main deck, abaft A. P., 1 foot 4½ inches.
Axis of rudder, forward of A. P., 6 feet 4½ inches.
Forward end of straight keel, from F. P., 12 feet.
After end of straight keel, from A. P., 30 feet.
Length of straight keel, 268 feet.
Forward end of bilge keel from F. P., 92 feet 6 inches.
After end of bilge keel from A. P., 78 feet 9 inches.
F. P. to center of foremast, at main deck, 90 feet 1⁷/₁₆ inches.
F. P. to center of stack No. 1, at main deck, 107 feet 4¹¹/₁₆ inches.
F. P. to center of stack No. 2, at main deck, 123 feet 4³/₈ inches.
F. P. to center of stack No. 3, at main deck, 161 feet 10¹¹/₂ inches.
F. P. to center of stack No. 4, at main deck, 161 feet 10¹¹/₂ inches.
Center of shaft struts forward of A. P., 21 feet 3 inches.



HEIGHTS ABOVE DESIGNER'S WATER LINE (9 FEET 4 INCHES W. L.).

Bridge deck at center (frame No. 42), 22 feet $4\frac{7}{8}$ inches. Bridge deck at outboard end (frame No. 42), 21 feet $8\frac{7}{8}$ inches. Forward smokestack on center line, 39 feet $5\frac{1}{2}$ inches.

Forward smokestack on conternary
Crows nest, 66 feet.
Signal yard, 86 feet 5¹¹/₁₆ inches.
Radio: Upper wireless aerial, 92 feet 8 inches.
Lower wireless aerial from about 46 feet on masts to smokestack.
Main deck, at side (frame No. 89), 11 feet 3³/₄ inches.
Main deck at center line (frame No. 89), 12 feet 5⁵/₈ inches.
Top of after deck house (frame 150), 16 feet 5¹¹/₁₆ inches.
Freeboard at stem, 17 feet 1¹/₁₆ inches.
Freeboard at stern, 8 feet 1³/₁₆ inches.

CONDITIONS OF LOADING.

Ship complete, ready for service in every respect, with full complement of officers and crew with their effects, and consumable load, is tabulated below, for normal, full, and emergency conditions.

In the design of the vessel the mean draft corresponding to the designer's water line viz, 9 feet 4 inches, contemplates the condition of loading given under the heading "NORMAL."

Emergency.

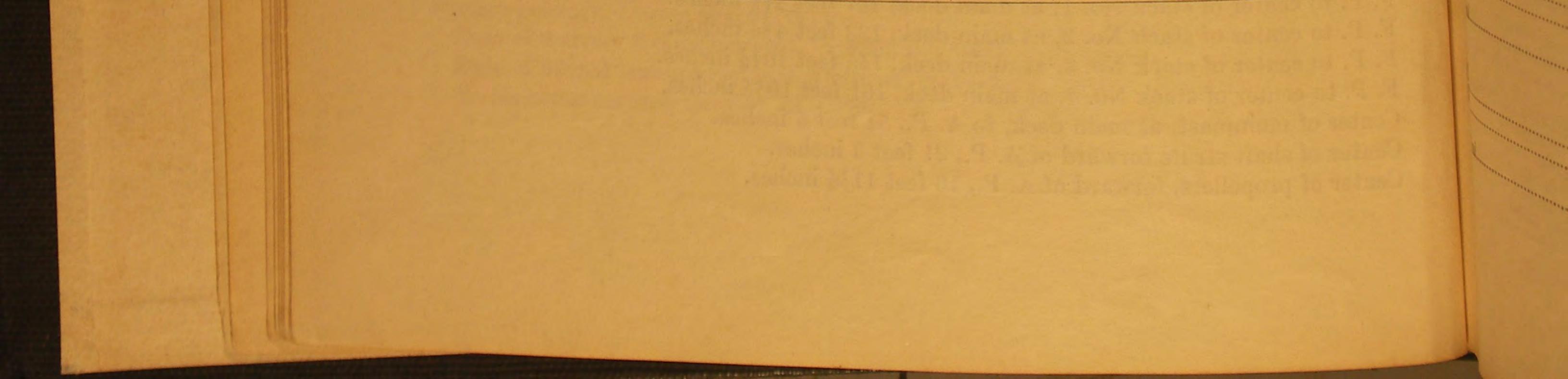
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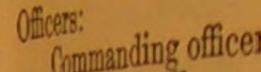
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	Quantity.	Weight.	Quantity.	Weight.	Quantity.	Weight.
	Doundo	(Thema)	Rounds.	Tons.	Rounds.	Tons.
I-inch .50-caliber ammunition	Rounds.	$T_{ons.}$ 15.35	400	15.35	528	19.7
	400		400	3.56	614	5.2
B-inch .23-caliber ammunition		3.56	12	10.7	12	10.7
Forpedo	12	10.7	the second se	2.3	12	2.3
Warheads	12	2.3	12	2.0		
Exercise and collapsible superheater detonators,			11 - 16 J. 49 D. K.	0		.8
etc		.8		.8		.2
-inch dummy cartridges		.2		.2		
5-mch dummy cartridges.		.1		.1		1
ou-camper dummy	the second s	.03		.03		1.
ou-camper pan	and the second se	1.6		1.6		-
30-caliber blank	State of the second sec	.1		.1		
45-caliber colt automatic pistol		.1		.1		12.
Supplies and Accounts stores	2	8.0	Full.	12.1	Full.	14.
Construction and Repair stores.	2	1.06	Full.	1.6	Full.	1.
ravigator stores.	2	.26		.4	Full.	
methical stores.	2	.2	Full.	.3	Full.	
Steam engineering stores	2	1.66		2.5	Full.	2.
Equipment stores.	2		Full.	1.35	Full.	1.
orunance stores.	2	.9		1.00	Full.	1.
marine stores	2	. 66		2.68	77 11	2.
L'ECHI WAUEL		1.78		20.46	1 1 1 1 1	32.
Reserve feed water		9.90			35	40
Fuel oil		14.0	Full.	24.23	Max.	274
	• 3	15.0	Full.	225.0	man.	1 1



