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INFORMATION CONCERNING

Some of the Principal Navies of the World

A SERIES OF TABLES COMPILED TO
ANSWER POPULAR INQUIRY



Office of Naval Intelligence
April, 1913

WASHINGTON
GOVERNMENT PRINTING OFFICE
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THE UNIVERSITY
OF CHICAGO

P R E F A C E.

The Navy Department is so frequently in receipt of letters from all parts of the country requesting information for debating societies, journals, and periodicals, as well as individuals, concerning the relative strength of the principal naval powers, the types of vessels building or built, and facts concerning the type of battleship popularly known as *Dreadnought*, that it has directed the Office of Naval Intelligence to prepare tables which will substantially make reply to the greater part of such letters.

Under these instructions the Office of Naval Intelligence has compiled the following tables from the best available data; and while these tables may be regarded as substantially correct, it is possible that inaccuracies may occur, for the reason that few countries besides the United States publish all the data concerning their fighting strength, and even greater efforts are being made abroad to maintain secrecy.

Tables I, II, III, IV, and V were compiled April 1, 1913, and are here reproduced.

T. S. RODGERS,

Captain, U. S. Navy, Director of Naval Intelligence.

OFFICE OF NAVAL INTELLIGENCE,

Navy Department, April, 1913.

(3)

TABLE I.
RELATIVE ORDER OF WARSHIP TONNAGE.

| Present order (tonnage completed). | | As would be the case if vessels now building were completed. | |
|------------------------------------|-------------|--|-----------------------|
| Nation. | Tonnage. | Nation. | Tonnage. ¹ |
| Great Britain..... | 2, 007, 247 | Great Britain..... | 2, 483, 545 |
| Germany..... | 865, 984 | Germany..... | 1, 133, 878 |
| United States..... | 763, 132 | United States..... | 929, 351 |
| France..... | 627, 787 | France..... | 807, 717 |
| Japan..... | 471, 962 | Japan..... | 616, 528 |
| Russia..... | 286, 930 | Russia..... | 595, 807 |
| Italy..... | 224, 837 | Italy..... | 413, 882 |
| Austria..... | 198, 159 | Austria..... | 260, 751 |

¹ Estimated.

TABLE III.

PERSONNEL.

[Apr. 1, 1913.]

| Rank. | England. | France. | Germany. | Japan. | United States. |
|-----------------------------|---------------------|--------------------|--------------------|------------------|-----------------|
| Admirals of the fleet..... | 3 | ..... | 2 | 1 | ¹ 1 |
| Admirals..... | 12 | ..... | 5 | 7 | ..... |
| Vice admirals..... | 22 | 15 | 12 | 17 | ..... |
| Rear admirals..... | 55 | 30 | 21 | 45 | ² 24 |
| Captains and commanders... | 644 | 360 | 351 | 292 | 212 |
| Other line officers..... | 2,473 | 1,467 | 1,811 | 1,818 | 1,471 |
| Midshipmen at sea..... | 558 | 60 | 398 | 154 | 0 |
| Engineer officers..... | 872 | 505 | 529 | 683 | ..... |
| Medical officers..... | 593 | ³ 390 | 322 | ⁴ 368 | 317 |
| Pay officers..... | 685 | 211 | 259 | 341 | 221 |
| Chaplains..... | 139 | ..... | 28 | ..... | 23 |
| Warrant officers..... | 2,675 | ⁵ 2,445 | 2,615 | 1,520 | 697 |
| Enlisted men..... | 115,079 | 55,760 | 60,920 | 42,043 | 47,469 |
| Marine officers..... | 457 | ..... | 170 | ..... | 316 |
| Enlisted men (marines)..... | ⁶ 20,943 | ..... | ⁷ 5,826 | ..... | 9,866 |
| Total..... | 145,210 | 61,243 | 73,269 | 47,289 | 60,617 |

¹ The Admiral of the Navy.

² The United States now has, temporarily, as extra numbers, due to promotion for war service, and to officers restricted by law to engineering duty only on shore only 8 flag officers, 23 captains, 6 commanders, 10 lieutenant commanders, and 1 lieutenant.

³ Includes pharmacists and apothecaries.

⁴ Includes pharmaceutical officers.

⁵ Includes adjutants, premier matres, and matres of all branches.

⁶ Includes 3,130 men of the Coast Guard.

⁷ Marine infantry and seaman artillery.

TABLE IV.
VESSELS BUILT.

[Apr. 1, 1913.]

| | Battle- ships, Dread- nought type. ¹ | Battle- ships. ² | Battle cruis- ers. ³ | Ar- mored cruis- ers. | Cruis- ers. ⁴ | De- stroy- ers. | Tor- pedo boats. | Subma- rines. | Coast defense vessels. ⁵ |
|--------------------|---|--------------------------------|---------------------------------------|--------------------------------|-----------------------------|-----------------------|------------------------|------------------|---|
| England..... | 16 | 40 | 8 | 34 | ⁶ 74 | ⁶ 144 | 49 | 70 | 0 |
| Germany..... | 11 | 20 | 3 | 9 | 39 | 118 | 9 | 26 | 3 |
| United States..... | 8 | 24 | 0 | 11 | 15 | 42 | 19 | 23 | 4 |
| France..... | 0 | 20 | 0 | 20 | 10 | 78 | 157 | 75 | 2 |
| Japan..... | 2 | 13 | 0 | 13 | 14 | 58 | 54 | 13 | 2 |
| Russia..... | 0 | 8 | 0 | 6 | 9 | 98 | 14 | 31 | 2 |
| Italy..... | 1 | 8 | 0 | 9 | 5 | 24 | 48 | 18 | 0 |
| Austria..... | 2 | 6 | 0 | 3 | 4 | 12 | 40 | 6 | 6 |

¹ Battleships having a main battery of all big guns (11 inches or more in caliber).

² Battleships of (about) 10,000 tons or more displacement, and having more than one caliber in the main battery.

³ Armored cruisers having guns of largest caliber in main battery and capable of taking their place in line of battle with the battleships. They have an increase of speed at the expense of carrying fewer guns in main battery, and a decrease in armor protection.

⁴ Includes all unarmored cruising vessels above 1,500 tons displacement.

⁵ Includes smaller battleships and monitors. No more vessels of this class are being proposed or built by the great powers.

⁶ Includes vessels of colonies.

TABLE V.
VESSELS BUILDING OR AUTHORIZED.

[Apr. 1, 1913.]

| | Battle- ships, Dread- nought type. | Battle cruisers. | Cruisers. | Destroy- ers. | Torpedo boats. | Subma- rines. |
|----------------------------|--|---------------------|-----------------|------------------|-------------------|------------------|
| England ¹ | 11 | ² 2 | ² 14 | ² 40 | 0 | ² 16 |
| Germany ³ | 6 | 3 | 4 | 12 | 0 | ⁴ 6 |
| United States.... | 5 | 0 | 0 | 14 | 0 | 23 |
| France..... | 7 | 0 | 0 | 8 | 0 | 20 |
| Japan ⁵ | 1 | 4 | 0 | 2 | 0 | 2 |
| Russia ⁶ | 7 | 4 | 2 | 9 | 0 | 8 |
| Italy..... | 7 | 0 | 2 | 11 | 21 | 2 |
| Austria..... | 2 | 0 | 3 | 6 | 12 | 7 |

¹ England has no continuing shipbuilding policy, but usually lays down each year 4 or 5 armored ships with a proportional number of smaller vessels.

