ARMORED FIGHTING VEHICLE COMBAT:

Due to the recent appearance of armored vehicles on the market, vehicles play an increasingly important role in the 12" action figure world. With slight modification, these rules should accommodate the current vehicles on the market, vehicles from the "Golden Year" resurgence of 12" action figures, blow-molded relics of yesteryear, as well as any unforeseeable future releases. Remember, these rules were designed for playability and fun; nowhere do the rules depart from reality in favor of fun more than in the arena of vehicle use. Thus, ranges of weapons and movement rates of vehicles have been markedly reduced to ensure that the battlespace does not grow to such magnitude that it is excessively unwieldy.

Rate of Fire: All armor (including tanks, AT guns, cannons, etc,) has a rate of fire of 1 shot per turn. Feel free to modify this if you have some unusual weaponry on hand (like a quad-.50 anti-aircraft gun or some such thing).

Order of Firing: similar to infantry:

1. Stationary shooter before moving shooter
2. Hero before non-hero
3. Expert Crew before Veteran Crew
4. Veteran Crew before Average Crew
5. Average Crew before Inexperienced Crew

Crew Experience: The more battles your crew survives, the more experienced they become. This, in turn, makes them a better crew! (Use your own standard - this is the regime we use.)

1-5 Combat Engagements - Recruit (inexperienced) crew
6-10 Combat Engagements - Average crew
11-20+ Combat Engagements - Veteran crew
21+ Combat Engagements - Expert crew

What if the crew has mixed experience because they are a crew of survivors from earlier conflicts? Average the crew's experience to determine their collective experience level. Each member's experience will increase over time, thus raising the collective experience of the crew as a whole. Also note that when the crew changes to a different vehicle, their skill drops to Inexperienced in the new vehicle – ditto for the gunner, since different vehicles have different weapons and each must be learned separately. The best approach is to keep the crew with the same vehicle, so they can "rack up" their battles and experience accordingly.

To Hit (basic roll- note that these ranges are "fun" oriented, not realistic to the point of unplayability, and are in feet rather than inches)**:**

Up to 20 feet....80% chance to hit (+20% bonus on 2nd shot to "range in" on the target)
20 - 30 feet.....60% chance to hit (+15% bonus on 2nd shot)
30 - 50 feet..... 40% chance to hit (+10% on 2nd shot)
50 - 100 feet.... 20% chance to hit (+5% on 2nd shot)
100 feet + ...10% chance to hit (no second shot bonus - this is "ammo wasting" mode)

Effect of movement:

Shooter moving		-50%
Target movement:		
slow	(0-50")	-10%
medium	(50-100")	-20%
fast	(over 100")	-30%

Firing Factors:

The expertise of the gunner is important, as well as many aspects of terrain, etc. The experience of the gunner is determined in the same manner as determining the experience of the crew (above). We treat the gunner separately, as he can "take his skill with him" when he transfers to another crew. Crew skill may help determine who fires first (by teamwork, tank positioning, etc), but it's the gunner who's going to either hit or miss his intended target:

Expert Gunner	+10%
Veteran Gunner	+5
Average Gunner	+- 0
Recruit Gunner	-10

Obscured Targets: If a tank or armored vehicle is hidden behind a wall or earthen barricade of some sort, such that the shooter's projectile could not penetrate, determine what percentage of the target is hidden, and reduce the shooter's chance of a hit by that amount. For example, if a tank half hidden in a tunnel and shooter could not possibly hit and damage the rear half of the tank, his odds of hitting that tank are reduced by 50%. Note that unlike other firing factors, this is 50% of the otherwise calculated result (i.e. if the calculated result shows a 50% chance to hit, but the target is half obscured - 50% - then the shooter's chance to hit is 25%).

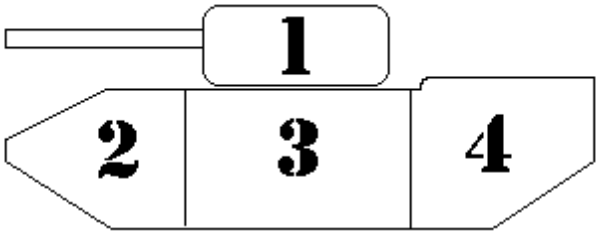
Shooting Cannon at infantry: Use the Artillery rules found in the "EXPLOSIVES / ARTILLERY / FLAME WEAPONS" section.

