

HISTORICAL ACCURACY IN GRAND STRATEGY GAMES: A CASE STUDY OF SUPREME RULER: COLD WAR

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ABSTRACT

Historical accuracy is an often overlooked and understudied topic in the study of realism in video games. For some games, however, this topic is both an extremely interesting and important one, quite deserving of attention.

In this paper, we investigate many of the issues and challenges of historical realism in video games, with a focus on strategy games. In particular, we examine these issues and challenges with reference to *Supreme Ruler: Cold War*, developed by BattleGoat Studios, providing both researcher and developer perspectives.

INTRODUCTION

Realism in video games is always an interesting topic for discussion. Whether the topic is the visuals, audio, artificial intelligence, story, or gameplay, every designer has their own take on balancing fun, marketability, and accuracy (Moreno-Ger et al. 2008).

In this paper, we investigate the challenges of historical realism in strategy games, and we compare the pre- and post-launch developer perception of the balancing choices made¹. In particular, we present a case study of the choices made to depict the world in *Supreme Ruler: Cold War* (SR: CW), developed by BattleGoat Studios, currently scheduled to be published by Paradox Interactive in Q3 2011 (BattleGoat Studios 2011). At the time of this writing there have been 22100 game start-ups, of which 10910 were of a pirated version (which may not fully work since it has a forced end date). Our observations were primarily taken from forum posts and e-mailed bug reports.

¹ BattleGoat and Paradox released *Supreme Ruler: Cold War* July 19th, but it was not fully in retail channels by time of final submission.

BattleGoat's two previous titles, *Supreme Ruler 2010* (BattleGoat Studios 2005), and *Supreme Ruler 2020* (BattleGoat Studios 2008) were set in the future relative to their release dates, but still required much historical accuracy. Units, terrain, political maps, even technologies had to tie into real world work that has been done, or was known to be worked on. Fortunately, in both of those games, from the moment the player starts, the world can diverge fairly rapidly from a historical path, but developers do not always have that luxury.

In this paper, we examine a variety of realism and accuracy choices made in historical strategy games, organizing them into several categories: cosmetic, strategically important, balance, and legal or social issues, and discuss the various trade-offs in each area. Throughout this discussion, we present a short case study of the perspectives of how the designers of SR: CW made their choices, and some of the problems encountered. Many of the cited examples of other similar grand strategy games tend to also be conveniently published by Paradox (Paradox Interactive 2007, 2009, 2010). The well-known *Civilization* series (most recently Firaxis 2010) falls in a similar style, but is less historical.

The remainder of this paper is organized as follows. We begin by discussing various categories of historical accuracy. Using this categorization, we examine the issues of realism and accuracy in grand strategy games, drawing upon SR: CW as an example. We then conclude by discussing these issues from the developer's pre-launch perspective as well as post-launch commentary once it is available.

CATEGORIES OF HISTORICAL ACCURACY

To study and assess historical accuracy in a game, we first need a simple way to define different types of adherence to accuracy based on how it impacts the game. We decided to view these design choices as being in one of four broad categories.

First are cosmetic changes. These are things that do not have a significant impact on gameplay; in

other words, if these things were changed, the game plays no differently for the player.

Second are strategically important issues. These can impact gameplay in a meaningful way, encompassing ideas that directly tie into the game's model of the world, and how that world is going to behave. Players should be presented with a believable historical world. However, real systems, such as diplomacy, involving written and unwritten agreements are very complex. Approximations are usually made for playability. A simple example can be found by examining Article 5 of the NATO treaty, which reads in part "an armed attack against one or more of them in Europe or North America shall be considered an attack against them all" (North Atlantic Treaty Organization 1949). An attack on French Guiana (the main European Space launch facility) is not apparently covered, but an attack on Saint Pierre and Miquelon (some small French fishing islands off the Canadian Coast) would be. Given the complexity of both understanding and modelling such treaties approximations are made. One option is a limited or colonial² war (Paradox interactive 2003, and 2009), or an all or nothing approach, where war is war, and fully activates alliances as is done in pretty much everything else, including previous Supreme Ruler titles. SR:CW attempts to create a more realistic situation, where countries may be funding an insurgency, or conducting spy mission incursions (naval or air) without a declaration of war. Countries being incurred on can fire on neutral incursions or not, which may or may not trigger a war; the player can choose the nature of their responses to this. The all or nothing approach of previous Supreme Ruler titles was also exploitable or could cause accidental wars when a player inadvertently moved a unit into the wrong place, which is also ahistorical (and especially troublesome when it happens with a friendly state).

