**Manual of Project X**

**Intro**

There are two players with each a team, both with a set of preselected units that you can choose to select or to let the computer select (randomized, preselected groups of units which I will mention later, etc). Both teams are controlled by a single player each and the ultimate goal (for now) is to simply kill the other player’s units.

**Units:**

There will be two classes of units for the first big iteration: infantry and ground vehicles (including scout cars, utility vehicles, halftracks/apcs, tanks, etc). There will be 3 factions in the game initially: Germany, America, and the Soviet Union. Each represent a certain playstyle and should feel different in playstyle.

**Factions:**

The Germans should feel more expensive yet more trained and damaging, with each vehicle and infantry squad feeling even stronger than the last; however some might be more fragile than usual units. The US should be the most balanced faction and should feel the easiest to play and use with not too many drawbacks or benefits. The Soviets should be cheaper and more tanky, but with less vision, mobility, and external features (ammo, takes longer to repair, etc).

**Pregame:**

A player can select for one or both players the units that the player (or both) get to play with in battle. Each team must contain only one faction’s units (makes no sense to pick German units with Soviet units together). Depending on the map, there can be up to 10 (small battle), 20 (medium battle), and 30 (large battle) units, and the total cost of the units can be up to x, y, and z (not decided how costs will go- should we do prestige/reputation? Maybe just straight up prices but what can we base that on?). There should be preselected unit loadouts depending on how many units can be brought and cost values, as well as factions.

**General moves possible:**

A player can pick any one unit and do a move from the following, then switching the turn to the opposing player afterwards.

Units can attack stationary, which grants bonuses for attacking possibly (e.g. % resistance to attacks, more accurate, farther vision radius, more on that in vehicles!)

Units should generally be able to move and then attack (except possibly certain late game heavy units or slower/damaged units of certain kinds such as anti-tank guns.)

Units can also choose to move and then not attack. This is weaker than sprinting.

Units can sprint, making them faster/farther than standard moving but not allowing an attack after. Maybe can give evasion/% chance to dodge attacks if sprinting.

Units can brace, making them not move, end that player’s turn, but give the unit 50% resistance.

A BIG part of the game is reliant on vision, which each unit has a certain amount of vision to be able to see through the fog of war. This fog of war creates a sense of needing to scout and to use smaller units rather than spam bigger units all the time. This is something I’m not sure how to code (vision).

**Infantry have the following attributes:**

Name

Team/Faction

Type

Cost

Hitpoints (HP)

Ammo

Damage (DMG) - split in different weapons - certain weapons can only affect certain types of units.

Percentage Hit (%) - how often the unit can hit enemy targets- this can change up or down.

Move Range (Move)

Sprint Range (Sprint)

Attack Range (Attack)

Vision Range (Vision)

Number Of Crew (Crew)

Evasion Percent (Evasion) - how much % the unit can dodge enemy attacks. - initially 0 unless passives.

Resistance Percent (Resistance) - how much % the unit can resist the damage of enemy attacks (attacks still hit but don’t do as much damage.) - initially 0 unless passives.

**Vehicles have the following attributes:**

Name

Team/Faction

Type

Cost

Hitpoints (HP) - split in 4 parts - Front Armor, Left Armor, Right Armor, Rear Armor - not sure how to code this dimensionality as well.

Ammo

Damage (DMG) - split in different weapons - certain weapons can only affect certain types of units.

Percentage Hit (%) - how often the unit can hit enemy targets- this can change up or down.

Move Range (Move)

Sprint Range (Sprint)

Attack Range (Attack)

Vision Range (Vision)

Attack Radius (Radius) - Both when standing still and moving.

Evasion Percent (Evasion) - how much % the unit can dodge enemy attacks. - initially 0 unless passives.

Resistance Percent (Resistance) - how much % the unit can resist the damage of enemy attacks (attacks still hit but don’t do as much damage.) - initially 0 unless passives.

Secondary:

Number Of Crew (Crew) - For vehicles I’m not sure how to implement this, if this is too difficult then we will skip this for now.