Tank Machine Gun Use: The coaxial and turret MGs on a tank operate as though the shooter were an infantryman in a fortified position. Shooting occurs with the same Firing Factors that an infantryman would use. (See the Fire Control and To Hit sections above.)

Hit Location: First divide up the target in four roughly equal masses (for example, a side shot might be turret, front of hull, middle of hull, and rear side of hull). Assign a % value to each section you've identified (for example 1-25% = turret, 26-50%=front of hull, 51-75%=middle of hull, 76-00%=rear of hull). Roll a percentile die and determine where the shot hit. You can also use a fancy die OTHER THAN percentile dice. In the example below a 1d4 would work as well as a percentile. Or you could roll 1d6 and disregard (reroll) 5s and 6s. Do it your way. Remember to take into account the areas the shooter can "see" so you don't end up with a hit to an area that couldn't possibly be exposed. Divide up the hull in thirds if the vehicle had no turret

(like the Stug III or an armored car). This has worked well for us, but you can elaborate on these rules to make it as complicated as you would like. Keep in mind, though, that the more complicated it becomes, the less "playable" it becomes. Two adults playing may opt for a very sophisticated elaboration on these rules, while a Dad playing with a couple of kids might want to keep it as simple as possible.

Here's an example of the scheme we use to figure out where a "hit" lands. You can roll percentile dice, or just use 1D4 if you have one:



Die Roll	Area Hit
1-25	1
26-50	2
51-75	3
76-00	4

Penetration:

Now that we know the vehicle was hit, and where it was hit, we have to figure out exactly what the repercussions may be… just because the target was hit doesn't mean it was significantly damaged. This issue requires consideration of two factors: (1) the ability of the cannon to penetrate the target's armor thickness and (2) the effect of deflection angles. Consult the table below to determine what amount of armor a given weapon can penetrate. The tables also include a column for "deflection." This column shows the effect of slanted armor. The greater the armor angle, the more likely that it will successfully deflect the projectile without penetration. But coming up with the math for this would make the game practically unplayable – especially for kids. So we use the "pass-fail" approach where if the deflection is 45 degrees or more, we factor in deflection; if it's less than 45 degrees, we consider it a flat steel plate. [If you'd like a more scientific approach, then the GM can certainly devise one.] Look at the target from the vantage point of the shooter. Determine the location of the hit (like the image above; modify for other views/angles of the target). Is the armor in that location flat (like the vertical side of a tank) or is it sloped (like the front of a Panther tank)? If the armor is perpendicular to the shot, then the projectile may penetrate to its maximum capability (as per the table below). If the armor is slanted 45 degrees or more (because of the angle of the tank to the shooter or because of slanted armor of the tank itself) then use the "deflection" column to see how much armor was penetrated.

Once you've determined where the tank was hit and how much armor the projectile can penetrate, you must determine how much armor the tank has. If the armor thickness is less than the projectile's penetration, damage has occurred. If the armor thickness is more than the projectile can penetrate, your tankers might have a headache from the loud >PING< as it ricochets.

Projectile Penetration Table:

	mm of penetration	
Launcher/Cannon	flat steel plate	deflection (>45deg)
Rifle Grenade	50	25
Piat	115	107
Bazooka	90	45
Panzerfaust	120	60
.50 HMG	25	12
37mm	50	25
47mm	70	35
57mm	85	42
75mm	100	50
76mm	125	62
88mm	200	100
90mm	150	75

Note: we'll discuss anti-tank weapons below, but it's more convenient to put them on the same table here for later reference.

Here is the important info for the M3 Stuart Tank (it's easy to look up the specifications for any armored vehicle you'd like to incorporate into your backyard combat):

Armor Location	Thickness (mm)
Front Glacis	51
Belly	12
Deck	10
Turret front	38
Turret sides	30
Turret top	13
Turret rear	30
Hull sides	25
Hull rear	25
Driver Plate	38

Misc:	
Fording Depth	6"
Trench	12"
Cannon	57mm
57mm Ammo	20 rounds (it's a small tank)
Turret MG	.30/.50 (varies by model)
Crew	3 (driver, gunner, cmdr)

