

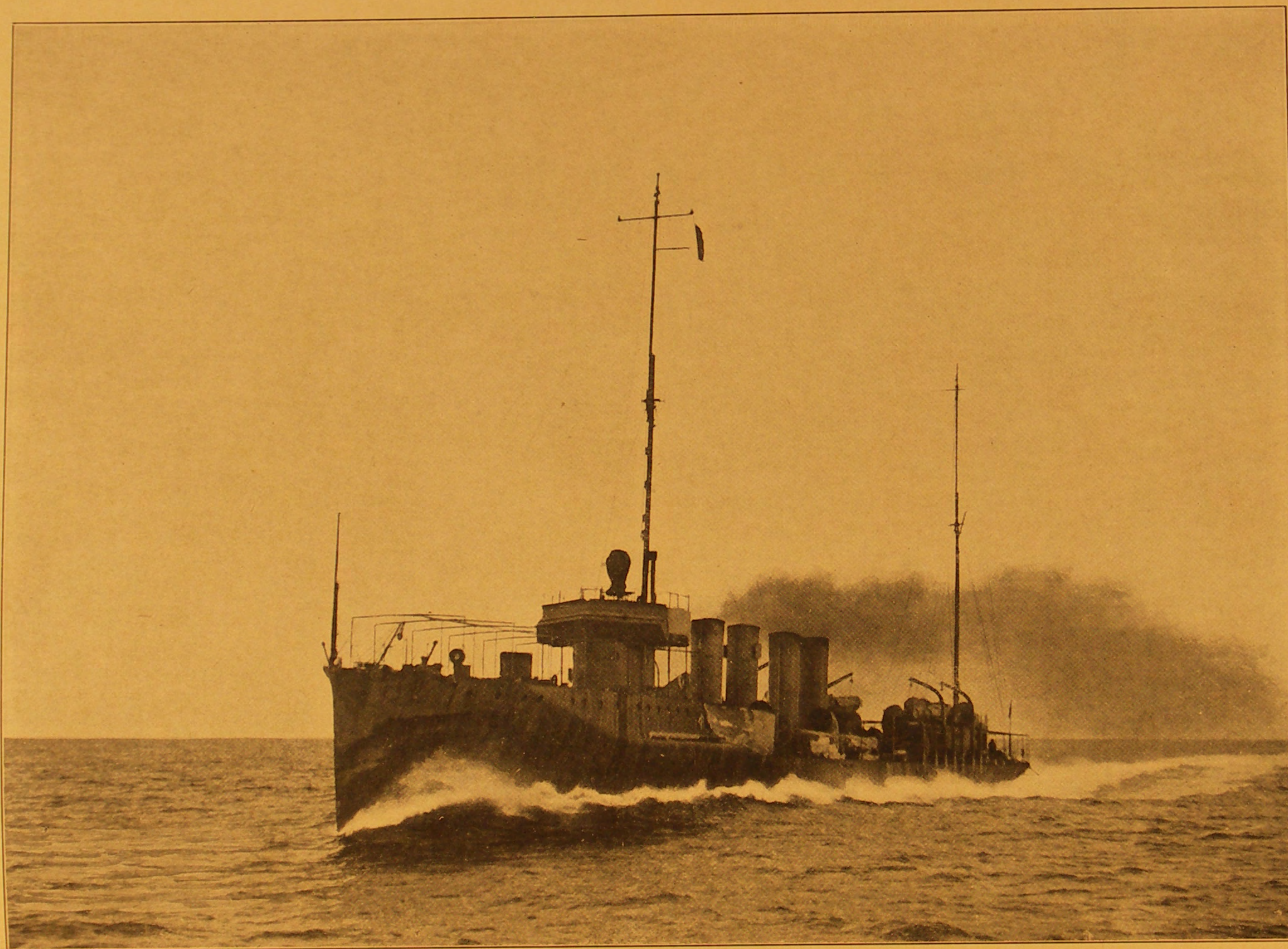
RESTRICTED

GENERAL INFORMATION

TORPEDO BOAT DESTROYER NO. 57

U. S. S. TUCKER

INFORMATION RELATIVE TO ITEMS UNDER THE
COGNIZANCE OF THE BUREAU OF
CONSTRUCTION AND REPAIR
NAVY DEPARTMENT



U. S. S. TUCKER

RESTRICTED

SERIAL No. **16**

GENERAL INFORMATION

INCLUDING

DESCRIPTIONS AND TESTS OF ELECTRIC AUXILIARIES

TORPEDO BOAT DESTROYER NO. 57

U. S. S. TUCKER

INFORMATION RELATIVE TO ITEMS
UNDER COGNIZANCE OF THE

Bureau of Construction and Repair

NAVY DEPARTMENT

Office of the Superintending Constructor
For U. S. Navy
Fore River Shipbuilding Corporation
Quincy, Massachusetts

