GENERAL INFORMATION
INCLUDING DESCRIPTIONS AND TESTS OF ELECTRIC AUXILIARIES

TORPEDO BOAT DESTROYERS
Nos. 206 to 230

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 Nos. 206 to 230

U. S. S.
Chandler - Southard - Hovey - Long - Broome - Alden
Smith Thompson - Barker - Tracy - Borie - John D.
Edwards - Whipple - Parrott - Edsall - MacLeish
Simpson - Bulmer - McCormick - Stewart - Pope
Peary - Pillsbury - Ford - Truxtun - Paul Jones

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

1921
Finished Plan No. 41

WASHINGTON
GOVERNMENT PRINTING OFFICE
1921

BUREAU OF SHIPS
NATIONAL ARCHIVES FILES
50732
INTRODUCTION.


DIMENSIONS AND DISTANCES.

Length over all 314 feet 4½ inches.
Length between perpendiculars on 9 feet 0 inches W. L., 310 feet.
Breadth, molded, extreme, 30 feet 11½ inches.
Breadth, extreme, over fenders, 31 feet 8½ inches.
Depth, molded at side (frame No. 88 ½), 20 feet 7¾ inches.
Depth, molded at center (frame No. 88 ½), 21 feet 10 inches.
Tons per inch (9 feet 4 inches W. L.), 15.48 tons.
Mean trial displacement (actual), 1229.81 tons.
Wetted surface 9 feet 4 inches W. L.), 9910 square feet.
Coefficient block (designed 9 feet 4 inches W. L.), 0.472.
Coefficient prismatic (designed 9 feet 4 inches W. L.), 0.623.
Coefficient midship (designed 9 feet 4 inches W. L.), 0.758.
Coefficient water line (designed 9 feet 4 inches W. L.), 0.670.
Area of rudder, 77.65 square feet.
Center of buoyancy (9 feet 4 inches W. L.) above bottom of keel 5 feet 8½ inches.
Center of buoyancy (9 feet 4 inches W. L.) forward of middle perpendicular, 1.06 feet.
Transverse metacenter above C. B. (9 feet 4 inches W. L.), 4 feet 10½ inches.
Longitudinal metacenter above C. B. (9 feet 4 inches W. L.), 742 feet.
Center of gravity of water line 9 feet 4 inches abaft middle perpendicular, 4.90 feet.
Center of gravity of full load water line 9 feet 9½ inches abaft middle perpendicular, 5.60 feet.
Frame spacing throughout, 21 inches.

LONGITUDINAL DISTANCES.

Projection abaft A. P., 16½ 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., 41 feet 5½ inches.
Length of straight keel, 256 feet 6½ inches.
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 1½ inches.
F. P. to center of smokepipe No. 1, at main deck, 107 feet 4½ inches.
F. P. to center of smokepipe No. 2, at main deck, 123 feet.
F. P. to center of smokepipe No. 3, at main deck, 145 feet 10½ inches.
F. P. to center of smokepipe No. 4, at main deck, 161 feet 10½ inches.
GENERAL INFORMATION.

Center of mainmast, at main deck, to A. P., 58 feet 13½ inches.
Center of shaft struts forward of A. P. (½ inch forward frame 165), 21 feet 3½ inches.
Propellers, forward of A. P., 16 feet 10½ inches.

HEIGHTS ABOVE DESIGNER'S WATER LINE.

Bridge at center line (frame No. 40, top of plating), 22 feet 5¾ inches.
Bridge at outboard ends (Frame No. 47 top of beams), 22 feet 1¼ inches.
Forward smokepipe on C. L., 38 feet 10¾ inches.
Lookout platform, 65 feet 3½ inches.
Signall yard, 88 feet 10½ inches.
Upper wireless aerial, 93 feet at forecast, 60 feet at mainmast.
Lower wireless aerial, 54 feet 6 inches at forecast, 40 feet at mainmast.
Main deck, at side (frame No. 60), top of plating, 13 feet 6½ inches.
Main deck, at side (frame No. 140), top of plating, 9 feet 1 inch.
Top of after deck house, top of plating C. L. (frame No. 150), 16 feet 5¾ inches.
Freeboard at stern, 17 feet 1½ inches.
Freeboard at stern, 8 feet 1½ inches.