HEIGHTS ABOVE DESIGNER'S WATER LINE (9 FEET 4 INCHES W. L.). Bridge deck at center (frame No. 42), 22 feet 41/8 inches.



Bridge deck at outboard end (frame No. 42), 21 feet 81/8 inches. Forward smokestack on center line, 39 feet $5\frac{1}{2}$ inches. Crows nest, 66 feet. Signal yard, 86 feet $5\frac{11}{16}$ inches. Radio: Upper wireless aerial, 92 feet 8 inches. Lower wireless aerial from about 46 feet on masts to smokestack. Main deck, at side (frame No. 89), 11 feet 3³/₄ inches. Main deck at center line (frame No. 89), 12 feet 5% inches. Top of after deck house (frame 150), 16 feet $5\frac{11}{16}$ inches. Freeboard at stem, 17 feet $1\frac{1}{16}$ inches. Freeboard at stern, 8 feet $1\frac{3}{16}$ inches.

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CONDITIONS OF LOADING.

Ship complete, ready for service in every respect, with full complement of officers and crew with their effects, and consumable load, is tabulated below, for normal, full, and emergency conditions.

In the design of the vessel the mean draft corresponding to the designer's water line, viz, 9 feet 4 inches, contemplates the condition of loading given under the heading "NORMAL." Wardroom officers.

Seaman branch:

Chief boatswain's n Boatswain's mate, 1 Coxswain.... Chief gunner's mat Gunner's mates, fir Gunner's mates, se Chief quartermaste Quartermaster, firs Quartermasters, sec Seamen Ordinary seamen ...

Total.....

