4b. Vehicular Combat

Revolution ver 1.0 – 15-Oct-2016. The following text is designated as Open Game Content.

This chapter provides a basic framework for vehicular combat. The basic rules for Conflicts are already enough to run simple action scenes involving only vehicles, but for combats you will probably want to use a system that grants a higher level of detail for vehicular weapons and equipment. This sub-system is intended to be a complement for Basic Combat which handles vehicles, and as such does not assume that you use any of the Advanced Combat rules, although it introduces a simplified version of concepts found also in Advanced Combat like Toughness and Armour Points.

Vehicular combat follows principles that are a bit different from man-to-man combat. Strike Rank will reset at the start of a new Round, unlike it happens in Basic Combat, but vehicles do not spend Strike Rank for each action like living creatures do in Advanced Combat. Movement has a great impact on combat among vehicles, and most rules for vehicular combat will deal intensively with movement.

Finally, these rules represent confrontations between fast vehicles, such as tanks and helicopters, or fighter and bomber aircraft. Capital ship combat should be run differently, although we will devote a small section to it at the end of this sub-chapter.

Round Sequence

Combat is divided into six second rounds, during which each vehicle can perform one or more actions. Every combat goes through the following steps:

1. Combat Setup: At the start of combat all players check any Consequences carried over from Adventure Time and similar disadvantages.

2. Statement of Intents: The Narrator declares what non-player characters will do, as long as it is something that is visible to the player characters. Then all players declare, in ascending INT order, what Actions their vehicles will perform during the Combat Round. Each vehicle pilot picks a number of white, green or red tokens representing the effect of vehicular movement on combat, and keeps them until the end of the round. The Strike Rank for that Round is then determined for each player and non-player character, according to the stated intents.

3. Vehicles Take Action: All vehicles perform their intended Actions in descending Strike Rank order. The vehicle with the highest Strike Rank will go first, followed by the one with the second-highest Strike Rank, and so on until the last vehicle has acted. Reactions, such as evasions or counter-measure use, are made during this process as appropriate, but pilots can wait until they are actually threatened before declaring how they react.

4. **End of Combat Round:** Once all eligible vehicles have acted, the Combat Round is over. All check-marks are erased from Strike Rank tracks, and all tokens are dropped. If there are still vehicles engaged in combat with enemies, go back to point 2 and start another combat round. Otherwise the Time Scale can be moved to Adventure Time.

Combat scale

Vehicular combat takes place on a different scale than individual combat. The distances travelled are far greater, the range at which combat exchanges take place is usually much longer, and the damage is often devastating. Zones and ranges for land vehicle combat are the same you would use in personal combat. However, vehicles can move more zones than a character, and can still fire after moving one or two zones. They do not suffer Penalties for firing within the Effective Range of their weapons without aiming.

For aerial or space combat, normal range and distances are greater. Multiply everything by ten as described in the Aerial Combat section. Battles that involve only helicopters are best kept on the ground scale.

Damage is expressed in damage points like it happens in Basic or Advanced Combat. However, each point of damage in Vehicular Combat corresponds to ten points of Basic/Advanced Combat damage. Likewise, each point of vehicular armour corresponds to ten AP's in Advanced Combat.

For instance, in Chapter 5 we will learn that a modern AT rocket does 2d20+10, or 12 to 50 points of damage, on the personal combat scale. On the vehicular scale, this will translate into a 2-5 range, or 1d4+1; enough to pierce the armour of most WW2 tanks and the lightest modern models.

Statement of Intents

At the start of each Round, the players and the Narrator will plan each vehicle movement, determining its trajectory and the position in which it will terminate its movement. This allows them to calculate the exact Strike Rank on which this movement and all other actions will take place.

Movement tokens

In order to help Statement of Intent, vehicular combat introduces the concept of movement tokens. These are abstract units used to remind you about what your vehicle has performed or is about to perform during the current combat round, although we suggest that you use actual coloured tokens for ease of book-keeping.

Tokens are divided in three groups, identified by their colour

- Green token: represents how difficult to hit your vehicle has become because of its swift and unpredictable movement, and bestows a Penalty on your enemies.

- White token: this token is the most commonly used token, and it counts as both a green and a red token when determining how many tokens of a given colour you have. It bestows a Penalty on both you and your enemies.

- Red token: represents how movement has delayed and impaired all attacks and actions performed by your vehicle. It bestows a Penalty on your rolls but not your enemies'.

Whenever the rules tell you to take a token, take a token of the exact colour specified. Whenever instructed to count red or green tokens, count white tokens among both red and green tokens.

Example: a vehicle has one white token and a red token. If counting green tokens, it has one (the white token). If counting red tokens, it has two (the real red token and the white token).

