GENERAL INFORMATION
INCLUDING DESCRIPTIONS AND
TESTS OF ELECTRIC AUXILIARIES

TORPEDO BOAT DESTROYERS
Nos. 231 to 250

INFORMATION RELATIVE TO ITEMS UNDER COGNIZANCE
OF BUREAU OF CONSTRUCTION AND REPAIR
NAVY DEPARTMENT, WASHINGTON, D. C.
GENERAL INFORMATION
INCLUDING DESCRIPTION AND TESTS
OF ELECTRIC AUXILIARIES

TORPEDO BOAT DESTROYERS

No. 231, U. S. S. Hatfield
No. 232, U. S. S. Brooks
No. 233, U. S. S. Gilmer
No. 234, U. S. S. Fox
No. 235, U. S. S. Kane
No. 236, U. S. S. Humphreys
No. 237, U. S. S. McFarland
No. 238, U. S. S. James K. Paulding
No. 239, U. S. S. Overton
No. 240, U. S. S. Sturtevant

No. 241, U. S. S. Childs
No. 242, U. S. S. King
No. 243, U. S. S. Sands
No. 244, U. S. S. Williamson
No. 245, U. S. S. Reuben James
No. 246, U. S. S. Bainbridge
No. 247, U. S. S. Goff
No. 248, U. S. S. Barry
No. 249, U. S. S. Hopkins
No. 250, U. S. S. Lawrence

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

1921

Finished Plan No. 41

WASHINGTON
GOVERNMENT PRINTING OFFICE
1921

BUREAU OF SHIPS
NATIONAL ARCHIVES FILES
50733
INTRODUCTION.

HISTORICAL DATA.

Authorized by act of Congress March 4 and October 6, 1917.
Vessel built by New York Shipbuilding Corporation, Camden, N. J.
Contract signed December 29, 1917.
Contract date of completion, to be constructed as expeditiously as practicable.

U. S. S. "HATFIELD," TORPEDO-BOAT DESTROYER, NO. 231.

Keel laid June 10, 1918.
Vessel launched March 17, 1919.
Christened by Mrs. J. E. Haugh.
Date of delivery to Government, April 16, 1920.
Date of official preliminary trial, April 1, 1920.
Vessel commissioned April 16, 1920.


Keel laid June 11, 1918.
Vessel launched April 24, 1919.
Christened by Mrs. Emma C. Keyes.
Date of delivery to Government, June 18, 1920.
Date of official preliminary trial, May 27, 1920.
Vessel commissioned June 18, 1920.


Keel laid June 25, 1918.
Vessel launched May 24, 1919.
Christened by Mrs. Elizabeth Gilmer Miles.
Date of delivery to Government, April 30, 1920.
Date of official preliminary trial, April 20, 1920.
Vessel commissioned April 30, 1920.


Keel laid June 25, 1918.
Vessel launched June 12, 1919.
Christened by Miss Virginia Blair.
Date of delivery to Government, May 17, 1920.
Date of official preliminary trial, April 28, 1920.
Vessel commissioned May 17, 1920.

Keel laid June 16, 1919.
Vessel launched June 2, 1920.
Christened by Miss Katherine Goff.
Date of delivery to Government, January 19, 1921.
Dates of preliminary official trials, December 30, 1920, and January 10, 1921.
Vessel commissioned January 19, 1921.


Keel laid July 26, 1919.
Vessel launched October 28, 1920.
Christened by Mrs. Shelton E. Martin.
Date of delivery to Government, December 28, 1920.
Date of preliminary official trial, December 12, 1920.
Vessel commissioned December 28, 1920.


Keel laid July 30, 1919.
Vessel launched June 26, 1920.
Christened by Miss Sarah A. Babbitt.
Date of delivery to Government, March 21, 1921.
Date of preliminary official trial, March 8, 1921.
Vessel commissioned March 21, 1921.


