



Notes from the Bunker

Challenge Ratings and Monster Advancement

by Rich Redman

Welcome to my bunker. As one of the designers of the *d20 Modern Roleplaying Game*, and a veteran of real-world modern combat (having served as a tank platoon leader in Operation: Desert Storm), I'm in a unique position to offer insights into the game.

This month's topic is assigning and testing Challenge Ratings. As an added bonus, we'll also take a look at how monster advancement works and go through a detailed example.

Introduction

Last month I promised a statistics block for the fiend we designed in that column. Since we'll be using it extensively in this installment, let's take a look at that first.

Shock Fiend

Shock fiends are chaotic creatures that delight in skulking around beneath modern cities, sucking electricity from cables, shorting out electrical devices, and interfering with the normal functioning of car batteries, stop lights, telephones, and other mechanisms.

A shock fiend stands approximately 8 feet tall and looks like an emaciated humanoid with long limbs and fingers. It has pale, leathery skin and no facial features save for two glowing, purple eyes.

In combat, shock fiends take advantage of the concealment they can gain when their electricity draining fields disable electric lights. They use their superior speed to stay out of reach of opponents, hurling electrical arcs at those foolish enough to come into range. Shock fiends prefer confined spaces in which ranged weapons don't offer opponents a significant advantage. When these monsters must cross open spaces, they do so in groups, using their lethal shock abilities to defend themselves.

Species Traits

Arc Ray (Su): As an attack action, a shock fiend can make a ranged touch attack against a single opponent. If the attack hits, the arc ray deals 1d6 points of electricity damage if the shock fiend is Medium-size, or 1d8 points if it's Large, or 2d6 points if it's Huge. The maximum range for this attack is 25 feet plus 5 feet per 2 Hit Dice, rounded down (that is, 30 feet for a 3-HD shock fiend).

Burning Water (Ex): Shock fiends react to water as if it were acid. A direct hit from a vial of water or a large, pump-action squirt gun deals 1d6 points of acid damage to the creature on a direct hit. A splash from a near-miss deals 1 point of acid damage, and water threatens a critical hit on a natural roll of 20.

Electricity Draining Field (Su): A shock fiend emits an electricity draining effect at all times. This effect extends to a radius of 5 feet per Hit Die (15 feet for a 3-HD creature) around the shock fiend. Any electrical

device within the electricity draining field is completely drained of power and ceases functioning. An unattended device receives no save against this effect; one that is held, carried, or operated by a creature can attempt a Fortitude saving throw (DC 14) using the wielder's Fortitude saving throw bonus to negate the effect. A new save at the same DC is required each round until the device either fails a save or is removed from the field. The save DC is Constitution-based ($10 + 1/2$ shock fiend's HD + shock fiend's Constitution modifier). The drained electrical device does not function again until it is outside the field and its power source has been replaced. A solid barrier at least 4 inches thick blocks the effect of the field.

Lethal Shock (Su): Whenever the electricity draining fields of two or more shock fiends touch (that is, when two or more 3-HD shock fiends are up to 30 feet apart), they can generate a lethal shock. This effect is the same whether the fiends mass together in a large group or form a chain so that each is in contact with only one or two other fiends' electricity draining fields. The lethal shock effect can be centered on any one contributing shock fiend, and it extends to a radius of 5 feet per Hit Die that fiend possesses. Any creature within this area takes 1d8 points of electricity damage per shock fiend contributing to it (Reflex save for half, DC 10 + the number of shock fiends contributing). Using this lethal shock ability suppresses the electricity draining field of the shock fiend on which it is centered for 1d4 rounds. This fiend cannot contribute to subsequent lethal shocks and cannot serve as the centering point for this effect again until its electricity draining field is restored.

Shock Field (Su): A shock fiend's electrical nature makes it hazardous even to touch. Any creature that makes an unarmed melee attack against the shock fiend takes 1d3 points of electrical damage. If a shock fiend is grappled, every creature in the grapple (except for shock fiends) takes 1d3 points of electrical damage per round of grappling.