² Includes vessels of colonies.

³ Germany has a continuing shipbuilding program, governed by a fleet law authorized by the Reichstag. For 1913 there are authorized 2 battleships, 1 battle cruiser, 2 cruisers, 12 destroyers. Eventual strength to consist of 41 battleships, 20 armored cruisers, 40 cruisers, 144 destroyers, 72 submarines.

⁴ \$4,760,000 authorized for experiments and further construction.

⁵ \$78,837,569 authorized to be expended from 1911 to 1917 for the construction of war vessels.

⁶ Russian shipbuilding program provides for the completion by 1918 of 4 battle cruisers, 8 small cruisers, 36 destroyers, and 18 submarines. Four battle cruisers and two cruisers have been contracted for and are included in the above table.

NOTE.—Vessels undergoing trials are considered as completed.

The following vessels are not included in the tables: Ships over 20 years old from date of launch unless they have been reconstructed and rearmed within 5 years; torpedo craft over 15 years old; transports, colliers, repair ships, converted merchant vessels, or any other auxiliaries; vessels of less than 1,500 tons, except torpedo craft; torpedo craft of less than 50 tons.

Table V includes vessels authorized but not yet laid down, as well as those actually under construction.

TABLE VI.

BATTLESHIPS AND ARMORED CRUISERS PRIOR TO THE DREADNOUGHT TYPE.

[Apr. 1, 1913.]

| | Built. ¹ | | |
|-----------------------|---------------------|---------|---------------------------------|
| | Num-ber. | Tons. | Guns, 8-inch and larger. |
| GREAT BRITAIN. | | | |
| Battleships..... | 40 | 589,385 | { 152 12" 8 10" 52 9.2" |
| Armored cruisers..... | 34 | 406,800 | { 68 9.2" |
| GERMANY. | | | |
| Battleships..... | 20 | 242,800 | { 40 11" 40 9.5" |
| Armored cruisers..... | 9 | 94,245 | { 6 9.5" 44 8.3" |
| UNITED STATES. | | | |
| Battleships..... | 24 | 323,858 | { 28 13" 68 12" 136 8" |
| Armored cruisers..... | 11 | 149,295 | { 16 10" 32 8" |
| FRANCE. | | | |
| Battleships..... | 20 | 286,005 | { 70 12" 10 10.8" 72 9.4" |
| Armored cruisers..... | 20 | 201,724 | { 68 7.6" |
| JAPAN. | | | |
| Battleships..... | 13 | 191,380 | { 52 12" 32 10" 6 8" |
| Armored cruisers..... | 13 | 138,483 | { 16 12" 50 8" |
| ITALY. | | | |
| Battleships..... | 8 | 96,100 | { 16 12" 8 10" 56 8" |
| Armored cruisers..... | 9 | 74,020 | { 19 10" 6 8" |

¹ Ships over 20 years old from date of launch not included.

² 7.6-inch, largest caliber carried.

TABLE VII.

DREADNOUGHT TYPE OF BATTLESHIPS, WITH CONTEMPORARIES OF OVER 18,000 TONS DISPLACEMENT, AND ARMORED CRUISERS OF INVINCIBLE TYPE (NOW CALLED BATTLE CRUISERS).

| | Built. | | | Building. | | | Number authorized up to Apr. 1, 1913, but not yet building or ordered. |
|-----------------------|---------|----------|--------------------------|-----------|--------------------|-------------------------|--|
| | Number. | Tons. | Guns. | Number. | Tons. ¹ | Guns. ¹ | |
| GREAT BRITAIN. | | | | | | | |
| Battleships..... | 16 | 334, 350 | { 60 13. 5" 100 12" } | 11 | 291, 100 | { 60 13. 5" 40 15" } | 2 5 |
| Battlecruisers... | 8 | 160, 800 | { 16 13. 5" 48 12" } | 2 | 55, 000 | 16 13. 5" | ..... |
| GERMANY. | | | | | | | |
| Battleships..... | 11 | 236, 490 | { 78 12" 48 11" } | 6 | 156, 220 | { 40 14" 20 12" } | 2 |
| Battle cruisers... | 3 | 64, 364 | 28 11" | 3 | 81, 000 | { 20 12" 10 11" } | 1 |
| UNITED STATES. | | | | | | | |
| Battleships..... | 8 | 167, 650 | 80 12" | 5 | 140, 000 | 50 14" | 1 |
| Battle cruisers... |  |  |  |  |  |  | ..... |
| FRANCE. | | | | | | | |
| Battleships..... | | | | 7 | 161, 884 | { 30 13. 4" 48 12" } | 4 |
| Battle cruisers... |  |  |  |  |  |  | ..... |
| JAPAN. | | | | | | | |
| Battleships..... | 2 | 41, 600 | 24 12" | 1 | 30, 000 | 10 15" | ..... |
| Battle cruisers... | | | | 4 | 110, 000 | 32 14" | ..... |
| RUSSIA. | | | | | | | |
| Battleships..... | | | | 7 | 158, 540 | 84 12" | ..... |
| Battle cruisers... | | | | 4 | 128, 000 | 48 14"? | ..... |
| ITALY. | | | | | | | |
| Battleships..... | 1 | 18, 600 | 12 12" | 7 | 167, 100 | { 20 14" 62 12" } | ..... |
| Battle cruisers... |  |  |  |  |  |  | ..... |
| AUSTRIA. | | | | | | | |
| Battleships..... | 2 | 40, 020 | 24 12" | 2 | 40, 020 | 24 12" | ..... |
| Battle cruisers... |  |  |  |  |  |  | ..... |

¹ Estimated.² Estimates 1913-14.

TABLE VII—Continued.

DREADNOUGHT TYPE OF BATTLESHIPS, WITH CONTEMPORARIES OF OVER 18,000 TONS DISPLACEMENT, AND ARMORED CRUISERS OF INVINCIBLE TYPE (NOW CALLED BATTLE CRUISERS)—Continued.

| | Built. | | | Building. | | | Number authorized up to Apr. 1, 1913, but not yet building or ordered. |
|----------------------|---------|--------|--------|-----------|--------------------|--------------------|--|
| | Number. | Tons. | Guns. | Number. | Tons. ¹ | Guns. ¹ | |
| BRAZIL. | | | | | | | |
| Battleships..... | 2 | 38,500 | 24 12" | 1 | 27,500 | 14 12" | ..... |
| Battle cruisers..... | | | | | | | |
| ARGENTINA. | | | | | | | |
| Battleships..... | | | | 2 | 56,000 | 24 12" | 1 |
| Battle cruisers..... | | | | | | | |
| CHILE. | | | | | | | |
| Battleships..... | | | | 2 | 56,000 | 20 14" | ..... |
| Battle cruisers..... | | | | | | | |

¹ Estimated.

TABLE VIII.