Keel laid August 14, 1919.
Vessel launched July 10, 1920.
Christened by Miss Ruth Lawrence.
Date of delivery to Government, April 18, 1921.
Date of preliminary official trial, April 11, 1921.
Vessel commissioned April 18, 1921.

DIMENSIONS AND DISTANCES.

Length over all, 314 feet 4½ inches.
Length between perpendiculars (9 feet ¾ inch W. L.), 310 feet.
Breadth, molded, extreme, 30 feet 11½ inches.
Breadth, extreme, over guards, 31 feet 7½ inches.
Depth, molded, at side (frame No. 89), 20 feet 7½ inches.
Depth, molded, at center (frame No. 89), 21 feet 9½ inches.
Tons per inch (9 feet 5¼ inches W. L.), 15.55.
Displacement (designed 9 feet 5½ inches W. L.), 1,230 tons.
Wetted surface (9 feet 5½ inches W. L.), 10,430 square feet.
Coefficient block (design 9 feet 5¾ inches W. L.), 0.479.
Coefficient prismatic (design 9 feet 5½ inches W. L.), 0.627.
Coefficient midship (design 9 feet 5¼ inches W. L.), 0.764.
Coefficient water line (design 9 feet 5¾ inches W. L.), 0.680.
Area of rudder, 77 square feet.
Center of buoyancy (9 feet 5\(\frac{1}{2}\) inches W. L.) above bottom of keel, 5 feet 9 inches.
Center of buoyancy (9 feet 5\(\frac{1}{2}\) inches W. L.) forward of middle perpendicular, 0.72 foot.
Transverse metacenter above C. B. (9 feet 5\(\frac{1}{2}\) inches W. L.), 8.54 feet.
Longitudinal metacenter above C. B. (9 feet 5\(\frac{1}{2}\) inches W. L.), 725 feet.
Center of gravity of 9 feet 5\(\frac{1}{2}\) inches water line abaft middle perpendicular, 5.36 feet.
Center of gravity of full load water line abaft middle perpendicular, 5.92 feet.
Frame spacing, 21 inches.

**LONGITUDINAL DISTANCES.**

Projection of stern at main deck, abaft A. P., 1 foot 4\(\frac{1}{2}\) inches.
Axis of rudder forward of A. P., 6 feet 4\(\frac{1}{2}\) inches.
Forward end of straight keel from F. P., 12 feet 6 inches.
After end of straight keel from A. P., 42 feet 3\(\frac{1}{2}\) inches.
Length of straight keel, 257 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 foremost, at main deck, 90 feet 1\(\frac{1}{2}\) inches.
F. P. to center of stack No. 1, at main deck, 107 feet 4\(\frac{1}{2}\) inches.
F. P. to center of stack No. 2, at main deck, 123 feet 4\(\frac{1}{2}\) inches.
F. P. to center of stack No. 3, at main deck, 145 feet 10\(\frac{1}{2}\) inches.
F. P. to center of stack No. 4, at main deck, 161 feet 10\(\frac{1}{2}\) inches.
Center of mainmast, at main deck, to A. P., 58 feet.
Center of shaft struts forward of A. P., 21 feet 3 inches.
Center of propellers forward of A. P., 16 feet 11\(\frac{1}{2}\) inches.

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

Bridge deck at center (frame No. 42), 22 feet 4\(\frac{1}{2}\) inches.
Bridge deck at outboard end (frame No. 42), 21 feet 6\(\frac{1}{2}\) inches.
Forward smokestack on C. L., 38 feet 10\(\frac{1}{2}\) inches.
Crows’ nest, 65 feet 3 inches.
Signal yard, 87 feet 7\(\frac{1}{2}\) inches.
Upper wireless aerial, 94 feet.
Lower wireless aerial from abt., 53 feet on masts to smokestack.
Main deck at side (frame No. 89), 11 feet 3\(\frac{1}{2}\) inches.
Main deck at C. L. (frame No. 80), 12 feet 5\(\frac{1}{2}\) inches.
Top of after deckhouse (frame 150), 16 feet 4\(\frac{1}{2}\) inches.
Freeboard at stem (molded), 17 feet 4 inch.
Freeboard at stern (molded), 8 feet 4 inch.
### GENERAL INFORMATION.