Third is balance, or systems design. How does one decide on the statistics of a Panther tank compared to a T-34, or a Queen Elizabeth class battleship and a Queen Elizabeth class aircraft carrier? Here, regardless of developer intention or effort, it is likely not possible (in a grand strategy game) to be perfectly authentic to those units. A tank or a ship simulator, for example, might have a more direct, more authentic model, but the combat model in a strategy game necessarily requires abstraction. Otherwise, the game quickly becomes unwieldy, unplayable, and generally not enjoyable for the player. The Total War Series (e.g. Creative

Assembly 2011) solves this problem by having both a real time strategy game, which is reasonably direct, and a grand strategy game together.

Fourth are legal or social choices. While these may also fall under other categories to some degree, they require special attention (Rosenthal 2009). After all, if a developer wants to market and sell its game to a profitable level, it needs to follow the rules and norms of society, even if those rules require compromises in historical accuracy, especially in certain locales or jurisdictions (China Daily 2004).

With this categorization in hand, we now delve into each area in more detail.

COSMETIC ISSUES

As discussed earlier, cosmetic areas of the game are things that have no real gameplay impact. People may feel strongly about them or not, but changing them one way or another will not impact gameplay.

A few examples come from something as seemingly benign as country flags. For instance, Switzerland uses a 1:1 aspect ratio flag, whereas nearly everyone else uses a 2:3³. This has implications on a game's user interface, requiring that interface layout needs to be setup to handle a small number of oddly shaped flags (Nepal uses two triangles), that artists need to pad the art around it, or that players will need to cope with some minor interface deformities. For SR:CW, the interface handles a 1:1 flag properly, though it is never explicitly made clear to the player why only one flag is like this, and in many cases people think is a bug.

Other flag issues depend on time. For instance, SR:CW starts in 1949, a country such as Canada, which chose its current flag in 1965 can confuse the player by using a historical flag, that looks nothing like the current one, but has no particular significance. The expectation, created to some degree by French and German flags, as they have changed over the years, is that different flags reflect vastly different governments and ideals. In the case of France the modern tricolour is a strongly republican symbol, and would not be appropriate for Bourbon France for example. East and West Germany pose a more interesting problem, having, from 1949 until 1959 the same flag, at which point East Germany added a hammer

² Limited and colonial war can be different as well. A limited war would be where allies are not explicitly called, and colonial would only allow fighting over colonial areas or the like.

³ Federal Department of Home Affairs FDHA
White on red: the Swiss cross
<http://www.bar.admin.ch/archivgut/00591/00601/00603/index.html?lang=en>

and compass decal to theirs. Using the historical flag can cause some confusion, but changing it realistically later would be legitimate learning experience and appropriate flavour. After testing SR: CW, it was found preferable to start East Germany with the later (post 1959) flag, because it was too difficult to distinguish between units of each Germany. In a similar fashion, the USSR and Peoples Republic of China used very similar flags, a red background with a yellow decal in the top left corner. They use slightly different reds, and decals, but, especially as small individual unit flags, which are just shrunk down versions of the national flag, they are basically indistinguishable. This issue has not yet been resolved to anyone's satisfaction.

Another area in which developers face cosmetic choices is the selection of place names. For SR: CW the choice is to use conventional short forms, such as United Kingdom, rather than United Kingdom of Great Britain and Northern Ireland, and so on. Problems arise in contested areas, Jerusalem or Al Quds, Falkland islands or Islas Malvinas, and so on. Since our primary market is in English we use the conventional English form. Further problems are presented by certain places such as the Côte d'Ivoire, which lists its country name as such, even in English⁴. On the other hand, the Supreme Ruler series typically uses the English transliteration local form for city names, such as Beograd rather than Belgrade, Warszawa rather than Warsaw and so on.

As with city names, SR: CW encountered issues with the names of some historical persons. The text processing engine used in-game reads in first and last names. Faisal II, the last King of Iraq, posed a particular problem because he used only one name, and was the only leader listed during the time period for the game to do so. As it turned out the, text parser failed to properly parse a single name, and at release Iraq appeared to be leaderless. The easiest solution is to simply put his name in the database as first name Faisal, surname II.

