INTRAVERSE INFINITY

ISSUE 4

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Cover Art – "Space Undefined"

This image is loosely based on a render of a black hole by the National Aeronautics and Space Administration. Kudos to Jean-Pierre Luminet for the early (1978), now-confirmed visual concept of a black sphere with a star matter torus.

Chicken Nuggets

This is fiction.

Chapter 1: Vigilante

I scratched my chin at my desk.

"You know," I said to myself, "It's probably best to never post this online."

The page for Archive Of Our Own was open, and my cursor hovered over the Post button. I took every precaution when I first made an account. A new e-mail account, a new alias, a new identity without the bounds and obligations of real life. No one to know who I was.

"It's fine. I proofread this ten times over."

Maybe it's embarrassing like I tried too hard; maybe it wasn't. Maybe I sullied an unspoken reputation in the community, but I didn't have a real reputation to fear for. I wanted to do it anyway. It was like my way of letting the world know how I thought about the series and fandom I follow. A niche old sci-fi series and in the fandom, I felt like the only one who didn't just want bondage rape porn of the main characters.

Everyone used to say "anything that goes on the internet stays there forever." Now, it's as though everyone's scrambling to archive what transient culture they could come across and preserve. Still, one click had an irreversible significance to me. My finger slowly teetered down, and the deed was done.

"Well," I said to myself. "Time to go to sleep."

The digital clock on my desktop read Saturday, 5:53 AM.

When I woke up in the late afternoon, I opened a web browser to browse social media. Usually, I expect zero notifications, zero messages, and a timeline full of dumb memes, watermarked image macros, and screenshots that I wouldn't recognize a day from now. I didn't have the personality to accrue hundreds of followers, so everyday was a slow day on there.

Apparently, social media is a hit thing in the modern internet life, but for what it is, it's lonely and overrated. If friends were closer than acquaintances, then acquaintances were closer than followers. Being online there was like being surrounded by stars in the night sky. Everyone was really out of reach.

Marking the page was a red circle that encapsulated the number one. One message— something that almost never happened. I opened it with optimism.

sjw1992 (Offline), one hour ago
    Do what I want or I will leak
    your gay fanfiction to your
    friends and family.

Who the hell was this fucker. I wrote in my response.

Me, just now
    Piss off. I never did
    anything to you.

The grey dot next to the username suddenly popped green. The guy was invisible the entire time.

sjw1992 (Online), just now
    You ate at Chick-filé, you
    closeted homophobic bigot. Do
    as you're told or I leak your
    gay fanfiction to your friends
    and family.

Me, just now
    Screw you. You don't know me.

"Fuck him," I said as I ate a chicken nugget. A white bag with red line art of a cartoon chicken was on my desk. "There's no way he knows where I live."

The next morning, I woke up and headed over to the bathroom. I filled a cup with water and squeezed toothpaste on to my brush.

"Honey," my mom walked over to the door, "Is there something you need to tell me and your father?"

Toothbrush in my mouth and an awkward vocal blob, I uttered, "Uh, no."

"Your father is having a harder time about it," she continued, "but I'll always support you no matter what."

"Ok, mom."

When I finished brushing, I walked over to my desktop for a quick check for messages I got online. I leaned to operate my mouse and keyboard, while not taking a seat.

My mail reader had a red dot meaning I received new e-mail messages, which I always took as good news. I clicked the icon, and the window took a longer time than usual to come on screen.

"God damn, this shit always hangs like this when I leave it on for a few days."

After a few seconds of no response, I could tell the program was just going to be slow until I restarted it, so I sat down. Not wanting to re-enter all my passwords for different mail accounts, I just waited.

Three e-mails.

The first was being @'d on social media.

sjw1992, 5 hours ago
    @(You) is a chicken nugget
    eating, sexist, white
    supremacist, gamergate
    supporting, FreeDSB using, gun
    owning, Republican voting
    homophobe.

"Who cares what these people think, but wow. How the hell did he get 521 retweets?"

The second was a notification from the social media service itself.

Account Termination - Code of Conduct
 Violation
    Reason: Homophobia

"Bullshit." But I didn't care about that account anyway.

The third message was a notification from AO3.

[AO3] Comment on your fanfic

I faced an 800+ word wall of text, but it made my day. The person never set an avatar and had a gender neutral username, but I always had a hunch it was a girl. She always left these massive comments, but she definitely paid attention to what I wrote.

"Alright," I said as I copied the text wall into a text editor and readied my fingers at the arrow and Enter keys, "Time to make sense of this."

By lunch hour, I finished drafting my response. I had broken up the wall of text, quoted each segment, and placed my response after.

"I think this response might bug out AO3 one way or another," I thought. It probably went way over the character limit. "I wish AO3 had a preview option for comments."

Then the doorbell rang and my buddy came over with two bags of Ins-And-Outs.

"It's lunch time, my dude," he said, "Charge your phone some day."

We ate at the dining table closest to the front door.

"Man," my friend said. "I proofread your shit and know your main characters are fags, but you didn't need to gay them up so hard."

"What."

I recalled the draft I gave him. It had slight cheesecake and almost-sexual fantasy in a dream sequence, but it was way better than having the character say "Hi, I'm gay" like an introduction from a bad video game. I wrote as a hobby, but at least I had better sense than to write things that way; I internally sighed.

"They're based on canon homo characters. I can't change that much," I said.

"Whatever man. I'll just ignore that chapter."

Way to overreact to one page.

Then my dad walked in the room.

"Boy," he said. "I'm not telling you who you should love, but you should remember there are some things another man can't give you."

"What the hell are you talking about."

"Someone on the internet told me you wrote a gay love story is what."

"Oh." I chewed and finished my french fry. "That guy is lying about me."

"Well, nevermind then," my dad left the room.

At the end of the day, I was again at my computer. The site I was on was the kind of internet bulletin board system as though the year 2005 never ended. You could say its look was dated, dull, or boring, but the lack of trendy glass aesthetics, rounded rectangles, and Easter egg colors meant it didn't eat half of my desktop's memory.

"Everyone hordes over at social media, but I get way more responses from real people here," I said to myself.

The topic of discussion was anime and manga, and an hour after I made my post, I got a response.

Anonymous, just a minute ago
>>385512 (You)
>yaoi
Neck yourself you cock guzzling degenerate.

I had to write my own.

Anonymous (You), just now
Fuck you too.

"Man," I sat back in my chair. "Fuck my life sometimes."

Chapter 2: Frozen Yogurt

"Not a cloud in the sky!" I said as I looked up.

The sun shone bright enough for my friend to bring her parasol today. We sat at the outdoor tables by the cafe with two cups of brightly colored frozen yogurt.

"Wait!" she said before I moved to take a scoop. "You gotta take a pic of our cups!"

"Right, I forgot."

I really didn't understand the trend. I took my phone out to take a picture. It clicked with the fake shutter of a real camera; then, I showed her the image it took.

"Gosh, you're hopeless," she said. "Your finger's blocking the lens again. Let me do it."

She then took out her phone, and in turn, it clicked.

"See?" she showed it to me. "I'll text it for both of us."

"Haha, yeah. You're a way better photographer than I am."

Even though we sat next to each other, with both of our phones out, we started silently browsing the web. Through scrolling text, just by the headlines and previews, the feeds were flooded by news of a gunman attacking a synagogue.

"Wow," I said. "That town isn't more than thirty miles away. Hell, the guy even has the same name as I do."

I scrolled down further and saw that SJW guy again with his tweet cited by the news.

sjw1992, one hour ago
> The shooting was racially motivated and carried out by a white supremacist nazi homophobe.

Just because the guy's popular, he's now a tipster for the news. I shook my head. If social media junkies of my generation were stereotyped to be tech addicts with short attention spans, hopelessly glued to the screen, then it said a lot about the journalists and reporters, who were over ten years older, that practically live on the feeds.

"That guy," I muttered, "and his fake ass robot followers."

"I don't get it either," she shrugged. "I never sign on there since there's no real conversation to be had."

"Bye!" she said from her car after she dropped me off at my house. "Let's study for next exam sometime."

"Yeah, later!" I waved off.

Not long after I stepped in from the door, I checked my phone for more news.

"The shooter carried out the attack with an AK-47," an article stated.

"Who do they think they're kidding," I commented as the photo of a pistol loaded.