T. G. Roberts, Naval Constructor, U. S. N.
Superintending Constructor

1916

FINISHED PLAN NO. 41

BUREAU OF SHIPS
NATIONAL ARCHIVES FILES

50641

GENERAL INFORMATION

COMPLEMENT

<i>Officers</i>		<i>Artificer Branch</i> <i>(Engine Room Force)</i>	
Commanding Officer	1	Machinist's Mates, first class . .	3
Wardroom Officers	5	Machinist's Mates, second class	3
<i>Chief Petty Officers</i>		Water Tenders	5
Chief Boatswain's Mate	1	Boiler Maker	1
Chief Gunner's Mate	1	Blacksmith	1
Chief Quartermaster (Navigating)	1	Coppersmith	1
Chief Machinist's Mates	3	Oilers	4
Chief Water Tender	1	Firemen, first class	10
Hospital Steward	1	Firemen, second class	7
<i>Seaman Branch</i>		<i>Special Branch</i>	
Boatswain's Mate, second class	1	Yeoman, first class (Command-	
Coxswain	1	ing Officer)	1
Gunner's Mates, first class	2	Yeoman, second class (Engineer	
Gunner's Mates, second class . .	2	Department)	1
Gunner's Mates, third class . . .	2	<i>Commissary Branch</i>	
Quartermaster, first class	1	Ship's Cook, first class	1
Quartermasters, second class . .	2	Ship's Cook, third class	1
Seamen	16	<i>Messmen Branch</i>	
Ordinary Seamen	13	Cabin Steward	1
<i>Artificer Branch</i>		Cabin Cook	1
Electrician, first class	1	Mess Attendants	2
Electricians, first class (wireless)	2		
Carpenter's Mate, second class .	1		

RECAPITULATION

Commanding Officer	1
Wardroom Officers	5
Chief Petty Officers	8
Seaman Branch	40
Artificer Branch	4
Artificer Branch (Engine Room Force)	35
Special Branch	2
Commissary Branch	2
Messmen Branch	4
Total	101

NUMBER OF MESSES

Crew's	5
Chief Petty Officers'	1

STATEROOMS AND BERTHS

Commanding Officer's stateroom and berth.....	1
Wardroom staterooms and berths.....	5
Chief Petty Officers' berths.....	8
Yeoman's Office, berth.....	1
Crew's berths, forward.....	57
Crew's berths, aft.....	29
Total.....	101

GENERAL DIMENSIONS

Length over all.....	315'-3"
Length between perpendiculars.....	310'-0"
Projection forward of F. P.....	2'-0"
Projection aft of A. P.....	3'-3"
Length of straight keel.....	269'-6"
F. P. to straight keel.....	7'-0"
A. P. to straight keel.....	33'-6"
Length of fender.....	154'-0"
F. P. to fender.....	84'-0"
A. P. to fender.....	72'-0"
Length of bilge keel.....	140'-0"
F. P. to bilge keel.....	91'-0"
A. P. to bilge keel.....	79'-0"
Length on 9'-4½" water line — mean draft to bottom of keel.....	310'-0"
Breadth, extreme, over fenders.....	30'-6½"
Breadth, extreme, molded.....	29'-10"
Mean draft to bottom of keel.....	9'-4½"
Midship section, forward of frame No. 89.....	0'-9"
Frame spacing, regular.....	1'-9"
Actual trial displacement, tons.....	10060.0
Area of wetted surface to 9'-4½" W. L. (sq. ft.).....	.4414
Coefficient of fineness, block.....	.7461
Coefficient of fineness, midship section.....	.6299
Coefficient of fineness, D. W. L.....	.5916