Pictures of real people pose another problem. SR: CW used a combination of custom portraits for various leaders (most of the major national leaders), and generic leaders for other countries, as well as all ministers. This leads to several problems. First, if the generic portraits assigned to neighbouring countries happen to be the same, players not familiar with the area can get confused. Second, some leaders had carefully crafted public images, and a generic portrait would not accurately reflect that. Lastly, some leaders, for example Mohammed Omar of Afghanistan (the leader of the

Taleban) have worked very hard to not ever have a photograph or portrait done on religious grounds. In this case it would be fairly easy to have a shadowy figure portrait to not offend religious sensibilities, or use a generic best guess.

These cosmetic choices at the start lead to another problem, which is how to change or update things appropriately. In the Paradox self-published titles (Paradox Interactive 2007, 2009, 2010 etc.) along with SR: CW have scripting systems in place that as long as certain conditions are met, the flag will change believably, either to the historical flag or one that believably makes sense (for example, a communist British flag). Changing city names to reflect different ownership is again a system that can be scripted in, but has little overall value, though it does affect the historical accuracy of the game in some areas.

STRATEGIC IMPORTANCE ISSUES

Issues of strategic importance are changes that could substantially impact gameplay or historical accuracy. Much of this in essence revolves around the models and approximations used in any game, though for us are largely political and economic. Trying to boil down the industrial base of a country into "industrial capacity" or splitting production into civilian, industrial, and military and so on, are attempts at simplifying the real world for playability. These simplifications, however, run counter to accuracy, and so there are interesting and challenging trade offs that must be considered.

Geo-Political

Starting with the geo-political area, in our case of SR: CW, the first and biggest questions are the Soviet satellite states, the decolonization areas, and then parts of West Germany, specifically, the areas under French occupation that the French were trying to keep. In some of these cases the game must attempt to balance between modelling a territory that will be independent shortly, from a territory that is independent. For example, Canada and Australia are separate from the United Kingdom, but Kenya and Uganda, in 1949, were not. Indonesia was, at the start date of SR: CW (October 9, 1949) still a colony of the Netherlands legally, but in practice it was much easier to just make it fully independent and forget about the colonial struggle which the Netherlands was going to end in less than a year anyway. Places that were clearly colonial (for example Kenya and Uganda), as well as the Soviet satellite states, required a specific political model where they were separate, but limited in what they can do diplomatically. One of the first fan mods for SR: CW that we saw was to put all of the Soviet satellites into one big

⁴ CÔTE D'IVOIRE

http://www.iso.org/iso/country_codes/iso_3166_code_lists.htm accessed June 15 2011

USSR nation, and it seems to be quite a popular theme. This is clearly an area where some fans have disagreed with the original SR:CW model of the world.

The messy problem of the French occupation zone in Germany, and areas they wished to keep in this time frame is a difficult one. Unlike Indonesia, which was to be independent immediately, the Saarland was, until 1956, an area the French were trying to administer. It is also important, because the Saar is a major source of both coal and steel, and so determining who gets control can have fairly significant implications. We decided, though without much conviction, and with much disagreement, to put the Saar directly under the control of France. It is too small to justify as its own state (which then needs some way to be peacefully absorbed into West Germany), but after assessing balance we think it should be under Germany, something for a path. Some other territorial disputes, for example between Canada and Denmark, have little to no value even today, and the squabbling over them is mostly cosmetic and low intensity.

Making sure important places are on the map is an interesting problem. Gibraltar is just large enough to make one hex on the SR:CW map (supplied by NASA), where each hex is about 16x16km. Portuguese Macau and Goa, and British bases on Cyprus, and a few others are simply too small to show up. Yet as naval bases or air strips or the like they could prove quite valuable, especially in a situation like the Falkland's war. It is an interesting challenge to balance between representing something that is theoretically significant, while at the same time not bogging down the map with little dots of colonial history that in practice will not matter. The SR:CW map, while provided from NASA still needs to have terrain manually painted on with our tools. Satellite maps have river enhancement techniques, but we still miss several water bodies. In all three Supreme Ruler releases, Rio Negro in Argentina has been completely missed, despite it being relatively important locally. None of the battles researched for the Supreme Ruler series mentioned it, and it does not show up on the satellite, even with enhancement for it to have been noticed when terrain painting⁵. Adding it in would require bridges placed across it historically accurately, and it is not readily apparent how militarily valuable it is. We tended to focus our attention on areas of the world that are most likely to be reflected in sales, or major conflicts.