I kicked off my shoes and went over to my desktop. Not long after, I heard the rush of cars, humming engines outside my house, and rude pounding on the front door. I jabbed my phone's screen as I walked back down to answer. The impatient knocker became increasingly forceful.

"God damn, what's the rush—"

The next thing I saw was the whole front door falling over like the frame was totaled. The puff of disturbed dust from flaking wood, and down flat to a loud, painful bang on marble floors that trembled the air. A team of armed dudes in Kevlar, like they came straight out of a video game, were at the porch. Each one had a big white "SWAT" emblazoned on their pouchy vests.

"Freeze!" an officer shouted.

"What! I didn't do anything! It wasn't me!" I held out my phone. "See! This is where I was at the time of the shooting!"

I tried to show them the picture of frozen yogurt I took at the cafe, but my finger blocked a portion of the photo, and my friend's parasol looked enough like a rifle to the police.

"You're under arrest," he said.

The officer apprehended and pushed me out the door. Just as, I saw the others confiscating the lever action rifle in the house.

"Wait. Hey, that's my dad's Winchester!"

"You have the right to remain silent," the officer butted the back of my head with an MP5.

At the end of the day, I ended up in detainment. After an interrogation and obvious attempts to get me to admit to a crime I didn't do, I sat front of my dad from behind a glass pane.

"Boy," my dad's voice raised as he started to lecture. "What in the hell's name do you think you were doing today."

"I swear!" I reiterated my story. "I was at the cafe with Courtney this afternoon."

It took a lot later for the department to find that the news got the whole story wrong. The sun sunk deep behind the horizon, and my ride home was silent. Not many would care about a nobody's front door, but it definitely was the reason behind the sour mood at the family dinner table.

Author's Note: I checked if a city would have to pay for property damage in the event of a police raid. It turns out they don't. http://archive.is/DzDZG

Endless Sky Version 0.9.10 Review

Endless Sky is a libre, 2D space (economy) simulator game. The year is 3012 and humanity has colonized much of the galaxy on the Solar system's quadrant. The main character starts as a player-named civilian who takes a loan of 430,000 credits from a bank. Afterwards, the player determines the path and story.

Like most libre games, the game receives updates. Endless Sky primarily tells its story through writing and makes use of Creative Commons (CC-BY-SA 4.0) licensed photographs; however, no parts of the game look crude, and the art style is consistent.

The First 5 Hours of the Game

The first thing on my mind when starting the game was paying back the loan. The mechanics of interest rate and credit score are also present. At the start of the game, there are three main choices for ships: a space shuttle, a freighter, and an interceptor. Due to my bias from other space games, I went with the space shuttle since I don't think freighting is fun to play and interceptors

A portion of the map from the navigation menu. The region nearby the center of the galaxy is The Core. Each node represents a star system, and each lane represents a route traversable by the Hyper Drive. Not every star system links to the main "mesh" of human space.
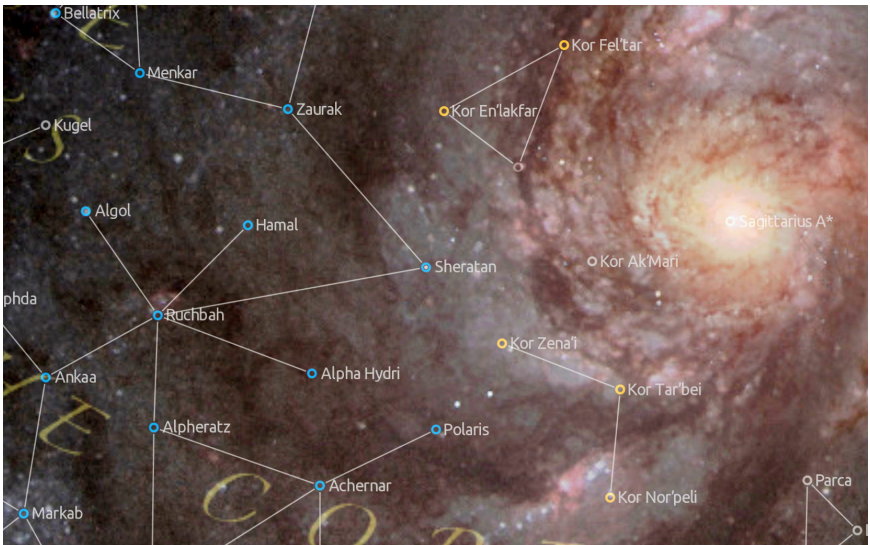
can involve high risk, low reward jobs.

After I started the game, I noticed death is cheap in Endless Sky, and it's easy to reload to the last station departed from. Shield recharges and hull repairs are free, so the conventional risk associated with combat aren't as present. With the space shuttle, I play as a mostly unarmed space taxi. The start of the game places the character in "core" territory rather than the frontier, so the threat of pirate raids don't manifest.

Unlike a real mortgage, the player automatically pays the "annuity", amounting to roughly 2,500 credits, daily. In the game, each departure from a station or hyperspace travel passes one day; thus, each traversal in the game (galaxy map looking like an undirected graph) costs loan payments. The daily loan payments can be reduced by decreasing the principal ahead of time.

Accomplishing an income greater than 2,500 credits per day was straightforward as long as each job is along the way to a final destination. The shuttle also has some capacity to carry cargo, and the game also discloses market prices for already visited sectors. With the first five hours of play, I could pay off the mortgage, buy an escorting ship, start expanding my income, and build a fleet.

Within this time, the game also hinted towards an overarching campaign of a potential human civil war between The Republic and Free Worlds. To give a brief idea, Earth is in Republic space, and Republic military ships often broadcast support for united humanity. Earth, as depicted in the game, is the human homeworld where many spacefarers make their pilgrimage, but Earth itself is rampant with crime and civil unrest. Meanwhile, Free Worlds ships broadcast support for liberty from a corrupt government.

The three other immediately encountered factions are The Syndicate, Pirates, and the Quarg. A fourth one, the Korath, may be encountered in the early game. The first two are human while the latter are aliens; only the lattermost is hostile (non-negotiable). The first three factions tend to be quieter until the campaign.

Expanding Income

The surplus credits after paying off the mortgage went into expanding ship capability and acquiring a fleet. On early jobs, the main limitation of early ships were the stats Bunk Room and Cargo Space. These attributes determine passenger and trade goods capacity. Upgrading purely in this route increases the Piracy Threat, determined by cargo and how defended a ship is. Eventually, I had to buy some fighter ships.
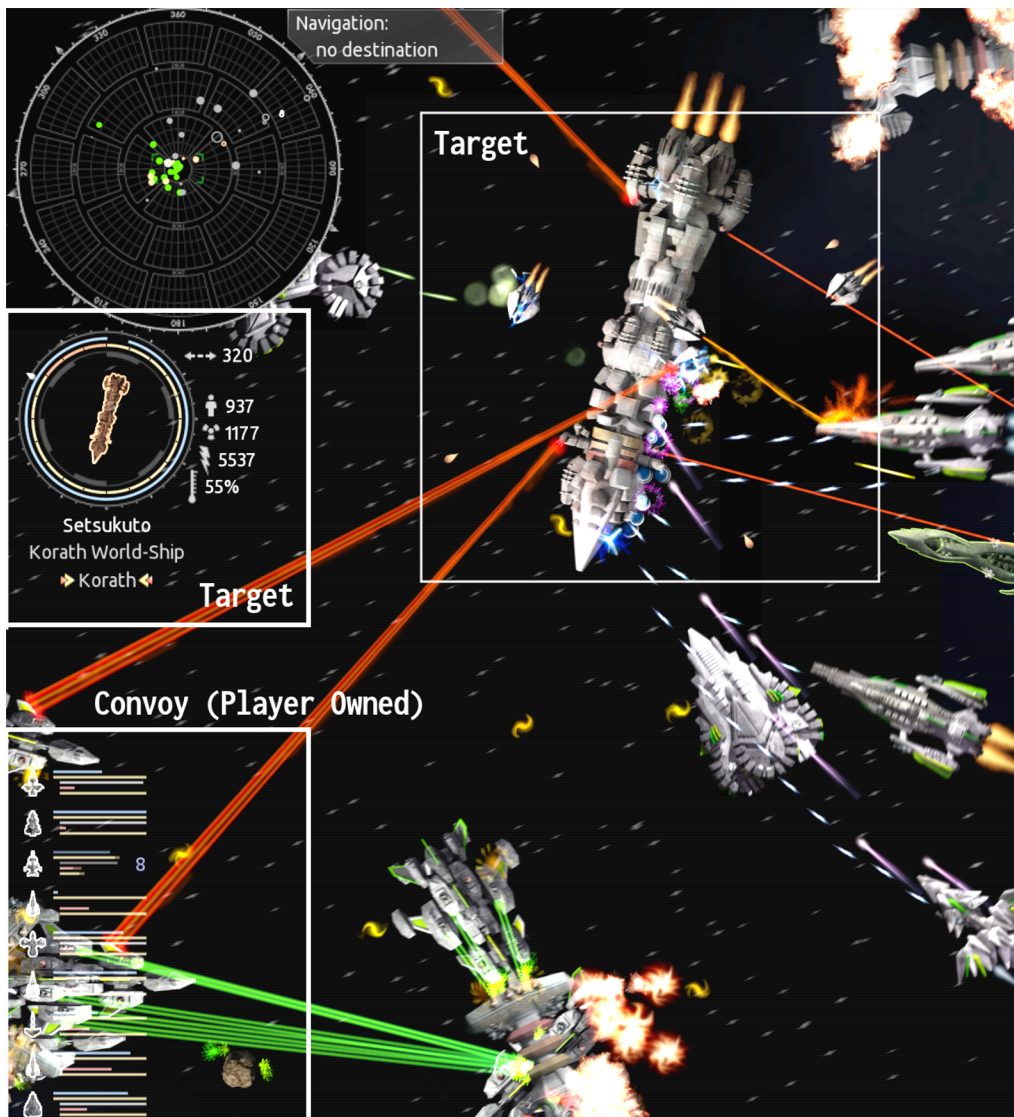
The Korath may be encountered trespassing Syndicate space. After the player acquires the Jump Drive, their territory is accessible.

