

A Short History of Sweeping Satellites and an Essay or Case Study on Game Design Evolution. by Mark Flanagan

Sweeping Satellites, the Early Years - Version One: Poker Chits, String, Ceiling Wax and 3D Printed Models.

It seems highly appropriate that the orbit of Sweeping Satellites came back around to VCoW in 2022. VCoW being the virtual partner of the physical CoW where Sweeping Satellites was first shown to the world back in July 2019, as part of the preparation process for Connections UK 2019, held later in September [giving us a two month refinement period]. To borrow from Jim Wallman's 'Game Development Cake Taxonomy' (as because as he said, "Who doesn't like cake?"), we had some of the solid ingredients of a new kind of cake placed in a tin, set on a 'low heat' just to see what would happen after 30 minutes cooking. The dough mix had tasted nice when we had licked the bowl clean so into the CoW kitchen we go. The prototype games design is shown below:



Figure 1: The Trio of Blue Boards



Figure 2: The Trio of Red Boards

Ian Robinson and my good-self were anxiously looking at the "cake" during the session to see if it would rise to the occasion. This is one of the unique features of CoW that I love, the ability to bring a crazy frog-like "jumping idea" to the table in front of 'informed [or patient/hung-over] gamers', to watch the embryonic cells divide and gasp at the topology taking form (ok, please excuse the mixed metaphor spaghetti). As important as it is to see what is clearly working (such as the premise of the satellite search mechanism, it is as equally important to see what is clearly not working (or what is awkward for the players to understand – such as trying to dynamically represent "all the possible orbits on the map at the same time" [the middle screen in the above pictures] – it looked messy [bloody obvious with hindsight]) and then perhaps a tantalising hint at what was perhaps "missing"(gasp, shock horror – clearer definition of VPs), leaving a tingle of an idea in your head.

Footnote: My "bad self" stayed at home which meant a "proxy family vote" was cast on my behalf [by the wife and daughter], which meant that "two breakfast" Bailey became our beloved dog, he joined the Flanagan's that year as Sweeping Satellites. I think that is called karma which is also a major part of game design.

All the above were the things Ian and I ruminated on and over as we journeyed back north (the news of the dog was broken to me in the car on the drive home). Extended CoW gratitude and kudos goes out to those first footing, patient satellite "cake tasters", veteran WD members David Bradbury, Nick Drage, Michael Young and the ever youthful sci-fi and satellite enthusiast Tom Mouat. Many thanks for your kind words and ideas they have borne out good fruit in the past four years.

Game Design Note: Feeding off the enthusiasm generated is another great [even unique(?)] feature of the CoW experience - rather than facing the slings and arrows of outrageous fortune [of the local wargames group], a more constructive .. thoughts on the “room for improvement – please carry on with this” meme is invariably always presented. If only my day work could be more like that (department away days with highly paid ingratiating facilitators would be things of the past)!

Back to the Sweeping Satellites. What followed were three Agile iterations of the game before Connections UK 2019 (each of roughly two-week long duration, each a Sprint in the official SCRUM terminology) producing an improved MVP [aka a playable game] at the end of each Sprint cycle. Critical game features being introduced through Product Backlog (the dirty laundry “still to do list”). Remember I am a “software bod” and methodology, process and procedure is what I bring to the party. All this naturally included yet more play testing [vital] with a brand-new set of play testers (remember this was pre-Covid so the online presence of gaming was experimental if anything, but a “new crowd” in a way was a very good thing (despite being painful to recruit), as it was those all seeing bright “new eyes” again. A final chrome element of “3D printed satellite models”, used as playing pieces (patiently superglued together painted bright Flat Matte Red and Flat Matte Blue in Tamiya’s finest) was added by serendipity as a last minute “stretch goal”.



Figure 3: Red takes an Interest in South America



Figure 4: Blue looks to the East

Note: Tip, if you dare introduce anything as fragile as that (3D Satellite Model) to a game, expect it to be broken, so take along a ACME 3D Satellite Model repair kit (which I cleverly [uncharacteristically] did) because trust me, you will have to use it, as I did – calming the nerves of the fat finger and thumbs players.