⁵ Thanks to Paradox Forum user *sonofliber* for repeatedly pointing this out.

Resources are another area that has received much discussion. Historically placed resources make for an interesting problem. The player knows Iran, Saudi Arabia, parts of Canada, the coast of the United Kingdom and so on all have vast, but then undiscovered, oil reserves. If they were put in game as we know them today but in 1949, the world should play out rather differently than if there was no way to plan for the future. On the other hand, not putting the resources in the game at all changes how the world would evolve. In the case of SR:CW and in general for historical games, the choice seems to be to have resources in reasonably historical locations and quantities (model permitting). In Europa Universalis III unpopulated (by Europeans at least) colonies do not get a resource they produce until colonized, with a random selection based on historical resources from the general area. That model keeps the macro-economic situation the same overall, presents the player with legitimate historical dilemmas (colonize A, or B, not knowing which will be more valuable), and adds some differences in replay value. In a game where the world is both defined and settled in advance, that could be somewhat problematic, especially with undiscovered major resources rarely on the borders between principle states.

The last really interesting geo-political phenomena are in the actual cold war, and how to model proxy fights, spheres of influence and so on. While we think insurgency is an interesting topic for the future, a simple model can at least accurately reflect the strategic effects, funding insurgents sows discontent and can change governments. Satellite states and colonies are bound in some way to their parent, and have resources drawn away. They become undesirable to keep when the resources they produce are not valuable enough. Countries can engage in proxy wars and lower intensity conflicts, fund insurgents, and spur political discontent.

Internal Political

With the world containing thousands of political systems, all with an ever-expanding slew of written and unwritten rules, it is simply not possible to try and correctly model country leadership everywhere, all at once. The player is empowered to make choices, even as a democratic state, much like a dictator. It is not much of a game if the player cannot make choices, and in the real world, making even a handful of meaningful choices can define a career. Rather than games viewing the politics as built from the people up, it has tended to be from the perspective of "I am the State" down, where automation serves to reduce micromanagement for the player rather than acting

as a realistic counterweight to their desires. Here there are not likely to be any surprises with SR: CW. The model from previous games in the series, of cabinet ministers who can be variously tuned to automate in different ways, remains. It seems like a good compromise: automation for those who want in, with some granularity, and total control for those who do not. This does tend to mean, however, that a player playing as the United States is running the country more like Stalin than Truman, which is quite interesting and ironic from the perspective of historical accuracy.

SYSTEMS AND BALANCE ISSUES

Where the previous section, on strategic impact, tends to concern larger, more abstract concepts, there are detailed problems as well, that may balance against each other and so on. This area is very much about systems and balance and, in this paper, we focus mainly on two areas. First is units, which broadly encompasses any sort of combat or transport item in the game. In their most simplistic form these units have a cost and a power, both of which need to be decided on. Most challenging is defining the value of utility; for example, what is it worth to be able to carry another unit, or to carry three missiles rather than four, and so on. Secondly, we examine technology, a system which itself is highly abstract, but again, must attach specific numbers for cost and effect. Following these issues, we briefly touch on balance issues in economics and multiplayer gameplay.

Units

Balance is a non-trivial problem at the best of times (Carpenter 2003). Units have some cost, and some statistics defining their various attributes, abilities, and so on. Different combat systems naturally necessitate different statistics. In the case of SR: CW, units have a cost in manpower and money, production time (which is, in turn, resources, which are also money), and they occupy a limited supply of construction slots. They have several statistics and capabilities depending on the unit.

Hopefully the idea of *construction slots*, say in a shipyard, addresses some of the weird behaviour that can come about from a single industry system, where an area can switch from building a tank division to a battleship in a heartbeat. It also reflects national assets; this shipyard, aircraft factory, and so on use the rest of the more abstract industrial base, but are themselves real things which can be captured or destroyed, just like in the real world, and there are consequences that come with that.

Because our units and structures are based on the real world we are faced with a simple problem: the world is simply not balanced. Sometimes, for the same cost, one thing is just better than another. Some places simply cannot, did not, or will not build a particular type of unit (notably big ships), even though their competitors might.

The choice in the Supreme Ruler series is to go with as accurate a model as possible. Unit statistics try and reflect their real world values. Other games use more abstract notions (for example in Hearts of Iron (Paradox Interactive 2009) giving units hard and soft attack values). In the Supreme Ruler case, an F15 should reflect the real combat value of an F15. In the Hearts of Iron case, the type of unit is a cosmetic name and all third generation medium tanks for all countries have the same base statistics. This is again a simplification, and one that runs counter to historical accuracy, but makes it very much easier to balance.