Around this time, I started paying attention to the characteristics of the ships and noticed the Argosy is capable of freighting and offense. By description, it lists itself capable of fighting off small interceptors, but some NPC Pirate Argosies were zipping around the map, outpacing larger warships and spraying missiles like a danmaku boss. This ship model started composing most of my fleet. At the point of having more than thirty ships, it sounded ideal in

Player HUD

Hull Integrity (Health)

When hull integrity reaches the orange or darker zone (15%), the ship will be disabled and vulnerable to boarding attempts.

Fuel
Energy
Heat

Player Ship (Flagship)

The Korath are an alien species that populate the regions nearby the core of the galaxy. Their space has numerous abandoned, but habitable planets. One of their ships is the "Korath World-Ship", having one of the highest passenger capacities in-game. Often containing at least 1000 passengers, it's not a ship with high chances to capture.

having each ship independently defensible and not a stealth subtraction of 700,000-2,000,000 credits to my net worth in assets.

I started to recognize boarding as a viable way to expand my fleet. Of the fifteen Argosies in my fleet, ten were stolen from pirates. Since boarding is an action that only the player can do on his/her behalf, it started to determine my ship of choice (flagship) and playstyle. There's no combat mechanic that determines the success of boarding besides random chance supplemented by crew

quantity (determined by Bunk Room) and weaponry. A larger crew improves the chances of capturing a ship. Due to the constraints of 2D, there's no immersive appeal to the extent of weaving through mounted turrets on a gigantic capital ship as a fighter, so the gigantic capital ship became my flagship choice.

Consequently, I started hanging around the frontiers where most pirates are, and the game started scaling the challenge to the in-game combat rating. At "force to be reckoned with" (10), the game still throws small interceptors at the player, but medium to heavy warships and carriers started spawning. To keep up, I was looking out for capital ships with more bunk room. The next commercially available capital ship was the Bactrian City-Ship.

The Bactrian City-Ship is locked behind several specific mission lines. I wasn't able to start them before I started getting bored without an overarching plot. The alternate path I took to expand my flagship's crew capacity was a big transport ship as opposed to a heavy warship, then working from there. *The perk of having a transport ship as a flagship is that it requires less crew members to maintain, while having plenty room for extra crew.*

Free Worlds Campaign (War Phase)

Around the start of the game, the Free Worlds (FW) offered a chain of missions that were non-military actions. The plot follows Katya Reynolds, an FW councilwoman, and a "vigilante nuclear power plant inspector", Ijs Springborn in investigating a terrorist attack that the Republic holds FW responsible for. In this phase of the campaign, the player transports them throughout the galaxy with the goal to prove Free Worlds innocent. This ends with the option to join the FW militia, which as the game discloses, will burn bridges with the Republic. I postponed joining because I didn't want to lose access to Republic shipyards and region-exclusive ships.

The plot introduces the Republic's "sub-faction" the Navy, less the Republic's fleet and more citizens of the Republic's publicly funded military force. The Navy overall has a good reputation with civilians in both Republic and Free Worlds space. Many characters including Free Worlds representatives aim to reduce conflicts with the Navy.

Between stalling the campaign and starting it again, I became a multi-millionaire, accumulated a massive militarized trade convoy, and subdued ("Dominated") pirate planets into paying me tribute. This introduces inconsistencies on how the campaign proceeded story-wise. Most diplomatic talks revolve around minimizing casualties for both sides. In-game, this was hard to avoid with my 50+ ship murder-fleet, but the narrative itself does not acknowledge of penalize this.

At some point in the campaign, the Free Worlds has to address the issue of piracy within their space and the Council grants the player some choice in the matter. Since I already landed on certain Pirate planets before the campaign, I already had access to relevant details for presented choices. The choice between a potentially violent route and a potentially peaceful route may have been harder without previously landing on a pirate planet, but in doing so, the non-asshole route became obvious.

For example, the planet Thule was first colonized during the early days of space travel and before Earth government controlled territory and formed the Republic. Once the Republic formed, they refused to join and have remained independent but rely economically on piracy. A few other planets have different stories such as an anarchist planet populated by the descendants of pirates. The populace isn't malicious. Mainly, they want to be left alone or autonomous, but their situations led them to support illegal activity. It's nice when the Pirate planets' allegiance changes from Pirate to Independent or Free Worlds, their in-game description is also updated. However, they, even when they're in-faction, still pay me tribute, especially when Dominating them later would've burned bridges with the faction.

Throughout the campaign, FW is pressured to expand operations. In the process, some characters confide to the player character their internal-external conflict. For example, granting a planet independence aligns with Free Worlds' ideals but isn't conducive to the continuation of the organization. As tensions escalate, the Senate also starts making far-reaching decisions, causing others to question whether FW is becoming an oligarchy.

The themes in the story aren't executed poorly; however, the writing itself isn't perfect. Despite having a combat rating of "force to be reckoned with", in some moments, my player character comes across as goofy dork. There are no tells on the nondescript player character's capabilities so some options that may be sound can result in the player character spilling his/her spaghetti. This stops as the story progresses and the player character gains more respect.

The hardest choice in the campaign is whether to release Navy prisoners of war as a show of good faith and hopefully reconcile differences, or to detain them to negotiate a prisoner exchange. To compare, most other choices in the game were "be a good guy and continue mission line" or be an asshole, decline, and potentially be locked out of further progress.

Post-Campaign

I omit the other half of the campaign to avoid spoilers.

Upon the completion of the campaign, the player is granted access to many things

that otherwise may have not be available. Once the conflict is resolved, the player's reputation is reset to friendly within human space regardless of past aggressive actions enacted independently of campaign goals. Because of campaign progress, new ships and technology are made available to the player.

The most significant technology ("Outfit") is the Jump Drive. Canonically, the Jump Drive is advanced alien technology that human science and engineering has not achieved. Thus, human access to Jump Drives is limited to stealing from hostile alien ships. The player only gets one Jump Drive from the campaign. In the post-game, acquiring more to equip the rest of the fleet became a personal objective of mine.

The Jump Drive does not rely on the hyperspace links between star systems and can jump between charted but unconnected star systems. Wormholes also start to appear in the game. Through both, the player starts to contact alien species that have not made themselves known previously.

The game is honest, breaking the fourth wall, that content after the main campaign is largely unfinished. What's currently implemented still has written interactions that can pique one's interest about isolated factions. The general pattern I've noticed is that the significant completion of a storyline is represented by the licence to buy and pilot heavy warships exclusive to a faction.