Antitank Example, Part I

Here's an example of Bazooka Joe attacking a SS tank: Joe advances slowly but surely to a ravine running alongside the oblivious SS tank crew who has unwittingly parked their tank out in the open as they stopped to relax in the sunshine. The ravine ends 10 feet from the tank (120"). Joe knows this is within Medium Range of his bazooka. Confidently he raises the bazooka into firing position and spends a turn taking aim. The tank crew spots him and spend the turn jumping into their tank (hoping he'll miss and they'll blast him into oblivion in the next turn). Joe is a Marksman with the bazooka, and it's braced on the edge of the ravine to steady his shot. He is not moving, but moved before aiming. Fortunately for Joe he's not under fire (yet). Joe has a 42% chance of hitting the tank. He fires, rolling a 37% - a hit! A Hit Location roll of 67% indicates the tank was hit in the middle of the hull. The tank was parked at an angle to Joe, and where the hit landed it's greater than 45 degrees - so we have to figure in deflection to see if the bazooka shot penetrated the SS tank's armor. The Projectile Penetration Table shows that the bazooka can penetrate 45 mm of armor at angle. The side of the SS tank is only 25mm thick - Joe's bazooka has penetrated the thin skin of the armored fighting vehicle! With a gigantic KA-BOOM the tank explodes. Black oily smoke gushes from the now-open hatches. Relief slowly comes to Joe and he feels himself relax – if he'd fired a moment later or if he'd missed, the ravine would likely have been blown to pieces by the tank's cannon - with him in it!

Did any of the German tankers survive? That's coming up in the NEXT section!

Damage: A tank whose armor was successfully penetrated by an antitank weapon or cannon could be out of action for the rest of the tactical conflict. Just because the attacker has scored a hit and the hit penetrated the armor, it doesn't solve the whole issue... just what type of damage was done? Did any crewmen survive? After you've determined the hit location and whether it penetrated the target's armor, you must now determine whether the vehicle is "knocked out" or not (next we'll determine the effect upon the crew):

Vehicle Incapacitation: This can include a hit that penetrates and disables some important part of the tank, such as its engine, drive train, cannon, etc, rendering it useless. Use this table to determine whether or not the tank is "knocked out:"

Hit to:	% chance disabled
Side Front	30% (drive train)
Side Middle	30% (drive train, turret controls)
Side Rear	80% (engine)
Turret (if any) front	80% (cannon)
Turret (if any) side	50% (cannon)
Turret (if any) rear	60% (cannon)
Front of hull	30% (drive train)
Rear of hull	80% (engine)

Note: this does not take into account any particular vehicle configuration, so the GM can be flexible here. Does this particular tank store ammo in the rear of the turret? If so, a hit to the rear of the turret could be CATASTROPHIC!

Crew Damage (Based on Hit Location): whether the crew is impacted by the penetration, and how badly they are impacted will be determined via the table below:

Tanks (and rear-engined AFVs)	turret crew	driver/hull gunner
Side hit to turret	killed	50% chance survive
Side hit to front of hull	50% chance survive	killed
Side hit to mid-hull	10% chance survive	10% chance survive
Side hit to rear of hull	60% chance survive	60% chance survive
Front hit to turret	killed	50% chance survive
Front hit to hull	10% chance survive	10% chance survive
Rear hit to turret	killed	50% chance survive
Rear hit to hull	60% chance survive	60% chance survive

Soft Vehicles (Jeeps, Kubels, Schwimmys, etc)	Driver / Front Passenger	Rear Passengers
Side hit to front area of hull	10% chance survive	40% chance survive
Side hit to mid-hull	10% chance survive	10% chance survive
Side hit to rear of hull	40% chance survive	10% chance survive
Front hit to hull	10% chance survive	40% chance survive
Rear hit to hull	40% chance survive	10% chance survive

** Note: a Hero will be incapacitated at most ("blown clear" if need be).*

Crew Survivor Damage:

If a crew member survived the incapacitation or destruction of his tank, next you must determine whether (or how badly) the crewman was injured. Even a crewman in an area of the vehicle that was NOT hit could still be injured by flying shrapnel inside the tank/vehicle. Use percentile dice to determine how badly (if at all) each crewman was injured:

Roll	Effect
1-40	Incapacitated
41-70	Wounded
71-90	Superficial Wound
91-00	Figure Escapes Unscathed

Note: use the Hit Location Table to determine where each crewman was injured if necessary.

Note: if the drive train or engine was hit, the vehicle can remain in combat, but cannot move. If the cannon was damaged, the vehicle could still move, but could not fire its main gun (hopefully it could at least get the crew out of the line of enemy fire!).