Chemical and biological weapons deserve special attention (Outpost Gamez 2011). For our purposes, we are not interested in non-lethal or incendiary agents. Incendiaries are part of the regular unit model, and non-lethals do not require any special systems to implement for grand strategy. Strategically, since the end of World War 2 lethal chemical weapons were only used to much effect in the Iran-Iraq war. Despite vast stockpiles, neither prohibited⁶ lethal chemical, nor biological weapons saw much use from major powers (Bismuth et al. 2004). Strategy games simply do not model phosgene grenades or cluster munitions directly, though those are also prohibited weapons. Because of their relative lack of overall significance, and unknown military value, BattleGoat chose specifically to not include them. One might expect these to also fall into the legal section, though the Victoria series of games (Paradox 2010 most recently) have chemical weapons at a strategic level without issue.

Technology

For simplicity, research and technological development in games tends to have some sort of centralized set of limits and focuses (say research centres, each researching on technology at a time), which is obviously not how real research works at all. But the model established over the years, of some centralized research plan in nearly every strategy game gives the player control and influence. This poses a number of challenges.

⁶ The Geneva protocol, 1925, and the Chemical Weapons Convention, 1993, describe prohibited and allowed agents.

Dramatic new technologies (and implementations) should presumably be expensive. If they are inexpensive, clearly worth development, or “stack” in some way, a clever player can exploit the system. Much like historical resources, a player that knows fusion reactors are just a few technologies away, or the best source of oil is Saudi Arabia will play differently than if they did not have such future knowledge, and the AI cannot exploit that knowledge to disadvantage the player too much.

Balancing technologies against each other is another challenge. A technology that increases electricity from oil by 5% has some cost compared to a technology that increases electricity from nuclear by 5%. Here there is little historical precedent to go on. The Manhattan Project and the space programmes are some of the few technologies that have had clearly, publicly defined goals and costs (Charette 1996). However, all of the intermediate technologies involved in those developments are harder to define and quantify. The costs also have to tie into other systems. To use the current Queen Elizabeth Carriers in the United Kingdom as an example, how do you separate the research and development costs from the actual building? How much is going on in parallel? Examination of budget documents might reveal the spending difference, but not how much is in parallel, or how well the costs can be spread out by adding more build orders, such as a third carrier, or the change in cost of reducing the order to just one ship. If there is a model of industrial capacity or military goods how does one factor those into the costs for one of the ships? Unfortunately the answers here are implementation specific and deeply tied to fairly elaborate technology trees. Research costs should reflect the value it immediately creates, the research it opens up, and if it is separate from building an actual thing, then the costs must be reflected in multiple places. If research is tradable (or can be stolen), which is itself an approximation, then you are also trying to factor that in as well, and avoid what, in previous Supreme Ruler titles was affectionately dubbed “trading your way to the 21st century” where a crafty player could accumulate all of the research known by all the artificial intelligence-controlled nations right after starting.

Economics

Games tend to use their own model of industry, goods, and so on. Those systems tend to stand on their own. In this section, we will look at concepts that map to the real world, notably in terms of currency and debt.

Currency is a somewhat abstract concept. For gameplay and programming reasons, it is much easier to simply have one currency in a game. The real world of exchange rates is complicated, unless everyone is on the gold standard, but then gold becomes the currency. The problem, especially for SR:CW in the Cold War time period, is that currency values were governed by complex agreements (Bretton Woods for example), in addition to central banks intentionally valuing and devaluing currency, with fixed, and in many cases inappropriate exchange rates. The cost of trying to understand these systems well enough to model them is rather prohibitive.

Debt was an issue not expected in SR:CW. It seems appropriate in this age of austerity to discuss though. Previous titles modelled national debt in an abstract but reasonably authentic way. Countries in previous titles had reasonably correct GDP, debt, and interest rates. Attempting to do the same in SR:CW posed some issues. While having correct GDP is straightforward, debt and interest are not. For many countries, notably colonies, their debt situation is quite complicated. They may or may not inherit a portion of their parent on independence; they may have their own debt initially; and so on. This also assumes we could find the relevant data at all, or it even existed (some of Germany’s debt agreements were signed after the start of the game, for example). Coupled with this is the system of debt repayments between governments, which is and was quite complex.