Playing further reveals some shortcomings of the game in its current form. As I've found, the availability of a mission is determined by random chance. There is often a delay between completing a mission and starting the next in the chain. It took a while for me to realize this as I was rushing to unlock Remnant warships and impatiently stalking spaceports.

Secondly, the commercial unavailability of Jump Drives led me to hoarding them. Currently, parking a ship forces the cargo it's carrying to be sold if there's no free space on active ships. Thus, all my freighters have to be with me even though they're put at unnecessary risk. There's no interface for managing which ships carry what cargo, but I haven't run into many issues regarding that.

Throughout, the game maintains the player character as a space adventurer rather than a space entrepreneur. Even though the game contains financially themed mechanics, trading, as far as I can tell, exists as guaranteed profit and not as a component in the simulation of a production chain. In most combat scenarios, I have my fleet shoot for me, and nothing currently necessitates controls such as formation or engagement. Overall, I still like the game and look forward to what it develops into.

Custom Mapping: Making of Frosthalo

The observation by modern gamers is that Xonotic, among other arena first person shooter (AFPS) games, is a Quake clone. It's not unfounded, but it's also extremely wrong. Having played hundreds of maps, the main problem I observe with Xonotic is that the defining game mechanics aren't clear to the players. No one will find original Xonotic game mechanics come into play on a map designed for Quake, and the abundant map ports obscure impressions. The prevailing mindset among players remains that *"if this game is a clone of that game, why not just play that game?"* ("that game" often being from the more established and recognized company).

This would happen for any game. When the Xonotic community talks about re-balancing the game for ported maps, I observe that Xonotic's originality is hypothetically compromised. The biggest victim of this is Xonotic's Defrag mode where the weapons are modified– removing secondary fires– since rocket jumping in midair would destroy the challenge in Quake maps. It's true that most maps played on public servers are Quake custom maps, but muting Xonotic's game aspects to compensate for designs not meant for the game makes Xonotic generic.

The lack of original designs coming to custom maps isn't without reason as proficiency in custom mapping tools doesn't necessarily translate to careers in modern game development anymore. Other game development tools are chosen over Quake engine's mapping tool (Radiant), and companies can put a EULA where the user grants the company irrevocable right to whatever is made in a provided modding tool.

The idea I had when designing maps for Xonotic was to make Xonotic's unique game mechanics more obvious. There's no warpzones in Quake 3, i.e see-through, shoot-through portals, so any crazy routes and tricks to be pulled off with those would be an immediately obvious difference. A competitive dueling meta heavily based around warpzone tactics would be a major change from what's often seen in AFPS, but most maps in Xonotic dueling map pools are still classic ports.

The Map Designs

Surf and Slick

Having played Race CTS on Quake 3 Defrag maps hundreds of times, what I notice is that the concept of frictionless surfaces doesn't make its way out of Race
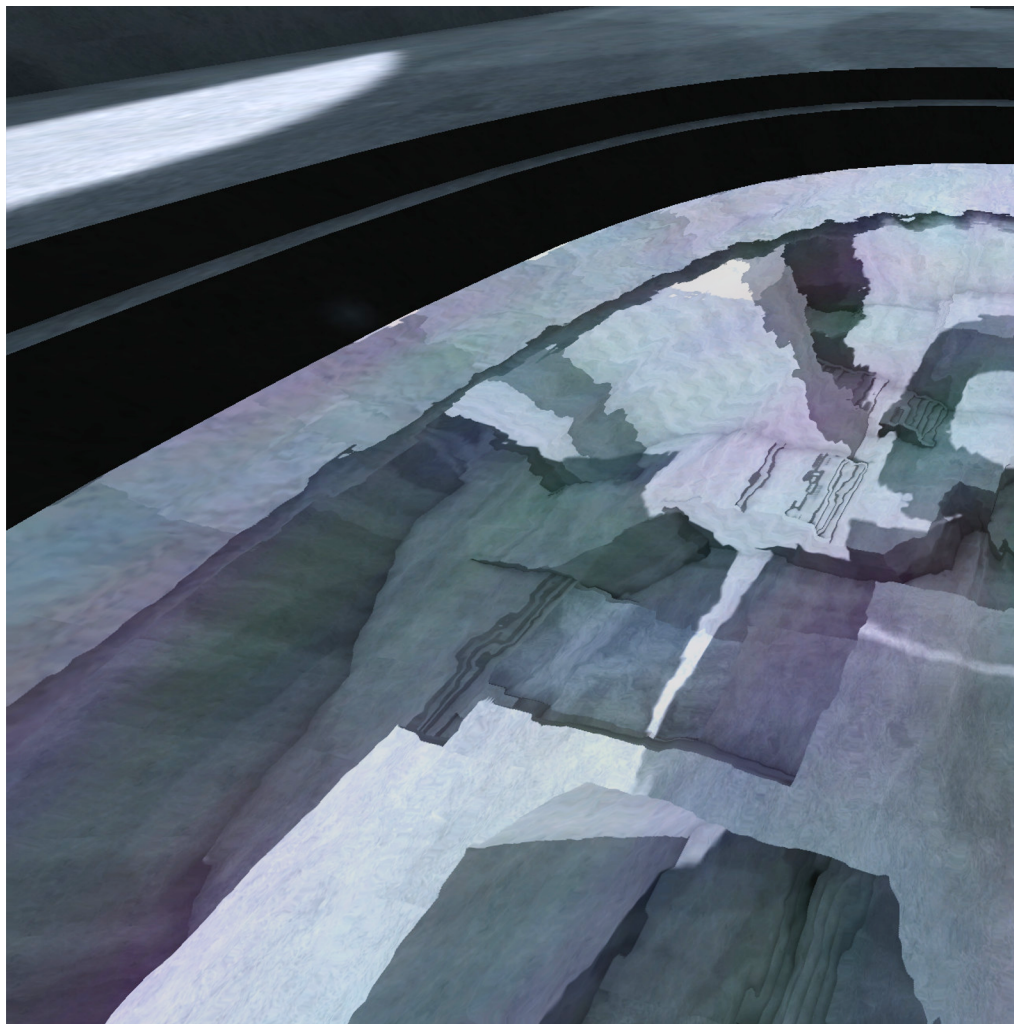
The map's halo making a shadow.

and onto general Deathmatch. The last time I played Reflex Arena, there wasn't a slick material, and the cvar to enable frictionless surfaces applies to the whole map. There's a very small slick patch in Quake Live's map, Cold War, but that's about it. Since I'm no master of 3D artwork, Frosthalo is a uniformly grey-lavender map. It started resembling, as players commented, a skate park with half and quarter pipes, except the ground was meant to be ice.