Number Of Parts/Pieces of a Vehicle (Parts) - For vehicles I’m not sure how to implement this, if this is too difficult then we will skip this for now.

**The common attributes/allowed moves are:**

All units can attack stationary, move and then attack, sprint, move only, brace, and give vision.

Both Infantry and Vehicles have a lot in common, they need names, teams, types, cost, hp, dmg, ammo, % hit, move, sprint, attack, vision, evasion, resistance.

**The different attributes/allowed moves are:**

Infantry have crew, which die over time based on hp lost (infantry are a squad of units). Vehicles MIGHT have this in the future but I’m not sure how to implement it properly (vehicles don’t die by simply losing crew over time, if a crew member dies it must be a specific one e.g. driver or gunner or loader, which can significantly affect game mechanics). Same as Vehicle parts, losing engine is different from losing turret rotation.

Infantry can automatically attack in that radius, move in that radius, see in that radius, etc.

Vehicles also cannot simply attack in all 360 degrees around it (except perhaps certain turreted light tanks and vehicles that attack stationary). If a vehicle moves, it will have less radius possible to aim. If a vehicle has no turret, it will have a weak rotation/radius.

Other attributes can be passives or actives that can be attached to different units, such as artillery, utility (repair units), etc. This can be stuff like dumb firing into fog of war, healing other units, replenishing ammo, gaining extra stats for certain moves/tiles moved into, building barricades/trenches, and even ramming/meleeing enemy units.

**Tiles attributes:**

Type

That’s it. Passives or actives can be added on to weird tiles such as shallow water (slower), icier terrain (slower), roads (faster for vehicles?), buildings (blocks vision/attack/movement), cover (resistance gain), mud (removes access to moving on vehicles!? Or probably just slows them down maybe lol).

**Maps:**

For now we run a very simple map, when I have time and we have a visual game going on we’ll start up bigger and better maps. Simple map is a single tileset (grass, desert, or snow) and just an open field.

**Unit Listing**

**Infantry:**

**Rifleman Squad:**

The general purpose infantry squad. Spammable, medium vision range, medium attack range, medium move range, medium cost. Cannot affect vehicles (maybe later can implement grenades). Very average 5 crew infantry squad.

Germany: Slightly more damage for slightly more cost.

America: No benefits or drawbacks.

Soviet Union: 6 crew instead of 5 crew, more men for mother russia. Also cheaper and more hp, but weaker damage, less ammo, and less % hit chance.

**Medic Squad:**

The healer infantry squad, only 2 medics per squad. Same price as rifleman squad but weaker damage and weaker hp. Able to heal other infantry squads. Does not add to dead crew (e.g. if a squad is at 15% hp (1 person) then can heal up to max 20% hp (1 person still left)).

Germany: Single medic, more damage, less hp, same cost as typical medic squads.

America: No benefits or drawbacks.

Soviet Union: Cheaper, but weaker healing (less healing per refit/total carried).

Something to think of in campaign or possibly Britain (Britain I feel is an infantry/special forces focused faction with weaker tanks and direct firepower)- medic squads that can revive.

**Anti-tank Rifleman Squad:**

The Anti-tank infantry squad. Can attack vehicles but also still have decent power vs infantry. Medium-high cost and medium ranges + medium dmg to both infantry and vehicles. 3 crew infantry squad.

Germany: Slightly more damage for slightly more cost.

America: No benefits or drawbacks.

Soviet Union: 4 crew instead of 3 crew. Also cheaper and more hp, but weaker damage, less ammo, and less % hit chance.

**Rocket Squad:**

The Anti-tank infantry squad with far more anti-tank potential than anti-tank rifles. High power vs vehicles, low power vs infantry. High cost. 2 crew infantry squad. Medium ranges + hp.

Germany: Significantly more damage for significantly more cost.

America: No benefits or drawbacks.

Soviet Union: Cheaper, but shorter move range, sprint range, and vision range.

**Officer:**

The Officer is a single crew squad with huge vision range, weak attack to infantry only, weak hp, and medium cost.