**BATTLESHIPS, ARMORED CRUISERS, AND CRUISERS (SCOUTS) OF THE
SIX PRINCIPAL NAVAL POWERS, LAUNCHED 1906-1912.**

| Year. | Bat- tle ships. | Ton- nage. | Arm- ored cruis- ers. ¹ | Ton- nage. | Cruis- ers. | Ton- nage. | Total. | Total tonnage. |
|-----------------------|-----------------------|---------------|---|---------------|----------------|---------------|--------|-------------------|
| GREAT BRITAIN. | | | | | | | | |
| 1906..... | 3 | 50,900 | 2 | 29,200 | ..... | ..... | 5 | 80,100 |
| 1907..... | 3 | 55,800 | 4 | 66,350 | ..... | ..... | 7 | 122,150 |
| 1908..... | 2 | 38,500 | ..... | ..... | 1 | 3,300 | 3 | 41,800 |
| 1909..... | 2 | 39,150 | 1 | 18,750 | 6 | 25,920 | 9 | 83,820 |
| 1910..... | 3 | 63,000 | 1 | 26,350 | 4 | 18,660 | 8 | 108,010 |
| 1911..... | 5 | 115,500 | 3 | 63,950 | 5 | 22,620 | 13 | 202,070 |
| 1912..... | 4 | 100,800 | 1 | 27,000 | 5 | 24,900 | 10 | 152,700 |
| Total..... | 22 | 463,650 | 12 | 231,600 | 21 | 95,400 | 55 | 790,650 |
| GERMANY. | | | | | | | | |
| 1906..... | 2 | 25,964 | 2 | 22,832 | 2 | 6,790 | 6 | 55,586 |
| 1907..... | ..... | ..... | ..... | ..... | 2 | 6,988 | 2 | 6,988 |
| 1908..... | 4 | 74,408 | 1 | 15,550 | 2 | 7,824 | 7 | 97,782 |
| 1909..... | 3 | 67,320 | 1 | 19,000 | 3 | 12,843 | 7 | 99,163 |
| 1910..... | 1 | 22,440 | 1 | 22,637 | ..... | ..... | 2 | 45,077 |
| 1911..... | 3 | 72,000 | 1 | 22,637 | 4 | 21,652 | 8 | 116,289 |
| 1912..... | 2 | 48,220 | 1 | 25,000 | 2 | 9,652 | 5 | 82,872 |
| Total..... | 15 | 310,352 | 7 | 127,656 | 15 | 65,749 | 37 | 503,757 |
| UNITED STATES. | | | | | | | | |
| 1906..... | 1 | 16,000 | 2 | 29,000 | ..... | ..... | 3 | 45,000 |
| 1907..... | ..... | ..... | ..... | ..... | 3 | 11,250 | 3 | 11,250 |
| 1908..... | 3 | 52,000 | ..... | ..... | ..... | ..... | 3 | 52,000 |
| 1909..... | 2 | 41,825 | ..... | ..... | ..... | ..... | 2 | 41,825 |
| 1910..... | 1 | 21,825 | ..... | ..... | ..... | ..... | 1 | 21,825 |
| 1911..... | 2 | 52,000 | ..... | ..... | ..... | ..... | 2 | 52,000 |
| 1912..... | 2 | 54,000 | ..... | ..... | ..... | ..... | 2 | 54,000 |
| Total..... | 11 | 237,650 | 2 | 29,000 | 3 | 11,250 | 16 | 277,900 |

¹ Includes battle cruisers.

TABLE VIII—Continued.

BATTLESHIPS, ARMORED CRUISERS, AND CRUISERS (SCOUTS) OF THE
SIX PRINCIPAL NAVAL POWERS, LAUNCHED 1906-1912—Continued.

| Year. | Battle-ships. | Ton-nage. | Arm-ored cruis-ers. ¹ | Ton-nage. | Cruis-ers. | Ton-nage. | Total. | Total tonnage. |
|----------------|---------------|-----------|----------------------------------|-----------|------------|-----------|--------|----------------|
| JAPAN. | | | | | | | | |
| 1906..... | 1 | 19,350 | 1 | 13,750 | | | 2 | 33,100 |
| 1907..... | 1 | 19,800 | 2 | 29,200 | 2 | 5,380 | 5 | 54,380 |
| 1908..... | | | | | 1 | 1,350 | 1 | 1,350 |
| 1909..... | | | | | | | | |
| 1910..... | 1 | 20,800 | | | | | 1 | 20,800 |
| 1911..... | 1 | 20,800 | | | 3 | 15,000 | 4 | 35,800 |
| 1912..... | | | 2 | 55,000 | | | 2 | 55,000 |
| Total..... | 4 | 80,750 | 5 | 97,950 | 6 | 21,730 | 15 | 200,430 |
| FRANCE. | | | | | | | | |
| 1906..... | | | 1 | 13,428 | | | 1 | 13,428 |
| 1907..... | 1 | 14,636 | 1 | 13,779 | | | 2 | 28,415 |
| 1908..... | | | 1 | 13,779 | | | 1 | 13,779 |
| 1909..... | 5 | 90,145 | | | | | 5 | 90,145 |
| 1910..... | 1 | 18,029 | | | | | 1 | 18,029 |
| 1911..... | 2 | 46,184 | | | | | 2 | 46,184 |
| 1912..... | 2 | 46,184 | | | | | 2 | 46,184 |
| Total..... | 11 | 215,178 | 3 | 40,986 | | | 14 | 279,256 |
| RUSSIA. | | | | | | | | |
| 1906..... | 3 | 42,000 | 3 | 31,000 | | | 6 | 73,000 |
| 1907..... | 1 | 16,600 | 1 | 8,000 | | | 2 | 24,600 |
| 1908..... | | | | | | | | |
| 1909..... | | | | | | | | |
| 1910..... | | | | | | | | |
| 1911..... | 4 | 92,000 | | | | | 4 | 92,000 |
| 1912..... | | | | | | | | |
| Total..... | 8 | 150,600 | 4 | 39,000 | | | 12 | 189,600 |

¹ Includes battle cruisers.

TABLE IX.

PRINCIPAL CHARACTERISTICS OF BATTLESHIPS RECENTLY COMPLETED OR APPROACHING COMPLETION.