SPONSORS.

<table>
<thead>
<tr>
<th>Official No.</th>
<th>Name</th>
<th>Keel laid</th>
<th>Vessel launched</th>
<th>Christened by—</th>
<th>Date of delivery to Government</th>
<th>Date of official preliminary trial</th>
<th>Vessel completed</th>
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<tbody>
<tr>
<td>201</td>
<td>Southard</td>
<td>Aug. 19, 1918</td>
<td>Mar. 21, 1919</td>
<td>Mrs. Francis Lewis Stewart, of Washington, D. C.</td>
<td>Sept. 24, 1919</td>
<td>Sept. 9, 1919</td>
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<td>207</td>
<td>Bakke</td>
<td>Apr. 10, 1919</td>
<td>Aug. 12, 1919</td>
<td>Elizabeth Whitney Connell Tracy, of Oregon, N. Y.</td>
<td>Apr. 6, 1920</td>
<td>Apr. 16, 1920</td>
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<td>209</td>
<td>Bostwick</td>
<td>Apr. 12, 1919</td>
<td>Nov. 9, 1919</td>
<td>Miss Julia Buzell May, of Cleveland, O.</td>
<td>May 11, 1920</td>
<td>May 4, 1920</td>
<td>May 11, 1920</td>
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<td>210</td>
<td>Emery</td>
<td>Oct. 25, 1919</td>
<td>Nov. 20, 1919</td>
<td>Miss Isabelle Grant, of Bloomfield, N. Y.</td>
<td>Nov. 26, 1920</td>
<td>Nov. 15-17, 1920</td>
<td>Nov. 15, 1920</td>
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<td>221</td>
<td>Paul Jones</td>
<td>Dec. 30, 1919</td>
<td>Sept. 29, 1919</td>
<td>Miss Evelyn Bagley, of Washington, D. C.</td>
<td>Feb. 8, 1921</td>
<td>Feb. 8, 1921</td>
<td>Feb. 8, 1921</td>
</tr>
</tbody>
</table>

1 Of Vassar College, Poughkeepsie, N. Y.
## CONDITIONS OF LOADING.

**SHIP AS DESIGNED.**

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."

<table>
<thead>
<tr>
<th>Kind</th>
<th>Normal</th>
<th>Full</th>
<th>Emergency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Quantity (rounds)</td>
<td>Weight (tons)</td>
<td>Quantity (rounds)</td>
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<tr>
<td>4-inch .50-caliber ammunition</td>
<td>400</td>
<td>15.00</td>
<td>400</td>
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<tr>
<td>3-inch antiaircraft ammunition</td>
<td>300</td>
<td>2.66</td>
<td>300</td>
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<tr>
<td>30 caliber ball, machine gun, model 1906</td>
<td>24,000</td>
<td>83</td>
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<tr>
<td>30 caliber ball, rifle, model 1906</td>
<td>13,300</td>
<td>45</td>
<td>13,300</td>
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<tr>
<td>30 caliber blank, model 1909</td>
<td>2,000</td>
<td>.04</td>
<td>2,000</td>
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<tr>
<td>30 caliber dummy, model 1906</td>
<td>1,000</td>
<td>.03</td>
<td>1,000</td>
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<tr>
<td>30 caliber blank, model 1998</td>
<td>4,000</td>
<td>.18</td>
<td>4,000</td>
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<td>30 caliber blank, model 1998</td>
<td>4,000</td>
<td>.08</td>
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<td>45-caliber ball, model 1911</td>
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<td>.15</td>
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<td>Torpedoes</td>
<td>12</td>
<td>15.00</td>
<td>12</td>
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<tr>
<td>War heads</td>
<td>12</td>
<td>2.30</td>
<td>12</td>
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<td>Drill and dummy cartridges</td>
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<td>.28</td>
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<tr>
<td>Fuses, detonators, etc.</td>
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<td>.17</td>
<td>.17</td>
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<tr>
<td>G. and R. stores</td>
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<td>.07</td>
<td>.07</td>
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<td>S. and A. stores</td>
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<td>.67</td>
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<tr>
<td>Miscellaneous stores</td>
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<td>Medical stores</td>
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<tr>
<td>Engineering stores</td>
<td>.07</td>
<td>.07</td>
<td>.07</td>
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<tr>
<td>Officers' mess stores</td>
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<td>.07</td>
<td>.07</td>
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<tr>
<td>Ordinance stores</td>
<td>.90</td>
<td>.90</td>
<td>.90</td>
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<tr>
<td>Equipment stores</td>
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<td>Fresh water</td>
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<td>Reserve feed water</td>
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<td>Fuel oil</td>
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<td>Engineering</td>
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<tr>
<td>Officers, crew, and effects</td>
<td>10.21</td>
<td>10.21</td>
<td>10.21</td>
</tr>
</tbody>
</table>