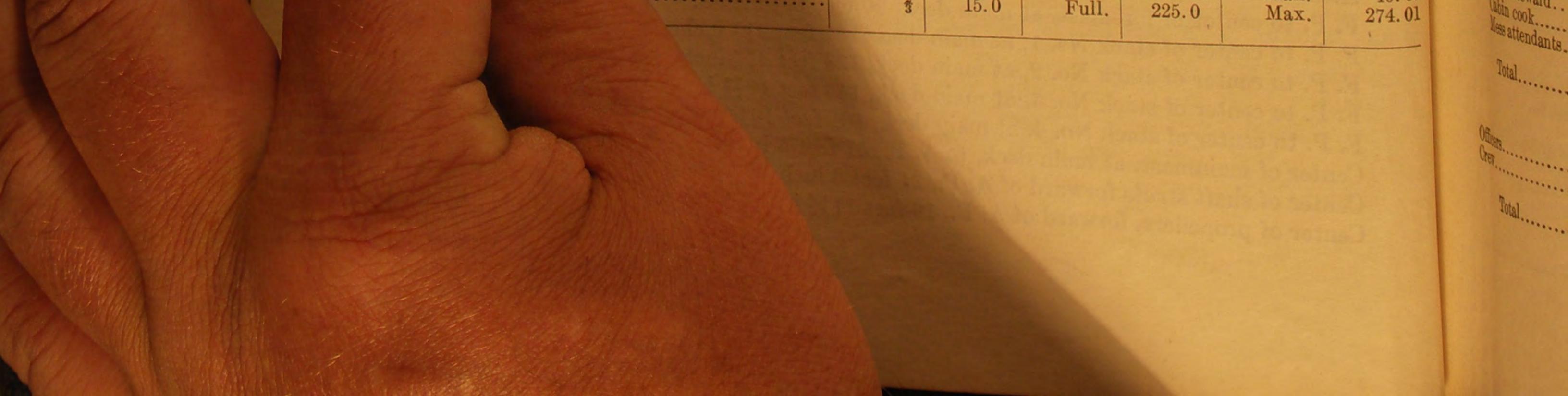
Artificer branch: Electrician, first cl Electricians, first o Electrician, second Carpenter's mate,

Total.....

Artificer branch (engin Machinist's mates

Machinist's mates,

	Normal.		Full.		Emergency.		Emergency.		Chief machinist's i Chief water tender	
	Quantity.	Weight.	Quantity.	Weight.	Quantity.	Weight.	Boilermakor			
4-inch .50-caliber ammunition 3-inch .23-caliber ammunition To 10- and collapsible superheater detonators,	Rounds. 400 400 12 12	Tons. 15.35 3.56 10.7 2.3 .8	Rounds. 400 400 12 12	Tons. 15.35 3.56 10.7 2.3 .8	Rounds. 528 614 12 12	Tons. 19.74 5.27 10.7 2.3	Blacksmith Coppersmith Oilers. Firemen, first class Firemen, second of Total			
my cartridges. my cartridges. lummy. all. le natic pistol. ts stores. air stores. es.	cipscepscepscepscepscepsceps	$ \begin{array}{r} .2\\ .1\\ .03\\ 1.6\\ .1\\ .1\\ 8.0\\ 1.06\\ .26\\ .26\\ .2\\ 1.66\\ .9\\ .66\\ 1.78 \end{array} $	Full. Full.	$\begin{array}{r} .2\\ .1\\ .03\\ 1.6\\ .1\\ 12.1\\ 1.6\\ .4\\ .3\\ 2.5\\ 1.35\\ 1.0\end{array}$	Full. Full. Full. Full. Full. Full. Full. Full. Full. Full. Full. Full.	$\begin{array}{c} .2\\ .1\\ .03\\ 1.6\\ .1\\ 12.1\\ 1.6\\ .4\\ .3\\ 2.5\\ 1.35\\ 1.0\end{array}$	Speial branch: Yeoman, first class Yeoman, second of Hospital steward. Total Ship's cook, first Ship's cook, first Ship's cook, first			
		9.90		$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		$\begin{array}{r} 2.\ 68\\ 32.\ 96\\ 40.\ 68\\ 274.\ 01\end{array}$	Mesmen branch: Cabin steward Cabin cook			



a with a set had as

5

DESIGNED COMPLEMENT.

NCHES W. L.).

(Section X-3.)

