Advance Wars Game Spec – To be expanded

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Advance wars is superficially simple, players take turns moving their entire set of units across the battlefield. This will focus on the rules governing combat, and unit movement across terrain.

There are 3 basic groups of units, Ranged, Direct, and Transport

Direct units are those that can move and then attack adjacent units after the movement action.

Ranged units are ones that can either move, or attack at range. There is a minimum range as well as a maximum range.

Transport units can carry certain types of units and move them. The units have to move to the transport and load themselves in, the transport is then free to move, and then unload after moving to any adjacent space.

The entire battle occurs on a rectangular grid of squares. Each unit occupies a square and has a movement range, movement type, fuel and sight range. Sight range only plays a role on fog of war maps.

Units are considered as potentially having 2 weapons. One of these is a weapon with ammo which can be depleted but replenished. If a unit has 2 weapons, then the 2nd will be a machine gun with unlimited ammo.

Direct units

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Name | Movement Type | Movement Range | Fuel | Weapon 1 | Weapon 2 | Sight Range | Cost |
| Infantry | 3 | Foot | - | Mach Gun | - | 2 | 1000 |
| Mech | 2 | Mech | - | Mach Gun | Bazooka (10) | 2 | 3000 |
| Recon (Jeep) | 8 | Tires | 99 | Mach Gun | - | 5 | 4000 |
| Small Tank | 6 | Tread | 60 | Mach Gun | Tank Shells 10 | 3 | 7000 |
| Medium Tank | 5 | Tread | 50 | Mach Gun | Bigger Tank Shells 10 | 1 | 16000 |
| Anti-Air | 6 | Tread | 60 | Flak Gun | - | 2 | 8000 |
| Helicopter | 6 | Air | 99/1 | Mach Gun | Rockets 10 | 3 | 9000 |
| Bomber | 7 | Air | 99/5 | - | Air-Ground Bombs 10 | 2 | 22000 |
| Fighter | 9 | Air | 99/5 | - | Air-Air Rockets 10 | 2 | 20000 |
| Submarine | 6 | Sub | 60/1/5 | - | Torpedoes 10 | 5 | 20000 |
| Cruiser | 5 | Ship | 99/2 | Flak Gun | Depth Charges 10 | 3 | 18000 |

Units with Fuel written as 99/5 means that they consume 5 units of fuel as a static cost per turn. Submarines have two costs, 1 unit per turn while on top of the water, 5 units while underwater and hidden.

Indirect Units

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Name | Movement Type | Movement Range | Fuel | Weapon Range | Sight Range | Cost |
| Artillery | Tread | 5 | 99 | 2-4 | 1 | 6000 |
| Rockets | Tires | 5 | 99 | 3-6 | 1 | 15000 |
| Missiles | Tires | 4 | 99 | 3-6 air only | 5 | 12000 |
| Battleship | Ship | 5 | 99/1 | 2-6 | 2 | 28000 |

Each indirect unit has ammunition of 10, which can be replenished (more on this later).

Transport Units

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | Movement Type | Movement Range | Fuel | Sight Range | Cost |
| APC | Treads | 6 | 70 | 1 | 5000 |
| Transport Helicopter | Air | 6 | 99/2 | 2 | 5000 |
| Lander | Ship | 6 | 99/1 | 1 | 12000 |

The main point here is that an APC will refuel all units next to it at the beginning of the turn as well as giving them more ammo, if an APC is commanded to move with or without a unit, it will also refuel vehicles next to it at the end of its turn. This includes air and naval units.

**Unit Interaction**

Unit interactions are fairly straightforward. You cannot move any unit through a space where an enemy unit is located; this means that even if a fighter plane is parked over a bridge, you cannot move units to the other side (even though the plane is clearly in mid air). You can load one infantry or Mech into an APC or a transport copter. You can move 2 of any units onto a Lander except another naval unit, or an air unit. And bizarrely you can land two of any kind of helicopter onto a cruiser. Submarines, even when submerged cannot move over an enemy unit.

If a unit is injured, another unit can move to the same space and “join together” their hp will be a combined total of the two, capped at 10, and they will combine ammunition and fuel stores. If there combined hp could have been more than 10, the player is refunded cash equal to the difference. If two units are joined, their turns end regardless of whether or not the unit that was stationary had moved.

A unit at less than full hp, cannot join with a unit at full hp, although the reverse is true.