| | De- signed speed. | Displace- ment. | Length between perpen- diculars. | Beam. | Draft. | Comple- ment. | Battery. | Torpedo tubes | Maxi- mum thickness armor belt. | Date launched. | Date of comple- tion. |
|-------------------------------------|-------------------------|--------------------|---|--------------------|--------------------|------------------|------------------------|------------------|---|-------------------|-----------------------------|
| Bellerophon (Great Britain). | 21 | 18,600 | <i>Feet.</i> 490 | <i>Feet.</i> 82 | <i>Feet.</i> 27 | 800 | { 10 12" 16 4" | } 5 | <i>Inches.</i> 11 | July, 1907 | Feb., 1909 |
| Vanguard (Great Britain).... | 21 | 19,250 | 500 | 84 | 27 | 800 | { 10 12" 20 4" | } 3 | 9½ | Feb., 1909 | Mar., 1910 |
| Neptune (Great Britain)..... | 21 | 19,900 | 510 | 85 | 27 | ..... | { 10 12" 16 4" | } 3 | 12 | Sept., 1909 | Jan., 1911 |
| Orion (Great Britain)..... | 21 | 22,500 | 545 | 88½ | 27½ | ..... | { 10 13.5" 20 4" | } 3 | 12 | Aug., 1910 | Nov., 1911 |
| King George V (Great Brit- ain). | 21 | 24,000 | 555 | 89 | 27½ | ..... | { 10 13.5" 24 4" | } 3 | 12 | Oct., 1911 | Nov., 1912 |
| Nassau (Germany)..... | 19 | 18,602 | 452 | 89 | 26½ | 950 | { 12 11" 12 6" | } 6 | 9½ | Mar., 1908 | Oct., 1909 |
| Helgoland (Germany) | 21 | 22,440 | 515 | 92 | 27 | 980 | { 12 12" 14 6" | } 6 | 9½ | Sept., 1909 | Aug., 1911 |
| Kaiser (Germany)..... | 21 | 24,110 | 535 | 95 | 27 | 1,000 | { 10 12" 14 6" | } 6 | 12 | Mar., 1911 | Aug., 1912 |
| North Dakota (United States). | 21 | 20,000 | 510 | 85 | 27 | 940 | { 10 12" 14 5" | } 2 | 11 | Nov., 1908 | Apr., 1910 |

TABLE IX—Continued.

PRINCIPAL CHARACTERISTICS OF BATTLESHIPS RECENTLY COMPLETED ON APPROACHING COMPLETION—Continued.

| | De- signed speed. | Displace- ment. | Length between perpen- diculars. | Beam. | Draft. | Comple- ment. | Battery. | Torpedo tubes. | Maxi- mum thickness armor belt. | Date launched. | Date of comple- tion. |
|-------------------------------|-------------------------|--------------------|---|--------------------|---------------------|------------------|------------------------------|-------------------|---|-------------------|-----------------------------|
| Utah (United States)..... | 20½ | 21, 825 | <i>Feet.</i> 510 | <i>Feet.</i> 88 | <i>Feet.</i> 28½ | 950 | { 10 12" 16 5"} } | 2 | 11 | Dec., 1909 | Aug., 1911 |
| Arkansas (United States)..... | 20½ | 26, 000 | 554 | 93 | 28½ | 1, 040 | { 12 12" 21 5"} } | 2 | 11 | Jan., 1911 | Sept., 1912 |
| New York (United States)... | 21 | 27, 000 | 565 | 95 | 28½ | 1, 070 | { 10 14" 21 5"} } | 4 | 12 | Oct., 1912 | |
| Vérité (France)..... | 18 | 14, 636 | 439 | 79½ | 26½ | 768 | { 4 12" 10 7.6"} } | 2 | 11 | May, 1907 | Jan., 1908 |
| Voltaire (France)..... | 19½ | 18, 029 | 476 | 84 | 27½ | 680 | { 4 12" 12 9.5"} } | 4 | 9.8 | Jan., 1909 | Aug. 1911 |
| Paris (France)..... | 20 | 23, 092 | 541 | 88½ | 29 | 915 | { 12 12" 22 5.5"} } | 4 | 10½ | Sept., 1912 | |
| Aki (Japan)..... | 20 | 19, 800 | 460 | 84 | 27½ | 932 | { 4 12" 12 10"} } | 5 | 9 | Apr., 1907 | Apr., 1911 |
| Kawachi (Japan)..... | 20½ | 20, 800 | 500 | 84 | 27½ | 1, 000 | { 12 12" 10 6"} } | 5 | 9 | Oct., 1910 | May, 1912 |
| Dante Alighieri (Italy)..... | 23 | 18, 600 | 520 | 87 | 27½ | 1, 030 | { 12 12" 20 4.7"} } | 3 | 9 | Aug., 1910 | Dec., 1912 |

| | | | | | | | | | | |
|-------------------------------|-----|---------|-----|-----|-----|--------|-----------------------|-------|----|---------------------------|
| Conte di Cavour (Italy)..... | 22 | 22, 340 | 554 | 92 | 27½ | 980 | { 13 12" 18 4.7" } | 3 | 12 | Aug., 1911 |
| Sebastapol (Russia)..... | 23 | 23, 000 | 590 | 85 | 27½ | ..... | { 12 12" 20 4.7" } | 0 | 9 | June, 1911 |
| Viribus Unitis (Austria)..... | 21 | 20, 010 | 492 | 89 | 26 | 1, 000 | { 12 12" 12 12" } | 4 | 11 | June, 1911 |
| Minas Geraes (Brazil)..... | 21 | 19, 250 | 500 | 84 | 25 | ..... | { 12 12" 22 4.7" } | ..... | 9 | Sept., 1908 Jan., 1910 |
| Moreno (Argentine)..... | 22½ | 28, 000 | 575 | 95½ | 28 | 1, 050 | { 12 12" 12 6" } | 2 | 12 | Sept., 1911 |

TABLE X.
 PRINCIPAL CHARACTERISTICS OF BATTLE CRUISERS AND ARMORED CRUISERS RECENTLY COMPLETED OR APPROACHING COMPLETION.

| | De- signed speed. | Displace- ment. | Length between perpen- diculars. | Beam. | Draft. | Comple- ment. | Battery. | Torpedo tubes. | Maxi- mum thickness armor belt. | Date launched. | Date of comple- tion. |
|--------------------------------------|-------------------------|--------------------|---|--------------|-------------|------------------|-----------------------|-------------------|---|-------------------|-----------------------------|
| Indomitable (Great Britain). | 25 | 17, 250 | Feet. 530 | Feet. 78½ | Feet. 26 | 750 | { 8 12" 16 4" | 5 | Inches. 7 | Mar., 1907 | June, 1908 |
| Indefatigable (Great Brit- ain). | 25 | 18, 750 | 555 | 80 | 26½ | 760 | { 8 12" 16 4" | 2 | 7 | Oct., 1909 | Feb., 1911 |
| Princess Royal (Great Brit- ain). | 29 | 26, 350 | 660 | 88½ | 27½ | 950 | { 8 13.5" 16 4" | 2 | 9 | Apr., 1911 | Oct., 1912 |
| Waldeck Rousseau (France). | 23 | 13, 779 | 515 | 70½ | 27 | 740 | { 14 7.6" | 2 | 7 | Mar., 1908 | July, 1911 |
| Blücher (Germany)..... | 24 | 15, 550 | 499 | 80 | 26½ | 820 | { 12 8.3" 8 6" | 4 | 7 | Apr., 1908 | Oct., 1909 |
| Von der Tann (Germany).... | 26 | 19, 000 | 561 | 87 | 27 | 900 | { 8 11" 10 6" | 4 | 7 | Mar., 1909 | Sept., 1910 |
| Moltke (Germany)..... | 26 | 22, 637 | 610 | 96½ | 27 | 1, 012 | { 10 11" 12 6" | 4 | 10 | Apr., 1910 | Sept., 1911 |
| Kurama (Japan)..... | 22 | 14, 600 | 450 | 75½ | 26 | 850 | { 4 12" 8 8" | 3 | 7 | Oct., 1907 | Feb., 1911 |
| Kongo (Japan)..... | 27 | 27, 500 | 680 | 92 | 27½ | ..... | { 8 14" 16 6" | 8 | 11 | May, 1912 | |
| Montana (United States).... | 22 | 14, 500 | 502 | 73 | 25 | 950 | { 4 10" 16 6" | 4 | 5 | Dec., 1906 | July, 1908 |

TABLE XI.