1 Two-thirds supply.
2 Full supply.
3 Maximum supply.

## DESIGNED COMPLEMENT.

**(Section X-3.)**

**Officers:**
- Commanding officer
- Wardroom officers

**Seaman branch:**
- Chief boatswain's mate
- Boatswain's mate, second class
- Coxswain
- Chief gunner's mates
- Gunner's mates, first class
- Gunner's mates, second class
- Chief quartermaster, navigating
- Quartermaster, first class
### GENERAL INFORMATION.

Seaman branch—Continued.
- Quartermasters, second class: 2
- Seamen: 16
- Ordinary seamen: 13
- Total: 41

Artificer branch:
- Electrician, first class: 1
- Electricians, first class, radio: 2
- Electrician, second class, radio: 1
- Carpenter’s mate, second class: 1
- Total: 5

Artificer branch (engine-room force):
- Chief machinist’s mate: 3
- Machinist’s mates, first class: 3
- Machinist’s mates, second class: 1
- Chief water tender: 1
- Water tenders: 1
- Boilermaker: 1
- Blacksmith: 1
- Oilers: 10
- Firemen, first class: 7
- Firemen, second class: 59
- Total: 109

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: 3
- Mess attendants: 4
- Total: 8

### RECAPITULATION.

| Officers | 6 |
| Crew | 101 |

**Total**: 107

**Note**: Berthing accommodations are provided for the following:
- Commanding officer: 1
- Wardroom officers: 7
- Chief petty officers: 10
- Emergency cabin (one transom berth): 2
- Yeoman: 9
- Cabin: 116
- Hammocks: 12
- Radio room: 2
- Total: 135
MACHINERY.

(A) Engines: The propelling machinery consists of Parsons turbines in combination with reduction gear and placed in two compartments.

The power is divided on two shafts, each driving a propeller and each being driven, through gearing, by one single-flow high-pressure turbine and one double-flow low-pressure and single astern turbine. Each astern turbine is fitted in the rotor casing with the corresponding low-pressure ahead turbine.

There are two main condensing plants, one for each power unit, with curved tube surface condensers, main air and circulating pumps.

The main circulation of cooling water through the condensers is by means of scoops, an auxiliary turbine-driven circulating pump providing circulation when maneuvering or backing.

Steam is provided by four White Forster boilers fitted for fuel oil only. Two boilers are arranged in each of two watertight compartments.

The forced draft system consists of two sets of three turbine-driven blowers each, discharging air into each respective fireroom.

(B) Propellers and shafts:

- Diameter of propeller shafting, inches, 11 1/4.
- Diameter of line shafting, inches, 11 1/4.
- Diameter of axial hole in shafting, inches, 1 1/4.
- Number of propellers, 2.
- Number of blades, each propeller (cast solid), 3.
- Diameter of propellers (designed), inches, 110.
- Pitch of propellers, fixed (designed), inches, 120.
- Ratio of diameter to pitch (designed) = \( P = \frac{D}{P} \approx 0.9175 \).
- Area, projected (designed) \( D_1 \), square inches, 5,223.
- Area, helicoidal (designed), square inches, 6,877.
- Area, disk (designed), square inches, 9,503.3.
- Tips of blades below 9 feet 4 inches, W. L., inches, 19 1/2.
- Material of propellers, Comp. “Mnc.”
- Starboard propeller is right hand.
- Port propeller is left hand.

