

Bywater's War Errata

16 October 2014

When we published *Bywater's War*, we had to include a ship's Gunnery Standard in the specifications in Annex A. This was because of the wide age range of the ships described, from pre-*Dreadnought* armored cruisers up to ships built in the late 1930s that served throughout WW II. Many of the classes also went through reconstructions in the 1920s and 1930s that upgraded their gunfire control.

Also, for the first time, we considered the gunnery capabilities of minor vessels, like subs and small craft, that were not fitted with a director, or even a wide-base rangefinder. Their chances of hitting would be less than a larger warship, even if they had the same weapons.

While the *Command at Sea* rules book includes the information for Gunnery Standards III and IV, Standards I and II are not included, and we don't expect players to buy *FG&DN* just to get the information.

The base hit chances for Gunnery Standards I through IV are shown on this page, and their gunnery modifiers are listed on pages 2 and 3. The next pages has Annex I, listing optical rangefinders for the interwar period. The last page has the rules for searchlights extracted from *FG&DN* and data for the searchlights used on the ships in *Bywater's War*.

We apologize for leaving this information out of the booklet, and encourage players to post this information on appropriate bulletin boards and share it with their friends. Also if players have any questions about *Bywater's War* or any other Admiralty Trilogy product, please contact us and we'll do our best to answer.

Larry Bond

GUNFIRE HIT CHANCES & MODIFIERS

Gunnery Standard 1 Base Hit Chances:

Short Range = 40%

Medium Range = 20%

Long Range = 10%

Extreme Range = 5%

Gunnery Standard 2 Base Hit Chances:

Short Range = 50%

Medium Range = 30%

Long Range = 10%

Extreme Range = 5%

Gunnery Standard 3 Base Hit Chances:

Short Range = 55%

Medium Range = 35%

Long Range = 10%

Extreme Range = 5%

Gunnery Standard 4 Base Hit Chances:

Short Range = 60%

Medium Range = 40%

Long Range = 15%

Extreme Range = 5%

GUNFIRE HIT CHANCE MODIFIERS TABLE (GUNNERY STANDARD 3 & 4) – Interwar Period/World War II

VISIBILITY/ENVIRONMENTAL MODIFIERS

| | Modifier | | |
|---|----------------|----------------|------------|
| • Visibility ≤20% (Ignore when target illuminated or silhouetted) | | | -4 |
| • Visibility ≤40% (Ignore when target illuminated or silhouetted) | | | -2 |
| • Target in line with sun - Target obscured. Must be ±10° of line from ship to sun. | | | -2 |
| • Target in line with twilight sun - Target silhouetted. Must be ±30° of line from ship to sun. | | | +1 |
| • Target silhouetted by a starshell or fire. | | | -1 |
| • Target illuminated by a starshell or fire or if ship is using a searchlight. | | | +0 |
| • Target illuminated by a searchlight. | | | +1 |
| • Dead Reckoning Fire - First turn of fire after a loss of visual contact on a target. | | | -4 |
| • Blind Fire - Firing at muzzle flashes. (Ignore visibility modifiers.) | | | -6 |
| • Sea State (Heavy seas make it very difficult to aim the guns properly.) | A&B | C&D | E-G |
| SS 3 | NA | NA | -1 |
| SS 4 | NA | -2 | -3 |
| SS 5 | -2 | -4 | -6 |
| SS 6 | -4 | -6 | NFP |
| SS 7 (No Fire Possible (NFP) at Sea States ≥ 7.) | NFP | NFP | NFP |

FIRE CONTROL/GUN MODIFIERS

| | Modifier | | |
|---|-----------|--|------------------------|
| • First turn of fire on target. (Long and Extreme range bands) | | | -2 |
| First salvo if new target is >15° in azimuth and 1 nm off of old target. | | | |
| • Third or later turn of fire on target - (All range bands) | | | +1 |
| • Firing ship is not being fired upon. | | | +1 |
| • Overconcentration: too many ships firing at same target. (Long and Extreme range bands) | | | -1 per ship over limit |
| • Radar + Visual Fire Control | | | |
| Best combination to use. Annex X lists RFC generation. | (1st Gen) | | +2 |
| | (2nd Gen) | | +3 |
| • Radar Fire Control only (Except blindfire capable radars.) | | | -3 off RFC Mod |
| • Land within ±45° of target and within unmodified fire control radar range | | | -2 off RFC Mod |
| • Local Control | | | -2 |
| • Spotter aircraft ≤5 NM of the target and at Low or Medium altitude band. | | | +2 |
| • Ships without stable elements that change course by ≥45° | | | -3 |
| • Firing ship steering evasively. Takes precedence over course change modifier. | | | -3 |
| Japanese ships or small combatants firing with steering evasively. | | | -4 |
| • Number of barrels firing. | | | |
| 1 - 2 | | | +0 |
| 3 - 4 | | | +1 |
| 5 - 6 | | | +2 |
| 7 - 8 | | | +3 |
| 9 - 10 | | | +4 |
| 11+ | | | +5 |