TIME REQUIRED TO BUILD SOME RECENT BATTLESHIPS OF THE FIVE PRINCIPAL NAVAL POWERS.

| Names. | Tonnage. | Date of contract or order. | Keel laid. | Launched. | Commissioned. |
|-----------------------|----------|----------------------------|------------|-------------|---------------|
| GREAT BRITAIN. | | | | | |
| Bellerophon..... | 18, 600 | Sept., 1906 ¹ | Dec., 1906 | July, 1907 | Feb., 1909 |
| Superb..... | 18, 600 | Dec., 1906 | Feb., 1907 | Nov., 1907 | May, 1909 |
| Collingwood..... | 19, 250 | Oct., 1907 ¹ | Feb., 1908 | Nov., 1908 | Apr., 1910 |
| Vanguard..... | 19, 250 | Mar., 1908 | Apr., 1908 | Feb., 1909 | Mar., 1910 |
| Neptune..... | 19, 900 | Nov., 1908 ¹ | Jan., 1909 | Sept., 1909 | Jan., 1911 |
| Monarch..... | 22, 500 | Dec., 1909 | Apr., 1910 | Mar., 1911 | Apr., 1912 |
| Thunderer..... | 22, 500 | Dec., 1909 | Apr., 1910 | Feb., 1911 | June, 1912 |
| King George V..... | 24, 000 | Nov., 1910 | Jan., 1911 | Oct., 1911 | Nov., 1912 |
| GERMANY. | | | | | |
| Nassau..... | 18, 602 | May, 1906 ¹ | Aug., 1907 | Mar., 1908 | Oct., 1909 |
| Westfalen..... | 18, 602 | Oct., 1906 | Aug., 1907 | July, 1908 | Nov., 1909 |
| Posen..... | 18, 602 | Apr., 1907 | July, 1907 | Dec., 1908 | May, 1910 |
| Rheinland..... | 18, 602 | Apr., 1907 | July, 1907 | Sept., 1908 | Apr., 1910 |
| Helgoland..... | 22, 440 | July, 1908 | Dec., 1908 | Sept., 1909 | Aug., 1911 |
| Kaiser..... | 24, 110 | Sept., 1909 ¹ | Dec., 1909 | Mar., 1911 | Aug., 1912 |
| UNITED STATES. | | | | | |
| South Carolina..... | 16, 000 | July, 1906 | Dec., 1906 | July, 1908 | Mar., 1910 |
| Michigan..... | 16, 000 | July, 1906 | Dec., 1906 | May, 1908 | Jan., 1910 |
| Delaware..... | 20, 000 | Aug., 1907 | Nov., 1907 | Feb., 1909 | Apr., 1910 |
| North Dakota..... | 20, 000 | Aug., 1907 | Dec., 1907 | Nov., 1908 | Apr., 1910 |
| Utah..... | 21, 825 | Nov., 1908 | Feb., 1909 | Dec., 1909 | Aug., 1911 |
| Wyoming..... | 26, 000 | Oct., 1909 | Feb., 1910 | May, 1911 | Sept., 1912 |
| FRANCE. | | | | | |
| Vérité..... | 14, 636 | May, 1902 | —, 1903 | May, 1907 | Jan., 1908 |
| Voltaire..... | 18, 029 | Dec., 1906 | June, 1907 | Jan., 1909 | Aug., 1911 |
| Danton..... | 18, 029 | May, 1906 ¹ | Jan., 1908 | July, 1909 | Feb., 1911 |
| JAPAN. | | | | | |
| Satsuma..... | 19, 350 | —, 1904 ¹ | May, 1905 | Nov., 1906 | Apr., 1910 |
| Aki..... | 19, 800 | —, 1905 ¹ | Mar., 1906 | Apr., 1907 | Apr., 1911 |
| Kawachi..... | 20, 800 | —, 1908 ¹ | Apr., 1909 | Oct., 1910 | Apr., 1912 |

¹ Built in Government dockyards.

TABLE XII.

BATTLESHIPS AND BATTLE CRUISERS ¹ AUTHORIZED, 1907-1912.

| | 1907 | | 1908 | | 1909 | | 1910 | | 1911 | | 1912 | |
|-----------------|-------|-------|-------|-------|-------|----------------|-------|-------|-------|-------|----------------|-------|
| | B. S. | B. C. | B. S. | B. C. | B. S. | B. C. | B. S. | B. C. | B. S. | B. C. | B. S. | B. C. |
| Great Britain.. | 3 | ..... | 1 | 1 | 6 | ² 4 | 4 | 1 | 4 | 1 | 4 | ..... |
| Germany..... | 2 | 1 | 3 | 1 | 3 | 1 | 3 | 1 | 3 | 1 | 1 | 1 |
| United States.. | 1 | ..... | 2 | ..... | 2 | ..... | 2 | ..... | 2 | ..... | 1 | ..... |
| Japan..... | 2 | 2 | ..... | ..... | ..... | ..... | ..... | 1 | 1 | 3 | ..... | ..... |
| France..... | ..... | ..... | ..... | ..... | ..... | ..... | 2 | ..... | 2 | ..... | ³ 3 | ..... |

¹ Armored cruisers able to take position in line of battle.² Includes two authorized by colonies.³ Includes one to replace the Liberté.

TABLE XIII.

NAVAL EXPENDITURES.

| Year. | England. | Germany. | United States. | Japan. | France. |
|-----------|----------------------------|----------------------------|----------------------------|---------------------------|---------------------------|
| 1906..... | \$167, 525, 238 | \$58, 405, 200 | \$104, 508, 719 | \$19, 231, 945 | \$60, 025, 405 |
| 1907..... | 159, 758, 177 | 69, 210, 400 | 99, 693, 298 | 41, 076, 145 | 57, 394, 167 |
| 1908..... | 160, 074, 573 | 80, 229, 800 | 129, 972, 971 | 40, 312, 533 | 58, 941, 096 |
| 1909..... | 181, 936, 341 | ² 97, 722, 800 | 136, 935, 199 | 35, 870, 061 | 61, 064, 096 |
| 1910..... | 206, 541, 168 | ² 103, 302, 773 | 131, 404, 640 | 37, 542, 184 | 74, 102, 439 |
| 1911..... | 215, 996, 391 | ¹ 107, 232, 000 | ² 126, 405, 509 | ¹ 42, 944, 329 | ² 80, 371, 109 |
| 1912..... | ¹ 228, 430, 064 | ¹ 110, 715, 043 | ² 123, 151, 539 | ¹ 46, 158, 216 | ² 81, 692, 832 |
| 1913..... | ¹ 235, 213, 489 | ¹ 111, 288, 618 | 140, 800, 643 | ..... | ¹ 89, 028, 626 |

¹ Estimates.² Authorized.

TABLE XIV.