I also never see "surfing" outside of race modes. There's one big surf curve by the 50 Health with an ordinary ground path on the interior. The perk above the ordinary ground path is that surfing is overall faster despite the longer
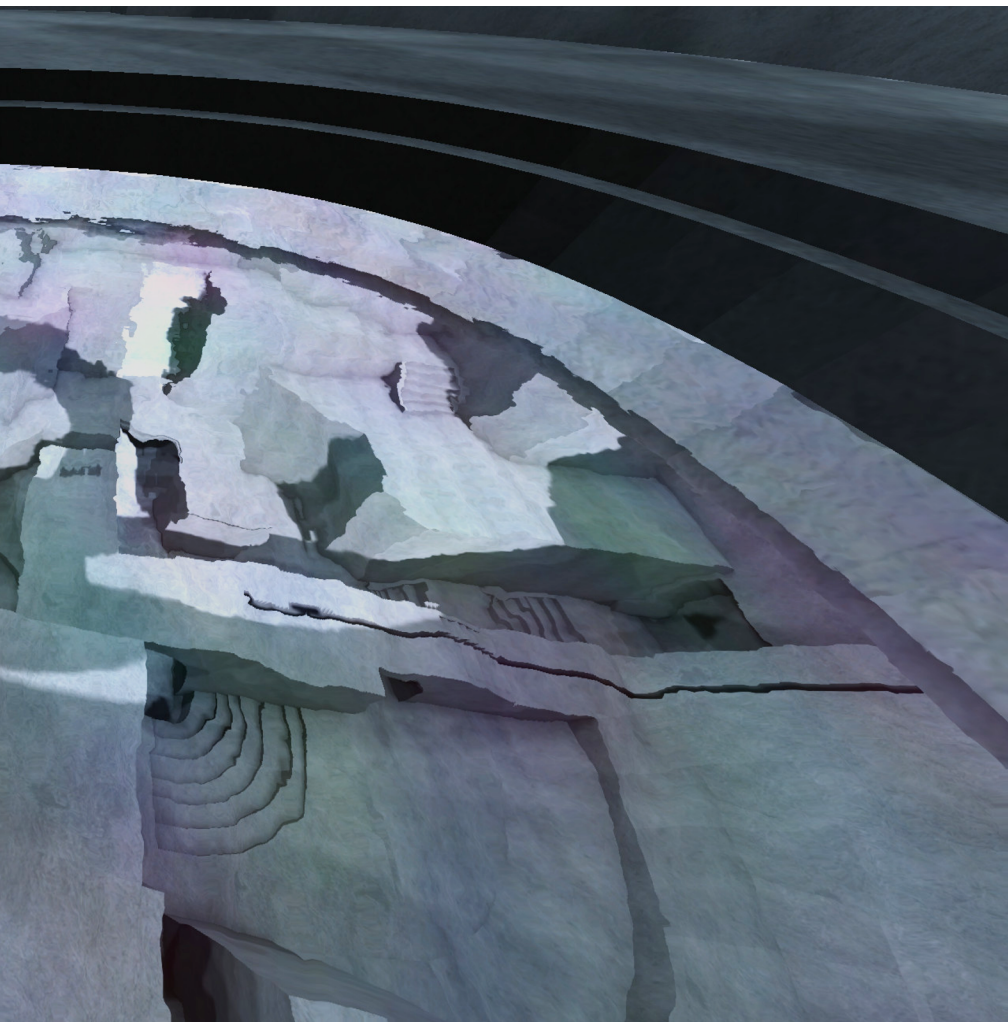
perimeter and grants the extra option to land on the shelf.

There are only two slick lanes, and the map is still fully navigable without any special tricks. The longest strip of ice coats the quarter pipe. It takes roughly 1,100 quake units per second (qu/s) to travel from the bevel stairs and up the long quarter pipe. The start can be from rest. Those with a good sense of circle jumping can slide up to the middling shelf (curved platform). A shorter icy half pipe requires roughly 1,300 qu/s to fly from the stairs to the upper shelf just underneath the big halo. The start can be from Mega Health then jumping down on the declining curve of the half pipe, but it's still harder since it requires more acceleration within a given distance.

Warpzones

Warpzones were a mechanic I wish Xonotic took more advantage of. In all official maps, the use of warpzones are modest since they are rendered as reflections. Xonotic has low system requirements, but players may turn off reflections for the extra frames it may offer.

The Halo

The map wouldn't be called Frosthalo if not for the giant circular warpzone in the sky. It leads from the floor of the map. Nearby, the Strength power up spawns every two minutes above the blue tab on the inner rim of the halo. Whoever grabbed the Strength power-up is free to fire rockets when granted an aerial view of the map. Because of the aerial view, the sniper (Vortex) doesn't spawn on this map; however, the alt-fire of the machine gun, still hitscan, is an unconventional alternative. When powered up, each bullet on the burst-fire mode deals 30 damage, amounting to 90 per burst (compared to Vortex's 80 damage).

Everyone else is also free to shoot through to the power-up's spawn. The halo itself is much like a floor and splash damage propagates through thin surfaces. It's possible to detonate Electro mines near or on the Strength power-up by shooting through the floor, but knowing when is hard since sound doesn't propagate through warpzones.

From what I've seen players will route through the floor's area and fall from the sky, shooting at anyone in the process, since fall damage is mostly negligible. I tend to get fragged from above.

Looping Route

There's a pair of warpzones on two opposite sides of the map. When players walk through one side, they end up on the other side of the map; thus, it's possible to infinitely run a route. Firing a projectile straight into the pair of warpzones will cause the projectiles to travel that loop until their lifetime expires. One can cumulatively add rockets to that path, but in the context of Deathmatch, focusing too much to crowd some airspace with rockets is asking to get shot. The route crosses with the spawn point of the Shield power-up. It should be a disincentive sitting and waiting for the spawn, but it's not too hard to avoid a traveling rocket.

Wrap-up

After getting most landmarks modeled, I had to patch up open gaps in the map. To avoid making certain areas bland, I added stairs. The reason: it's an easy way to break up lines of sight. Additionally, jumping on stairs in Xonotic results in "gliding" upwards. In other AFPS games, stairs can slow down the player. The resulting map may be impossible to port between games, but I was content making it as original as possible.
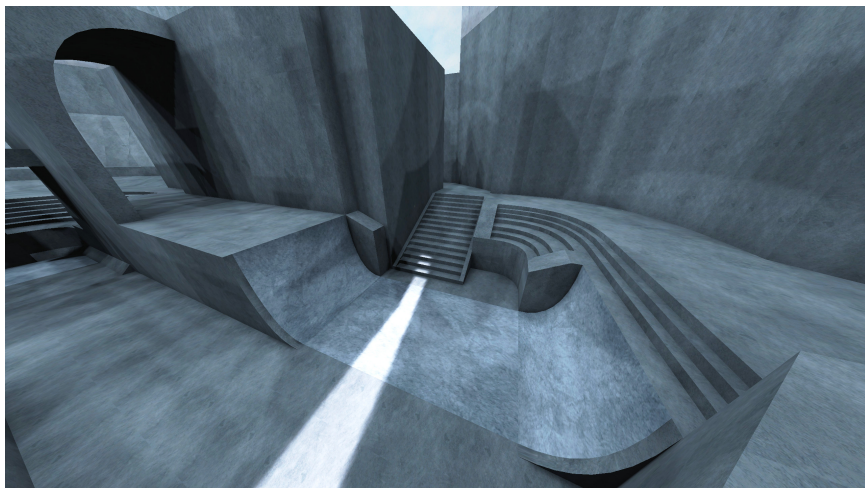
The half-pipe— obtaining 1300 qu/s within this space is tricky.

Using Mercurial DVCS on Save Files - Diablo II

Around 2015, I got the idea to track my save file progress with Mercurial, a revision control software like Git. The noticeable difference is, by default, Mercurial adds all modified files for the next commit, when in Git's case, each modified file would have to be added manually. There are other differences, but as I've found Mercurial is more suitable for save files, especially for the multiple files that appear in Diablo II's save directory.

The nice thing is that I have a time-line of my own progress, what I accomplished and at what date. I still manually fill in a message like "Completed Difficulty", and by the tracking software, it includes a timestamp and the commit ID. For those who don't know Git or Mercurial, I could also upload my repository of saves files to

a server as a backup method or an alternative to "cloud saving"; however Mercurial doesn't have an "HgHub" so it's not as popular as Git.

The idea is that single player Diablo II doesn't have the Battle.net command /played, so the exact time investments for each accomplishment isn't attainable. Initially, my style was to complete the game on Hell Difficulty and retire the character. It's ideal since I don't want my Hardcore characters dying, which turns their sprites on the character selection screen into a generic ghost. Plus, the borderline trash, self-found equipment that they all have isn't worth trading with myself. Each playthrough from start to finish takes me around 30 hours, and I almost always end the game at level 81.

Later, with Lutris' hour tracking, I

started recording the time spent per character, which puts some milestones into perspective now that I can account for playtime without having each level 80 character equal a time estimate for 30 hours played. Since Sorceress is the fastest character to level up, I decided to play her into the level 90s.

What I never stop putting into perspective is the "strategy guides" that dominate the top results on web search engines. They will list recommended equipment for a character build, almost always best-in-slot items as the way to play the character. Some guides provide a "budget" equipment section, but again, demand is a factor in what's considered budget. Since I'm playing single player and there's no multi-player "economy" (what may entirely be upheld by automation, botting), much of the "advice" provided doesn't apply.

Just before my Sorceress hit level 93, the body armor for spellcasters, Skin of the Vipermagi dropped from Baal. What would've been considered an exceptional piece of equipment (but not elite), dropped for the first time on my repository of saves. That's about three years of seasonal playing, more precisely, 107 cumulative hours of post-game playing on my sorceress.