	Of	fficers: Commanding officer	7
		Wardroom officers	E
	Se	eaman branch:	
		Chief boatswain's mate. Boatswain's mate, second class.]
		Coxswain	
		Chief gunner's mates.	2
		Gunner's mates, first class	-
		Chief quartermaster, navigating	
		Quartermaster, first class	
		Quartermasters, second class	1
		Ordinary seamen	ī
		Total	4
	A	rtificer branch:	1112
ent of of	ficers a	Electrician, first class	
full, and e	monau	Electricians, first class, radio	
un, and b	mergen	Carpenter's mate, second class	
igner's w	ater li		
ding "N(DIELE	rtificer branch (engine-room force):	
		Machinist's mates	
T		Machinist's mates, first class	
Eme	rgency.	Chief water tender	
Quantity.	Weight	Water tenders.	
Quantity.	w eigm.	Boilermaker.	
Rounds.	Tons.	Blacksmith.	
528	19.	Oilers.	
614	5.	Firemen first class	
12 12	10.	Firemen, second class	-
		Total	3
	S	Special branch:	
		Yeoman, first class, commanding officer	
		Yeoman, second class, engineer department.	
	L	Hospital steward	
		Total	
Full.	12.		
Full. Full.	1. 0	Commissary branch: Ship's cook, first class	
Full.	ALL	Ship's cook, third class	
Full.	2.	Total	
Full.	1	10tal=	
Full. Full.	2. N	lessmen branch:	
Max.	32.1	Cabin steward	
Max.	40.	Cabin cook. Mess attendants.	
Max.	274	Total	
		RECAPITULATION.	
	0)fficers	
	C	rew	



(B) MISCELLANEOUS COMPARTMENTS.

Ventilation is obtained by natural draft through cowls and ventilators, as follows: Crew's wash room aft is ventilated by means of a 10-inch mushroom type ventilator fitted in the top of after deck house. This ventilator has two hinged covers, one top and one bottom. The bottom cover is watertight and is fitted with a 4-inch drain cock.

Natural ventilation is provided for the auxiliary radio room by means of a 3-inch screwdown mushroom vent, operated from the room. Crew's water-closet in after deck house, crew's space D-202, and steering gear compartment are ventilated by means of 10-inch cowl ventilators, two of which are fitted in the top of after deck house and one for the steering gear compartment, which is portable, fitted in the main deck. One supplies the crew's space D-202 on the first platform deck through a trunk leading therefrom. A portable cover is provided for closing the opening in the main deck when the ventilator to steering gear compartment is removed. This cover is stowed in close proximity to the ventilator. The paint and oil room forward on the second platform is provided with an exhaust duct of lap-welded watertight tubing, terminating in the storeroom A-302.

32

The M. V. tubes' listening booth in the hold, between frames 12 and 15, is provided with an exhaust pipe 3 inches in diameter covered with hair felt and canvas between the first and second platform decks, and terminating in crew's washroom A-303.

(C) MAGAZINES.

The magazines are provided with natural supply and exhaust ducts of 3-inch lap-welded tubing, terminating forward in the wardroom and pantry and on the main deck in the diagonal bulkheads abreast the pilot house and radio room, and aft in the torpedo repair room and passage in the after deck house. Galvanized steel wire, $\frac{1}{4}$ -inch mesh, is fitted at all terminals except on those which terminate in bulkheads where plating is perforated with $\frac{1}{2}$ -inch diameter holes.

(D) BOILER ROOMS.

Air for ventilation and forced draft enters each boiler room through three rectangular vent trunks abreast the galley deck house. Shutters are provided for these trunks with duplicate sets of hinges, so that the shutters may be swung inboard or forward at will. Dogs are provided to hold the shutters in the closed position. Wire mesh screens are provided in each trunk. Immediately below each trunk a turbine-driven fan is installed for forced-draft service.

(E) ENGINE ROOMS.

Each engine room is ventilated by means of 30-inch ventilators of the cowl type. There is one for the forward engine room located at frame 109 on the port side of engine hatch. The center of cowl is approximately 5 feet 6 inches above the main deck. The duct in the engine room is led forward for discharging air near the gauge board. The ventilators for the after engine room are located one at frame 118 near the center line of ship; the other at frame 129 starboard. The center of these cowls is approximately 5 feet 6 inches above the main deck.

A drip pan is provided under the duct in the forward engine room to catch any condensation from the duct. This pan is provided with a drain connection leading to the bilge. The bottom of each ventilator in the after engine room is provided with a drain connection to the bilge.



45

AMMUNITION HANDLING AND LOADING ARRANGEMENTS.

(Section U-2)

The forward davit on the port side, at frame No. 108, and the after davit on the starboard side, between frames Nos. 129 and 130, are used for handling torpedoes from the ship's side and transferring them to the trolley tracks which extend from the forward to the after tubes on the port and starboard sides. These tracks are 6 by 3.33 by 3.33 inches, 12.25-pound I-beam attached to the under side of the 8 by 4 by 4 inches 18-pound I-beam boat skids, and are so located at ends as to support the torpedo while loading into tubes.