COST OF SOME OF THE CAPITAL SHIPS RECENTLY COMPLETED.

| Name. | Type. | Nation. | Displacement. | Year completed. | Total cost. |
|---------------------|----------|-----------------|---------------|-----------------|-------------------------|
| Superb..... | B. S.... | England..... | 18,600 | 1909 | \$8,158,828 |
| Neptune..... | B. S.... | do..... | 19,900 | 1911 | 8,411,497 |
| Hercules..... | B. S.... | do..... | 20,000 | 1911 | 8,087,690 |
| Orion..... | B. S.... | do..... | 22,500 | 1912 | 9,337,709 |
| Monarch..... | B. S.... | do..... | 22,500 | 1912 | 9,182,657 |
| Lion..... | B. C.... | do..... | 26,350 | 1912 | 10,065,562 |
| Nassau..... | B. S.... | Germany..... | 18,602 | 1909 | ¹ 8,748,880 |
| Helgoland..... | B. S.... | do..... | 22,440 | 1911 | ¹ 11,209,800 |
| Von der Tann..... | B. C.... | do..... | 19,000 | 1910 | ¹ 8,726,508 |
| Moltke..... | B. C.... | do..... | 22,637 | 1911 | ¹ 10,491,040 |
| Satsuma..... | B. S.... | Japan..... | 19,350 | 1910 | ² 9,262,800 |
| Aki..... | B. S.... | do..... | 19,800 | 1911 | ² 8,764,800 |
| Danton..... | B. S.... | France..... | 18,030 | 1911 | 9,641,707 |
| Voltaire..... | B. S.... | do..... | 18,030 | 1911 | 10,520,000 |
| Minas Geraes..... | B. S.... | Brazil..... | 19,250 | 1910 | 8,863,843 |
| Michigan..... | B. S.... | United States.. | 16,000 | 1910 | 6,805,924 |
| South Carolina..... | B. S.... | do..... | 16,000 | 1910 | 6,683,485 |
| Delaware..... | B. S.... | do..... | 20,000 | 1910 | 8,034,994 |
| North Dakota..... | B. S.... | do..... | 20,000 | 1910 | 8,472,150 |

¹ Amount appropriated.² Approximately.

TABLE XV.

AIR CRAFT.

[Apr. 7, 1913.]

| | Mili- tary dirigi- bles. | Private dirigi- bles (esti- mated). | Military aeroplanes (includes monoplanes, biplanes, hydro- aeroplanes). | | Private aero- planes (esti- mated). | Avia- tion fields. | Pilots (mili- tary and civi- lian). | Manu- fac- turers. |
|----------------|-----------------------------------|---|---|-------|---|--------------------------|---|--------------------------|
| | | | Army. | Navy. | | | | |
| Austria: | | | | | | | | |
| On hand.... | 5 | 2 | 40 | 6 | 35 | | | |
| Ordered.... | 3 | | | | | 3 | 60 | 5 |
| England: | | | | | | | | |
| On hand.... | 3 | 3 | 101 | 40 | 154 | | | |
| Ordered.... | 4 | | 47 | 20 | | 31 | 382 | 21 |
| France: | | | | | | | | |
| On hand.... | 13 | 5 | 450 | | 1,000 | | | |
| Ordered.... | 7 | | | | | 39 | 1,200 | 20 |
| Germany: | | | | | | | | |
| On hand.... | 17 | 10 | 152 | | 200 | | | |
| Ordered.... | 5 | | | | | 36 | 320 | 15 |
| Italy: | | | | | | | | |
| On hand.... | 8 | 0 | 100 | | 100 | | | |
| Ordered.... | 2 | | 30 | | | 14 | 200 | |
| Japan: | | | | | | | | |
| On hand.... | 2 | 0 | 20 | | 5 | | | |
| Ordered.... | 1 | | | | | 3 | 20 | |
| Russia: | | | | | | | | |
| On hand.... | 9 | 0 | 250 | | 150 | | | |
| Ordered.... | 10 | | 0 | | | 8 | 118 | |
| United States: | | | | | | | | |
| On hand.... | (¹) | 0 | 20 | 5 | 1,000 | | | |
| Ordered.... | | | 3 | 1 | | 13 | 320 | 6 |

¹ One dirigible, which is practically useless, is on hand.

The number of pilots can be given only approximately. There are a great many more under instruction who have not received their certificates as pilots.

A large number of the private aeroplanes are experimental machines.

On account of the great number of experimental aeroplanes constructed, it is impossible to state the number of actual manufacturers definitely.

FOREIGN SHIPBUILDING PROGRAMS.

GREAT BRITAIN.

The total naval estimates for 1912-13 amount to \$228,430,064, as compared with \$216,036,101 for the preceding year, while for 1910-11 the amount was \$197,597,906. The total estimate includes a supplementary estimate of \$4,817,835, and an increase of the enlisted personnel by 1,500 men.

The actual standard of new construction which the admiralty has in fact followed during recent years has been to develop a 60 per cent superiority in vessels of the *Dreadnought* type over the German navy on the basis of an existing fleet law.

The shipbuilding program authorized for 1912-13 provides for the following new construction: Four large armored ships, 8 lightly armored ships, 20 destroyers, a group of submarines, 1 coast-guard cruiser, 4 oil-tank steamers, 1 water-tank vessel, and 2 tugs.

During the year there were completed the battleships *Conqueror* and *Thunderer*, each of 22,500 tons displacement; the *Centurion* and *King George V*, of 24,000 tons; as well as the battle cruiser *Princess Royal*, of 26,350 tons, a sister ship of the *Lion*; and the *New Zealand*, of 18,800 tons.

Of four battleships authorized in 1910 two have been completed, and of those of the 1911 program the *Iron Duke* and *Marlborough* were launched this fall. These ships are of about 26,400 tons displacement. The four battleships of the 1912 program are, according to press reports, to be armed with eight 15-inch guns, to displace 27,500 tons, and have a designed speed of 25 knots. Two of these ships were laid down in October, while the contracts for the other two were awarded in November. The battle cruiser *Tiger*, authorized in 1911, has been laid down, and will displace approximately 28,000 tons. All capital ships now building, excepting those of this year's program, will be armed with 13.5-inch guns.

The contracts for the eight lightly armored cruisers were awarded during October. These ships, according to the First Lord of the Admiralty, are to be "the smallest, cheapest, and fastest vessels, protected by vertical armor, ever projected for the British navy."

The contracts for the 20 new destroyers have been awarded. It is believed that these vessels will have a displacement of 1,000 tons.

Of the submarines authorized, neither the number nor the size has been officially announced.

GERMANY.

The total naval estimate for 1912-13 amounts to \$110,715,043, as compared with \$107,232,000 for 1911-12.

The fleet law has been amended so as to provide by 1920 a fleet to comprise 41 battleships, 20 large cruisers, and 40 small cruisers, an increase of 3 battleships and 2 small cruisers. It is proposed to build 6 submarines yearly, and by allowing a life of 12 years to maintain an establishment of 72 boats. The amendment further provides for the maintenance in full commission of about four-fifths of the fleet.