My Genocide Crusade

While the numbers aren't impressive, 7K damage from Lightning and 3K damage Blizzard, my Sorceress could effectively solo the game with increased difficulty (player count artificially set to 8). The listed damage doesn't count resistance negation granted by

Cold Mastery, or the contexts where I cast Level 3 Lower Resist from a store-bought wand. My Sorceress also has 1.1K health and 600 Mana without any buffs.

At level 94, I self-made the Call to Arms (Amn + Ral + Mal + Ist + Ohm) Runeword which effectively grants a 77% boost to Health, Mana, Stamina, and +1 to All Skills. This was the turning point where I just decided to stop casually hitting up arbitrary areas of the game and go straight for experience gains.

The random monster in the overworld grants roughly some hundreds of XP while the level up thresholds are about 100 million at this point. Groups of Champions, Uniques and Minions yield experience in the 10,000s, so I drop a Blizzard on them as I pass by. Unsurprisingly the big places to hit are Chaos Sanctuary and Throne of Destruction. Chaos Sanctuary yields roughly 1 Million XP in total, while Throne of Destruction yields 3 Million.
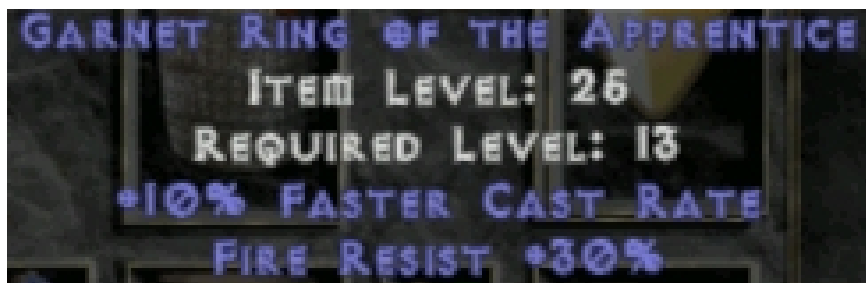
Character Build

Skill points are hoarded until level 18 (for Lightning); then, two or more points are spent per level up at the milestones of level 24 and 30.

1 Frozen Armor
20 Blizzard
20 Glacial Spike
1 point into prerequisites
1 Cold Mastery

I skip Shiver Armor and Chilling Armor. Besides that the armors don't stack,

The lowest level equipment she wears.

freezing an enemy upon hit is more significant for survival than the retaliating effects on Shiver and Chilling Armor. I also skipped Frozen Orb since 1 point in it is a waste.

20 Glacial Spike vs 20 Cold Mastery: 20 hard points in Glacial Spike translates to 100% Cold Damage bonus to Blizzard while 20 points in Cold Mastery translates to -115% to Enemy Cold Resistance. I still went with Glacial Spike. It's a good spell mainly because it keeps the mercenary safe even if he's surrounded by a group of will-be frozen monsters.

Cold Mastery doesn't break Cold immunities, and the lowest possible resistance in the game is -100%. Hypothetically, if I come across a monster with 0 Cold Resistance, then the extra -15% doesn't come into play. Generally, monsters on Hell difficulty have at least a little bit (25% - 33%), but there's still a few with absolute zero. Additionally, Level 3 Lower Resist reduces cold resistances by another -44%, and it's available on wands sold by merchants. For Cold Mastery, I figure one point is good enough. Currently, she has +13 soft skill points

from equipment bonuses leaving -85% to enemy cold resistance before Lower Resist is applied.

```
20 Lightning
20 Lightning Mastery
1 point each into entire tree
x points from leveling post-game
 into Chain Lightning
1 Warmth
```

The choice between maximizing Lightning Mastery as opposed to other spells that synergize with Lightning is simple. Lightning receives +8% damage per hard points in its synergized spells; meanwhile, Lightning Mastery grants +12% Lightning Mastery to all lightning spells per point, both hard and soft, with no diminishing returns.

RE: Energy Shield, one point in Telekinesis and one point in Energy Shield is enough even when the stat point paradigm is to reach 156 base Strength, and dump the rest into Vitality. The rule is that 1/12th of incoming damage incurs a recovery animation, and increasing Vitality; thus, increasing the damage needed to incur recovery still factors in. This is also why I went for pure Vitality rather than investing in Dexterity to

reach the maximum block rate.

This build is playable with self-found magic-rare items and low tier runewords like Stealth (Tal + Eth). When lacking mana bonuses, the inconvenience will be chugging Mana Potions. Primarily, equipment can cover expanding the mana pool, just that the Sorceress has to be equipped with items that grant bonuses to mana. Guaranteed, affixes that grant Increase Maximum Mana by % or plain +Mana can be found on Horadric Cube crafts. End game, on a rationally equipped Sorceress and having at least one point in Warmth, Energy Shield can cover for general sources of damage without emptying the mana pool. The main mindset: mana regenerates faster than health, but between the cost of Teleport vs the cost of taking hits, the former is cheaper mana.

Between a group of Lightning Immunes and a group of Cold Immunes, the group of Lightning Immunes die faster because of Blizzard. Hence, any points from leveling in the later levels is put into synergizing Lightning.

Playtime Summary

This character was played for approximately 240 hours ('t' is an estimate for 30-40 hours) between late 2016 and early 2020. On average, she was played for 80 hours per year. Before reaching level 90, the character found a Pul Rune, Harlequin Crest (Shako), and Skullder's Ire. Her first non-Hellforge high rune is Vex from Lower Kurast found @ 48 hours of post-game playing. Cruel fate had it that she found The Occulus at level 95; however, she could complete the Heart of the Oak Runeword (Ko + Vex + Pul + Thul), having the required runes, at level 91.

She has never seen a Stone of Jordan, but at level 92, she found a +1 to Skills Ring, Bul-Kathos' Wedding Ring. After finding Nature's Peace at level 94, she was free to bully Nihlathak, but whether she will try to do Uber Tristram is another story.

Never seen Mara's Kaleidoscope, but I crafted this.

```
$ hg log | grep "Ceres"
[SC] Ceres - [t + 200h 55 min] Reached Lv 95 + Found Occy, Seed Reset
[SC] Ceres - [t + 187h 46 min] 2,450M XP Milestone + Found Guardian Angel & Ist
[SC] Ceres - [t + 184h 32 min] 2,425M XP Milestone + Found Um & Fal
[SC] Ceres - [t + 177h 32 min] 2,401M XP Milestone + Transmuted Mal
[SC] Ceres - [t + 167h 32 min] 2,351M XP Milestone + First Find of Chance Guards
[SC] Ceres - [t + 152h 21 min] Reached Lv 94 & Found Ist, Lo, Peace Ring
[SC] Ceres - [t + 107h 50 min] Reached Level 93 + Found Snowclash
[SC] Ceres - [t + 103h 50 min] Found Bul-Kathos Ring & Viperskin
[SC] Ceres - [t + 98h 17 min] Found a Gul Rune - Overloaded Stash
[SC] Ceres - [t + 90h 18 min] Reached 2 Billion XP (Level 92)
[SC] Ceres - [t + 80h 45 min] First Page Shared Stash Filled
[SC] Ceres - [t + 76h 48 min] Reached Lv 92
[SC] Ceres - [t + 63h 31 min] Chaos + Baal Runs & Stash Clearance
[SC] Ceres - [t + 57h 55 min] Chaos & Baal Runs
[SC] Ceres - [t + 55h 31 min] Completed a Respec Token
[SC] Ceres - [t + 54h 19 min] Reached Lv 91 & Found Gul Rune in CS
[SC] Ceres - [t + 52h 53 min] ~90% of the way to next level
[SC] Ceres - [t + 51h 11 min] Got Um Rune from WSK3
[SC] Ceres - [t + 48h 40 min] Got Pul from Countess & Vex from LK
[SC] Ceres - [t + 45h 47 min] Rolled Lightning Skills GC
[SC] Ceres - [t + 43h 58 min] 3x Chaos + Baal Runs
[SC] Ceres - [t + 42h 13 min] 3x Chaos + Baal Runs
[SC] Ceres - [t + 41h 11 min] Reached Lv 90
[SC] Ceres - [t + 39h 38 min] Did 5x Chaos & Baal Runs + Rolled 2nd Spirit Mon.
[SC] Ceres - [t + 37h 30 min] Did 5x Chaos & Baal Runs + Completed Respec Token
[SC] Ceres - [t + 35h 58 min] Did 3x Chaos & Baal Runs
[SC] Ceres - [t + 35h 00 min] Transmuted Pul Rune
[SC] Ceres - [t + 32h 00 min] Reached Lv 89
[SC] Ceres - [t + 30h 32 min] Found Gull Dagger
[SC] Ceres - [t + 30h 01 min] XP Bar Above 50% + Found Shako
[SC] Ceres - [t + 22h 31 min] Reached Lv 88
[SC] Ceres - [t + 17h 7 min] Reached Lv 87 + Found Skullder's Ire
...
2016-11-11: Permitted Ladder RWs on Ceres, new character Trega
2016-11-07 Ceres completes Hell Difficulty without Ladder RWs
```

Cube x Cursed x Curious, Volume 1 Review by Anon

One day, I was window shopping at a local store that sells among many things, manga and anime. I noticed, from the corner of my eye, a girl with silver hair sitting on a box. My interest was already piqued, amplified by the red lettering and odd font of the title. Being the poorfag I am, however, I opted to go home and torrent it. Later researching that it had a light novel counterpart, I instinctively knew I should read instead of watch whatever this was.

