

CHAPTER 4

DAMAGE



Basic Concept

When you score a hit on an enemy ship, whether from a gun or torpedo, you must immediately determine the damage inflicted by that hit. Doing this requires a die roll. Artillery and torpedoes use different procedures for that roll, to determine whether structure or buoyancy damage is inflicted on the target. Damage is applied immediately to the target's DC.

In the case of artillery fire, if the target was not sunk by that damage, you will roll to determine whether any **critical damage** was inflicted. That, too, is marked on the target's DC.

Damage is Sequential, Not Simultaneous

Whenever a weapon's hit causes damage, that damage is applied immediately to the target. Sometimes a ship will be damaged before it can shoot back. It might, for example, lose a turret before it can reply with its own fire.

Damage that Reduces Speed

It is often the case that a ship takes damage that reduces its top speed to something less than its current speed. At the moment that happens, mark the ship with whatever current speed it is still capable of. It is possible that a damaged ship might become slower, and thus easier to hit by another attack a few moments later.

The words "Armor" and "Penetration"

We use these terms for simplicity, but they represent several things. "Armor" represents the ship's overall protection scheme, including things like underwater torpedo bulges. "Penetration" represents a weapon's size and power, not just its ability to penetrate a given amount of armor at a given range. In both cases there are so many variables to consider that we can only approximate.

If you have experience playing older generations of naval games, you might be dismayed to see only three possible results on the PEN table. But that's because - for artillery at least - there really were only three possible results. Either a weapon struck with its full force; or it struck with some reduction in its force due to distance or angle; or it got lucky and struck with more than its full force because it plunged through thinner deck armor. Those are the three results for artillery, adjusted according to their probability given the range.



Armor

All ships have an armor value, expressed as a number over an armor symbol. In some cases the value is zero.



Armor

Resolving Artillery Damage: The PEN Table

When you score an artillery hit on an enemy ship, you must roll one die on your firing ship's PEN table, in the lower-left corner of its DC.

The PEN table has three columns. For example, if you roll a 3 or 4, you would consult the middle column.

Each column shows a result, in a shape and color matching your ship's artillery. These results are in two rows. When firing at short range, use the lower row. At long range use the higher row.

The number shown is the PEN value for the hit you just scored.

Fuso & Ise classes (4)

	9	6	4
0	1		
1	0		

At Long Range

1	2	5
4	5	8

At Short Range

3	4	5
6	7	8

5

Using the PEN Table

The battleship *Fuso* has a primary battery of large guns, shown in red squares. It also has a secondary battery in casemates: small guns shown in white circles. If *Fuso* fires her primary battery at long range and scores a hit, you would roll a die. Let's say you rolled a "5." That result, for the primary battery at long range, shows a PEN value of 8.

Or, imagine that you are firing *Fuso's* secondary battery at short range, and you score a hit. This time, you roll a "2." At short range, the white circle shows that a roll of "2" gives a PEN value of 3.

Underwater Protection

Most navies attempted to create systems of additional armor below the waterline, in an attempt to mitigate torpedo damage. These systems were nearly all disappointments once tested in actual combat conditions. Because they were only fitted on the largest warships, and those ships are represented with better armor in the game, I decided it was unnecessary to create a separate subsystem for underwater protection.

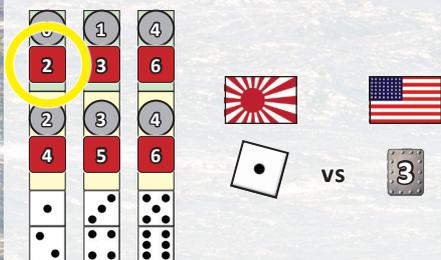


STRUCTURE DAMAGE

Structure Damage from Artillery

If your PEN value is greater than the target's armor value, your shot penetrated and you inflict an amount of **structure damage equal to the difference** by which it is greater. Mark out that many structure boxes on the target's DC.

If the PEN value is equal to, or less than the armor, the shot didn't penetrate and no structure damage is inflicted.



An Example of Artillery Damage

A Japanese cruiser fires its main battery at long range and hits the American cruiser *Cleveland*. The Japanese player rolls a one and the Damage Table shows a result of 2. That is less than the American armor value of 3, and thus no structure damage is inflicted.