Germany: Significantly more damage for slightly more cost.

America: No benefits or drawbacks.

Soviet Union: Cheaper, but cannot attack. Too cheap for weapon.

**Sniper Squad:**

The Sniper is a 2 crew squad with the highest potential infantry killing power of any infantry, with the highest vision and attack ranges of all infantry. High cost. Cannot affect vehicles.

Germany: Slightly more damage for slightly more cost.

America: No benefits or drawbacks.

Soviet Union: 3 crew instead of 2. Also cheaper and more hp, but weaker damage, less ammo, and less % hit chance.

**Engineering Squad:**

The vehicle repair + ammo resupply squad, only 2 crew per squad. Same price as rifleman squad but weaker damage and weaker hp. Able to heal other infantry squads.

Germany: Single engineer, more damage, less hp, same cost as typical engineering squads.

America: No benefits or drawbacks.

Soviet Union: Cheaper, but weaker repair + ammo resupply (less supply per refit/total carried).

**Mortar Squad:**

The Mortar is a 2 crew squad with the potential to hit units in the fog of war by simply trying to hit randomly into the fog of war. However if the enemy is spotted by other units the Mortar can have high accuracy and high attack range on the enemy. Medium damage and short move range/short sprint range/short vision range.

Germany: Significantly more damage for significantly more cost.

America: No benefits or drawbacks.

Soviet Union: 3 crew instead of 2. Also cheaper and more hp, but weaker damage, less ammo, and less % hit chance.

More infantry in the future but this is already a lot probably.

**Vehicles:**

**Utility Vehicles:**

Same vehicles for repair, ambulance, and transport.

**Repair Vehicles:**

Repairs vehicles and resupplies their ammo. Low cost, medium move ranges, vision ranges. No attack, low armor!

Germany: Sd. Kfz. 251: Significantly more armor, repair/supply amount, for slightly more cost.

America: M2 Halftrack: More move range (medium-high), otherwise standard.

Soviet Union: Gaz AA: Significantly cheaper for weaker armor.

**Ambulances:**

Heals infantry squads (but doesn’t add to dead crew, only repairs to so much). See Medic Squad. Low cost, medium move ranges, vision ranges. No attack, low armor!

Germany: Sd. Kfz. 251: Significantly more armor, heal amount, for slightly more cost.

America: M2 Halftrack: More move range (medium-high), otherwise standard.

Soviet Union: Gaz AA: Significantly cheaper for weaker armor.

**Transport Vehicles:**

Allows 2 infantry squads inside a vehicle max. Can evacuate them or transport them around. If blown up the infantry squads die inside! Low cost, medium move ranges, vision ranges. No attack, low armor!

Germany: Sd. Kfz. 251: Significantly more armor, can store 1 more squad, for slightly more cost.

America: M2 Halftrack: More move range (medium-high), otherwise standard.

Soviet Union: Gaz AA: Significantly cheaper for weaker armor.

**Scout Vehicles (unarmed):**

Has MASSIVE vision range, MASSIVE move range, no attack, low armor!

Germany: Kubelwagen: Slightly more armor for slightly more cost.

America: Willy’s Jeep: No benefits or drawbacks.

Soviet Union: ..uh I can’t find one, Soviet need unarmored scout car, Soviet scout with tank.

**Armored Cars:**

Aren’t tanks, have significantly more move range, vision range, and have an attack, one per faction with infantry machine guns only and another that also has cannons to fire at vehicles (barring the Germans which both can penetrate vehicles). Low-medium cost, low hp, medium dmg. Armored cars can rotate 360 degrees easily.

Germany:

Sd. Kfz. 222: Light vehicle damage, slightly more cost.

Sd. Kfz. 234 Puma: Medium vehicle damage, hits like a light-medium tank, farther attack range, significantly more cost.

America:

M3 Scout Car: Infantry damage only, no benefits or drawbacks otherwise from armored car specs.

M8 Greyhound: Medium vehicle damage, hits like a light-medium tank, faster move range, significantly more cost.

