



Bullet Points Vehicles

by Charles Ryan

Welcome to the sixth installment of *Bullet Points*. I'm Charles Ryan, one of the designers of the **d20 Modern Roleplaying Game**. I'm here to answer your questions about the game, offer advice on tricky issues, and give you a little peek into the minds of the designers. You'll be hearing from me every couple of weeks.

If you've checked out the earlier installments of *Bullet Points*, you know the format. Every two weeks I pick an issue that's provoked a lot of questions or comments, begin with a general discussion of the topic, and then answer specific questions related to it. If there are any unrelated but pressing questions in my mailbox, I might tackle them at the end of the column, but only if there's room and they can't wait for an appropriately themed column.

Vehicles

The topic for this installment is vehicles -- specifically, why they work the way they do. Let's start with a brief discussion of vehicle statistics and the design decisions behind them.

Hit Points and Hardness

Vehicle statistics, particularly hit points and hardness, elicit quite a few comments. That's especially true in relation to tanks and armored vehicles.

Many gamers are convinced that the armored vehicles for which statistics are given in the game are just too weak. The M1A2 Abrams is often cited as an example for this point of view. After all, goes the argument, it's a well-established fact that the Abrams is indestructible in battle. Nothing short of another Abrams can put so much as a dent in this paragon of combat might; all other attacks simply bounce off its hull.

Now before we go any further, let me back up what I'm about to say with some serious credentials -- not mine, but those of fellow **d20 Modern** designer Rich Redman. Rich was an Abrams platoon leader in Operation: Desert Storm -- he commanded four Abrams tanks during several days of battle. If anybody is intimately familiar with the capabilities of the Abrams, it's Rich.

Now back to the nitty-gritty statistics. Some people have pointed out that the game version of the Abrams, with its hardness of 20 and 64 hit points, can be taken out with small arms. An M2HB fired with the Burst Fire feat deals 4d12 points of damage. That's an average of 26 points per round, or 6 points per round after adjusting for the tank's hardness. At that rate, the tank reaches 0 hp after 11 rounds. That's ridiculous, say the objectors. There's no way machine gun fire could ever penetrate the armor on an Abrams.

Well, they're right. But reducing a vehicle to 0 hit points means only that it has been disabled -- not that it's been blasted to fiery bits. And the occupants, with 100% cover, are never vulnerable to small arms fire.

So what exactly does disabling a tank mean? Any armored vehicle -- even an Abrams -- can be disabled without penetrating its armor. Tanks sport various pieces of external equipment, such as optics and running gear, that they require to function. It's not at all unreasonable that a 1-minute-plus barrage of concentrated, heavy machine gun fire could damage this external equipment enough to render the tank inoperable. If you have any doubts about that, ask Rich. His platoon lost three tanks in the Gulf War, and not a single one of them had its main armor penetrated by enemy fire.

The foregoing doesn't mean that just any handheld weapon can disable a tank. Like any other objects, vehicles are immune to critical hits, so a tank with a hardness of 20 is never going to be damaged by somebody with a handgun. In fact, a hardness of 20 takes the punch out of almost any attack. The most powerful weapon for which statistics are given in the ***d20 Modern Roleplaying Game*** is the M72 LAW, which deals 10d6 points of damage. That's a lot by the standards of a d20 game -- equivalent to the maximum damage of a *fireball* in D&D. A LAW deals an average of 35 points of damage, or a maximum of 60 points. Because the LAW is an armor-penetrating shaped charge, it ignores 10 points of hardness. Thus, the tank's hardness reduces the damage by only 10, to an average of 25 points. But with its 64 hit points, even a shot from a LAW doesn't slow the Abrams down one iota.

The LAW isn't really a great weapon to be shooting at a modern battle tank, so let's assume you use something more powerful, like a TOW II. No statistics are provided for the TOW in ***d20 Modern***, but it would be reasonable to assume that it deals 20d6 points of damage. That means it deals 70 points of damage on the average, making it more powerful than any spell effect in the *D&D* game. Reduce that damage by 10 for hardness (again, assuming that it ignores 10 points of the tank's 20 hardness), and the TOW deals an average of 60 points per hit. Thus, a hit from a TOW reduces the tank to 4 hit points -- but it's still up and running!

I went looking for a *D&D* effect that could take out an Abrams with an average hit. The best I could come up with was a breath weapon from a great wyrm green dragon, which deals 24d6 points of damage. That's an average of 84 points of damage -- exactly enough to disable the tank. A red dragon's breath deals more raw damage, but because a tank is an object, it takes only half damage from fire.

The Role of the Tank

While you're considering the "realism" of game statistics for tanks, you might also want to consider the role of these vehicles in your game. In the real world, it's nice to imagine (whether or not it's true) that an Abrams fighting in Iraq or Afghanistan is entirely invulnerable to anything the enemy can throw at it. In a game setting, however, the tank is a tool for either the heroes or the bad guys. If it's completely invulnerable, your game is going to get boring pretty quickly.

Vehicle Combat

Before we move on to questions, let's consider the vehicle combat system for a moment. Some gamers have expressed disappointment that the vehicle system in the ***d20 Modern*** game didn't provide for "dramatic chases." That is, instead of offering a method for handling car chases in a free-form manner, the system requires dealing with vehicle positions on a grid. So why did we cut the dramatic chase out of our design philosophy?

The decision was not an easy one. Most of the designers here have worked on roleplaying games for years and years, and many of us have worked on other modern or science-fiction systems in the past. Some of

those games have offered that sort of dramatic chase mechanic for vehicles. Know what we discovered through working with the games that did have it and the games that didn't? No matter which option is chosen -- dramatic or tactical -- half the audience complains. Create a tactical system, and half the gamers lament the lack of a dramatic system. Create a dramatic system, and half the fans cry out for a tactical system. It really all comes down to individual preference.

