WWI Artillery Simulation

by

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ARE YOU READY TO FIRE?

CONTENTS

INTRODUCTION

Big guns are sexy.

World War 1 had some damn big guns.

Ready to Fire gives a player these damn big guns.

Ready to Fire is a simulation of World War 1 artillery that casts the player as a battery commander, leading a small artillery battery. Traditionally, digital games have represented artillery as a trajectory game, relying on a player's skill at interpreting distance into fire angle. *Ready to Fire* pulls back a bit to explore more interesting decisions. As a battery commander for an artillery battery, the player is responsible for deciding firing targets, calling ranges, and deciding when to move when things get too hot.

It's a broader perspective than usual, and it opens up new types of interaction and detail previously unexplored in games. The intimate details of World War 1 can be expressed: a watch to tell time, a telephone to call in shots, hand-drawn maps for terrain. Scenarios can be set up to explore new aspects of warfare; some examples are night fighting, assault support, and intelligence gathering.

Are you ready for a new type of simluation? Are you ready for the earth-shaking power of fifty-pound shells, under your command? Are you *Ready to Fire*?

Overview

Ready to Fire is a simulation of World War 1 artillery. This PC simulation will convey the excitement and horrors of war, and the tactical considerations a battery commander leading a field battery must make.

World War 1 is known as the first modern war – a war dominated by machines. The ordered lines of Napoleonic warfare disintegrated under the punishing firepower of modern weapons, most notably, accurate and rapid-firing artillery. The absolute killing power artillery possessed in World War 1 reshaped the battlefield, necessitating the stalemate of trench warfare, the enduring public image of the war.

The game's focus will be on the western front, extending from Belgium to Switzerland. The time period will be optimized for the mid-point of the war, 1916, but should be able to stretch to the beginning and end periods with an acceptable minimum of historical inaccuracies. As both sides were roughly comparable, players will be able to play as either the Allies or Central Powers. The art assets and start for artillery will need to be swapped but infantry units should work roughly the same. The baseline, however, will be Britain's Royal Field Artillery (RFA).

5 Minutes of Gameplay

The player picks a scenario – the Battle of the Somme, July 1, 1916, British RFA. A short briefing is given, outlining objectives: several minutes of sustained bombardment to suppress and destroy obstacles, followed by a moving barrage to advance before the infantry, scheduled to assault at 1200 hours.

The player is given an opportunity to customize their battery using a points system: do they take 4 18-lbers or 3 4.5 in. howitzers? A map of the battlefield is presented, a realistic representation of the field map that would have been available. Five positions are possible and the player uses their judgment to pick one.

The player then finds themselves in a first-person perspective as the battery commander. Their battery has been set up in an indirect-firing position. The player carries a telephone and cabling and must find an observation position. They walk through the field and lay down when they are satisfied. Ahead lies the friendly line of trenches, past that, No-Man's-Land, and about 3 miles distant, the enemy line. Checking the field map, simple projections show the angle and distance to any given position. This is automatically cross-referenced with a range table showing the appropriate firing angle, powder usage, and fuse times for their guns. Notations on the map show mission targets; currently, the notes show that the barbed wire is to be bombarded, to clear the way for the infantry. Satisfied, the player calls in the bombardment, speaking into their microphone:

"Zero, seven degrees, four-five-hundred."

Over the telephone, the response comes,

"Zero, seven degrees, four five-hundred."

The guns in positions, the player gives the firing order:

"Fire."

A deafening explosion is heard as all guns in the battery discharge. Under the noise, the telephone crackles,

“Shot.”

The shots land somewhat north of the target. The player makes the estimated adjustments and calls them in:

“Less one degree fifty-five minutes. Four three-hundred.”

The response:

“Less one degree fifty-five minutes, four three-hundred.”

“Fire.”

“Shot.”

It hits well on target. Checking a pocket watch, the player notes that two minutes remain before the assault. They order a continuous bombardment with thirty-second intervals between shots.