Two trolleys are provided for use on these tracks and have been tested to a load of 5,600 pounds, which is twice the working load. The torpedoes are normally stowed in the triple tubes, provision being made in the forward and after magazines, compartments A-112m and D-105m for warheads. These warheads are handled in the magazines by purchase hooked into padeyes suitably located for that purpose.

A davit, tested to 1,000 pounds is provided for striking down ammunition and warheads to their stowage spaces.

LIST OF AMMUNITION STOWAGE.

Туре.	Compartment.	Total capac- ity.	Allow- ance.	Number in each box or tank.	Length.	Stowage sizes, width.	Depth or diameter.	Weight of each box or tank.
4-inch, 50 ammunition. Do. 3-inch antiaircraft. Do. 30 cal. ball, model 1906. Do. 30-cal. ball, model 1898. 30-cal. blank, model 1898. 30-cal. blank, model 1898. 30-cal. blank, model 1909. 30-cal. dummy, model 1906. 45-cal. ball, model 1911. Warheads. Do. Torpedo detonator. Impulse primers. Superheater fuses. 50-pound impulse powder.	A-110M A-110M A-112M D-105M Above main deck A-110M A-110M	$ \begin{array}{r} 1 \\ 1 \\ 3 \\ 6 \\ 6 \\ 9 \\ 6 \\ 7 \\ 7 \end{array} $	$214 \\ 186 \\ 120 \\ 148 \\ 120 \\ 148 \\ 120 \\ 148 \\ 14 \\ 14 \\ 14 \\ 11 \\ 13 \\ 6 \\ 6 \\ 6 \\ 6 \\ 7 \\ 1$	$ \begin{array}{c} 1\\ 1\\ 6\\ 6\\ 1,200\\ 1,200\\ 1,200\\ 1,000\\ 2,000\\ 1,000\\ 2,000\\ 1,000\\ 2,000\\ 1,000\\ 2,000\\ 1,000\\ 2,000\\ 50\end{array} $	Inches. 51.92 51.92 20 20 $16\frac{1}{2}$ $34\frac{1}{2}$ $34\frac{1}{2}$ $9\frac{3}{4}$ 12.45 $21\frac{5}{8}$ $16\frac{1}{4}$ $28\frac{15}{16}$ $28\frac{15}{16}$ $28\frac{15}{16}$ $4\frac{3}{8}$ 4.82 8.42 $16\frac{3}{4}$	Inches. Inches. 12 12 13 14 $9\frac{1}{2}$ 9 13 $\frac{1}{8}$ 17 $\frac{1}{8}$ 12 $\frac{1}{2}$ 12 $\frac{1}{4}$ $3\frac{3}{8}$ 3.036 3.036 10 $\frac{1}{4}$	Inches. 6.64 6.64 $9\frac{1}{2}$ $9\frac{1}{2}$ $9\frac{1}{2}$ 8 $8\frac{1}{4}$ $7\frac{1}{2}$ 8 $11\frac{3}{4}$ $7\frac{1}{8}$ 21 21 $3\frac{3}{8}$ 3.32 3.32 $10\frac{1}{4}$	Pounds. 83.75 83.75 2119 2100 299.75 244.5 284 266 2100 426 426 426 426 110 426 58

(Section U-1.)