Air/Naval units that run out of fuel die at the beginning of the next turn (unless they start the turn on an airport/navy yard respectively, or are next to an APC)

Units without ammo will try to use their secondary weapon if its usable against their target. So a tank out of ammo, will fire its machine gun onto another tank doing about as much damage as infantry would, a fighter without ammo is useless except as a dummy. A helicopter without rockets will fire its machine gun. Naval units, Fighters, and Bombers cannot be struck by machine guns, and as such can only be attacked by secondary weapons.

In fog of war, things change slightly. Units cannot see what is inside a forest (more on terrain later) unless they are next to it, a unit who accidentally moves through an occupied space forfeits its turn. In water, reefs act the same.

Submerged subs behave the same even on non fog maps, if a unit tries to move over it, that unit loses that turn and the sub is revealed. Areas that a player cannot see are greyed out, but the sounds of units moving across during the opponents turn are played as well as revealing the rough area, so you can hear tanks going through the woods even if you cant see them.

Units cannot blind fire into grey territory, a unit must finish the move before the contents of a forest is revealed (so you cant repeatedly start and cancel a move to see what is adjacent to the end space).

**Part 2 – Movement Mechanics**

**-Unit movement in Combat**

**-Unit movement across terrain types**

**-Transport mechanics**

**-Infantry abilities**

Units in combat move slightly differently than normally, as mentioned previously, Direct combat units, such as tanks, infantry, or submarines (in short anything without a ranged attack) can move before attacking, but not after. On the contrary, units with range can only move or attack, but not both. Units cannot move through or end a turn on top of an enemy unit, and a unit that unknowingly encounters an enemy unit in its path will end its turn without being able to attack.

Transport units can only unload at the end of their turn, but units can load into transports before the transport moves, or after it moves as long as it has space.

Units move based on their movement type. There are several types of locomotion: Foot (for infantry), Mech (just for mechs), Tires, Treads, Ship, Air. Each unit has a type of locomotion as well as a movement range. This creates a unique movement effect for each unit as well as a unique behavior. The cost of moving over a certain square of terrain is determined by the terrain type. For example the cost of moving over anything for an air unit is 1. The cost of moving over water is 1 for all ships, and 2 for a reef. If a unit has some movement range left, but not enough to move through the next square, it can stop on it.

For example, in Advance Wars, a rocket unit has an attack range of 3-5. A Movement type of Tires, and a range of 5. Over a road (where movement cost is 1) the unit can move 5 spaces before stopping. In a forest, where over trees the movement cost is 3. The unit can move 2 spaces before stopping even though 2x3=6 which is more than 5. Furthermore, the unit can move one space over a road, one space over a tree, and into the next tree as well. Treads have a slightly different value over trees, so although a rocket unit is literally bogged down by trees, an artillery unit with a movement range of 6 and treads can move 3 spaces into the woods because treads cost 2 to move over trees.

**Transport Mechanics**

Before a transport moves, any unit can move onto it by ending the turn on the transport providing that unit can be carried by the transport. APCs can only carry infantry and mechs, Landers can carry any land unit including an APC that is carrying another unit and carry two units at once compared to 1 for the APC. A helicopter is much like an APC except that it flies and only carries infantry and mechs. None of these units can attack whether or not they are carrying a unit.

The lone exception is the Cruiser. The cruiser can fire flak guns at aircraft, it can fire powerful torpedoes at submarines even if they are submerged (making them the only unit except a sub that can attack a submerged sub) and it can carry two helicopters which can be either transport or battle copters.

A transport cannot “pick up a unit” either by moving over it, or ending a turn on it. These options are not available.

The APC is unique, in that it can refuel and rearm any unit. At the beginning of each turn, the APC will rearm and refuel any unit next to it. This occurs before any unit moves. At the end of its move, the APC can unload any unit it was carrying as well as refuel and rearm all the units it ended the turn next to. The APC can re-arm planes, and ships (if it ends the turn next to them) but it cannot refuel itself (hows that for irony).

**Infantry Abilities**

When I refer to infantry, I mean either the normal infantry or the mech unit. Infantry has a movement range of 4 and a movement cost of 1 over everything except mountains (which is 2). Mechs have a powerful rocket launcher as a 2nd weapon, and have a movement cost of 1 over everything.