Soviet Union:

BA-64: Infantry damage only, very fast move range, weaker damage, weaker armor, significantly cheaper.

BA-10: Light vehicle damage, slightly weaker armor and damage, same cost as M3 Scout Car.

And.. haven’t even gotten to the tanks or tank destroyers. We’ll probably skip artillery or rockets for now until Mortar infantry are in the game: if those happen then artillery and rockets probably can happen.

**Light Tanks:**

Lighter tanks, slightly more vision range, slightly more move range (or significantly depending on the tank), weaker attack, weaker hp, lower cost. Some are higher tier which mean they are significantly higher cost. If not mentioned it is a standard tank cannon which can pen tanks.

Germany:

Early tier:

Panzer I Ausf. A: Weak armor and damage, very cheap. Runs machine guns only, which only harms infantry.

Panzer 35(t): Average armor, damage, and slightly lower price. Slower move range and vision range. Weaker turret rotation.

Mid tier:

Panzer I Ausf. C: Average armor, damage, and price. The very basic tank.

Panzer II Ausf. C: Average armor, damage, and price. However, runs autocannon- which is less accurate per shot but has multiple shots.

Panzer 38(t): Average armor, medium-high damage, and medium-high price. Faster move range than normal. Weaker turret rotation.

Late tier:

Panzer II Ausf. J: Significantly more armor, significantly more damage, significantly more cost. Runs autocannon- which is less accurate per shot but has multiple shots.

America:

Early tier:

M3 Stuart: Lower armor, same damage, and slightly lower price. Slightly higher move range. Good anti-infantry potential (lots of machine guns).

Mid tier:

M5 Stuart: Average armor, damage, and price. Good anti-infantry potential.

LVT-A1: Average armor, damage, and slightly higher price. Does NOT get affected by terrain issues (e.g. cannot be slowed or stopped). Amphibious tank. Good anti-infantry potential. Waker turret rotation.

M22 Locust: High move range, high vision range. Light armor and damage, average price. Basically a scout tank. Designed to be paradropped as a tank (maybe soon?)

Late tier:

M24 Chaffee: Significantly more armor, significantly more damage, significantly more cost. Plays like a medium tank with high move range and vision range.

Soviet Union:

Early tier:

T-26: Lower armor, same damage, and slightly lower price. Weaker rotation.

BT-5: Very low armor, same damage, and slightly lower price. Move range is unparalleled, amazing move range.

Mid tier:

T-60: Weak armor and slightly lower damage, cheap. Runs machine guns only, which only harms infantry. High vision range.

T-70: Weak armor and slightly lower damage, cheap. T-60 that runs a tank cannon.

BT-7: Low armor, same damage, and average price. Move range is unparalleled, amazing move range, and above average vision range.

Late tier:

T-50: Significantly more armor, significantly more damage, significantly more cost. Plays like a medium tank with high move range and vision range.

**Medium Tanks:**

Medium tanks, medium everything. The gold standard of tanks. Some are higher tier which mean they are significantly higher cost.

Germany:

Early tier:

Panzer III Ausf. B: Lower armor, damage, and price. Ghetto medium tank.

Panzer III Ausf. E: Lower armor, same damage, and slightly lower price.

Panzer IV Ausf. E: Average armor, damage, and price.

Mid tier:

Panzer III Ausf. J: Average armor, above average damage, and above average price.

Panzer IV Ausf F2: Average armor, AMAZING damage, and high price. High attack range. The premium sniper tank and the showcase of German firepower. Can duel with tanks well above its tier.

Late tier:

Panther Ausf. G: Above average armor, above average damage, and high price. High vision range.

America:

Early tier:

M3 Lee: Weird funky tank. Lower armor, two guns (one turreted one non-turreted), move range is shorter. Price is average for the potential sustain damage. Weaker rotation.

Mid tier:

M4 Sherman: The staple tank, above average armor, average damage, average price.

Late tier:

Sherman Easy 8: Above average armor, above average damage, above average price. High vision range and attack range differentiates it.

M26 Pershing: High armor, high damage, high price. Solid end game tank.