The naval appropriation bill for 1912-13 authorized the following new construction: One battleship, 1 battle cruiser, 2 small cruisers, 12 destroyers, 6 submarines, and 1 submarine salvage ship. As usual, there is an increase in the personnel to meet the increased needs of the service. Provision is made for 282 additional officers and 5,454 enlisted men.

During the year there were completed the battleships *Oldenburg* of 22,435 tons, the *Kaiser* and *Friedrich der Grosse* of 24,110 tons displacement. The battle cruiser *Goeben* has been completed; she has a displacement of 22,632 tons, mounts ten 11-inch guns, and on trials attained a speed of 28.6 knots.

FRANCE.

The total naval appropriation for 1912 amounts to \$81,692,832, as compared with \$80,371,109 appropriated for 1911.

The shipbuilding program authorized for 1912 provides for the following new construction: Three battleships, 9 submarines, and 1 transport. The original program authorized two battleships, but a third was provided for to replace the *Liberté*.

There has been no addition of capital ships to the fleet during the year, but increased activity has become manifest in all shipyards, and work on the new construction is progressing rapidly. Nine destroyers and several submarines have, however, been completed during the year.

The battleships of the 1912 program will mount ten 13.4-inch guns in center-line turrets. A four-gun turret is under consideration for future ships.

JAPAN.

The total naval estimate for the year 1912-13 amounts to \$46,158,216, an increase of \$2,926,971 over the estimates for 1911-12. The unexpended balance of the existing appropriation, "Expenses for maintaining naval preparation," amounts to \$123,839,443, to be expended in six years, up to and including 1916-17. The allotment for maintenance and construction for 1912-13 amounts to \$24,144,446, as against \$21,768,673 for the year 1911-12.

During the year the following ships have been completed: The battleships *Settsu* and *Kawachi*, both of 20,800 tons, armed with twelve 12-inch guns; and three 4,950-ton cruisers, the *Yahagi*, *Hirado*, and *Chikuma*; two 600-ton destroyers and one submarine.

The battleship *Fuso*, authorized in 1911, has been laid down. She is to have a displacement of approximately 30,000 tons and mount 14-inch guns. Three battle cruisers of the 1911 program have been laid down in Japan. They are of the *Kongo* class, 27,500 tons displacement, armed with 14-inch guns, and a designed speed of 29 knots.

RUSSIA.

The naval estimates for 1912, ordinary and extraordinary expenditures, amount to \$84,630,780. This is an increase over the budget as voted last year of \$28,061,933.

The naval program as prepared under the direction of the minister of marine and authorized by the Duma includes the following items: (1) For new construction, fitting out and enlargement of ports, etc., \$221,450,000. (2) For completion of ships building and current expenses, \$403,245,000. Item (1) constitutes the small shipbuilding program which is to be executed in five years.

The new construction includes 4 battle cruisers, 4 protected cruisers, 36 destroyers, and 12 submarines for the Baltic, 4 protected cruisers for the Black Sea, 2 protected cruisers and 6 submarines for the Pacific. It was decided that the annual installments should be asked for as separate yearly credits.

The only addition to the fleet during the year has been the *Novik*, a destroyer of 1,260 tons displacement, with a speed of 36 knots. There are under construction, however, 7 battleships of 23,000 tons, 4 battle cruisers of 28,000 tons, 9 destroyers, and 6 submarines.

ITALY.

The naval appropriation for 1912-13 amounts to \$41,893,420. Of this amount \$21,722,536 is for the maintenance of existing vessels and for new construction now in hand or to be commenced.

The naval appropriation law does not specify the number or type of ships to be laid down, this being left to the discretion of the navy department, but the following new construction has been decided upon: Two battleships, 6 destroyers, 6 torpedo boats, and 6 submarines.

During the year there were completed the battleship *Dante Alighieri*, of 18,600 tons displacement, mounting twelve 12-inch guns in four center-line turrets, 1 scout cruiser of 3,220 tons, besides several torpedo craft and submarines.

There are under construction, besides the 2 battleships provided for this year, 5 battleships, 2 scout cruisers, and several torpedo craft and submarines.

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AUSTRIA.

The total naval estimates for 1912 amount to \$28,167,714. Referring to the program adopted by the Austro-Hungarian delegations in the autumn of 1910, which authorized an expenditure of \$63,417,200 for shipbuilding in six installments during the years 1911 to 1916, inclusive, the amount apportioned for this year for new construction is \$13,601,000, which is to be expended on the ships now building. The amount apportioned for 1912 (\$13,601,000) was increased by the granting of an extraordinary credit of \$8,120,000 on October 14, 1912, by the delegations. The total amount appropriated for the navy for the year 1912 is, therefore, \$36,287,714. The only new construction provided for this year is one mining vessel of 1,000 tons displacement.

During the year the battleship *Viribus Unitus*, of 20,010 tons displacement, mounting twelve 12-inch guns in four center-line turrets, has been added to the fleet. Three battleships, 3 small cruisers, 6 destroyers, 12 torpedo boats, and 7 submarines are under construction.

SPAIN.

Spain, in 1908, provided a program for the upbuilding of her navy, as follows:

| | Tons each. |
|--------------------------------|------------|
| 3 battleships of about..... | 15,000 |
| 3 torpedo-boat destroyers..... | 350 |
| 24 torpedo boats..... | 180 |
| 4 gunboats of about..... | 1,000 |

ARGENTINA.

Argentina has provided for a program of 2 large battleships and 12 destroyers and authorized increasing the program, if required, to 3 large battleships and 16 destroyers.

BRAZIL.

In December, 1904, Brazil provided for a shipbuilding program, which has since been modified (put into execution in 1907), and now includes:

- 3 battleships.
- 2 scout cruisers.
- 10 torpedo-boat destroyers.

All of the above vessels except one battleship have been completed and delivered to Brazil. The third battleship is now under construction in England.

PROGRAMS FOR 1913-14.

The programs for 1913-14, so far as they have been determined or published, are as follows:

GREAT BRITAIN.

The total naval estimates for 1913-14 amount to \$235,213,489 as compared with \$228,430,065 for the year 1912-13 (including the supplementary estimate). The principal increases occur under the heads of Pay of Personnel, Victualing and Clothing, and Naval Armaments. The increase in personnel is due to the requirements of new ships being placed in commission and under construction. The total number of officers and men will reach 146,000. The total cost of new construction is \$77,662,162.

The estimates provide for the laying down during the year of 5 capital ships, 8 light cruisers, 16 destroyers, and a group of submarines. An additional battleship, the gift of the Federated Malay States, has been contracted for. The Canadian Government has under consideration a bill which provides for a grant of £7,000,000 to the Crown, for the construction of three first-class ships.

GERMANY.

The total naval estimates for 1913-14 submitted to the Reichstag in the latter part of November, 1912, amount to \$111,288,618. The ordinary recurring expenditure is \$46,935,805; the nonrecurring ordinary expenditure is \$52,179,113; the extraordinary expenditure is \$12,173,700; this is an increase over last year's (1912-13) final estimates (the ordinary estimates and the supplementary estimates being taken together) of \$573,574.

Increase of personnel is provided as follows: Two hundred and twenty-three additional officers, 6,125 enlisted men. The total strength of the personnel of the Navy will in 1913 be 3,394 officers and 69,495 men.