“Four rounds gunfire thirty seconds.”

The batteries roar as they lay down a hail of fire. The assault is scheduled to begin. Looking at the objectives, the player sees a plan of fire for sweeping bombardment. They begin planning this, looking to their map.

They are interrupted when a shell lands perilously close. The camera blurs and the world recedes temporarily under the concussive impact. The world comes back and the player has a choice: do they continue to bombard as scheduled? Do they instead try to locate and destroy the enemy artillery? Or do they relocate to another firing position? Can they afford to not support the assault with their bombardment?

With a roar the assault begins. What does the player do?

Core Dynamics

Difficulty Variations

To ease players into the simulation, there will be three difficulties, Easy, Medium, and Hard. The easier difficulties will require less knowledge of artillery tactics and methods; some of the estimation will be done for the player. As the difficulty increases, these aids are removed.

In addition, the aggressiveness of enemy AI and accuracy of enemy artillery will increase as the difficulty increases.

Level of Agency

Ready to Fire places the player inside a single battery commander. This is a midway point between the grand strategy war games so often present and the individual mechanical simulation vehicle simulations stress. It places the player in a position to make tactical decisions and control a handful of units. They have enough power to decide the course of battles, but they are still at a close enough level to feel the power of the machinery and get the details that allow real-world knowledge to be useful.

First-Person Gameplay

The player will control their character as a single first-person character. They will control as a standard first-person shooter does. They will have the ability to go prone which will be used when the player has reached a suitable observation point.

The conventions of a modern shooter will be used to present the danger and excitement of the experience. Similar to *Call of Duty*, the player will experience concussive effects to close impacts that include whiteout, audio distortion, and temporary loss of control. The player should not die or be in bodily harm except in limited circumstances. The modern shooter convention of regenerating health and screen distortion to indicate damage will be used to cleanly indicate danger to the player.

Situations that will kill the player include:

- Standing up too long at an observation point. While the player should be safe when prone and observing, standing too long in an exposed area should threaten the player. Sniper fire should start whizzing around the player, with a randomly determined number of misses before the player dies (about 3-5, or 10 seconds of warning).
- Moving past the cover point. The pre-selected artillery positions will all be in indirect firing locations. The player's task is to find an observation point and remain hidden. If the player attempts to venture farther they will be cut down by sniper fire.
- Remaining in a gas cloud. Chemical warfare will be an option and will be a gentler way of warning the player to move their battery, with a gradual damaging effect forcing the player to take cover.

Limited Information Roleplaying

The agency level is used to enhance immersion by limiting information. Traditionally, a war game gives the player near-omniscience. They can move the camera by fiat and look at the battlefield from any angle. Fog of war is commonly used to lend a sense of surprise to the

simulation but the perspective still gives unrealistic advantages to the player. Attempts to pare this back in games have commonly been met with resistance; players feel like the camera is 'clamped down', and they struggle against it.

But a first-person game does not suffer these limitations. Players happily accept that a single soldier can only see what's in front of them. The scene around them is detailed enough that they have enough information to deal with, and what they don't know about the battle is exciting and surprising.

Ready to Fire uses this concept to provide a new immersive experience. The game is controlled from a first-person perspective. Effective presentation of realistic details makes the management of limited information part of the game, rather than an unexpected burden. Maps are richly drawn, time is kept with a pocket watch, data from the field comes through by dialog from friendlies and realistic visual cues. Artificial radar, score-tracking, and other such things are shunned.

Time Compression

The common phrase holds that a soldier's life in long stretches of dreariness interrupted by moments of panic. Games generally present only the exciting parts. For a simulation, though, some attempt must be made to present the in-between times.

Ready to Fire will compress time so that non-active stretches pass more quickly. A 24-hour day will be represented in game time as 1 hour. Specific actions, though, will occur in real-time. Therefore, moving and setup times can be drastically reduced and balanced against gameplay considerations.