Infantry can capture enemy or neutral cities by using the capture command. They can only capture or attack, but they cannot do both. Infantry.. can deal minor damage to nearly any unit with the assault rifles, (or whatever shit they carry), but are mostly inconsequential. Mech units can take a big chunk of health out of any land unit with the rocket launchers, but have limited ammo, when they run out of ammo they are no better or worse than infantry.

Capture works by reducing a city’s capture hp by the capturing units health. All cities and headquarters have 20 hp and take 2 turns to capture with a full hp, so a unit can start one turn, and then get damaged to extend the capture time.

Each faction, or team, starts each battle with a headquarters which is usually in a well defended place, If this headquarters is capture, the battle instantly ends to the demise of the captured faction.

**Part 3 – Artwork and Animations**

**-Menu Animations**

The menu animations are fairly straightforward, an arrow moves between menu options and is animated in 3 states to give you a better idea of where it is at any given time, two arrows (one on each side are used for the main menu). During a battle, a gloved hand pointing a finger is used in place of one side of the square cursor used to select units, and is also used in the menu as a generic pointer for issuing unit commands or battle commands.

The Main Menu contains the following commands:

*Battle Maps*

This includes a section for purchasable content through in game currency. The GBA contains a static number of Cos, battle maps which are purchased through coins acquired through the campaign or through war room maps. This should be revised to include some maps from the original, as well as potential connectivity to a user designed map section. I would propose that we handle this similarly to HoN or LoL where currency is both acquired at a slow rate in game, and can also be purchased.

*Link Mode*

This would allow two game systems to link together for a multiplayer game, this requires further discussion in terms of special rules such as timed turns and etcetera.

*VS Mode*

This allows for a hot-seat game on the same device, this should be fairly simple to implement

*Campaign*

What do you think?

*War Room*

This is a section for purchased maps which can just be played outside of the normal campaign.

*Tutorial*

Also self explanatory

The Battle Menu contains the following commands:

*Units*

This brings up a detailed list of unit statistics including both your units and enemy units, it shows fuel/ammo/health and can be browsed during larger battles to zoom in on a particular unit even if you don’t know where it is.

*Save*

Lets you save the game at that exact point in the battle.

*Info*

This shows the requirement for the current battle, as well as the number of days, CO power gauges and information on each CO.

*Options*

This lets you change in game sound, animation displays, and also gives you the option to yield the battle (forfeit). This command, also gives you the option to “delete” a unit. This turns your cursor into a delete cursor, and if you select a unit with it that has not yet moved during the current day, that unit will self-destruct. You will not earn CO power, or money with this move.

*End*

This command simply ends your turn.

**-Individual Unit Animations**

Each unit has a darkened state which indicates that it has finished its turn for the day, and a lit state indicating it is ready to move. The units have a gentle bob to them, regardless of whether or not they have moved which is a 3 part animation which the units transition through.

-A unit has 3 states, we can call them Low, Mid, and High. For example, infantry start with their lags squat and their rifles low, they first raise their legs a little, then they raise their rifles, then they lower the rifles and lower the legs. If you call the three states L/M/H the units transition through L-M-H-M-L and so on and so forth.

Some units have only 2 animations depending on the unit, for example tanks bob up and down and lengthen then shorten their cannons (weird). Rocket units and Artillery units just have a gentle bob to them. Anti-Air units raise and lower their double cannons and their treads roll slightly. Missile units have no animation except their wheels slightly turning (each wheel is 2x2 pixels) so the the unit is essentially still.

**-Movement Animations**

When you select a unit to issue a command, the movement grid is displayed first for how far the unit can move, if you chose not to move (by selecting the same space) the command menu is shown. When selected, the unit changes to an excited state. For infantry, they appear to run in place, and no longer move their rifles, anti-air units begin to move their treads and stick their guns into the air. All units stop their normal up-down bob and seem to move in place. When moving the units change orientation, and end the turn facing the direction they moved the square onto while still selected and attacking, as soon as you end the unit’s turn, the unit assumes its default right/left facing.

-All units face to the right for Team A and to the left for Team B. Generally the player’s units face Right and the enemy faces Left the entire game. As noted, this only changes temporarily during movement.