Soviet Union:

Early tier:

T-28: Lower armor, damage, and price. Holds many machine guns to infantry hunt. Weaker rotation.

Mid tier:

T-34: The staple tank, above average armor, average damage, average price.

T-34/76: Above average armor, above average damage, above average price.

Late tier:

T-34/85: Above average armor, high damage, above average price.

**Heavy Tanks:**

Heavy tanks, low vision range, low move range/possibly attack range, high attack (perhaps some might not be so high), high hp, lower cost. Generally Heavy tanks are high tier.

Germany:

Mid tier:

Panzer VI Tiger: High armor, high damage, high price. Low move range. Weaker rotation.

Late tier:

Panzer VI Tiger II: High armor, AMAZING damage, very high price, very high attack range. Low move range. Weaker rotation.

Maus: INSANE armor, high damage, you will go broke after buying this. Extremely bad move range and vision range. Horrible turret rotation.

America: Relies on Shermans and tank destroyers heavily, maybe Pershing's.

Soviet Union:

Early Tier:

T-35: A joke tank, heavy machine guns with very weak cannon damage and low armor with very weak vision range and move range and attack range. Cheaper than any heavy tank though. What turret rotation?

Mid tier:

KV-1: Very high armor, above average damage, above average price. Low move range. Weaker turret rotation.

KV-2: Very high armor, high damage, high price. Low move range, low vision range. Carries a howitzer which maybe can dumb fire into fog of war. No infantry protection, no machine guns. Bad turret rotation.

Late tier:

IS-2: Very high armor, very high damage, very high price. Slightly weaker turret rotation.

**Tank Destroyers:**

Mixed bag of tanks, some lighter, some medium, some heavy. Generally these lack anti-infantry damage and typically hunt tanks only. General design are as follows per faction:

Germany: Heavier armor, heavier damage, early tier/lower cost vehicles tend to play like heavier early tanks. Later tank destroyers stay very heavy. **Not turreted**, weak mobility.

Early tier:

Marder II: Very weak armor, average damage, cheap price.

Stug III Ausf. B: Very strong armor, average damage, above average price. No machine gun.

Mid tier:

Stug III Ausf. F: Very strong armor, above average damage, above average price. No machine gun.

Jagdpanzer 38(t) Hetzer: High armor and damage, high price, high move and vision range. Feels like a scout tank with an amazing gun but no turret.

Jagdpanzer IV: Very strong armor, very high damage, very high price. High attack range.

Late tier:

Jagdpanther: Very strong armor, very high damage, very high price. High attack and vision range. Lower move range.

Strumtiger: Very strong armor, derpy artillery cannon, very high price. Can dumb fire into fog of war. High damage. No machine gun, weak to infantry. Weaker vision range.

Panzerjager Ferdinand: Highest armor of any tank destroyer, very high damage, very high price.

America: Lighter armor, heavier damage, faster move ranges and farther attack ranges. Turreted, much better mobility in change for lighter armor.

Early tier:

M8 Scott: Light armor, Heavy damage, average price. High move range. Definition of a glass cannon.

Mid tier:

M10 Wolverine: Slightly lower armor, heavy damage, average price. High attack range.

M18 Hellcat: Slightly lower armor, heavy damage, high price. High attack range, high move range, high vision range.

Late tier:

M36 Jackson: Average armor, very heavy damage, high price. High attack range.

Soviet Union: Cheaper cost, weaker armor, medium damage, later vehicles play similarly to German tank destroyers. **Not turreted.**

Early tier:

SU-76: Weak armor, average damage, cheaper price. More spammable non-turreted vehicle.

SU-122: Average armor, very high damage, average price. Artillery cannon, can dumb fire into fog of war. No infantry protection/machine gun. Weak vision range.

Mid tier:

SU-85: Average armor, above average damage, average price. High attack range.

SU-100: Average armor, very high damage, above average price. High attack range.

Late tier:

ISU-152: Very high armor, very high damage, very high price. Artillery cannon, can dumb fire into fog of war. Weaker vision range.