Shock Fiend (Electricity Fiend): CR 4; Medium-size outsider; HD 3d8+9; hp 22; Mas 17; Init +2; Spd 40 ft.; Defense 21, touch 12, flat-footed 19 (+2 Dexterity, +9 natural); BAB +3; Grap +4; Atk +4 melee (1d4+1 plus 1d3 electricity, claw), or +5 ranged (1d6 electricity, arc ray); Full Atk +4 melee (1d4+1 plus 1d3 electricity, 2 claws), or +5 ranged (1d6 electricity, arc ray); FS 5 ft. by 5 ft.; Reach 5 ft.; SQ cold resistance 10, darkvision 60 ft., electricity draining field, electricity immunity, lethal shock, outsider traits, telepathy; AL evil, chaos; SV Fort +6, Ref +5, Will +5; AP 0; Rep +0; Str 13, Dex 15, Con 17, Int 8, Wis 14, Cha 12.

Skills: Hide +8, Listen +3, Move Silently +8, Spot +3.

Feats: Point-Blank Shot, Simple Weapon Proficiency.

Advancement: 4-5 HD (Medium-size), 6-8 HD (Large), 9-12 HD (Huge).

Testing Challenge Ratings

The 3rd edition of the *Dungeons & Dragons* game provides a formula for estimating challenge ratings. But while a formula seems reassuring, the figure it provides is still just an estimate. You need to test out the CR of your creation before using it in your game, and you may even need to tweak it further during play.

I originally estimated the shock fiend's CR at 3. Let's see how that tests out.

To test a monster's CR, you need to make several comparisons with the statistics of the characters it's likely to face. Testing is always easier when you have copies of your players' character sheets handy for those comparisons. To test out the shock fiend, we'll use a party of heroes who have only basic classes.

Step 1: Attack and Defense

Add 10 (to represent an average die roll) to your monster's attack bonuses and compare the results with the Defense values of your heroes. If the monster's result is higher than most of the party's Defense ratings, then it can hit the heroes more than 50% of the time. In that case, you might need to raise its CR. If the result is lower than the party's average Defense rating, then it can hit the heroes less than 50% of the time, so its CR may need to come down.

A 3rd level Fast hero with a Dexterity of 15 has a Defense of 16 before factoring in equipment. A Smart or Charismatic hero with an average Dexterity has a Defense of 11 before factoring in equipment. The Defense values of Strong, Tough, and Dedicated heroes fall somewhere in between. Our shock fiend has a +4 bonus on melee attacks and a +5 bonus when using its arc ray, giving it an average attack roll of 14 or 15. Thus, it has a 50% or better chance to hit most of the heroes and less than a 50% chance to hit one of them. That's pretty balanced and doesn't indicate that we need to change the CR.

Now let's reverse the process. Add 10 to the heroes' attack bonuses and compare the results with your monster's Defense. If the party can hit the monster more than 50% of the time, you might need to lower its CR, and if they can hit it less than 50% of the time, you might need to raise its CR. If the ability of the monster to hit the heroes (see above) indicated that the CR needed to go the other way, this result cancels that one.

A 3rd-level Strong hero with a Strength of 15 has a +5 bonus on melee attack rolls. A Fast hero of equal level with a Dexterity of 15 has a +4 bonus on ranged attack rolls. Even if such characters could catch a shock fiend flat-footed, they would have a really tough time hitting it. Thus, its CR should increase. The higher we take the CR, the better chance the heroes have to hit it and the worse chance it has to hit them. In this case, a CR bump of 1 point seems appropriate. At that point, both sides have some difficulty hitting the other, though the fiend can still hit the heroes more often than they can hit it. This fact, however, is likely to force wise heroes to withdraw from their first encounter with it and do some research on the creature. Once they find out about its weakness, the odds should even out considerably.

2. Saving Throws

Add 10 to each of your heroes' saving throw bonuses and compare the result with the saving throw DCs for any of your monster's special abilities that regularly come into play in combat. If the heroes can make their saves more than 50% of the time, the monster's CR is probably too low. If they can save less than 50% of the time, its CR is probably too high.