#### CONDITION OF LOADING.

The following table is tabulated for normal, full, and emergency conditions:

<table>
<thead>
<tr>
<th></th>
<th>Normal</th>
<th>Full</th>
<th>Emergency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Quantity</td>
<td>Weight</td>
<td>Quantity</td>
</tr>
<tr>
<td>5-inch shells</td>
<td>400</td>
<td>8.93</td>
<td>400</td>
</tr>
<tr>
<td>5-inch powder charges</td>
<td>400 tanks</td>
<td>8.39</td>
<td>400 tanks</td>
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<tr>
<td>3-inch .35-caliber ammunition</td>
<td>300 rounds</td>
<td>2.65</td>
<td>300 rounds</td>
</tr>
<tr>
<td>Torpedoes</td>
<td>12</td>
<td>10.53</td>
<td>12</td>
</tr>
<tr>
<td>4-inch .50-caliber cartridges</td>
<td>400</td>
<td>15.35</td>
<td>400</td>
</tr>
<tr>
<td>Warheads</td>
<td>12</td>
<td>2.73</td>
<td>12</td>
</tr>
<tr>
<td>Exercise and collapsible heads, superheater fuses, detonators, etc.</td>
<td>2</td>
<td>77</td>
<td>2</td>
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<tr>
<td>Dummy cartridges</td>
<td>20 rounds</td>
<td>.45</td>
<td>20 rounds</td>
</tr>
<tr>
<td>Dummy tanks</td>
<td>30</td>
<td>.42</td>
<td>30</td>
</tr>
<tr>
<td>3-inch dummy cartridges</td>
<td>6 rounds</td>
<td>.05</td>
<td>6 rounds</td>
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<tr>
<td>.30-caliber dummy cartridges</td>
<td>1,000 rounds</td>
<td>.03</td>
<td>1,000 rounds</td>
</tr>
<tr>
<td>.30-caliber ball cartridges</td>
<td>42,000 rounds</td>
<td>.12</td>
<td>42,000 rounds</td>
</tr>
<tr>
<td>.30-caliber blank cartridges</td>
<td>6,000 rounds</td>
<td>.12</td>
<td>6,000 rounds</td>
</tr>
<tr>
<td>.45-caliber Colt automatic pistol cartridges</td>
<td>15</td>
<td>.15</td>
<td>15</td>
</tr>
<tr>
<td>S. and A. stores</td>
<td>Two-thirds</td>
<td>8.08</td>
<td>Full</td>
</tr>
<tr>
<td>C. and R. stores</td>
<td>do</td>
<td>1.06</td>
<td>do</td>
</tr>
<tr>
<td>Navigator stores</td>
<td>do</td>
<td>.27</td>
<td>do</td>
</tr>
<tr>
<td>Medical stores</td>
<td>do</td>
<td>.21</td>
<td>do</td>
</tr>
<tr>
<td>Engineering stores</td>
<td>do</td>
<td>4.11</td>
<td>do</td>
</tr>
<tr>
<td>Equipment stores</td>
<td>do</td>
<td>.90</td>
<td>do</td>
</tr>
<tr>
<td>Ordnance stores</td>
<td>do</td>
<td>.67</td>
<td>do</td>
</tr>
<tr>
<td>Officers' mess stores</td>
<td>do</td>
<td>.15</td>
<td>do</td>
</tr>
<tr>
<td>Fresh water</td>
<td>29.06</td>
<td>do</td>
<td>29.06</td>
</tr>
<tr>
<td>Reserve feed water</td>
<td>do</td>
<td>24.20</td>
<td>do</td>
</tr>
<tr>
<td>Fuel oil</td>
<td>190.00</td>
<td>do</td>
<td>229.00</td>
</tr>
</tbody>
</table>

1 Applies to Destroyers Nos. 231 to 235, inclusive.
2 Applies to Destroyers Nos. 226 to 250, inclusive.

### DESIGNED COMPLEMENT.

(Section X-3.)