HEIGHTS ABOVE DESIGNER'S WATER LINE

Designed water line above bottom of keel.....	9'-4½"
Designed water line above molded base line.....	9'-4"
Top of ball on foremast.....	97'-2 ⁵ / ₁₆ "
Top of truck light on mainmast.....	96'-5"
Top of pilot house at center line, frame No. 38, top of plating.....	24'-6"

HEIGHTS ABOVE

Forecastle deck plating at stern, to
Main deck plating at stern, to
Bridge at side, frame No. 39, to
Bridge at center line, above fore
Floor of searchlight platform,
Center line of forward searchlight
Center line of after searchlight
Center line of 5.2 M. by 45 C.
board, about.....
Center line of 5.2 M. by 45 C.
about.....
Center line of 5.2 M. by 45 C.
board, about.....
Center line of 5.2 M. by 45 C.
about.....
Center line of 4-inch R. F. gun
Center line of 4-inch R. F. gun
Center line of 4-inch R. F. gun
Center line of 4-inch R. F. gun

GENERAL INFORMATION

HEIGHTS ABOVE DESIGNER'S WATER LINE—*Continued*

Forecastle deck plating at stem, top of plating	17'-5 $\frac{5}{16}$ ''
Main deck plating at stern, top of plating	8'-5 $\frac{7}{16}$ ''
Bridge at side, frame No. 39, top of beam	23'-9 $\frac{3}{4}$ ''
Bridge at center line, above forecastle deck, molded	7'-6''
Floor of searchlight platform, top of plating	31'-3 $\frac{1}{16}$ ''
Center line of forward searchlight, frame No. 43, about	35'-3 $\frac{1}{4}$ ''
Center line of after searchlight, frame No. 154 $\frac{1}{2}$, about	20'-0''
Center line of 5.2 M. by 45 C. M. twin torpedo tube, frame No. 78 starboard, about	12'-3''
Center line of 5.2 M. by 45 C. M. twin torpedo tube, frame No. 99 port, about	12'-0''
Center line of 5.2 M. by 45 C. M. twin torpedo tube, frame No. 129 starboard, about	11'-9''
Center line of 5.2 M. by 45 C. M. twin torpedo tube, frame No. 137 port, about	11'-6''
Center line of 4-inch R. F. gun, frame No. 25, center line, about	21'-3''
Center line of 4-inch R. F. gun, frame No. 54, port, about	13'-6''
Center line of 4-inch R. F. gun, frame No. 54, starboard, about	13'-6''
Center line of 4-inch R. F. gun, frame No. 163, center line, about	12'-9''

**LOADS CONTEMPLATED IN DETERMINING THE MEAN DRAFT
CORRESPONDING TO THE "DESIGNER'S WATER LINE."**

In the design of the vessel the mean draft corresponding to the "DESIGNER'S WATER LINE," viz., 9 foot, $4\frac{1}{2}$ inches, contemplated the following condition of loading:—

Ship complete ready for service in every respect, with full complement of officers and crew with their effects, and consumable load as tabulated below:

Ammunition, including torpedoes, detailed as follows (full supply):—

	Pounds	Weight in Tons
11,000 .30 caliber rifle ball	895	
1,000 .30 caliber rifle (dummy)	66	
10,000 .45 caliber pistol (automatic)	550	
400 4-inch ammunition	31,600	
8 warheads, 367 pounds each	2,936	
8 torpedoes, 2,800 pounds each	22,400	
superheaters, detonators, primers, etc.	144	
Construction and Repair Stores (two-thirds supply)		26.16
Supplies and Accounts Stores (two-thirds supply)		1.33
Navigation Stores (two-thirds supply)		6.50
Medical Stores (two-thirds supply)		.06
Steam Engineering Stores (two-thirds supply)		.21
Officers' Stores (two-thirds supply)		1.67
Ordnance Stores (two-thirds supply)		1.09
Equipment Stores (two-thirds supply)		.67
Fresh Water (two-thirds supply)		.72
Reserve Feed Water (two-thirds supply)		9.70
Fuel Oil, Ship's (two-thirds supply)		12.30
Fuel Oil, Ship's (two-thirds supply)		193.30
Fuel for Galley Range (two-thirds supply)		2.00

GENERAL INFORMATION

S. J. M. Swivel joint megaphone mouthpiece, Types A, B, and C, in accordance with Bureau of S. E. drawing No. 1834-L Alteration 1.