Declaring Movement

When evaluating vehicular movement, consider that all movement within a zone costs nothing in terms of tokens. It just takes place at the appropriate Strike Rank for the vechicle. Each full zone moved costs the vehicle one white token. No vehicle can move further than its basic Move in zones. All tokens picked because of movement after the third are red tokens, not white tokens. The first white token picked by a flying vehicle is always replaced with a green token.

VEHICLE MOVEMENT TABLE			
Movement in zones	**Land Movement in metres**	**Air Movement in metres**	**Tokens picked**
Within same zone	Within 15 metres (9 km/h)	Within 150 metres (90 km/h)	No tokens
One zone	Within 30 metres (18 km/h)	Within 300 metres (180 km/h)	One white token
Two zones	Within 60 metres (36 km/h)	Within 600 metres (360 km/h)	Two white tokens
Three zones	Within 90 metres (54 km/h)	Within 900 metres (540 km/h)	Three white tokens
Each further zone	Each further 30 metres	Each further 300 metres	One extra red token

Determining Strike Rank

During Statement of Intents Phase, after determining their plan for the current Round, players whose vehicle will move calculate their Strike Rank by checking the number of tokens they have picked. The Narrator does the same for all non-player characters, noting which vehicles act at a Strike Rank which is lower than DEX.

Strike Rank is based on the DEX of the pilot. However, if a vehicle has more than one crew, consider the main gunner's DEX if the vehicle is trying to fire that round, and the pilot's DEX if it is just manoeuvring. This value is treated as the pilot's DEX for the duration of that Round.

White/Red tokens	Strike Rank
Up to one	DEX
Two	DEX -5
Three or more	DEX -5, and can only move and not act

If the final Strike Rank is zero or less, then the vehicle cannot attack that round, and its Strike Rank drops to one.

Vehicular attacks

During the Action Phase, each vehicle executes its movements, attacks and other actions according to its stated plans. In general, a player may change his or her statement of intent once the planned Strike Rank arrives,. However, this will always add one extra red token to the standard cost of the new actions, which may imply that they become impossible.

Target range and line of fire

The validity of the range for a planned attack, as well as the presence of a line of sight, must be checked using the position of the target during Statement of Intent and the presumed position of the attacker after he or she has performed the planned movement. If range or obstacles do not allow the attack, then the player can neither declare it during the Statement of Intents phase, nor execute it during the Action phase.

It may happen that the intended target is no longer in the expected position after a vehicle executes its move. If this is the case, and the attack becomes impossible, then it must be aborted. If the attack is not impossible, it will be carried over with the range and modifiers related to the new position of the target.

It may also happen that a target is not yet in the position for which the attack is declared when the attacker's Strike Rank comes, but it has declared a movement that would bring it there for a subsequent DEX Rank. In this case, the attacker can delay the attack until a subsequent Strike Rank at no penalty. The target can abort its movement to avoid being hit, but this will cost it the extra red token for altering intents.

Modifiers to the Attack roll

Most attacks in vehicular combat are ranged attacks. For each green or white token the *target* has, an attack suffers one Penalty. For each red or white token the *attacker* has, the attack suffers one Penalty.

Vehicular weapons are more precise than individual ones, and they can always fire within their effective range without any Penalty. For each Range Category beyond effective Range, an attack suffers one Penalty. Firing Bursts provides a Bonus as in personal combat.

Ranged defence

Vehicles can evade projectile and beam weapons, although such a feat is not necessarily easy. Ground targets can only evade missiles by rolling their driver's Drive skill with a Penalty. They cannot evade gunfire or beam weapons. Flying vehicles can evade any kind of attack with a normal Pilot skill.

Evasion rolls are influenced by tokens, but less than attacks: they ignore the first two red/white tokens, and become impossible when the defender has three or more.

Missiles

Missiles are inaccurate weapons that can deal a lot of damage. Missiles are ideal for use against big, slow targets, as they are easy to evade for aircraft but impossible to avoid for capital ships or bases. Due to its limited speed, evading a missile fired outside its normal range receives a Bonus, which in the case of a ground target offsets the inherent Penalty for evading on land.

The best defence a slow target has against a missile is countermeasures. Countermeasures are used with an Operate [specific countermeasure] roll that opposes the attack roll. Turrets specialised in anti-missile fire are treated as countermeasures, although they can also fire at aircraft.

Missiles are not very precise weapons. Missile attacks cannot score an Advantage, no matter the roll.

Hits

When a vehicle is hit, roll for the location hit and then roll for weapon damage. Subtract the armour that protects that specific location, and apply the remaining damage to the Toughness of the area hit.

Damage is always cumulative for vehicles. Damage from each hit is added to any previous damage until total damage equals or surpasses Toughness. If an Advantage was scored (remember, missiles cannot score Advantages), the attacker can choose the location hit.