Using historical debt levels was found to cripple gameplay, and calculating interest rates to vary over time with what was happening was quite hard. To try and get any source of money to move forward, the game essentially degenerated to trying to disband the army as quickly as possible, which is neither realistic nor fun for the player. It would reflect the overall strategy of demobilization, but did not capture reconstruction or economic expansion well. For launch, SR:CW erred on the side of giving the player more choice, and simply wiped every countries’ debt. This, interestingly enough, creates its own problems. For example, the United Kingdom has a much larger GDP than Russia, with France close behind, and no particular reason to weaken themselves militarily in this scenario. As a result, with no debt in place, it becomes quite a challenge for Russia to catch up to the United Kingdom or stay ahead of France. Eliminating debt significantly shifts the balance of power, but modelling it properly proved prohibitively difficult to keep the game both fun and accurate. To reflect a relatively gradual reconstruction, SR:CW creates an artificial shortage of industrial goods, which are needed to

make factories to produce both more industrial goods and other things.

Multiplayer Balance

In multiplayer gameplay, it is difficult to find multiple countries that one could say are “balanced” against each other. The closest three are probably France, the United Kingdom, and Italy all having comparable GDP and populations, with Turkey, Spain, and Germany being close, but outliers. Another possible pair is Egypt and Ethiopia (Central Intelligence Agency, data for 2011). There are a few others, but if you want them to be reasonably close to each other geographically, there are relatively few countries that could be called balanced based on population, GDP and resources. This creates an unfortunate trade off, as an equal balance provides more fair and enjoyable gameplay to players, but providing this balance would be historically inaccurate.

Starcraft 2 (Blizzard 2010), while not a historical game, deals with many of the challenges faced in balancing units. Some of these changes are discussed on the official Blizzard forums⁷, some not. Testing if a unit is balanced is not trivial, and may involve things such as automated testing, or analysing real world player data. It is important to note that two sides (in the case of Starcraft, all 3 sides) can be balanced, but have individual units which are not, and those units will tend to be over, or under represented. A faction can also be deficient at a specific set of circumstances, on specific terrain for example.

There are numerous ways to assess balance, either through simulation, automated testing, or play testing. The goal with balancing a game is that on one hand, it should never be cheaper to build a better army, all else being equal than the nearest reasonable competitor. That presents the problem of how one defines “cheaper”, either as a percent of GDP, on a nominal basis, or purchasing parity and so on, and how much you want to factor in technology. In SR: CW the choice was made to stick to historical accuracy as close as possible for unit statistics. Some of those statistics, such as weapon range, travel range, mass, and so on are easily found, and the rest are chosen to reflect their expected capabilities given the combat model. This is not intended to be balanced; the feeling being that multiplayer is a relatively small segment of their customer base, and given the relatively limited set of options for balanced country play, it seemed impractical. Multiplayer gamers have proven inventive in trying to, with the historical model,

⁷ <http://us.battle.net/sc2/en/forum/> as of June 2011

come up with fair scenarios or self-enforced rules people can play⁸.

LEGAL AND SOCIAL ISSUES

SR: CW has nuclear weapons to kill millions, which are, bizarrely, not all that controversial in the ESRB and PEGI ratings applied to the game, whereas a depiction of direct person on person tactical violence warrant an older suitability. Supreme Ruler 2020 and SR: CW have a PEGI 7+ and ESRB E 10 for everyone rating, as does Hearts of Iron, but the Total War series rate T for teen with ratings variously for Blood and Gore, Violence, alcohol, and sexual references. However, there are still controversial choices, notably on country borders and who is defined as a colony or satellite state. This is a relatively complex topic.

Where is the border between India, Pakistan and China in Kashmir? Territory that is clearly disputed, but also clearly under the control of one party, The Falklands for example, are relatively easy – the controller is the owner. On the other hand, the more murky areas, especially in the colonial era pose other problems. Who is in charge of Rhodesia in 1949? Should it be independent in some way, a satellite state, or something else? The British reorganized the territory several times after 1949, and there is no particular reason that the current arrangement would have been the final one if different choices were made (by, in this case, the player). Algeria was part of France, to them an integral part, for several years after the start of the game, and a different evolution of history could have seen Algerian Independence play out very differently. Tibet is always a great source of animosity; is it a satellite, independent, part of or something else with Communist China (who are themselves an interesting case). There are a number of conflicts that were largely internally driven, by the people so to speak, rather than by the state. Assuming one would even want to, how do you model an apartheid state? What about Turkish and Greek populations in Cyprus? The list goes on and on. Often it is not clear what is the most accurate portrayal should be for a game, and when one factors in the sensitivity of these matters, these are formidable questions indeed. The best approach is often to select a model that is consistent with the accepted reality in the largest markets, or, if a developer is big enough, making different versions for each locale.