**-Combat Animations**

All the usual movement animations take place, during combat the battle map is replaced by a small theater like stage which is divided into 2. On the right are the units being attacked, and on the left are the player controlled units. Each side, has units corresponding to the amount of health the unit has remaining. For every 2 hp the animation has an additional unit up to 5. So at 10 and 9 health, there are 5 units on the side, for 8 and 7 health there are 4 units and etc. The defending units are portrayed on the background of whatever and are stationary. The attacking side rolls/marches/flies onto the corresponding scenery for their terrain and opens fire upon the still defenders. Roughly halfway through this animation, the defenders that are left alive after the attack open fire as well, and retaliate at the attacking forces. After this the animation ends. Units that die are blown up by a small mushroom cloud in the case of explosions. The only exception is infantry that is shot by machine guns which instead just fly off the screen.

This screen also has a health bar divided into 10 sections with the corresponding health written numerically as 1-10. However, the health will drop in smaller increments as appropriate. There is also a small window showing the CO in charge of the unit and their reactions to the attack, the possible emotions displayer are happiness, fear, indifference, pride, and worry. Happiness is shown after a successful attack, worry is shown immediately before an attack fear is shown after a loss of 2 or more hp. Pride is shown during a successful counterattack (during which the Attacking CO will show worry. Indifference is shown by the attacking CO before the attack is made.

**-CO Animations**

These animations are specific to the case. Each CO power has a unique animation to it which affects units differently. Generally, a unit will have a glowing outline to them which slowly fades in/out during that turn. Additionally, the name of the CO power, as well as a full body picture of the CO is shown during a graphical intro right as the power is used. Every unit that the power specifically effects will have an animation affect them such a special glow, flashing lights, rotating flash or something similarly inconsequential.

Each CO has 2 different artworks.

There is a small portrait, which is used in combat animations, and during speech in the game. This is also used for CO selection in the campaign, or in war room maps where you can multiple CO’s.

There is also a full body portrait, which is used during CO description, CO power animations and other choice times during the game.

**Part 4 – CO Abilities and Modifiers**

-**Current CO Abilities and shared patterns**

The game currently features a diverse list of CO’s. We have the annoying Andy, who’s units have no passive bonuses or penalties and who’s CO power is by far the easiest to implement. And we end with Sturm who has a very odd CO power of dropping a meteor onto units and slaughtering their HP.

Upon activating the CO power

|  |  |  |  |
| --- | --- | --- | --- |
| CO Name | Passive Bonus/Penalty | Passive Penalty | CO Power |
| Andy | Absolutely Nothing | Zip/Zero/Zilch | Heals all damaged units by 2 |
| Max | Direct non-infantry units gain +50% attack | All rangedunits have  -10% attack and have a range reduced by 1 | All units gain an additional 10% attack  Direct units gain an additional 15% (after 50% bonus) |
| Sami | All infantry have +20% attack and capture buildings 50% faster | All direct units have -10% attack, ranged units are unaffected | Increases infantry movement range by 1 and reduces movement cost to 1 over all terrain |
| Kanbei | All units have +10% attack and defense | All units cost 10% more to build | Increases all units attack and defense by another 20% |
| Grit | Ranged units have +20% attack and one extra range | All direct attack units have -20% attack and defense | Increases ranged units attack by another 50% and gives them +2 more range |
| Olaf | No passive bonuses | Movement range is the same in bad weather | Makes it snow |
| Sonia | All units have +1 sight range and can see inside trees | Units are “unlucky”. More on this in Section 5 | Increases vision range of all units by a further 2 |
| Sturm | None | All units are 20% weaker | Drops a meteor onto a 3x3 rhombal grid damaging all units down to 2 hp. |
| Eagle | Aircraft are 15% stronger and consume 2 less fuel per turn. | Naval units do 20% less damage | All mechanical units that ended the turn can move again, but are 20% weaker. After ending his turn, Eagle units take 30% more damage |
| Drake | All naval units are 10% stronger and can move one space further. Units are unaffected by rain | All air units are 20% weaker | Damages all enemy units for 1 hp. Causes Rain for at least one turn. Drake passively increases the chance of rain when he’s on a battlefield. |

**-Possibilities**

All CO powers make units 10% stronger for that turn, generally the powers affect the simple statistics for the units or a cross-section of the units. Max has strong tanks, Eagle has strong planes, Drake has strong ships… this gives them some flavor as well as some back story which adds positively to the game experience. In other advance wars games there are CO’s that spawn infantry on buildings, decrease the cost of units, resupply all units and other miscellania. Our best goal here is to brainstorm powers for CO’s along with storyline with some mild to heavy recycling of the available material.