A typical scenario which has lasts a single daytime (30 minutes in real-time) might break down as follows:

- Setup, positioning: 5 minutes
- Range-finding: 5 minutes
- Shooting: 15 minutes
- Taking cover: 5 minutes

Receiving Orders

In keeping with the theme, players will be briefed as realistically as possible. A the pre-mission briefing, they will be given a clear statement of their objectives alongside the area maps. These maps may be incomplete or inaccurate in certain ways. The objectives will have enough leeway that the player will be able to execute them with some freedom.

Example orders may include:

- Clear a path through the barbed wire in No-Man's Land for the assault
- Provide a sweeping bombardment ahead of a scheduled assault
- Defend an area of ground from enemy assaults

In addition, survival will always be a requirement.

Additional orders may arrive during a mission. The player must always be aware of their priority for objectives and what constitutes mission failure; this will be denoted by 'Critical' and 'Secondary' objective designations.

Initial Placement

At the end of the briefing, the player is given the opportunity to select their starting location. They initially choose based on the map data given to them; however, they may cycle through the first-person perspective of these areas before they decide (this represents the quick walkthrough a commander would have been able to take). They are not allowed to walk around, though.

Once the player selects a location, it is load and their artillery is set up aligned to a pre-set Zero Line (the reference angle for angle adjustments). The player then has the freedom to find an observation point.

Battlefield Intelligence

In *Ready to Fire*, the player is limited to information they would realistically have.

Given Data

The player will enter the battle with several pieces of information:

- A local map, indicating the location of their battery, their forward line, the enemy's line, and local terrain features. This may exists in various levels of sophistication and accuracy based on the scenario. However, this is used as the base grid on which attacks are plotted.
- A pocket watch, to track the time. The player is not automatically notified when battlefield actions will begin or end but must track it themselves.
- A notebook with bookmarks to objectives, background information, and ammo counts. This can be 'enhanced' with features such as real-time updating of ammo counts and objectives.

Direct Observation

The player's primary means of gaining battlefield intel is their eyes. The battlefield space will be somewhat compressed in favor of presenting interesting visual targets. Harder scenarios can of course have more hidden targets.

Coordination

The mission briefing will lay out any pre-planned actions, such as assaults over No-Man's-Land. During the missions, the game will simulate the difficulty of battlefield communications for the time period. Players will need to carefully watch the time to make sure they are accomplishing objectives because they will not have the ability to hold back other parts of the army.

Receiving New Intel

At specified or random times during the mission, the player may receive new intel. Some examples include:

- A scout has returned from a mission and brought the locations of enemy emplacements (for example, machine gun emplacements, artillery emplacements, troop concentrations). These are circled on the player's map.

- A survey plane has returned, bringing with it aerial photographs. These replace the player's map. The player must still interpret them to find targets of interest.

Choosing Targets

The player is given the freedom to choose their targets themselves. Keeping in mind the mission objectives, they can bomb what they want. This makes target selection a crucial skill in the game. Correctly identifying important areas to bombard will be a major tactical choice. The skill to identify targets will mimic real-world skills and so players' real-world knowledge will apply to the game. The game will serve to teach players the proper targets as well.

Calling Shots

The game interface for shot calling must be immersive and feel realistic to the players. As discussed above, players will give leeway when it is obviously required for gameplay, but all efforts must still be made to give the look and feel of reality. This is especially important for *Ready to Fire* because the player lacks direct fire control.

The basic methodology for calling shots is as follows: the player looks through their sighting tool (binoculars). They estimate their target's location on their map, held in their hand and taped to a board. They move a cursor on the map to where they think their target is and the distance calculations from the guns pop up. To the side, a table of artillery loads is pulled up and cross-referenced with the player's range (this represents the character looking the data up in a book they would have with them). The player reads this data to their batteries, which then fire.