⁸ These are not necessarily actual scenarios, but simply agreed rules or victory conditions they play to. For example, the first player as a European state to conquer Australia wins.

Trademark and copyright is another great legal question in historical games (Rosenthal 2009). Do car simulators need rights to use specific vehicles? Gran Turismo advertises licenced cars from top manufacturers. But then who owns the rights to the image of an F22 or the like? What about something historical, like a ship from 1940? How about a ship that is now a museum? In SR:CW the units are all modelled by the team, and many are fictionalized similar but not identical for gameplay reasons, so as to not have, for example, 15 different versions of what is basically the same aircraft. Typically, government equipment falls in the public domain, but one has to be careful on what is being depicted and when. In a strategy game, one must be careful about depicting military organizational units (such as regiments, platoons and divisions) as well, rather than just equipment. Basing a game on the activities of the Irish 1 Southern Brigade, and use of their flags and so on may run into conflict with the official use of those images.

Depicting real people poses a considerable number of problems. Homefront (Kaos Studios 2010) encountered legal problems in Japan and the Republic of Korea (South Korea) over portrayal of real people (Owen 2011). The game was outright banned in South Korea, so as to not antagonize the North, and changed in Japan to not be malicious to real people or countries (Parker 2011). Depictions of various fascist leaders risk getting a game banned, especially in Germany, and even if they are portrayed in a negative light (Stegbauer 2007). The political system in SR:CW is, for the most part, sufficiently abstract to avoid this, and starting in 1949, most of the world has changed. However there are still important people in the world from that period, and as the game gets deeper in, the player could find more and more people who are, in turn, relevant today if real people were portrayed.

Homefront also had to change the enemy they were trying to portray, which is obviously Communist China. Having the PRC as the enemy would get the game banned in the PRC, cause political tensions, and so on. For a game like Hearts of Iron, or Supreme Ruler, being banned by the People's Republic of China may actually benefit sales, due to the free press coverage, and the lack of existing sales in China anyways. For a product like Homefront however, with a major publisher like THQ they obviously chose a different route.

SANDBOX VS. HISTORICAL SIMULATOR

Where other Paradox-published games tend more towards historical simulators, with heavily scripted events to lead the world towards something like what actually happened, BattleGoat Studios has

taken the route of setting up the world in something reasonably historical and letting the player have at it, to radically transform the way history unfolds. The goal here is to empower the player to make interesting choices if they want. That is prohibitively hard if they choose to play the Comoros, as they can choose to do, but a player as Indonesia, Nigeria, or Vietnam should have a lot of choice on how the world plays out, even if they were, in October 8, 1949 not entirely free. At the same time, the world should behave somewhat authentically, and trying to build a nuclear aircraft carrier as an independent Vietnam in November 1949 would seem somewhat unrealistic.

The aim for us was to build a world that as realistically as possible depicts the start date. Where a historical simulation diverges from a sandbox is in how they make the system evolve. Forcing France, and then the United States into the decolonization and war scenario in Vietnam would guarantee history evolves with major defining events for both parties. Doing so, however, may not have any connection to how the player is evolving the game. A historical simulator attempts to present the player with authentic historical choices, and then believable historical consequences. A sandbox aims to present the player, at least initially, with authentic historical choices, but then shape how the world forms through their choices, and have random, unexpected things happen. Imagine a World War 2 game where the Nazis never invaded Poland. Suddenly, it ceases to be much of a World War 2 as we know it. SR:CW lets the cold war go hot, the various smouldering insurgencies and proxy wars move and pop up in different places. The different styles require different tools. A sandbox needs a more general artificial intelligence, whereas a simulator needs more robust scripting, and artificial intelligence that behaves more historically.

PRE-LAUNCH THOUGHTS ON SR:CW

As with any game design, an enormous number of decisions are made before launch; some big, some small. One never knows how the customer base is going to respond to this work until it has been released and in their hands. In this section, we briefly summarize some of the choices made (as discussed in previous sections), for easy comparison to the post-launch reception.