The provisions for new ships are according to the program laid down in the fleet law, and provide for the construction of 2 battleships, 1 battle cruiser, 2 small cruisers, 1 gunboat, 1 torpedo-boat flotilla (12 boats), and \$4,760,000 for submarine construction and experiment. The construction of a new imperial yacht was also appropriated for.

FRANCE.

The naval estimates for 1913-14 submitted to the Chamber of Deputies carries a total appropriation of \$89,028,626. Of this amount \$22,946,738 is for new construction and provides for the laying down of 2 battleships, 3 destroyers, 3 submarines, and 1 river gunboat. It also includes the first installments for the two battle-

ships provided in the fleet law for 1914. Those two ships were to have been begun January 1, 1914, but recent advices indicate that they will be laid down in October, 1913.

A further increase in the present shipbuilding program is under discussion.

RUSSIA.

The naval estimates for 1913-14 amount to \$118,643,820. This is an increase over the revised estimates of 1912-13 of \$36,624,187. This increase is in accordance with the shipbuilding program of June 23, 1912, known as the Small Shipbuilding Program, which provides for 4 battle cruisers, 8 cruisers, 36 destroyers, and 12 submarines, and the previous arrangements for ships to be built for the Black Sea and the Baltic. The principal items of this increase are as follows: New construction of ships, \$16,878,390; armament, \$8,810,722; naval ports, \$8,104,558.

JAPAN.

The Ashai states that a scheme drawn up by Admiral Takarabe for the expansion of the Navy estimates, based on an imaginary enemy, disposing of 21 battleships, has been accepted. It provides at present for the construction of 3 *Dreadnoughts* of the most powerful type and for the eventual carrying out of a scheme of 8 *Dreadnoughts*, 4 battle cruisers, 8 scouts, and 40 destroyers, at a cost of £36,500,000. It was originally proposed to build 8 *Dreadnoughts*, 8 battle cruisers, 16 scouts, 48 destroyers, costing £54,000,000, but this scheme was cut down to meet financial exigencies.

ITALY.

The total naval appropriation for 1913-14 amounts to \$49,550,147. This is an increase of \$7,691,116 over the appropriation for the preceding year.

The enlisted strength is increased by 2,000 men, namely, from 33,000 to 35,000.

AUSTRIA.

The naval estimates for 1913 amount to \$28,959,168. Of this amount \$13,885,200 constitutes the extraordinary credit for new construction allotted for the year 1913, and \$15,073,968, the ordinary expenditure. Under these two heads the total amount available for new construction is \$15,976,100. The personnel is hereby increased as follows: 1 rear admiral, 3 captains, 5 commanders, 31 lieutenants, 12 midshipmen, 5 medical officers, 27 engineers, 6 paymasters, and 1,500 petty officers and men. The strength will be increased from 14,000 to 21,000 men in 1916.

The naval estimates for 1914, submitted to the Austrian Delegations in March, 1913, carries the first installments for the construction of three *Dreadnoughts* to replace the ships of the Mon arch class.

CONTINUOUS SHIPBUILDING PROGRAMS.

GERMANY.

| Year. | Battle- ships. | Armored cruisers. | Small cruisers. |
|-----------|-------------------|----------------------|--------------------|
| 1908..... | 3 | 1 | 2 |
| 1909..... | 3 | 1 | 2 |
| 1910..... | 3 | 1 | 2 |
| 1911..... | 3 | 1 | 2 |
| 1912..... | ¹ 2 | 1 | 2 |
| 1913..... | 1 | 1 | 2 |
| 1914..... | 1 | 1 | 2 |
| 1915..... | 1 | 1 | 2 |
| 1916..... | ¹ 2 | 1 | 2 |
| 1917..... | 1 | 1 | ² 2 |

¹ Includes one additional ship under the amendment;

² Includes one additional ship outstanding from the fleet law.

The fleet law amended June 9, 1912, now provides for an establishment, in 1920, of 41 battleships, 20 large cruisers, and 40 small cruisers, all less than 20 years old, and 144 torpedo craft and 72 submarines, less than 12 years old. The last amendment carried an increase of 3 battleships and 2 small cruisers, and further provides that about four-fifths of the fleet shall be kept in full commission.

GREAT BRITAIN.

Great Britain has no fixed program, but her policy now is to develop a supremacy of 60 per cent in vessels of the *Dreadnought* type over the German Navy on the basis of an existing fleet law.

FRANCE.

On March 30, 1912, the French Government adopted a ship building program which provides for the completion by 1920 of 13 battleships and 6 scout cruisers. This new construction is to be laid down as follows:

| Year. | Battle-ships. | Scout cruisers. | Year. | Battle-ships. | Scout cruisers. |
|-----------|---------------|-----------------|-----------|---------------|-----------------|
| 1912..... | 3 | 0 | 1916..... | 0 | 0 |
| 1913..... | 2 | 0 | 1917..... | 2 | 2 |
| 1914..... | 2 | 0 | 1918..... | 0 | 2 |
| 1915..... | 4 | 0 | 1919..... | 0 | 2 |

RUSSIA.

The naval program as prepared under the direction of the Minister of Marine and authorized by the Duma includes the following items: (1) For new construction, fitting out and enlargement of ports, etc., \$221,450,000. (2) For completion of ships building and current expenses, \$403,245,000. Item (1) constitutes the small shipbuilding program which is to be executed in five years.

The new construction includes four battle cruisers, four protected cruisers, thirty-six destroyers, and twelve submarines for the Baltic, two protected cruisers for the Black Sea, two protected cruisers and six submarines for the Pacific. The amount available for 1912-13 is \$103,515,000. It was decided that the annual installments should be asked for as separate yearly credits.

ITALY.

Italy has a shipbuilding program extending to the year 1917-18. A certain sum is allowed each year for new constructions and the maintenance of the fleet. The number and type of ships to be laid down each year is determined by the Minister of Marine, therefore it is not possible to know what vessels are to be built until the navy department has made its decision.

AUSTRIA.

The present shipbuilding program expires in 1915 with the completion of the four battleships authorized in 1911. An additional program is under consideration.

No other countries have continuous shipbuilding programs.

REFERENCE BOOKS.

PROBABLY MAY BE FOUND IN A PUBLIC LIBRARY.

Navy Yearbook (Pulsifer).—Giving annual appropriations and various acts relating to the Navy, beginning 1883; alphabetical list of all United States vessels, with data on same; list of vessels of the principal navies of the world, etc. Printed as a congressional document.

Fighting ships (Jane).—Giving a detail description of all fighting ships and showing silhouettes, plans, and elevations of ships, description of uniforms, lists of naval bases, etc.

The Naval Pocketbook (Clowes).—Giving detail description of individual ships, lists, and numbers, data concerning guns, etc.

The Naval Annual (edited by Viscount Hythe).—Giving a series of essays on the navies of the world, lists, and numbers, and plan and elevation of principal ships.

For recommendations to Congress and reports of the various bureaus, see annual reports of the Secretary of the Navy.

The tables of "Warship tonnage" and "Sea strength" (Tables I to V, ante) of the principal naval powers are published annually by the Office of Naval Intelligence. ✓

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