Difficulty Variations

The amount of realism and real-world knowledge expected of the player will scale according to the selected difficulty level. The target methodology will change as follows:

- Easy: the grid lines on the player's map are overlaid on the player's view of the world. They need only 'read the world' to find their targets' location.
- Medium: the calculations occur as described above.
- Hard: as medium, but weather effects come into play. The weather's status can be seen in the world and data can be had in the player's journal, with a page given the wind speed and direction estimate.

Determining Shell Type

The player will have access to different shell types depending on the mission and their gun. The ammunition of the batteries will be limited based on the mission, with resupplies occurring at specified time intervals.

Based on this, the player must decide when they want to use normal shells (good for open areas, poor penetration) or high-explosive ammunition (better for taking out fortified position), while keeping in mind their remaining munitions.

Calling Methodology

Two methods will exist to allow the player to call their short.

The first is voice command. If the player owns a microphone, they will be able to order their batteries using the syntax of a battery commander. The speech will follow the British Royal Field Artillery syntax, maintaining consistency despite the army the player plays as.

To support players without a microphone, an interface will also need to be built. As a PC title, likely the best solution is mouse control over dialog boxes which pop up.

The Zero Line

Shots are called in reference to the Zero Line, the initial angle at which each gun is set up. This is preset for each gun position.

Evaluating Impacts

The impact of a shot will not show the player numbers but instead be represented completely within the context of the simulation's world. The player will have to peer intently through the smoke to see if they need another barrage or if they have achieved their goal.

This should be time-consuming enough to read that a player will eventually begin to gain the skill to estimate the damage they have caused. A good player should be better off calling five rounds onto a point, confident it will be likely to hit the target, than waiting after each round to see the impact.

This can also come into play when the player is dealing with enemy artillery. They will need to have a good sense of when they enemy artillery is disabled rather than just hiding from bombardment.

Enemy AI

Key to *Ready to Fire* is the ability to influence enemy behavior with artillery. Because one of artillery's prime functions is to suppress charges, the game will model this behavior by having a morale system for the enemy troops.

This will be broken down roughly to the squad level, 8-20 men. Groups will seek cover when they are under fire and hide for a period of time. Assaults will be able to be turned around by heavy shelling. And units will attempt to move around concentrated areas of bombardment if they need to assault.

The friendly and enemy infantry soldiers will need the ability to fight each other. This can be a relatively simple model of damage over time scaled by morale and cover as long as the animations present a decent-looking fight (think of Creative Assembly's *Total War* series).

Coming Under Fire

In certain scenarios, enemy artillery will exist on the map. Under these circumstances, an artillery duel may occur with the player.

The enemy artillery may exist either in a state of idleness or with a specific target. In idleness they will be effectively invisible, but may activate to fire upon the player. If they have a target they will be unleashing bombardment upon it. Small visual clues such as a flash of light or a small amount of smoke will be the clues the player needs to locate these batteries and begin firing upon them.

Each time the player fires, enemy artillery will have a random chance of discovering the player's location. When this happens, the artillery battery will begin firing on the player. This will never hit on the first round. It serves to alert the player that they are under fire. At this stage, the player's tactical choice is between relocating (which will hide them from the artillery but cost time) or returning fire, and attempting to destroy the enemy battery before they themselves are destroyed.

The number of hits the player can take from enemy artillery before they are destroyed is randomized but eventually the enemy will get a dead-on hit and the player's game will be over. By difficulty level:

- Easy: 3-8 hits
- Medium: 3-5 hits
- Hard: 2-4 hits

Relocating

The player can at any time choose to move their artillery battery. This will be done if the player wants a better observational position or if they come under fire. The action costs time – the player, when looking at their map in relocation mode, will get a time estimate for how long it will take in game-time. This can mean that the player is losing valuable time to complete objectives.

The transition will be handled by a loading screen. Once done, the player will be placed with the guns and will walk to an observation point again.

Scenario Types

To express the range of battles artillery can be involved in, several scenario types will be used as templates. These can be expressed in different maps or recombined for more complex levels.