We were shamelessly begging, stealing, and borrowing precious game time from local gamers and also advice from an academic partner (a Space Policy subject matter specialist – a retired Professor on International Relations called Michael Sheehan) who came to [Connections UK 2019](#) to present with us, as I pulled in a personal favour. It was all crazy fun though, the game was now much refined and a big success on the day, played twice and did not result in a nervous breakdown of the umpires despite being nearly overworked with paperwork and calculations. Most importantly, people (the “ground dwelling players”) seemed to go away from the event with an appreciation of “looking up into space” and having an idea of what these kinky satellite orbits: High Latitude Earth Orbits (HLEA), Middle Latitude Earth Orbits (MLEO), Tundra, Polar and the wacky Russian named Molniya, were. Good job, people genuinely seemed to like it as it “gave them” something.



Figure 5: Overworked Sweeping Satellites Umpires



Figure 6: Happy Professional Wargaming punters deep in the midst of play

Hmm, was it the mystic Kung Fu monk moment, where “my work here is done now”, and walk away off into the sunset? We just couldn’t help ourselves, so we kept tinkering, refining and playing – we even made a YouTube video and trundled along to a suitably entitled DSTL ‘innovation opportunity’ event in 2020, to find out that apart from good catering, if you are not on their equivalent of a five-year plan [and we were not into making NLAWs] you don’t speak the same language (but they are very good at being very polite). The wargaming sock-draw beckoned as the online Wargames Vault did not seem a patriotic place to use as a pay-for repository as the real Reds, the Chinese and Russians could see it.

Sweeping Satellites, everything is Virtual - Version Two: The Covid Years and the Virtual “Google Docs” Experience!

Job done, I quietly placed an order with Navwar to paint 1/3000 WWII ships, Ian continued making RSPB videos and we both innocently joined the British Army Fight Club where I was reunited with Major Ed Farren, whom I had met through Phil Sabin. The result of which was a British Army Fight Club game called [Take That Hill](#), extended from Phil Sabin’s game [Connections UK 2014 Take That Hill and Simulating War]. Once done, Ed casually informed us that Fight Club were looking for a Space Game and did we know of one? Sweeping Satellites duly emerged from the sock and knicker draw, just as Covid-19 struck.

Despite the implied difficulty in arranging face to face communication, I found COVID-19 a mixed blessing in disguise as “online became the new norm”; VCoW and the weekly Sheffield [WD North] Online meetings being just two

examples (as well as the infamous fad of family Zoom quizzes). Therefore, by necessity, which of course is a Frank Zappa the mother of invention, Sweeping Satellites became a Google Hang-Out and Google Document experience where we managed to remove some of that ball aching paperwork via Spreadsheets.



Figure 7: Fight Club Educational Space Game Primer

Game Design Note: I have a love-hate relationship with spreadsheets (others, close friends, differ). Yes, they can make tabulations and calculation easy [quicker than a simple dice roll CRT - perhaps], a dynamic Quick Reference Sheet of sorts, but relying on them for anything more than a coffee-club calculator is the road to hell, paved as we know with good intentions. They can if left unchecked, bind you into a ritualistic performance or cabal that is unforgiving and unwieldy, if you step out of sequence. Debugging is shocking too, as much pleasure in a working spreadsheet can be, it palls before the miscreant one – how is this not working? Ok, getting off the programmer’s high horse soap box now. We used them but they were not the end product, but a useful temporary measure – procedural validity. If it could appear in a spreadsheet, it could be clearly expressed in rule form.



Figure 8: Online with every move captured in Google Docs

mole [unexpected world events appearing in random places] and Cluedo, the staple inspiration of many a WD members “special” game [working out what the other players strategic intentions are].



Figure 10: DSET 2023 unveils Sweeping Satellites

The game continues its tour, this time Bristol and DSET 2023, a pre-meet of Connections UK for the Professional Wargaming community (but it is primarily a major “heavy duty” armaments fest, for the kinetic and software systems defence industry stuff). The Sweeping Satellites game development has been a hugely fertile and rewarding experience. What can be gleaned from the above is hopefully a “sense of adventure” bears fruit, bouncing between analogue and digital improves a game and finally you will have to say farewell to things you love, such as 3D Printed Satellite Models, but if the game is better for it then it is a good thing. Game Design reminds me of Longitude and Harrisons continuous search for improvement and innovation in his creation.