If you think about it, though, the *d20 Modern* system really provides both. At the character scale, the system is very tactical, and that's what you really need when characters and vehicles are interacting with one another. At the chase scale, the system is still technically tactical, since you're still marking out vehicle locations on a grid. But few roads are wider than a single 50-foot square, so play boils down to a linear chase scene that can be as dramatic as you desire.

The best thing about this arrangement is the way the two systems seamlessly interact. In my own campaign, several scenes that started with gunfights or melees on the ground progressed to the point where the bad guys (or the heroes) eventually retreated to their vehicles. At that point, there was often action at character scale for a round or two, while the vehicles got started and some characters were still racing to get aboard (or to try to stop the fleeing vehicles). Then the action transitioned seamlessly into chase scale without even the slightest pause.

It's also worth mentioning that the *Urban Arcana* campaign setting (due out in May) includes rules for modifying vehicles. It even lets you add magical and supernatural capabilities to your vehicle!

Questions and Answers

Okay, enough of my rambling. Now let's look at some questions relating to vehicles.

What happens when you try to sideswipe a person with a vehicle?

There are no special rules for sideswiping a person; the rules for the sideswipe stunt apply to any target the driver chooses. (In fact, the very first sentence says, "a driver can attempt to sideswipe a vehicle or other target.") Nevertheless, the text might be easier to interpret if the fourth paragraph read as follows.

"If the stunt is successful, both the sideswiping vehicle and the target take damage as if they had collided (See Collisions and Ramming, page 160), except that the collision multiplier is 1/4, and the target (or the driver of the target vehicle) can make a Reflex save (DC 15) to reduce the damage to both vehicles by half of that result. If the target is another vehicle, that vehicle's driver must succeed on a Drive check (DC 15) at the beginning of his next action or lose control of the vehicle."

Are the range increments for vehicle weapons correct? Can't a tank shoot at targets miles away?

First of all, a weapon's range increment is not merely "the longest range we've ever heard rumors of this weapon being used at divided by 10." The actual formula is roughly 2/3 of the maximum effective range divided by 10. This figure provides a base maximum range unaffected by feats or special equipment. The actual effective range can be attained (or exceeded) by adding such elements as the Far Shot feat or special sighting devices.

That said, however, the range increments for armored vehicle weapons are, in fact, wrong. They should be as follows:

BMP-2	30mm cannon	300 ft.
M1A2 Abrams	Tank cannon	400 ft.
M2A2 Bradley	25mm cannon	350 ft.

 **Why can't you score a critical hit against a vehicle? After all, a car definitely has a discernable anatomy -- engine, gas tank, tires, and so on.**

Vehicles are objects. As such, they are immune to critical hits, according to the game rules. Now let's look at a point or two of design philosophy.

Contrary to popular belief, critical hit immunity is not always due to lack of a discernable anatomy. Cars do have important parts, like engines and drive trains -- don't those count as "anatomy"? Maybe, but that's not relevant. A lack of discernable anatomy is just one guideline for determining whether a creature might be immune to critical hits. Certain classes of targets are not subject to critical hits, regardless of whether or not they have discernable anatomies, and objects constitute one of those classes.

Finally, although you can't score a critical hit against a vehicle, you can target some specific vulnerabilities. Check out the rules for taking out tires and targeting windshields on page 163 of the *d20 Modern Roleplaying Game*.

 **Why do I have to pay the full price for a car when I can buy a house with just a down payment?**

This question really relates more to the Wealth system than it does to vehicles, but since we've covered Wealth recently without addressing this particular issue, we may as well talk about it here. All characters must have places to live, whether they own or rent. For that reason, we built the cost of your hero's monthly housing payment (rent or mortgage) into the Wealth system. Thus, the extra hit to the character's Wealth score for buying a house comes only from the down payment. The hero still makes monthly mortgage payments, but you don't have to make Wealth checks for them and they don't affect the character's Wealth score, just as you don't make Wealth checks and the character doesn't suffer Wealth loss for paying rent.

You might argue that mortgage payments are generally more expensive than rent. That's often not true, but we made up for that possibility that it might be the case by basing the down payment DC on about 20% of the full cost of the house -- despite the fact that it's possible to buy a house with as little as 3% to 5% down - - or sometimes even 0% down. The extra cost of mortgage payments is also offset by the fact that home ownership improves your credit rating and therefore expands your buying power. So in the end, it evens out.

Cars differ from houses in that they are optional -- it's not assumed that every character has a car, so the cost of monthly car payments isn't built into the Wealth system. Don't think, however, that just because a character takes a one-time hit to Wealth, he must have purchased the car outright. On the contrary, his Wealth goes down when he buys a car because his buying power (including his available credit) goes down. It's assumed that your character may be making monthly payments, and those payments cut into his

ability to afford other things just as much as the one-time expenditure of the entire purchase price would.

Do you have a rules question about the **d20 Modern Roleplaying Game**?

Send it to bulletpoints@wizards.com, and then check back here every other week for the latest batch of answers!

About the Author

Charles Ryan has designed and written games for more than twelve years. His credits include such diverse titles as the **d20 Modern Roleplaying Game**, *The Wheel of Time Roleplaying Game*, *Deadlands*, *Millennium's End*, *The Last Crusade*, *Star Trek: Deep Space Nine*, *Dune: Chronicles of the Imperium*, and *Star Trek: Red Alert!*, to name just a few. Charles served as Chairman of the Academy of Adventure Gaming Arts & Design, the professional organization of the games industry, from 1996 through 2001. He lives in Kent, Washington with his lovely wife Tammie, three cats, and a dog. He works for Wizards of the Coast, Inc.



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