- Defense: the player is tasked with stopping enemy assault. These will occur over No-Man's-Land. This is relatively easy for the player's powerful artillery.
- Clear Ground: the player is tasked with clearing an area to prepare for a friendly assault. This involves destroying barbed wire and ensuring enemy troops are suppressed.
- Artillery Duel: there are one or more artillery batteries attempting to bomb you. They are sweeping the area looking for hits. Eliminate them before they eliminate you.
- Assault Support: an assault will occur at time X. Ensure that you are suppressing the enemy lines when the assault occurs and perform sweeping bombardments to keep advancing your fire ahead of the troops. Don't hit your own men!
- Night Mission: your intelligence has told you where you need to bomb and you can call fire down at that location, but you can't use direct observation. Use your map-reading skills and the brief flashes you get when shells land to eliminate the targets.

Randomizers

Scenarios should not evince the same behavior every time they are run. This is necessary because so much of the artillery game lies in testing knowledge about where one believes the enemy is located and how to fire to reach a specific spot.

The terrain of the maps should not change (unless a dev comes up with a fantastic procedural trench-digging algorithm), but the enemy force placement and attack schedules should. Weather conditions can be randomized to make targeting less deterministic. Local reinforcement (the bonus intelligence, the ammo dumps) can occur at random time intervals.

Audience

Ready to Fire's core audience will consist of the following groups:

1. Military buffs
2. Simulation enthusiasts
3. Gamers looking for something new

World War 1 is an underserved market in the games industry. While there are plenty of World War 1 books, documentaries, websites, and academic papers, there are very few games that specifically focus on this period of time. This is an opportunity.

World War 1 abounds with fantastic imagery: the hellish, blasted landscape of No-Man's Land, the alien gas masks, biplanes zipping above, and of course, the great artillery batteries. These sights fit perfectly within videogames, and, more importantly, are not being done to a great deal. The fertile mine of World War 2 has nearly been stripped clean, yet the public still demands war games; *Ready to Fire* can give them a new version of what they want.

Audience Expectations

Military Buffs

Players interested in military matters will find much to like in a rare look at the machinery of the First World War The up-close nature of *Ready to Fire* will give these players the most immersive experience they can have in these battlefields.

Simulation Enthusiasts

Sim players will appreciate the new perspective on a rare subject. *Ready to Fire's* level of agency, the battalion commander, allows the simulation player the opportunity to *lead* people, rather than just fiddle with machinery and small trajectory knowledge. They will experience the unique tactical decisions of their post, rather than generic strategic choices which apply generally to all wars. They will be using and learning specific knowledge – and what could be more exciting for these players?

Experienced Gamers

Finally, *Ready to Fire* will appeal to experienced gamers. As a relatively new take on a game, *Ready to Fire* will be able to attract interest among opinion-leaders, such as members of enthusiast press and vocal community members. This game will have legs beyond its marketing budget.

Audience Economics

Or, What Does the Audience Value?

The importance of different game features can be evaluated by looking at what is important to the expected players of the game. This can guide development by prioritizing features. This can also subtly guide game balance by giving the designers additional options in balancing desirable / undesirable rewards.

Fidelity

The importance of accuracy cannot be overstated. The sim and military audiences are demanding of their hobbies, and successful products need to be accurate to within a reasonable nitpicking standard (3 milli-Wozniaks).

First and foremost, the models for the artillery need to be accurate. Mistakes in modeling are the easiest to spot. Fortunately, they should be relatively easy to avoid: reference photos are available for the time period, and surviving pieces can be found in museums (helpfully photographed by members of our own audience).

Sound effects will need to be reasonably accurate. This is an area that can tolerate more fudging, because sound artifacts are much rarer for the time period. Still, gun noises are often portrayed wrong in media products. The audience for *Ready to Fire* will notice if this is the case.

Troop uniforms will need to be modeled. This should be an easy task. There can be generalization between the time periods; players are relatively understanding of lapses in uniform changes between periods, provided other details remain at the same level of generalization.