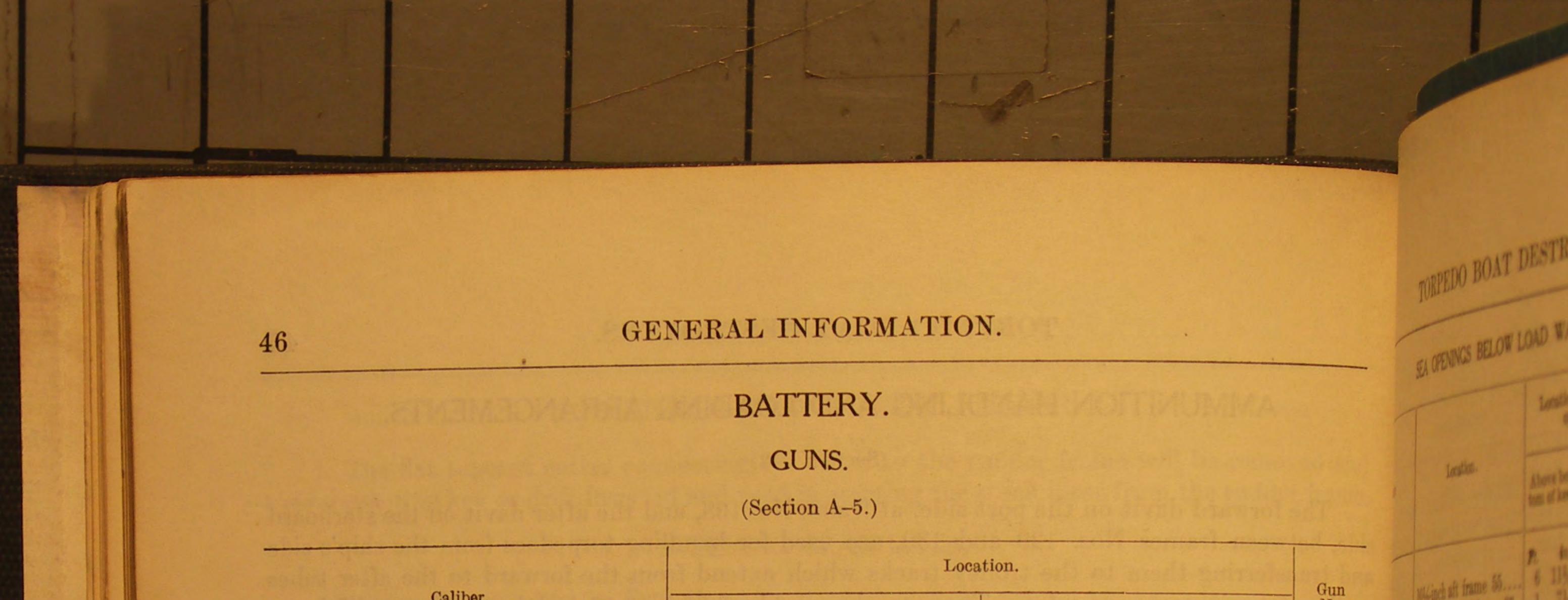
¹ Boxes.

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² Per box.

In addition to the above there is provision on the main deck and above for ready-service stowage of 102 tanks of 4-inch ammunition and 200 rounds 3-inch antiaircraft ammunition.