(C) Boilers:

- Kind of boiler (oil burning), White Forster, built by Band, W., Co.

  Number (2 in each boiler room), 4.
  Designed working pressure, pounds, 265.
  Heating surface, each boiler, square feet, 6,877.
  Cubic contents of combustion chamber, each boiler, 633.
  Diameter of main steam pipes between engine and boiler rooms (2), inside diameter, inches, 10 1/2.
  Diameter of steam pipe from each boiler, inside diameter, inches, 7 1/2.
  Number of oil burners, each boiler, 14.
  Number of furnaces, each boiler, 1.
  Smokepipes, height above base line: (1) 48 feet 2 1/8 inches, (2) 47 feet 8 7/8 inches, (3) 47 feet 1 3/8 inches, (4) 46 feet 7 1/4 inches.
  Number of smokepipes, 4.
  Area of section through one smokepipe, 29.29.
MACHINERY.

(A) Engines: The propelling machinery consists of Parsons turbines in combination with reduction gear and placed in two compartments.

The power is divided on two shafts, each driving a propeller and each being driven, through gearing, by one single-flow high-pressure turbine and one double-flow low-pressure and single astern turbine. Each astern turbine is fitted in the rotor casing with the corresponding low-pressure ahead turbine.

There are two main condensing plants, one for each power unit, with curved tube surface condensers, main air and circulating pumps.

The main circulation of cooling water through the condensers is by means of scoops, an auxiliary turbine-driven circulating pump providing circulation when maneuvering or backing.

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(B) Propellers and shafts:

- Diameter of propeller shafting, inches, 11\(\frac{1}{4}\).
- Diameter of line shafting, inches, 11\(\frac{1}{4}\).
- Diameter of axial hole in shafting, inches, 7\(\frac{1}{4}\).
- Number of propellers, 2.
- Number of blades, each propeller (cast solid), 3.
- Diameter of propellers (designed), inches, 110.
- Pitch of propellers, fixed (designed), inches, 120.
- Ratio of diameter to pitch (designed) = \(\frac{D}{P}\), 0.9175.
- Area, projected (designed) \(\frac{D}{2}\) square inches, 5,223.
- Area, helicoidal (designed), square inches, 6,277.
- Area, disk (designed), square inches, 9,303.3.
- Lower tip of blades below bottom of keel, inches, 29\(\frac{1}{2}\).
- Tips of blades below 9 feet 4 inches, W. L., inches, 19\(\frac{1}{2}\).
- Material of propellers, Comp. "Mnc."

Starboard propeller is right hand.

Port propeller is left hand.

(C) Boilers:

- Kind of boiler (oil burning), White Forster, built by Band, W., Co.
- Number (2 in each boiler room), 4.
- Designed working pressure, pounds, 265.
- Heating surface, each boiler, square feet, 6,875.
- Cubical contents of combustion chamber, each boiler, 633.
- Diameter of main steam pipes between engine and boiler rooms (2), inside diameter, inches, 10\(\frac{1}{2}\).
- Diameter of steam pipe from each boiler, inside diameter, inches, 7\(\frac{1}{2}\).
- Number of oil burners, each boiler, 14.
- Number of furnaces, each boiler, 1.
- Smokepipes, height above base line: (1) 48 feet 2\(\frac{1}{4}\) inches, (2) 47 feet 8\(\frac{1}{4}\) inches, (3) 47 feet 1\(\frac{1}{4}\) inches, (4) 46 feet 7\(\frac{1}{2}\) inches.
- Number of smokepipes, 4.
- Area of section through one smokepipe, 20.29.