The tools and methods used to determine range will need to show a passing resemblance to reality. This is an area which players will be flexible on, for games always compromise actual execution in favor of gameplay. Therefore, visual symbols and 'interpreted' applications of artillery methods such as range tables and surveying will need to feel complete enough to satisfy players' feeling that they remain in the simulation, while not impeding gameplay by requiring real arduous mathematics.

Finally, the overall flow of the game will need to fit an abstract model of what artillery should be accomplishing in the setting. The role of the player, the battalion commander, must be roughly close to what it would be in reality, in terms of the decisions made. The game can empower the player to a degree by giving them more choice in target selection, allowing them to pack up quicker, compressing time between interesting events and compressing spaces so that the player can have a better view, but the rough abstract model needs to feel right. It needs to fit the experience a player would expect from reading a history of the war. Different scenario archetypes playing on different tactical roles can also encourage this.

Impact

Ready to Fire promises a close-up look at World War 1 infantry, and it needs to deliver. Sound effects have to be more than accurate: they need to be *loud*. Explosions need to shake the earth. Shrapnel needs to fly through the air.

Because this is a game about guns with no fire button, extra care needs to be taken to make sure that the player still feels empowered. Ensuring everything hits like a punch in the face is a good first step.

Uniqueness

Giving the players something new is important to maintaining interest amongst the hardcore gamers. The key to this is the level of control the player is given and their limited information. Being a commander rather than a single gunner, rather than a general plotting strategy, is a rare approach. And using that to build immersion with realistic maps and information-gathering is an exciting and different approach.

SPECIFICS

Artillery in *Ready to Fire* will be modeled in the rules in the following ways.

DEFINITIONS

The multitude of statistical information one can find on weapons needs to be converted into a few simple rules for the simulation. These are:

For artillery pieces:

- Range: the maximum firing range of the weapon.
- Ammo Types: the types of ammunition the weapon can use.
- Range Tables: the specific tables the game will present when the player is looking at a specific range with their guns on the map.

For ammunition:

- Explosive Radius: radius of the explosion.
- Penetration: ability to do damage through 'cover' such as barbed wire, trenches, and bunkers.
- Damage: a number value for damage dealt by the ammo. This represents the percent chance of causing a casualty to each unit within the explosion radius.
- Replenishment: the rate at which ammo gets replenished and the initial amount granted.

CONVERTING RESEARCH TO GAME DATA

The following process will be used to prepare artillery pieces into usable game statistics.

For artillery pieces:

- Range (base): pulled directly from data.
- Ammo Types: build a unique ammunition table for each ammunition type that will be modeled in game. Limit this to a few archetypal variations (the focus should be on different guns more than different ammo).
- Range Tables: use historical data to supply these; they are in game for flavor purposes. The ranges of ammunition types may vary in the same gun because of differing weights.

For ammunition:

- Explosive Radius: this is a combination of shell weight and explosive type. The basic formula is:
    - Shell Weight * Type + Modifier (for specific types)
        - Possible types are: Shrapnel (1), High Explosive (.3), and Incendiary (.5)
- Penetration: this is based on the type of ammunition. The values are:
    - Shrapnel (.3), High Explosive (1), and Incendiary (.5)
- Damage: based on shell weight and explosive type. The basic formula is:
    - Type + Modifier (for specific types)
        - Possible types are: Shrapnel (.25), High Explosive (.5), Incendiary (.05) [Incendiary remains in effect for some period of time], Gas (.02) [Gas remains in effect for some period of time]