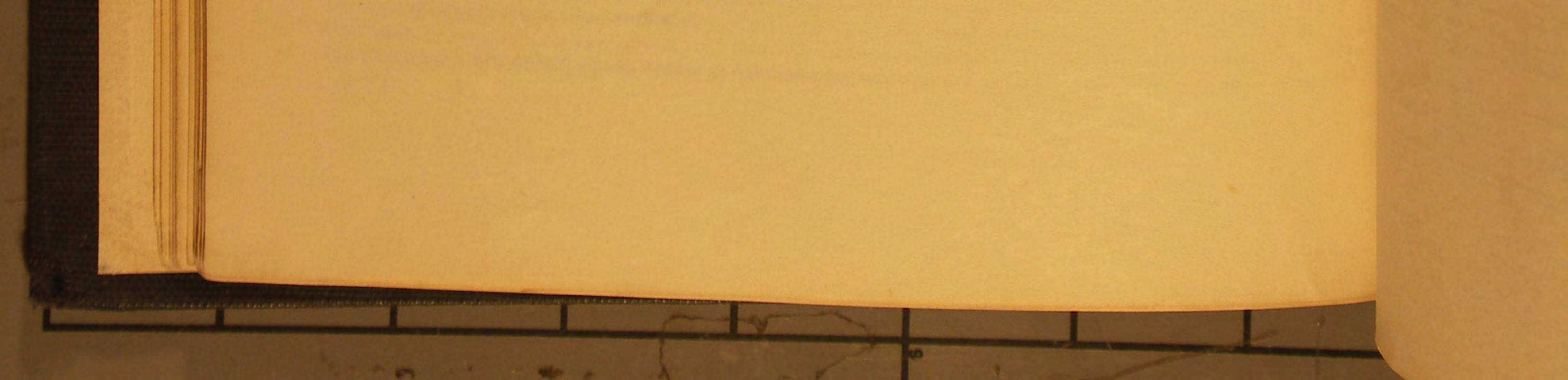


	Gun			
Caliber.	Deck.	Frame.	No.	14 inch forward frame 6
4-inch rapid-fire gun Do		28 center line 76 port 76 starboard	1 2 3	m
Do	Main deck	163 center line	4	time fisch aft frame 94
	AIRCRAFT.			Center line at frame 98.
3-inch antiaircraft gun	Main deck	36 center line		mai 10% neh aft frame 110.
Do	do	62–63 port		inite Millingh of frame 112
	TORPEDO TUBES.			Center line at frame 115
21 feet by 21 inches D triple torpedo tube	Main deck	99-100 port	The second	mar Winch forward fram
21 feet by 21 inches D triple torpedo tube Do Do Do	do	107–108 starboard 127–128 port		mie 114 inch aft frame 117.
Do	do	137–138 starboard		51/ inch sit frame 128

SMALL ARMS.

 30-inch caliber machine gun 25 rifles, .30 caliber 25 automatic pistols, .45 caliber 	magazino	11 10 por		
	BOATS. (Section U-5.)			
	Name.		No.	Carrying capac- ity (each).
24-foot motor sailing launch. 24-foot whaleboat. 21-foot motor dory. 10-foot punt.			1 1 1 1	19 men. 23 men. 10 men.

SOUNDING TUBES



MINE-LAYING WINCH.¹

(Section U-7.)

Builder, Orr & Sembower (Inc.). Type, double-engine winch. Number of cylinders, 2. Diameter of cylinders, 5 inches.

50

Stroke of pistons, 7 inches.
Working steam pressure, 75 pounds per square inch.
Gear ratio, 15 to 58.
Size of gypsy heads, diameter, 8½ to 9 inches.
Capacity of gypsy heads, 3,000 pounds at 180 feet per minute.

MINE-LAYING GEAR.¹

(Section U-2d.)

(See plans Nos. 30, 31, 32, and 33 in portfolio No. 2.)

The mine-laying gear consists essentially of two tracks, one on each side of the vessel, and a mine-laying winch. The tracks are bolted to angles or doublings on the deck and the tracks may be entirely removed from the vessel when not required for laying mines. The starboard track carries about 30 mines and the port track about 34 mines.

SMALL OF TANKE

When the destroyer is not actually engaged in mine laying the mines are securely held in place by wedges and lashings. During the operation of mine laying all wedges and lashing are removed, leaving the mines free to move in the tracks. The mines are moved aft by means of wire ropes, which lead to the two gypsy heads on the winch.

At the after end of each track is a mine-tilting table for launching the mines. Each tilting table is operated manually and launches one mine at a time over the side of the vessel. Immediately forward of the tilting tables are two locking devices, one on each track. These locking devices are also manually operated and will only allow a mine to slide onto the tilting table when the locking lever is thrown in the proper direction.

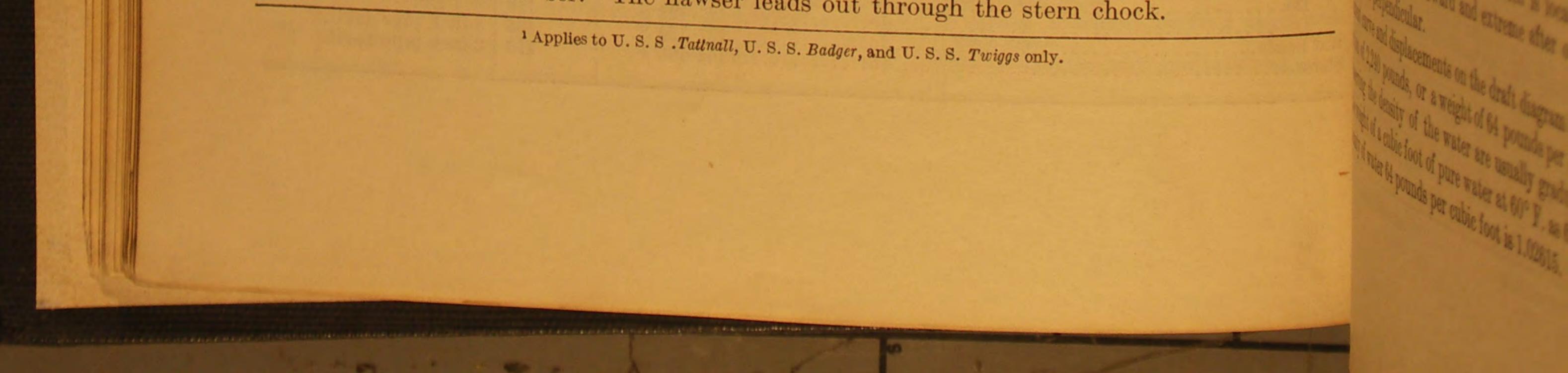
TOWING ARRANGEMENT.