On the cosmetic side, BattleGoat Studios has tried to be as authentic as possible with SR:CW. With events to change flags to historical norms, with names of places all as close to their actual names as possible. The overall gameplay model of building, production, and combat is very much the same as previous versions, so the presumption is that the

target customer base will be satisfied with what works and what they know.

Where things are likely to get interesting is in colonies, satellite states and the new geopolitical models of diplomacy, and proxy wars and so on. How the player base will respond to some of these new features remains to be seen. No one launches a game hoping for a negative reception, and that is not likely, but it was interesting to see how the players respond and what they want tweaked for the major patches.

Multiplayer was another unknown. The Supreme Ruler series has supported multiplayer for some time, and it is a relatively small part of the audience, which makes it hard to know what exactly they want. There is not a major attempt to make a balanced multiplayer game; while a balanced multiplayer scenario probably could be made, the expectation is that players will prefer the historical route, or will add whatever they want through various mods to the game.

As of time of submission for review, a hot topic on the BattleGoat forums was the space race, and how technology will be tied into that⁹. The game certainly has technologies tied to the space programmes, and there is a fairly abstract model of orbiting satellites, and a whole space race victory condition, fortunately we had anticipated this one, though players would have liked a less abstract space race.

POST LAUNCH ANALYSIS

The main mechanism for feedback on SR:CW is on the BattleGoat and Paradox forums, with other feedback arriving through forums for various retailers, game websites, and other portals as well. Many of the issues that came up during launch have already been touched on elsewhere in this paper, such as the map, the economy, and some unit issues. Several areas deserve separate attention, however.

On the cosmetic side, Churchill and de Gaulle were not actually the leaders of the United Kingdom and France in 1949. The fans really noticed this issue, and pointed out a couple of flag errors we had as well. As mentioned earlier, the satellite maps missed a few geographic features that several users think we should have added.

Strategically, the diplomatic artificial intelligence seems to struggle with expanding spheres properly, especially as the United States, and it is not clear as a player how to do it. The United States should

come into the time period friendly with a lot of people, but for gameplay reasons that momentum is not reflected; it would make the United States too powerful. Unfortunately, it creates a very poor Cold War when all of NATO joins the USSR and the United States does nothing about it.

Technology can be very unbalanced. Some units, especially 1960's and early 70's era do not really require any technology that did not exist in the early 50's. Instead, it just took a long time for people to bother developing them. This gap, where you can jump ahead in technology and militarily is easily exploitable.

The world is round, the map in SR:CW is not, and the Pacific is bigger than portrayed. For much of the Cold War, the threat of missiles being lobbed over the pole with bombers in hot pursuit just does not fit right on a flat map. SR:CW created a strategic deployment option where a unit can be sent anywhere without seeing how it gets there (which is itself a system the player needs to learn). This has confused several people, and required some tweaking to unit ranges from historical accuracy. The Pacific had to be shrunk down a little for some path finding reasons. It is still big, although it looks a bit odd.

The SR:CW model of the United Nations is a fairly abstract notion that governs world trade, which is not really what the United Nation does. Being unpopular with the United Nations in SR:CW makes it impossible to buy goods, yet there are several countries in the game that were not even part of the United Nations for decades (notably the People's Republic of China). In a game about waging war, it is a challenge to find a good role for an organization devoted to peace.

The United States has over 60 aircraft carriers in 1949, which is reasonably historical considering many are escort carriers. Unfortunately, this presents the player with a dizzying managerial task at the start of the game, and the artificial intelligence, which does not know how to disband units, can end up with an absurdly large navy of largely antiquated ships.

SUMMARY

As demonstrated in this paper, historical accuracy can be an interesting and important topic of discussion. Developers face many issues and challenges in this regard in the creation of their games, with far-reaching ramifications on the sale and reception of their games. This paper has highlighted many of these issues and challenges, using Supreme Ruler: Cold War as a source and reference for discussion.

⁹ <http://www.bgforums.com/forums/>

One area we have not discussed is tactics and doctrines. Tactics and doctrine tie heavily into the artificial intelligence system, and are a separate topic. Larger strategies, like strategic bombing (and its various euphemisms such as area bombing, or precision bombing) may have various abstract implementations, but more specific strategies like infiltration are somewhat different. Here, a believable model should try and deal with a historical strategy that is not successful, and try to change. The reactive nature of strategies and how they work with the artificial intelligence system is a large separate topic that requires further attention and study.

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