Voice tubes are of seamless brass tubing, 49 mils thick for straight leads and 109 mils thick for bends. Where exposed to mechanical injury they are 180 mils thick. The tubes in general are led close up under the main deck on the port side, and where necessary to pass through fuel oil tanks, they are carried in a duct provided for the purpose. Lock nuts and washers are used where tubes pass through decks and bulkheads. Single hangers for voice tubes are in accordance with General Type Plan No. 72, and where a number of tubes are run together, a plate hanger is used, having the required number of holes to support the entire group.

STEERING ARRANGEMENTS

SEE PLAN No. 13 IN PORTFOLIO

The steering gear is of the horizontal right and left hand screw type, single thread, the traveling nuts being connected to the rudder crosshead by links. A spur gear on the forward end of the screw shaft meshes with a pinion on the crank shaft of a vertical two-cylinder $6\frac{1}{2}$ " x 8" steam steering engine located on the starboard side close to the screw gear. The engine and gear, and also the wheels for hand operation, are located in D-204, the aftermost compartment on the platform deck.

The engine is provided with automatic follow-up type of control, and is operated by wire rope transmission and shafting from the pilot house and the bridge wheels, by shafting from the wheel on top of the after deck house, and by a trick wheel mounted on the after side of the engine. Clutches are provided to disconnect each wheel while the others are in operation.

The rope transmission from the forward wheels is $\frac{3}{8}$ -inch diameter plow steel wire, run in 1-inch brass pipes under the main deck on the starboard side of the ship, and terminating on grooved drums and the forward and after ends. Lubricating tees, expansion joints and sheaves in water-tight boxes are installed at suitable intervals in the leads. The forward drum is mounted on a shaft which is connected by beveled gears to the vertical shaft to pilot house and bridge-steering stands. The after drum is equipped with an automatic rope tightener, and is mounted on a shaft connected by beveled gears to the valve-operating shaft of the engine.

The transmission from the power wheel on the after deck house is $1\frac{1}{4}$ -inch steel shafting with beveled gears and universal joints, and operates the same beveled gears as the rope drum shaft above mentioned, a shifting clutch lever being provided to disconnect one or both the distant controls of the engine.

To operate the screw gear by hand, two 5-foot wheels are installed forward of the screw shaft and directly connected to it by means of a sliding clutch held in place by stop pins. When steering by hand, the engine pinion is withdrawn by means of a clutch operated by a hand wheel just forward of the pinion bearing.

An emergency spare tiller, stowed on the after side of the machinery hatch, main deck, is provided to be fitted over the top of the rudder stock, above the main deck, and operated by a relieving tackle consisting of 3-inch manila rope run continuously through 9-inch blocks attached to pad eyes at frames Nos. 156 and 171, port and starboard.

REFERENCE ARRANGEMENT PLANS

Fore River Shipbuilding Co. plan No. H-226-59-A. Arrangement of Steering Gear Leads.

Fore River Shipbuilding Co. plan No. H-226-59-C. Arrangement of Steering Gear Compartment.

Hyde Windlass Co. plan No. P. 4397. Screw Steering Gear, 6 $\frac{1}{2}$ " x 8" Vertical Engine and other detail plans.

INSTRUCTIONS FOR STEERING FROM THE VARIOUS STATIONS

TO STEER BY STEAM FROM PILOT HOUSE

Disconnect the clutch over stand in pilot house and the trick wheel clutch on vertical shaft over steering engine, throw into starboard position the clutch-shifting lever on horizontal shafting over the engine, disconnect the hand wheel clutch at forward end of screw shaft and connect the clutch on forward side of engine pinion.

TO STEER BY STEAM FROM BRIDGE

Proceed as above except that the clutch over pilot house stand is to be connected, and the pilot house wheel disconnected.

TO STEER BY STEAM FROM AFTER DECK HOUSE

Disconnect the trick wheel and hand wheel clutches and connect the engine pinion clutch as above, and throw into port position the clutch-shifting lever on horizontal shafting over the engine.

TO STEER BY STEAM FROM STEERING ENGINE ROOM

Connect the trick wheel and engine pinion clutches, disconnect the hand wheel clutch and throw into middle position the clutch-shifting lever on horizontal shafting over the engine.

TO STEER BY HAND FROM STEERING ENGINE ROOM

Disconnect the engine pinion clutch and connect the clutch between hand wheels and screw shaft.