(See plan No. 21 in portfolio No. 1.)

Arrangements are provided for towing and for being towed. For being towed, a 7 by 3.45 by 3.45 inch by 20.9 pound channel bar is worked around the base of the 4-inch gun foundation on the main deck at frame No. 28, center line. A towing bridle of 5 inch circumference steel-wire rope, made in two sections and fitted with thimble and shackle at ends, is provided. The sections of bridle are 44 feet and 68 feet in length.

This bridle is given one and one-half turns around the channel bar on the gun foundation, and both ends lead forward on the outboard side of the riding bitts to a shackle. The 8 inch circumference manila hawser connects to this shackle and leads out through the bow chock.

For towing, a similar channel is provided in way of the 4-inch gun foundation at frame No. 163 on the main deck, center line. One section of the towing bridle referred to above (the short length) is used for towing. It is given one and one-half turns around the channel on the gun foundation and is led aft and connected by means of a heart-shaped shackle to the 8 inch circumference manila hawser. The hawser leads out through the stern chock.



MACHINERY.

the second second

53

71

(A) Engines: Parsons marine steam turbine engines, with reduction gears installed in two engine compartments. Each compartment contains a high-pressure and a low-pressure turbine, with reduction gears to the propeller shaft, one scoop condenser, and an independent forced oil lubricating system. . (B) Propellers and shafts:

Diameter of propeller shafting, inches.... Diameter of line shafting, inches.... Diameter of axial hole in shafting, inches.... 111 111

Frame

Forward side of but 12. Do.

After side of bulkha

Forward side of bull 29.

42

143

158

167 28

42

14-15

62-63

67-68

85-86

118-119

143-144

Port. Starbo

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Forward ride	Diameter of anima and		2
29.	Number of propellers		3
Forward side of builds 29. Between 45-46 atter side pilot house. Forward side of builds 49.	Number of propellers. Number of blades, each propeller (cast solid).	9' 9	011
pilot house	Number of blades, each properter (cast sond). Diameter of propellers (designed)	10/	9/1
. Forward side of hell	Diameter of propellers (designed) Pitch of propellers, fixed (designed)	. 10	00
49.	Pitch of propellers, fixed (designed) Ratio of diameter to pitch (designed) = P =	. 1.1	.09
Forward side of bille 55.	Ratio of diameter to pitch (designed) = P = Area, projected (designed) D, square feet	. 36.28	175
55.	Area, helicoidal (designed), square feet	. 43.	75
After side of bulkheil	Area, helicoidal (designed), square feet Area, disk (designed), square feet	. 65.9	995
and and a second second	Area, disk (designed), square feet. Lower tip of blades below bottom of keel, inches.	- 1	211
Forward side dia	Lower tip of blades below bottom of keel, inches Tips of blades below W. L. at 9 feet, inches	. 1	191
Forward side of bill 131.	Tips of blades below W. L. at 9 reet, inches		
101.	Material of propellers, cast manganese bronze.		
After side of bulkhe	Starboard propeller is right hand.		
	Port propeller is left hand.		
Forward side of b			
152.	(C) Boilers:		
Forward side of h	Kind of boiler (oil burning), 4 Thornycroft Express, water tube, oil burning.		
after deck ho		••	4
tween frames 1			260
house, between			762
154-155.	Heating surface, each boiler, square feet Cubical contents of combustion chamber, each boiler, cubic feet		727
m Forward side of	Cubical contents of combustion chamber, each boller, cubic leet		111
164.	Cubical contents of combustion chamber, each boller, cubic leet Diameter of main steam pipes, inches		8
			14
which point is equal to			14
WITCH POLITO IS COMPLE			28
LINE.			
			20
Frame.	Number of smokepipes Area of section through one smokepipe, square feet		20.
	Area of section through one smokepipe, square recommended		