What if the Japanese rolled a five? That results in a PEN of 6. That would have inflicted three structure damage on *Cleveland*.

Damage from Torpedoes

Your Navy List indicates the value of your torpedoes. When you score a torpedo hit, roll one die and add its score to that value.



If the final torpedo value is **greater than the target's armor** value, then you have inflicted **one buoyancy damage** upon the target. Mark off the highest-remaining box on its buoyancy track.



If **equal to, or lower** than the target's armor, you inflict **one structure damage**.

For example: your navy's torpedo value is "3" and you roll a two, thus a total of five. Against an enemy with an armor of "3," your total is higher and thus you inflict one buoyancy damage.

If the final value is **6 or more greater** than the target's armor value, the torpedo has broken the ship's keel, and she sinks immediately.

Crippled

If all of a ship's blue structure boxes have been marked, it is crippled. It now uses the red values for its directors, flak, and top speed. It is possible that critical damage may have already reduced some or all of these values in any event.

A crippled ship may still fire its artillery (with a penalty), and launch torpedoes.

Note that a ship's buoyancy boxes might be untouched, but being crippled reduces her speed to the lowest (red) value on the buoyancy track. That does not mean, however, that you mark-out the buoyancy boxes. They are still there; the ship is still afloat. But you must use that lowest top speed once the ship is crippled, no matter how many buoyancy boxes are marked.

CRITICAL DAMAGE

Checking for Critical Damage

When resolving artillery and bomb hits — whether or not any structure damage was inflicted — the shooting player next rolls **two dice** on the critical damage table. Critical damage is *in addition* to any structure damage, and will need to be marked on the target’s DC.

You do *not* roll on this table after a torpedo hit; they use a different procedure, as explained on the previous page.

In the basic game you will need only the uppermost row of the critical damage table: artillery damage against battleships, cruisers, and destroyers. The advanced game introduces the use of bombs, and has a separate critical damage table for aircraft carriers.

Critical Damage Table

(Battleships, Cruisers, and Destroyers)

	2	3	4	5	6	7	8	9	10	11	12

(Aircraft Carriers)

	2	3	4	5	6	7	8	9	10	11	12

Used in the Advanced Game

Critical Damage that Doesn’t Apply

Sometimes the critical damage is unique to certain kinds of ships or circumstances. If your ship carries no torpedoes, then it is not affected by the *Torpedo Launcher* critical damage. If you have no secondary battery, then a *Secondary Battery* result does nothing, and so on. In such cases, treat the result as “no effect.”

There are also several cases in which critical damage can be applied only once. For example, your ship’s directors or flak value can only be degraded from blue to red. Once the value is red, more critical damage has no effect on that ship system. A torpedo launcher can only be destroyed once, as is the case with any given turret.

Some critical damage results apply only when playing the advanced game.

CRITICAL DAMAGE SYMBOLS

PEN Only

“PEN Only.” This note above the symbol indicates that this type of damage applies only if the artillery penetrated the ship’s armor. If it didn’t, treat the result as “no effect.”



Minimum Damage. If an enemy weapon hit the ship but didn’t penetrate, then this result means that it did one structure damage after all. If the weapon hit the ship and *did* penetrate, i.e. already did structure damage, treat this result as “no effect.”



Extra Damage (Advanced Game Only). This result means that an extra amount of structure damage is inflicted (representing fires and subsequent explosions), over and above whatever the weapon already did.



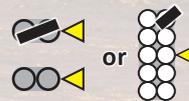
Directors. The ship’s director value is degraded. Mark-out the blue box. You must now use the red value.



Primary Battery. One of the ship’s primary battery turrets has been destroyed. The shooting player chooses which turret. All tubes on that turret are destroyed.



Secondary Battery. One of the ship’s secondary battery turrets has been destroyed. The shooting player chooses which turret. If the ship has case-mates, then only one tube is destroyed.



Torpedo Launcher. If the ship has a torpedo launcher, that launcher (and its torpedoes, if they still haven’t been launched) are destroyed. If the ship has multiple launchers, the shooter chooses one to destroy.



Catastrophic Explosion. The ship’s magazine explodes, sinking her immediately.



Flooding. Mark-out the highest-value box on the ship’s buoyancy track. If that was the last (red) box, then the ship sinks.