Each point of damage that affects Toughness can destroy or disable sub-systems present in the location. Each sub-system is identified with a number in the vehicle description. The equipment marked with the same number as the unit die of the attack roll is hit by the first point of damage inflicted. For each point of damage after the first, roll 1d10 and disable the appropriate component. Any roll of "0" on either the unit die or a d10 means that the attacker can choose the disabled component. Disabling an engine can blow up a craft if the pilot or chief engineer fails an Operate roll. A vehicle with a disabled engine can still move if it has additional ones, but all Pilot rolls will suffer one Penalty.

Once the Toughness of a location has been reduced to zero, it is disabled and all components in it cease to function, although this will cause an explosion, when the location contained an engine or other potentially explosive materials, only if the specific sub-system was hit. For most ships, sinking is just a matter of time once one of their locations is destroyed.

Aerial Combat

This section includes detailed rules for aerial and space combat. We will use the term "aircraft" to indicate anything that can fly, either in space or in the atmosphere.

First Token Rule

Whenever an aircraft moves and the rules decree that it has to pick one or more white tokens, replace the first white token picked with a green one. This represents the intrinsic difficulty of hitting a flying target.

Aerial ranges

Whether you use zones or actual distances, aerial combat ranges and movement allowances are ten times as big as their equivalent on the ground. Multiply everything by ten to obtain plausible zone sizes and range distances for aerial combat: one zone is 200-300 metres, short range is 500 metres, and so on. This means that one zone on an aerial battlefield may be the equivalent of a whole ground battlefield.

Even though distances are greater in aerial combat, the numeric ranges given for vehicular weapons are valid when the vehicle is flying or is firing at an airborne target. This represents the fact that it is much easier to have a clear line of fire when one or more of the combatants are airborne. The only difference with ground-based combat is that all kinetic (except HE), laser or particle weapons used beyond Medium aerial range have their damage halved, no matter what their listed effective range is. Missiles, which are not so effective on the ground, become more useful when launched from a spacecraft, as they will still be able to deal full damage when launched from kilometres away.

Minimum Movement

While an aircraft is moving in the atmosphere, it cannot stop completely unless it can hover. It must move a minimum of one zone, which will give it one green token, according to the First Token Rule. Whenever the vehicle is not moving at all because it is hovering, it will not gain this green token, thus becoming an easy target.

Firing arc

Weapons not mounted on turrets can only fire straight in front of the firing vehicle. While this is usually of limited importance for ground vehicles, which can easily make a turn within the time frame of one Combat Round, it becomes a major inconvenience for aircraft, which are always facing in the direction of their last movement. At the same time, the enemy will undoubtedly try to be as far as possible from an aircraft firing arc when its Strike Rank comes, so the vehicle might have to perform some manoeuvres to keep its target in the line of fire.

When firing at another aerial target that is not immobile or moving directly towards you, you must make sure to end your movement with the enemy exactly in the direction your craft is facing. You can usually end your movement facing a direction which forms up to a 45 degree angle with the one your aircraft faced at the start of the Round. You can attempt to make greater turns, up to 90 degrees, by succeeding in a Pilot skill roll, modified by any red/white tokens you have. Few aircraft can make turns of more than 90 degrees, and those that can receive a further Penalty to the roll in any case.

The Pilot Skill roll to keep the enemy in your firing arc must be made after making your move and just before firing. The roll is not opposed. The enemy pilot will have a chance to evade the attack itself, according to the rules for aerial defence. A failed roll will force you to pick an extra red token, possibly delaying your attack or making it impossible (remember that three red tokens mean automatic failure).

Capital Ship Combat

Some naval or space battles will feature one or more capital ships or space stations. Each ship can constitute a separate battleground for personal or vehicular combat and occupy one entire zone on the in-flight battleground. Capital ships may change facing by no more than 45 degrees per round during combat, and even this simple manoeuvre requires the helmsman to make a successful Pilot Skill roll. A capital ship receives no tokens when moving, and is always considered immobile when firing, as its velocity is extremely stable and its effect on accuracy is easy for its firing computers to calculate (or for its experienced skipper to guess if your game is set during the age of sail).

When a smaller vehicle hits a ship within normal weapon range, the location where the blow lands is not rolled but chosen by the firer. If the roll is an Advantage, the attacker can choose even the single subsystem targeted, hoping to disable a vital system. Capital ships cannot evade any attack but they are often equipped with heavy armour or energy shields or even more frequently with point-blank guns, usually mounted in turrets, that they use to intercept incoming missiles. Apply the rules for countermeasures to these guns. Player characters are often found manning these devices in battle.

Capital ships can fire any number of weapons per round, as each weapon is supposed to be operated by a separate gunner. When a capital ship attacks another capital ship, given the long range of ship weapons, the two are hardly ever located on the same map. Combat between capital ships is better handled at a more abstract level if you are not employing a specific advanced sub-system designed for this purpose.