Artillery Tables

Type	Range (base) (yds)	Shell Weight (base) (lbs)
British Mk. 1 18-pdr	7,000	18
British 13-pdr	5,900	12.5
British 60-pdr	10,300	60
British 12 ½ pdr (mountain)	5,800	12.5
British 20 pdr (mountain)	5,800	20
British 6-in Howitzer	10,000 – 11,600	100
British 4.5 in Howitzer	7,000	35
French model 1897 75mm	9,000	16 (shrapnel), 11.75 (HE)
French model 1897 105mm	13,400	35
French Schneider 1897 Howitzer	6,000	35
French model 1898 155mm Howitzer	7,650	88
French Schneider 155mm Howitzer	10,500-13,300	95
German 7.7cm	5,800 – 11,700	15
German 10cm 04/14	12,085	39.5
German 10.5cm field Howitzer	7,600	34
German model 1916 10.5cm Howitzer	9,200 – 10,900	34
German 15cm howitzer	7,000 – 9,400	95
Austrian 10.4cm M14	13,670	38.5
Austrian 15cm Howitzer M14	8,850	38.5

Testing Assumptions

Model: High-Level Game Flow

A board game will be constructed to test the high-level decision making.

It will consist of:

- A symbolic map of a battlefield, tile-based. Different terrain types are built in to the map, and additional tiles can be placed on top of them to model defenses.
    - Tile: barbed wire tiles with hit-points
    - Tile: trench tiles, providing protection to soldiers

  Objects will exist on top of these tiles and can be damaged.
    - Objects: hidden artillery posts, revealed when fire
    - Objects: machine gun emplacements with facing
    - Objects: friendly, enemy soldier pieces which stand atop tiles
- A table for artillery types along with hit percentages
- A simple script for enemy AI
- A simple script for pre-planned scenarios
    - Ex: after 5 turns, allied assault
    - Ex: after 7 turns, enemy assault
- A small deck for random bonuses, such as new intel or new objectives

Units will be modeled with hit points, damage, range (in tiles), and percent chance to hit.

The basic flow of gameplay will be as follows:

1. Player chooses a starting location out of three
2. Player chooses a target, estimates location in grid space
3. Artillery bombardment is calculated, with dice randomizer to model inaccuracies in weapon type and player skill
4. At location of hit, impact is modeled with dice randomizer to model results
    a. If an object such as an artillery position, machine gun, or troop is in the tile, damage will be rolled.
    b. Depending on the terrain type, damage will be modified.
    c. Damage against defenses will also be calculated (against barbed wire, trenches, etc.)
5. Enemy turn – decide enemy actions.
    a. Ex: randomizer decides if enemy artillery sights player, begins attacking
    b. Any awake units attack if able (ex: machine guns, infantry)
        i. Any enemies within their range?
        ii. If they are, roll to hit closest target.
        iii. If hit, deal damage and remove casualties.
6. Randomizer decides if random bonuses occur, such as:
    a. New intel – reveal hidden artillery
    b. New objectives – player gains new objectives
7. Scripted actions occur, such as:
    a. Enemy or allied troop assault – troops begin moving across No-Man's Land.

Key Questions:

- Are meaningful tactical decisions occurring?

- Is there tension and excitement?
- Can the player shape the battlefield?
- Do random bonuses feel rewarding and useful?

Model: Range-Finding Interface

A computer interface will be constructed to test how the player aims and orders fire.

It will be a first-person interface (using a development engine like Unity or Unreal) to test if player's can convert world-space to map space and work with the interface to determine range.

The map and range table will be implemented close to the way they are described in Core Dynamics. These elements need to essentially all be in place to test them, though they can be in uglier, more primitive form. The results of the player's call need only be marked on the map to test how close the player got.

Key Questions

- Can the player learn this system?
- Is the process of figuring this out interesting?

SUMMARY

Ready to Fire combined the immediacy of a modern shooter with the depth of a traditional simulation. By playing as a first-person game, the player is immersed and feels the power of their setting. This is further strengthened by the emphasis on real-world methods of interaction with the game, such as the map and pocket watch. The perspective eases non-sim players into the game while they learn the rules and tactics, and gives grizzled wargamers a closer-than-ever look at their favorite subject.

The setting, World War 1, is under-utilized today and so *Ready to Fire* avoids feeling overdone while still fitting broadly into the military genre.

And as a sim game, the core gameplay can be easily and cheaply modeled to hammer it out before production begins.

APPENDIX

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