Note that you must do this even if the ship is crippled and already reduced to its lowest top speed.



CRITICAL DAMAGE SYMBOLS



Flak (Advanced Game Only). The ship's flak value is degraded. Mark-out the blue box. You must now use the red value.



Plane (Advanced Game Only). One plane on the carrier is destroyed. The shooter chooses which plane. A carrier with an armored flight deck treats this as "no effect."



Plane (Advanced Game Only). As above, but this applies even if the target is a carrier with an armored flight deck.

Four Ways to Die (I realize that sounds like a James Bond movie)

A ship is removed from the game at the moment any of the following happens:

- If it marks its last structure box, OR
- If it marks the last box of its buoyancy track, OR
- If it takes a torpedo hit with a value six or more greater than its armor, OR
- If it suffers a catastrophic explosion.



HMAS Australia by Ralph Hart.

NOTES ON DAMAGE



Shots, Hits, and Damage

Naval wargames “bathtub” the process of hitting and causing damage. This is particularly true at close ranges and with smaller weapons. The 5” guns of an American destroyer, for example, could fire at least twelve rounds per minute. Unless you want a game in which one turn represents five seconds (!) then you must accept the abstraction that a “hit” in the game might represent several. Ships often took a large number of hits. The cruiser *Vincennes*, for example, was hit over 80 times by Japanese artillery at Savo Island before succumbing to torpedo damage. I’d rather not have to resolve eighty separate hits for a single ship in a single game.

What is Damage?

Torpedo and bomb damage is relatively simple to contemplate. An armor-piercing bomb, plunging through the deck of even the mightiest battleship at an unpredictable angle, could cause serious trouble for almost any ship system. A torpedo has the ability to do fundamental damage to almost anything except superstructural systems like AA or radar (although in the latter case it might indeed flood the compartment through which information must be processed).

Artillery is different. Before assessing damage, we have to determine whether a shell penetrated the target’s armor. If it penetrated before exploding, particularly if it did so around the waterline or by plunging through the deck armor, it could wreak havoc.

Navies often used the recycled armor plate of old, decommissioned warships for weapon tests. Considerable data thus exists to give us a general idea of the penetrative power of 1940s naval artillery. Out to about 16,000 yards the heavier artillery could penetrate as much armor as their size suggests. For example, the 15” guns on *Bismarck* could penetrate over 16” of armor at that range, more than the armor of any ship afloat. The 8” guns of a US heavy cruiser at 16,000 yards could penetrate about 6-7” of armor, enough to put a hole in any enemy cruiser.

Although big guns had theoretical maximum ranges that were much longer, nobody ever hit anything at a range greater than 26,000 yards. At that range, a shell plunged at an angle of about 20 degrees. That’s not nearly as steep as a dive bomber, but it meant there was a possibility of a “plunging shot” that missed the belt armor and penetrated the thinner deck armor. Thus at long range there’s a modest chance of a very good result. But two thirds of the time, it is likely that the shell strikes belt armor after having flown ten miles or more, and is thus reduced in effectiveness.

Why Separate Buoyancy from Structure?

It was rare that a large ship was sunk by enemy gunfire. It did occasionally happen (*HMS Glorious* was a famous example), but sinking this way was more often the fate of destroyers. Big ships were more likely reduced to hulks, at which point they were usually abandoned and then finished off later with torpedoes, sometimes by their own side.

Although torpedoes usually cause only minimal structure damage to big ships, they often cause buoyancy damage, which is a much shorter track. In this way, we can highlight the vulnerability of ships to enemy torpedoes, and the cumulative effect of flooding.

Torpedoes are too Scary! One Shot, One Kill?

As with artillery fire, a torpedo “hit” in the game might represent more than one torpedo in the spread finding its target. The war provides many examples of big ships going down from a single spread of torpedoes: heavy cruisers like USS *Indianapolis* (two hits), battleships like HMS *Royal Oak* (three hits), carriers like the IJN’s *Taiho* (one hit, followed by poor damage control).

The most effective torpedoes have a 50-50 chance of sinking a typical cruiser, and are virtually guaranteed to sink lighter ships. That said, those lighter ships are also usually faster, more difficult targets, and since torpedoes are a precious one-shot resource, you are usually more tempted to launch them against high-priority targets that are better able to survive them.