<table>
<thead>
<tr>
<th>Branch</th>
<th>Number</th>
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</thead>
<tbody>
<tr>
<td>Officers</td>
<td></td>
</tr>
<tr>
<td>Commanding officer</td>
<td>1</td>
</tr>
<tr>
<td>Wardroom officers</td>
<td>5</td>
</tr>
<tr>
<td>Seamen branch</td>
<td></td>
</tr>
<tr>
<td>Chief boatswain's mate</td>
<td>1</td>
</tr>
<tr>
<td>Boatswain's mate, second class</td>
<td>1</td>
</tr>
<tr>
<td>Coxswain</td>
<td>1</td>
</tr>
<tr>
<td>Chief gunner's mates</td>
<td>2</td>
</tr>
<tr>
<td>Gunner's mates, first class</td>
<td>2</td>
</tr>
<tr>
<td>Gunner's mates, second class</td>
<td>2</td>
</tr>
<tr>
<td>Chief quartermaster, navigating</td>
<td>1</td>
</tr>
<tr>
<td>Quartermaster, first class</td>
<td>1</td>
</tr>
<tr>
<td>Quartermasters, second class</td>
<td>16</td>
</tr>
<tr>
<td>Ordinary seamen</td>
<td>13</td>
</tr>
<tr>
<td>Total</td>
<td>42</td>
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<tr>
<td>Artificer branch</td>
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<tr>
<td>Electrician, first class</td>
<td>1</td>
</tr>
<tr>
<td>Electricians, first class, radio</td>
<td>2</td>
</tr>
<tr>
<td>Carpenter's mate, second class</td>
<td>1</td>
</tr>
</tbody>
</table>

Artificer branch—Continued.

<table>
<thead>
<tr>
<th>Branch</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Artificer branch (engine-room force):</td>
<td></td>
</tr>
<tr>
<td>Machinist's mates</td>
<td>3</td>
</tr>
<tr>
<td>Machinist's mates, first class</td>
<td>3</td>
</tr>
<tr>
<td>Chief machinist's mate, second class</td>
<td>2</td>
</tr>
<tr>
<td>Chief water tender</td>
<td>2</td>
</tr>
<tr>
<td>Water tenders</td>
<td>2</td>
</tr>
<tr>
<td>Boilermaker</td>
<td>3</td>
</tr>
<tr>
<td>Blacksmith</td>
<td>1</td>
</tr>
<tr>
<td>Coppersmith</td>
<td>1</td>
</tr>
<tr>
<td>Oilers</td>
<td>10</td>
</tr>
<tr>
<td>Firemen, first class</td>
<td>3</td>
</tr>
<tr>
<td>Firemen, second class</td>
<td>3</td>
</tr>
</tbody>
</table>

Total: 39
TORPEDO BOAT DESTROYERS NOS. 231 TO 250.

Special branch:
Yeoman, first class, commanding officer.......................... 1
Yeoman, second class, engineer department......................... 1
Hospital steward.................................................. 1

Total........................................................................... 3

Commissary branch:
Ship's cook, first class............................................... 1
Ship's cook, third class............................................... 1

Total........................................................................... 2

Messmen branch:
Cabin steward......................................................... 1
Cabin cook............................................................. 1
Mess attendants....................................................... 2

Total........................................................................... 4

RECAPITULATION.
Officers................................................................. 6
Crew................................................................. 95

Total........................................................................... 101

PLANS.

(Section B-1.)

Furnished under the cognizance of the Bureau of Construction and Repair for ship use.