In the case of our shock fiend, there are only two abilities that require the opponents to make saves. Most of the heroes fall a bit short of the 50% mark on their saves against the electricity draining field, but that ability isn't likely to have a major effect on combat since most characters don't use weapons that depend on electricity. Thus, it doesn't really play into the CR. The lethal shock ability can't be used by a single shock fiend, and its save DC doesn't depend on the creature's statistics, so it also doesn't affect the CR.

3. Resistances, Immunities, and Weaknesses

Compare the creature's resistances and immunities with the damage the heroes can deal. If the heroes have to roll maximum damage to hurt the monster because of its damage reduction, or if they can't hurt it at all because it is resistant or immune to the kind of damage they can deal, either lower its CR or tone down its resistances.

It is possible for characters to take on a creature that they might normally have difficulty damaging if you give it more weaknesses and set up the encounter situations in such a way that the heroes can exploit them. With a little effort, you can create situations in which the heroes encounter the fiend but have the opportunity to withdraw, research its weaknesses, and then return fully prepared to destroy it. For example, a shock fiend with damage reduction 10/+1 should probably be CR 5 or higher, but you could offset that by increasing the potential lethality of its burning water weakness. Instead of having water deal damage as though it were acid, you could make the effect instant death (or 3d6 points of acid damage on a successful Fortitude save). In that case, lower-level heroes could still defeat the creature if they had a chance to find out about its weakness to water.

Advancement

Advancement of monsters is covered in Chapter Eight: Friends and Foes in the *d20 Modern Roleplaying Game*. Table 8-1: Creature Sizes and Table 8-18: Adjustments to Physical Abilities and Natural Armor give most of the information you need for the task.

Take our shock fiend, for example. Its advancement entry indicates that raising its HD to 6 makes it Large. Applying the adjustments to its physical statistics indicated on Table 8-18 along with the new size and additional Hit Dice generates the following creature. (As noted below, I didn't use the natural armor bonus adjustment indicated on Table 8-18 for this creature. See the Advancement Notes section below for the reasoning behind this decision.)

Advanced Shock Fiend

An advanced shock fiend looks the same as a normal one, except for its size.

Species Traits

Arc Ray (Su): As an attack action, a shock fiend can make a ranged touch attack against a single opponent. If the attack hits, the arc ray deals 1d8 points of electricity damage. The maximum range for this attack is 25 feet plus 5 feet per 2 Hit Dice, rounded down (that is, 40 feet for a 6-HD shock fiend).

Burning Water (Ex): As above.

Electricity Draining Field (Su): A shock fiend emits an electricity draining effect at all times. This effect extends to a radius of 5 feet per Hit Die (30 feet for a 6-HD creature) around the shock fiend. Any electrical device within the electricity draining field is completely drained of power and ceases functioning. An unattended device receives no save against this effect; one that is held, carried, or operated by a creature can attempt a Fortitude saving throw (DC 18) using the wielder's Fortitude saving throw bonus to negate the effect. A new save at the same DC is required each round until the device either fails a save or is

removed from the field. The save DC is Constitution-based ($10 + 1/2$ shock fiend's HD + shock fiend's Constitution modifier). The drained electrical device does not function again until it is outside the field and its power source has been replaced. A solid barrier at least 4 inches thick blocks the effect of the field.

Lethal Shock (Su): Whenever the electricity draining fields of two or more shock fiends touch (that is, when two or more 6-HD shock fiends are up to 80 feet apart), they can generate a lethal shock. This effect is the same whether the fiends mass together in a large group or form a chain so that each is in contact with only one or two other fiends' electricity draining fields. The lethal shock effect can be centered on any one contributing shock fiend, and it extends to a radius of 5 feet per Hit Die that fiend possesses. Any creature within this area takes 1d8 points of electricity damage per shock fiend contributing to it (Reflex save for half, DC $10 +$ the number of shock fiends contributing). Using this lethal shock ability suppresses the electricity draining field of the shock fiend on which it is centered for 1d4 rounds. This fiend cannot contribute to subsequent lethal shocks and cannot serve as the centering point for this effect again until its electricity draining field is restored.