TARGET MODIFIERS

| | Modifier | | |
|--|----------|----|----|
| • Target speed. | | | |
| Speed 25 - 34 knots | | | -2 |
| Speed ≥ 35 knots | | | -3 |
| Speed ≤ 10 knots | | | +1 |
| Stationary ("Dead in the Water") | | | +2 |
| • Target steering evasively. (Requires min target ship speed of 20 knots.) | | | |
| Size Class B | | | -2 |
| Size Classes C & D | | | -4 |
| Size Classes E - G | | | -6 |
| • Target Aspect (Broad/Quarter/Narrow) | | | |
| Size Class A | +2 | +1 | +0 |
| Size Class B | +1 | +0 | -1 |
| Size Class C & D | +0 | -1 | -2 |
| Size Class E - G | -2 | -3 | -4 |

GS 3 & 4 Modifier multipliers (Short & Medium/Long & Extreme) = 4/2

Annex I - Interwar Optical Rangefinders

| Country | Name | Length (m) | Effective Range | | Type | Year | Ships |
|---------|--------------------|---------------|-----------------|--|--------|---------|---|
| | | | (ktyds) | | | | |
| Japan | BU Type 2.0m | 2.0 | 9.0 | | Cnc | WWI | DD |
| Japan | BU Type 2.5m | 2.5 | 11.0 | | Cnc | WWI | CL |
| Japan | BU Type 3.5m | 3.5 | 16.0 | | Cnc | WWI | BB and BC, main deck-mounted RF |
| Japan | BU Type 4.5m | 4.5 | 20.0 | | Cnc | WWI | Turret RF on Kongo, Ise, Fuso classes |
| Japan | Type 5 | 4.5 | 21.0 | | Cnc | 1914 | BB, Yamashiro main director in 1917; Mutsu |
| Japan | Type 7 | 10.0 | 46.0 | | Cnc | 1918 | BB, Nagato main director in 1924 |
| Japan | Type 13 | 8.0 | 39.0 | | Cnc | 1924 | Turret RF on Haruna & Kirishima ('27), Kongo & Hiei ('29), Ise & Fuso classes ('28), Nagato class ('30) |
| Japan | Type 14 2.0 m | 2.0 | 10.0 | | Cnc | 1925 | DD |
| Japan | Type 14 2.5 m | 2.5 | 12.5 | | Cnc | 1925 | Main director CLs, including Yubari |
| Japan | Type 14 3.5 m | 3.5 | 17.0 | | Cnc | 1925 | CA Main director |
| Japan | Type 14 4.5 m | 4.5 | 22.0 | | Cnc | 1925 | BB, BC & CA main director: Kongo ('25), Haruna ('26), Kirishima ('27), CAs beginning with Takao |
| Japan | Type 14 6.0 m | 6.0 | 29.0 | | Cnc | 1925 | CA turret RF, main director after 1935, Oyodo class |
| Japan | Type 14 8.0 m | 8.0 | 39.0 | | Cnc | 1929-33 | CA turret RF after 1935 |
| Japan | Types 89 - 93 2.5m | 2.5 | 12.5 | | Cnc | 1929-33 | Small escort ships |
| Japan | Types 89 - 93 3.0m | 3.0 | 14.5 | | Cnc | 1929-33 | DD |
| Japan | Types 89 - 93 3.5m | 3.5 | 17.0 | | Cnc | 1929-33 | CLs Abukuma, Kuma, Tama, Kiso, Yura, Ning Hai, Ping Hai after modernization |
| Japan | Types 89 - 93 4.0m | 4.0 | 19.5 | | Cnc | 1929-33 | CLs Natori, Sendai, Jinstu, Naka, Ooi after modernization |
| Japan | Types 89 - 93 4.5m | 4.5 | 22.0 | | Cnc | 1929-33 | CLs Tenryu, Nagara, Isuzu, Kitakami, after modernization, Katori class |
| Japan | Types 89 - 93 6.0m | 6.0 | 29.0 | | Cnc | 1929-33 | CA and CLs, Takao class, Abukuma ('38), Kitakami and Ooi ('41) after modernization |
| Japan | Type 94 4.5m | 4.5 | 22.0 | | Stereo | 1934 | Numerous ships, high angle (H-A), Main director: Kitakami ('45), Isuzu ('44) |
| Japan | Type 94 8.0m | 8.0 | 39.0 | | Dual | 1934 | CA, Oyodo class turret RF, Super A cruisers Main director |
| Japan | Type 94 10.0m | 10.0 | 49.0 | | Dual | 1934 | Battleships after mid-1930s reconstruction. Main director and turret RF |

Notes:

(1) BU is the Japanese designation for indigenously produced Barr & Stroud rangefinders

| | | | | | | | |
|-----|-----------------|-----|------|--|--------|------|---|
| USA | Mk4 Mod 0 - 5 | 3.0 | 15.5 | | Cnc | 1908 | OBB, OCR main deck mounted RF |
| USA | Mk6 | 1.5 | 6.5 | | Stereo | | Turret mounted for BB secondary battery |
| USA | Mk8 | 4.6 | 24.0 | | Cnc | 1912 | BB, Single Barr & Stroud 15 ft RF on Utah |
| USA | Mk10 Mod 0 - 5 | 6.1 | 32.0 | | Cnc | 1913 | Turret RF for BBs Utah, Florida, Wyoming, Arkansas, New York, Texas, Oklahoma, Nevada, on turret roof |
| USA | Mk12 Mod 0 - 4 | 3.7 | 19.5 | | Cnc | 1913 | BBs, main deck mounted RF |
| USA | Mk13 Mod 0 - 1 | 7.7 | 40.5 | | Cnc | 1914 | BBs, turret RF on Pennsylvania class |
| USA | Mk16 Mod 0 - 1 | 8.1 | 42.5 | | Cnc | 1917 | BBs, turret RF for New Mexico class |
| USA | Mk17 Mod 0 - 1 | 3.7 | 19.5 | | Cnc | 1917 | CL, DD Main deck mounted RF |
| USA | Mk18 Mod 0 - 2 | 4.6 | 24.0 | | Cnc | 1917 | BBs, main deck RF on New Mexico and Maryland classes |
| USA | Mk 22 Mod 0 - 2 | 9.1 | 48.0 | | Stereo | 1918 | BBs, turret RF for California and Maryland classes |
| USA | Mk30 Mod 0 - 1 | 6.1 | 26.5 | | Cnc | 1924 | CVs |
| USA | Mk35 Mod 0 - 4 | 3.7 | 16.0 | | Cnc | 1928 | Main deck RF on Arkansas, New York, Texas BBs, Pensacola, Northampton, New Orleans, Omaha classes |
| USA | Mk36 | 6.1 | 26.5 | | Cnc | 1928 | BBs, main deck RF on Nevada, Pennsylvania, Colorado classes |
| USA | Mk37 Mod 0 - 6 | 8.1 | 38.0 | | Stereo | 1930 | BB, CA, CLs, turret RF for CAs New Orleans, Wichita, Cleveland, and Baltimore classes |
| USA | Mk38 Mod 0 - 1 | 4.6 | 21.0 | | Stereo | 1939 | Anti-aircraft RF |
| USA | Mk42 | 4.6 | 25.0 | | Stereo | 1939 | BB, CA, CL, DD, Mk37 gun director |
| USA | Mk45 Mod 1 - 4 | 5.5 | 25.0 | | Stereo | 1939 | BB, CA, CLs, Mk34 Main gun director. BBs and cruisers with modernization. |

Initial version on Vincennes, Brooklyn class in 1936 didn't have the RF until 1939.

5.2.4.1 Ship-Based Searchlights. Using a searchlight for illumination is ordered during the Plotting Phase, and is available for targeting purposes in the Planned Fire Phase of that turn. A searchlight can only illuminate a target once it has been detected visually. Any new targets found in the Detection Phase cannot be illuminated until the following Planned Fire Phase. It takes a little time to coach the searchlight operator onto the target.

Any ship in the beam of a searchlight is treated as being illuminated. However, any ship using searchlights is also considered to be illuminated for gunfire purposes.

| <u>Country</u> | <u>Diameter (cm)</u> | <u>Year</u> | <u>Range (yds)</u> | <u>Platforms</u> |
|----------------|----------------------|-------------|--------------------|--------------------------|
| Japan | 90 | 1918 | 4,000 | BB, BC, CA, CL, DD, TB |
| Japan | 110 | 1922 | 5,000 | BB, BC, CA |
| Japan | 150 | Early 1920s | 8,000 | Coastal Defense |
| Japan | 90 | 1933 | 5,000 | DD, TB, Patrol Craft |
| Japan | 110 | 1933 | 7,000 | BB, BC, CA, CL |
| Japan | 90 | 1938 | 7,000 | DD, DE, TB, Patrol Craft |
| Japan | 110 | 1938 | 8,000 | BB, BC, CA, CL |
| Japan | 150 | 1938 | 9,000 | Coastal Defense |
| USA | 60 | 1920s | 4,000 | DD |
| USA | 90 | 1920s | 6,000 | BB, BC, CA |
| USA | 150 | 1920s | 8,000 | Coastal Defense |
| USA | 60 | 1930s | 6,000 | DE |
| USA | 90 | 1930s | 8,000 | BB, BC, CA, CL, DD |
| USA | 150 | 1930s | 10,000 | Coastal Defense |

Other Errata:

Page A-20: USS *Lexington* BC: Change the arcs for the secondary 6 inch battery from P/S to Casemate.

Page B-3: B1M1 and B1M2, B1M3 torpedo bombers. In the ordnance loadouts, change “18 in torpedo” to “Type 91 torpedo (1931).”

Page B-9: Navy Type 10 Carrier Torpedo Aircraft. Reduce the Maneuver Rating to 1.0/0.5, and change “1 torpedo” to 1 250 kg bomb.” The aircraft never carried a torpedo operationally because the first Japanese aerial torpedo, the Type 91, encountered extended development problems and did not enter service until 1931.

Page B-10: Navy Type 93 Land-Based Attack Aircraft. In the ordnance section, delete the torpedo.

Page 129, Annex B1 Airships. The full power speed for *Akron* and *Macon* is 70 knots, not 10.