All of the following plans are a part of the ship's regular allowance of articles under cognizance of the Bureau of Construction and Repair, Equipage, Title "B," Class 35.

Additional copies of any plan specified in this list may be issued to the commanding officer at his request for use on board ship. The booklet sets are issued to the commanding officer in sufficient number to provide one copy for each officer in charge of a department or division.

All plans issued to the vessel shall be receipted for, and shall be considered as a charge on the books of the executive officer, under the same regulation as governing articles of equipage.

All plans and booklets are to be considered as confidential documents.

The plans furnished the vessel are in portfolios 32 inches by 15 inches, bound on the 32-inch edge.

The prints are taken on 30-inch wide blue-print paper, folded "bellows fashion," 13 inches wide, arranged so that the top fold presents the title of the plan without unfolding.

The inside front cover of the portfolio carries a list of plan numbers and a list of portfolio numbers and titles of the plans.

An additional copy of the lists, inside the front cover of the portfolio, is made up into booklet form for use in finding plans, and is left loose in the front part of the portfolio.

Blue prints of electrical auxiliaries, steering engine, windlass, etc., obtained from outside sources, are of miscellaneous sizes. They are attached together and folded as one set, and the set assigned a single number in series of portfolio numbers.

There is one copy furnished of all the plans named in the list except Booklets of General Information and Booklets of General Plans, of which one copy is furnished for each officer.

Booklet of General Information and Final Indenting Experiment are not included with the plans made up in the portfolio; there is included, however, in the portfolio an uncut print of small-scale booklet plans of the vessel.
MACHINERY.

(A) ENGINES.

Westinghouse 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 .......................................................... 11\(\frac{3}{4}\) inches.
Diameter of line shafting ................................................................. 11\(\frac{1}{4}\) inches.
Diameter of axial hole in shafting ...................................................... 6\(\frac{1}{2}\) inches.
Number of propellers ................................................................. 2.
Number of blades, each propeller (cast solid) ................................. 3.
Diameter of propellers (designed) ................................................... 9 feet.
Pitch of propellers, fixed (designed) .............................................. 9 feet 10\(\frac{1}{4}\) inches.
Ratio of diameter to pitch (designed) ........................................... 1.087.
Area, projected (designed) ......................................................... 37.92 square feet.
Area, helicoidal (designed) ......................................................... 43.92 square feet.
Area, disk (designed) .............................................................. 60.62 square feet.
Lower tip of blades below bottom of keel .................................... 20\(\frac{3}{4}\) inches.
Tips of blades below W. L. at 9 feet .............................................. 20\(\frac{3}{4}\) inches.
Material of propellers .......................................................... Cast manganese bronze.
Starboard propeller is right hand.
Port propeller is left hand.

(C) BOILERS.

Kind of boiler: White-Forster Express, water tube, oil burning.
Number (2 in each boiler room) ......................................................... 4.
Deemed working pressure ............................................................... 265 pounds.
Heating surface, each boiler .......................................................... 6,875 square feet.
Cubical contents of combustion chamber, each boiler .................... 663 cubic feet.
Diameter of main steam pipes (I. D.) ............................................ 10\(\frac{3}{4}\) inches.
Diameter of steam pipe from each boiler (I. D.) ................................. 7\(\frac{1}{4}\) inches.
Number of oil burners, each boiler .................................................. 14.
Number of furnaces, each boiler ..................................................... 1.
Smoke pipes, height above main deck ............................................. 25 feet.
Number of smoke pipes .......................................................... 4.
Area of section through one smoke pipe ........................................ 20.3 square feet.

ELECTRIC PLANT.

GENERATORS.

Two 25-kilowatt, 125-volt, turbo-generators manufactured by the Westinghouse Electric & Manufacturing Co.

WIRING, ETC.

The wiring for lighting and power and interior communication circuits is in general leaded and armored wire. Semiportable leads are armored wire. Portable leads are plain braided duplex deck cable. All wiring for light and power is run on the "two-wire" system.