A few additional notes before proceeding, I have not taken a peek at the manga or anime adaptation, nor have I read past this volume at time of writing. Consider this review, then, as a "first impressions" of the series. With the introduction out of the way, I will be reviewing specifically the first volume in the light novel series of "Cube x Cursed x Curious"(which I will refer to as "C3") by Hazuki Mi-

nase.

The main cast of characters are introduced in short order. First is Yachi Haruaki, who is just an average high school boy. He doesn't get angry, nor is he protagonist who flaunts strength, not the hot blooded type in the slightest. Unusually, he can resist curses; therefore, his father regularly sends him what are called cursed items. It's not anything that's explained at the moment. One such case is the box he received during the prologue that turns out to be a girl, Fear-in-cube. Part of her curse is her human form despite her boxy initial appearance. She's been alive for centuries, and must deal with her use in horrendous deeds. Also introduced is a ten year companion of Yachi, Muramasa Konoha, who when not in her human form, is a long sword. With Fear and Konoha pretty antagonistic towards one another in both funny and serious ways, Yachi generally acts

as the straight man whenever they have their arguments.

The first two chapters will have you believe that this series of novels is a slice of life with Fear discovering the weird new world she arrived in. She was sent by Haruaki's dad, from who knows were, and she was asleep for who knows how long. There's some of slice of life stuff such as Fear trying to figure out how a television works and uprooting the whole damn house while Konoha and Haruaki were at school. After a normal day at school, initially interrupted by Fear, the trio are confronted by a woman named Peavey who basically has claws for hands. She hates cursed items, although hate is perhaps not strong enough. She's disgusted by them and wants to destroy them. Her purpose for arriving on the rooftop is to kill Fear. She starts a fight with Haruaki and Konoha. The fights here are really well done. They're drawn out but for a reason. You get to read the thoughts of the characters, mostly Haruaki, and see his calculations for what to do on the battle. In series, it's always nice to read battles where you get insights into the thought process of the characters.

Amidst the battle, Peavey riles up Fear by revealing the origin of Fear's curse. Throughout the ages, whenever someone, such as a king or inquisitor needed to torture, Fear was the tool of choice. Fear gets reminded about this and loses it. She takes a Rubik's cube, transforms it into a weapon of her choice, and uses it to cut off one of Peavey's arms. Feeling ashamed of her dismemberment, Peavey retreats.

Fear, in her anger, also runs away to the worry of Haruaki and Konoha.

There are two dramatic threads in the first volume that start off once the battle concludes. I won't delve into either of them for brevity and spoiler's sake, except for the plot point that revolved around Fear. After Fear runs away, Haruaki and Konoha go to recover her. Once recovered, Haruaki guarantees to Fear that he'll always try to protect her in a playfully condescending way. It was sweet. I really felt that Fear understood her situation, will go forward, and appreciate her new friends more.

Baka-Tsuki was the fan group responsible for the English translation I read. Now mind you, I speak English and do not have a working knowledge of Japanese; thus, my perspective is from someone who can't know how the LN originally reads. That said, the translation is alright, although it is extremely rigid in normal conversation. An example I can recall is an instance in which someone says "I can not do what you are asking me to do". It's not that any of these characters talk in such a rigid style as they're all teenagers. I imagine Fear, as silly as she is, wouldn't talk with so much verbosity. Aside from that, it is a serviceable translation.

As evident by the panty shot on the book's cover and its categorization online, it's ecchi. There's some of it in the first volume. One of them is a scene of Fear in the shower pulling down Haruaki's pants. It and Konoha's reaction after walking into the bathroom were very funny. There's also

Konoha having her clothes fall off when she's in her sword form because, well, a sword is a lot thinner than her giant boobs. In every case, the only things that get the typical light novel images are these fanservice scenes. The fanservice doesn't unnecessarily intrude on any other part of the story and has its own place in between major events. It's quite innocent and just involves characters unaware of their situations.

All things considered, this was a fun read. Some of it was just dumb fun of Fear interacting with the world around her. Other parts were well done actions scenes. The emotional arcs themselves were wholesome and sweet. However, there's not anything like deep or groundbreaking storytelling. There's something to look forward to in its setting or by the prospects of its cute girls and action scenes.

Reverse Engineering Devil May Cry, II

Published code segments are from GNU GPL licensed scripts, with permission not to "infect" the rest of the document.

Between Devil May Cry 4 and Devil May Cry 4: Special Edition, the game itself hasn't changed structurally. The base addresses and the offsets may have changed, but the data structure remains the same. For example, when scanning for Red Orbs, two results near each other will be the Red Orbs in current possession and the Red Orbs collected for the mission; then, the outlier is the Red Orbs count that will be stored in the save file (different data structure). With my knowledge of the game and when I filled requests for hacks for the re-release, I had to update the addresses and offsets; then, most things were good-to-go.

When I uploaded my first hacks to a file host, I didn't expect them to get taken down for piracy. I didn't crack the game or rob a boat, so this incident seemed misunderstood if not unfair. The file host I was using, over

time, turned from a decent, recognizable service to a shitty one that adds scammy advertisement redirects, so I didn't care about contesting the takedown. It didn't take me until a few months later to figure what "piracy" actually referred to.

The 4-byte integer "Red Orbs" is sold as a microtransaction for the people who either are too lazy to play a video game, can't pace themselves in completing a game, or don't want to replay the game despite buying the game again. Most debates involve the citation of real life obligations, but Devil May Cry 4 is a single player game, not a massively multiplayer online grind-a-thon. So I can't sympathize. Whatever their circumstances, a basic hack that edits the value in an address provided, for free, unlimited in-game items that CAPCOM intended to sell.

Fast-forwarding, I noticed Cheat En-

gine received a copyright infringement notice from the Entertainment Software Association regarding access to in-game DLC items and microtransactions.[1] The cheats section of Cheat Engine forums was then taken down. With my layman understanding of copyright, code involved with cheats aren't copied from the game, and may at most be the equivalent of quoting for restoring original logic after modifying it. There's no actual copying of a digi-tal hat involved when said digital hat is already on the user's computer as a part of the install. If it should be emphasized, the quantity of an item is increased by editing a number at an address in memory (part of the user's hardware). Of course, somewhere in the world, a corporate lawyer will weave some ways to regard cheats as unauthorized derivative works and convince a judge in the process should any dispute make it to court.