Shock Field (Su): As above.

Advanced Shock Fiend (electricity fiend): CR 8; Medium-size outsider; HD 6d8+30; hp 57; Mas 21; Init +2; Spd 40 ft.; Defense 24, touch 10, flat-footed 23 (+1 Dexterity, -1 size, +14 natural); BAB +6; Grap +15; Atk +10 melee (1d6+5 plus 1d3 electricity, claw), or +6 ranged (1d8 electricity, arc ray); Full Atk +10 melee (1d6+5 plus 1d3 electricity, 2 claws), or +6 ranged (1d6 electricity, arc ray); FS 5 ft. by 5 ft.; Reach 10 ft.; SQ cold resistance 10, darkvision 60 ft., electricity draining field, electricity immunity, lethal shock, outsider traits, telepathy; AL evil, chaos; SV Fort +10, Ref +6, Will +7; AP 0; Rep +0; Str 21, Dex 13, Con 21, Int 8, Wis 14, Cha 12.

Skills: Hide +6, Listen +11, Move Silently +10, Spot +10.

Feats: Point-Blank Shot, Precise Shot, Simple Weapon Proficiency.

Advancement Notes

The huge jump in natural armor bonus was my choice. Rather than using the +2 increase from Table 8-18, I used the standard natural armor bonus for a Large fiend from the Fiend monster entry.

The grapple bonus increases not only because the shock fiend's base attack bonus and Strength score increased, but also because Table 8-1 provides an additional bonus for larger size.

The shock fiend gained 21 skill points in the transition. I assigned 3 ranks each to Hide and Move Silently, bringing both up to the maximum allowed. Of the remaining 15 points, I assigned 8 to Listen and 7 to Spot. The size penalty a Large creature takes on its Hide checks combined with the loss of Dexterity for the size increase means the advanced shock fiend can use all the help it can get in that skill. Unfortunately, it can't do any better than maximum rank, which doesn't entirely offset the losses.

The Large fiend gained another feat. It seemed reasonable to continue along the Point-Blank Shot tree, so

I added Precise Shot.

The CR doubled because the increased ability scores gave the advanced shock fiend a lot more hit points, and a lot more ability in melee, than it had previously. Its greatly increased Defense might mean that its new CR should be even higher, but that should be confirmed through testing.

Summary

Challenge Ratings can't be accurately assigned by a formula; you have to test out the creature both before and during play.

- No statistics block is complete without a description of what your fiend does, what it looks like, and how it fights.
 - Once you have a complete statistics block, test your creation's Challenge Rating by comparing key features against your characters' means of defeating them.
 - If your creation can hit your heroes more than 50% of the time, its CR should be higher. If it can hit them less than 50% of the time, its CR should be lower.
 - If the heroes can hit your creation more than 50% of the time, its CR should be lower. If they can hit it less than 50% of the time, its CR should be higher.
 - If the heroes can make their saving throws against your creation's abilities more than 50% of the time, its CR should be lower. If they can make their saves less than 50% of the time, its CR should be higher.
 - Check the monster's immunities and resistances against the damage the heroes can deal. If they have to roll maximum damage to harm it (or can't harm it at all), its CR should be higher.
 - When advancing a monster, check its new size and then start where you did when creating it -- with the ability scores. Next, move on to Hit Dice and hit points. Once you've dealt with those details, you should have all the information you need to complete the advanced statistics block.
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About the Author

Before [Rich Redman](#) came to Wizards of the Coast RPG R&D department, he had been an Army officer, a door-to-door salesman, the manager of a computer store, a fundraiser for a veterans' assistance group, and the manager of Wizards of the Coast's Customer Service department. Rich is a prolific game designer, having worked on the **Dungeons & Dragons** game, the **d20 Modern Roleplaying Game**, the **Marvel Super Heroes Adventure Game**, and **Dark*Matter**. When he's not working as vice president of [The Game Mechanics](#), a d20 design studio, Rich does freelance game design, cooks, and performs yoga.
