

Patch data:

Name: Fair Hit
Version: 1.1
Author: HatZen08

ROM data:

Console: Super Nintendo Entertainment System (SNES)
Official name: Final Fantasy 3 (USA) / Final Fantasy 6 (JPN)
Language/Version: English, version 1.0
Header: Yes

Log:

Version 1.1:

- Fixed: Unset high byte of A could corrupt the division function at Lv X Spells.
- Fixed: Fenrir spell could dispel the image status.
- Added: F.A.Q.

FAQ:

Q: What is the Fair Hit patch?

A: The Fair Hit patch is a reimplement of the hit system in Final Fantasy 3. It defines, for every action in battle, if it hits or miss.

The patch isn't a bug fix. It uses different algorithms from the original one and produces different results.

Q: If compared with the original hit system, what is his best feature?

A: It doesn't have the following bugs:

- In the original, only the magical evasion is used. The physical evasion is replaced by magical evasion because of a bug.
- In the original, monsters have physical and magical evasion. However, it is practically ignored in the hit system.
- In the original, when status conflicts over hit rate, questionable priorities are used. As example, Vanish has priority over Reflect.

Q: How hit rate is calculated?

A: There is three hit rates in the original code. They are the physical hit rate, the magical hit rate and the attack hit rate.

The formula for physical and magical hit rate are capped at [1, 255]. Higher values raises the change to hit an attack. Lower values raises the chance to miss an attack. Their formulas are:

Physical hit rate = $255 - (\text{Evade} * 2) + 1$.

Magical hit rate = $255 - (\text{Mblock} * 2) + 1$.

The attack hit rate is a value loaded from different databases:

- If the attack is fight and attacker is monster, it is loaded from the monsters database.
- If the attack is fight and attacker is character, it is loaded from the weapons database.
- If the attack is a spell, it is loaded from the spells database.

The value stored in the attack hit rate is redundant. All values loaded from the the attack hit rate will always hit in the original algorithm because they are too high. With few exceptions, a attack will never miss because of the attack hit rate alone.

This patch selects between the physical hit rate or the magical hit rate, based in the type of attack. The attack hit rate is not used because it is redundant, except in special cases. The algorithm assumes that the attack hit rate alone will always hit. It is effectively what happens in the original code.

Q: How does the Lv X spells work?

A: In the original code, Lv X spells hit or miss based on the target's level. Unfortunately, the enemies level are preset in every battle with the same value. As result, all Lv X spells will produce equal hit rate for the same target.

In this patch, Lv X spells ignores the target's physical or magical evasion. It uses the attack hit rate to calculate if the spell hit or miss. For values in the [1,9] range, the hit rate is 1/X. Otherwise, the attack hit rate is used as the target's hit rate. In summary:

- Lv 3 Muddle hit rate is 1/3 or 33%
- Lv 4 Flare hit rate is 1/4 or 25%
- Lv 5 Doom hit rate is 1/5 or 20%
- Lv ? Pearl hit rate is calculated by a special code and isn't affected by the new algorithm.

Q: How does the stamina defense work?

A: Stamina is used as evasion. Physical or magical evasion is fully ignored. The value of 1 corresponds as 25% of evasion and the value of 64 corresponds as 75% of evasion. In the algorithm, evasion is capped at [1,64].

Q: How does Golem work?

A: Golem HP is set as the caster's HP. Every time a character is hit by a common physical attack, Golem's HP is decreased instead of the target's HP. When golem's HP becomes 0, he will stop to block enemies attacks. It is the original algorithm for Golem.

Q: How does Interceptor's block work?

A: He intercepts 25% of all common physical attacks. When it is intercepted, Interceptor have 50% of chance to counter attack.

Q: How does Blind status work?

A: If the target has Blind status, he has 25% of chance to have his physical evasion fully ignored. When this effect is triggered, the attack will always hit. It only applies to physical attacks.

Q: How does Bead effect work?

A: The Bead effect gives the wearer 25% of chance to dodge any physical attack. When it is triggered, an animation is displayed. The character rises their arms.

Q: How does Image status work?

A: While the image status is in effect, all common physical attacks will miss. However, any physical or magical attack have 25% of chance to dispel the image status.

Q: My effective hit rate is different from the described. Why?

A: The algorithm uses a pseudo random number generator. It has issues related to the badly distribution of the generated numbers.

As example, suppose there is two series of numbers generated by the pseudo random number generator. The numbers are in the range of [1,255]:

A = { 56, 289, 125, 160, 1, 199 }

B = { 1, 64, 120, 55, 9, 17 }

If the number generator has a good distribution, it is possible to calculate a hit rate of nearly 50% based on the statement:

- If the number is higher than 126, it hits. Otherwise, it misses.

If you apply the statement to the A series, the effective hit rate is 50% because three numbers are higher than 126. They are {289, 160 e 199}. However, the B series doesn't have one single number higher than 126. Its supposed hit rate should be 50%. However, its effective hit rate is 0% because of the generated random numbers. They are too low and badly distributed in the [1, 255] range.

The effective hit rate will always have the interference of this issue. When the generated numbers are really badly distributed, the effective hit rate can variate greatly. However, in the long run, it should work as it is supposed to be.

Bug Tracker

If you have found a bug, you can post it in the forum:

<http://www.romhacking.net/forum/index.php/topic,15577.0.html>