The Mediator, Partially

The number on the left is the offset the variable is at in Devil May Cry 4: Special Edition (launch) which may or may not change between patches. Their locality is inclined to remain the same however. Finding the mediator has been described in the previous article.

```
object Mediator {
    +0x24     object *Player;       // pointer to player character object
    +0x120    object *Boss;         // pointer to boss object

// beating an arbitrary mission when this is changed to 20 will trigger unlocks
    +0x150  int mission_number;
// below reports currently loaded level i.d, but doesn't change level
    +0x154  int room_id;            // parallels file names for maps
    +0x178  byte cutscene_event;    // boolean

    +0x184  int red_orbs;           // the value on the top right of the HUD
    +0x18c  int red_orbs_got;       // red orbs gathered in context of mission
    +0x190  int red_orbs_max;       // total red orbs spawned in mission
    +0x194  byte endbattle_event;       // boolean
    +0x197  byte is_in_combat;          // boolean
    +0x198  byte unknown_boolean;       // related to sprinting
    +0x19a  byte is_not_updating_red_orbs_max; //boolean

// boolean, 0 = initial, 1 = player pressed skip
    +0x1a8  byte cutscene_end;
// boolean, 1 = initial, but setting to 0 by memory editor doesn't skip
    +0x1a9  byte cutscene_play;

// human difficulty, M12 = 350.0
    +0x1ac  float enemy_difficulty; // nerfs when player dies too much
    +0x1b0  int continue_count;     // times player died and selected continue
    +0x1b4  int hell_gold_orbs;     // (0-3), retries available on H&H or HOH
```

_____

[1]what happened - Cheat Engine Forums (ESA Claim Discussion), http://archive.is/suleX

```
28      +0x1b8  byte unknown_boolean;   // related to sprinting
29
30  // 1 = human, 2 = son of sparda, 3 = DMD, 4 = LDK; can be updated in-game
31      +0x240  int gamedifficulty;
32  // 0 = regular, 1 = one-hit kills, 2 = only player is one-hit killed
33      +0x244  int gamemode;
34
35      +0x264  float timer_mission;    // time spent in mission
36      +0x384  float timer_event;      // timer underneath player's health bar
37  };
38
39  object Player {
40      +0x1c float deltatime;
41
42      +0x40 float position_x;
43      +0x44 float position_y;
44      +0x48 float position_z;
45
46      +0x60 float scale_x; // = 1.0, can't think of a moment where this changes
47      +0x64 float scale_y; // = 1.0
48      +0x68 float scale_z; // = 1.0
49
50  // the game does not have a walk modifier for keyboard
51  // if values are forced to +/- 80, then the player walks
52      +0x18d0 twobytes horizontals;   // -127 = move left, 127 = move right
53      +0x18d2 twobytes verticals;     // -127 = move down, 127 = move up
54      +0x18d4 float magnitude;        // 127.0 = run straight, 179.6 = run diagonally
55      +0x18d8 float radians;
56      +0x1920 byte flag_btn_down; // varies depending on button
57      +0x1a74 byte unknown_bool;  // changes depending on attack i.d
58  // 0x1 = forward; 0x2 = left; 0x8 = right; 0xc = back
59  // 0x0 = neutral or no lock; 0x6 = diagonal: left+back
60      +0x1bfc int signal_lockon_dir;
61
62      +0x19ac int character_id;   // 0 = Dante, 1 = Nero, 2 = Vergil
63      +0x1b00 float health;       // each chevron equals 1,000.0
64      +0x1b04 float health_max;   // new save = 6,000.0, unlocked = 20,000.0
65
66      +0x1b74 byte is_dead;           // boolean, checked when player is hit
67      +0x2504 float deviltrigger;     // each chevron equals 1,000.0
68      +0x2508 float deviltrigger_max; // new save = 3,000.0, unlocked = 10,000.0
69  };
```

Delta Time

Japanese companies are somewhat notorious for producing frame rate fixed games designed for consoles, and when porting a game, did not account for variable frame rates on the desktop computer. The neat thing about Devil May Cry 4 is that it supports 144 Hz; it can even be set as the display frequency in the PC Options menu. For a 2008 game, it did well in that regard.

The Steam release of the HD Collection, the Playstation 2 era Devil May Cry

games, had the classic problem of the game running twice as fast on a 120+ frames per second capable desktop. A later patch then locked the frame rate to 60.

Those who played the series will recognize that the Quicksilver style, granting bullet time effects, will slow enemies down to mostly normal rates when running the game at an unlocked 60+ fps. To get normal rates, the game could slow itself down as the frame rate increases, but it doesn't.

The logic is simple and only involves manipulating three variables for Devil May Cry 3. To find these variables, the first step is to have Quicksilver unlocked by defeating Geryon the Timesteed. The default values for work rates are 1.0 but reduce when Quicksilver is activated. Have Dante snap his fingers until you eliminate the variables. The work rates may have been in an array. The first element is the global work rate, which is the one I alter.

Some contexts of the game reset the work rates to hardcoded default values. To have a comfortable playing experience, some additional instructions must be modified.

```
; example modifications
dmc3.exe+325FB7:
    mov [rcx],3F000000 ; hex for 0.5
dmc3.exe+325FBE:
    mov [rcx],3ED55555 ; hex for 0.416
```

```
; original codes - restore this to reset
; dmc3.exe+325FB7:
;   mov [rcx],3F99999A ; hex for 1.20
; dmc3.exe+325FBE:
;   mov [rcx],3F800000 ; hex for 1.0
```

The changes are simple, but there's a fair reason why the game wasn't released with variable frame rate support. Not every bit of logic goes through work rate arrays. For example, the enemies may move normally, but their decision making (and "aggression") is still accelerated. I don't think it's impossible to decelerate other parts of logic, but it presents the issue that those segments must be located and identified. One example is fixing the mission timer.

Every main Devil May Cry game features some concept of time manipulation, but in Devil May Cry 1, the Bangle of Time offered only a complete stop to the enemies while changing nothing about Dante. Devil May Cry 2 introduced the effect of enemies and the world slowing around the player character; however, there wasn't a nice array of work rates. While the monsters and player can be slowed down for 144 frames per second, an elevator for example, will still go faster than it's supposed to, and there's still the problem of unusually aggressive enemies. In Devil May Cry 3. the software design pattern starts to strongly resemble Devil May Cry 4's with Mediator, Player Object, and other game entities.

Assume readbytes(address, number of bytes) and writefloat(address, value) are some defined functions available in a memory editing library or API.

```lua
-- bool    is_turbo;      // dmc3.exe+d694a9
-- float   global_rate;   // dmc3.exe+cef390, init = 1.0
-- float   turbo_factor;  // dmc3.exe+4cc560, init = 1.2

local fps = 144     -- or whatever it actually is
local slow = 60/fps -- slowing factor applied to game
local isturbo = readbytes('dmc3.exe+d694a9', 1) -- detect turbo setting
if isturbo then
    slow = slow * 1.20
end
-- write new work rate to address for immediate effect.
writefloat('dmc3.exe+cef390', slow)
```

```
; mission timer fix for 144 fps
; [enable]
; these offsets are based on the unpatched version of the game
alloc(newmem,25,dmc3.FMODGetCodecDescription+26F2C4)
label(returnhere)
label(originalcode)
label(exit)

newmem:
; the mission timer is inaccurate by a factor of framerate/60
push ebx              ; ebx will be used as storage
push edx              ; edx will be used as divisor
originalcode:
mov eax,[r10+000000A8] ; re-use this for mul
mov ebx, 3c           ; ebx = 60
mul ebx               ; multiply by 60
mov ebx, 90           ; ebx = 144
div ebx
; quotient is now in eax
pop edx
pop ebx

exit:
jmp returnhere

dmc3.FMODGetCodecDescription+26F2C4:
jmp newmem
nop
nop
returnhere:

; [disable]
dealloc(newmem)
dmc3.FMODGetCodecDescription+26F2C4:
mov eax,[r10+000000A8]
```

Editor/Publisher/Writer's Note

Thank you to all readers and filesharers.

Occasionally, I check my torrent client, and the tracker that most notoriously times out, at the time of writing, is the one I've been including in my magnet links in previous issues. I think it's the best URL that explains what the link is for. It might have to be said that there are dozens of other open trackers that aren't under constant lawyer-attacks since they don't index torrents. Add as many bittorrent trackers as you'd like.

Editing

I tend to be blind to my own errors until a draft print. Somehow, that's when I spot errors at a glance. While writing Issue 4, I improved the editing process and started to recognize common errors. Ideally, this is the one release I have to do, and for Issue 2 and 3, the last revisions.

Cryptographic Signature (XMR)

QR codes are provided so print-copy readers don't have to manually enter each letter. Digital-copy readers should remove line breaks and spaces when verifying.

Address: 44WQfjBuMfUjDBeWFqPxmhPXXLsGySWhDSDY6NqUFeUchUmNpeSdsud24x7KDk44W8G
kAgG2fbSyyc3JNfnXrcD8FevMX6u

Signature: SigV12wqFxxqgGLfQPEXCWv5CA1acabxW6dJT5NgM32enneRmLVoChemVGBKW5pfM
L72LGz6aaFeqZgsLVh5qbgXG27Go

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(a) Address	(b) Signature	(c) Previous Issue

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