

ALL FORMATS
116 PAGES MONTHLY

Wireframe

LIFTING THE LID ON VIDEO GAMES

ZX SPECTRUM

A tribute to Sir Clive's
game-changing computer

PORTABLE PIONEERS

Exploring the lost art of
the handheld demake



THE WANDERING VILLAGE

Inside a unique city-building simulator

Issue 56 £6 | wfmag.cc





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Ray tracing doesn't make beautiful games; great art direction does

There was a video that did the rounds recently, where someone had gotten the modded Wii U version of *The Legend of Zelda: Breath of the Wild* up and running on a PC, and they'd turned all the settings in the graphics menu *right up* to 11. Ray tracing! 4K resolution! Enough buzzwords to make a subreddit swoon.

'*Breath of the Wild* looks better than ever with this amazing mod!' read the headlines. Words like 'stunning' were thrown around pretty liberally, with almost everyone agreeing how much better it looked. Better. Who wouldn't want to click on that and have a look? *Breath of the Wild* looked amazing on release, and if it somehow looks 'better' now... then wow!

Here's the thing. It *doesn't* look better. It looks more realistic, arguably? Some of the lighting plings around hitting surfaces in a different way, there are reflections on *everything* whether they like it or not. It's frightfully clever tech, no doubt about it. But better? Does this look 'better'?

I mean, no. It doesn't. *Breath of the Wild* is one of those games that, despite being hampered by the Wii U's pretty iffy processing power (by modern standards), still manages to look absolutely stunning, and that's a graphical effect achieved not by how many teraflops of RAM are running through your quad-cooled processing unit or whatever, it's achieved by having an astonishingly talented group of artists with exceptional vision, executed flawlessly. Art direction, they call it. It's a proper job. It's taken years to get right, and *Breath of the Wild* pulls it off with aplomb.

Half-Life 2 is the same. That game is, unbelievably, 17 years old now. Count 'em. In computer terms, that's ancient. *Half-Life 2* is closer to 1988's *Super Mario Bros. 3* than it is to us now. But the thing *Half-*



DAN MARSHALL

Dan Marshall set up *Size Five Games* in 2008 before selling indie games online was really a thing. His most recent smash hit indie game was *Lair of the Clockwork God*.

Life 2 has? It's art direction. It still looks better than a lot of shooters released today, and it's not because of the quaraflops jimmering through your motherboard, it's again because of the absolutely exceptional art direction. Pop some ray-casted light and high-res textures into *Half-Life 2* and you know what you've got? A slightly worse looking version of *Half-Life 2*.

And look, I get it. The initial wow factor of seeing ray casting is still impressive. There was a screenshot recently from the new *Ratchet & Clank* where you could see the entire world reflected in a character's eye. That's *insane*. I think my gut problem with all this is the knee-jerk reaction to uncritically label it as 'better' because of the technology. Let's stop, take a breath, and really think about what looks good, what doesn't, and why.

There's a brilliant account on Twitter called @CRTpixels, which I highly recommend you check out if you can. They take pixel art as it's presented in games today, all crisp and clean and blocky colours, and show side by side how it was designed to look on an old CRT monitor, scanlines and all.

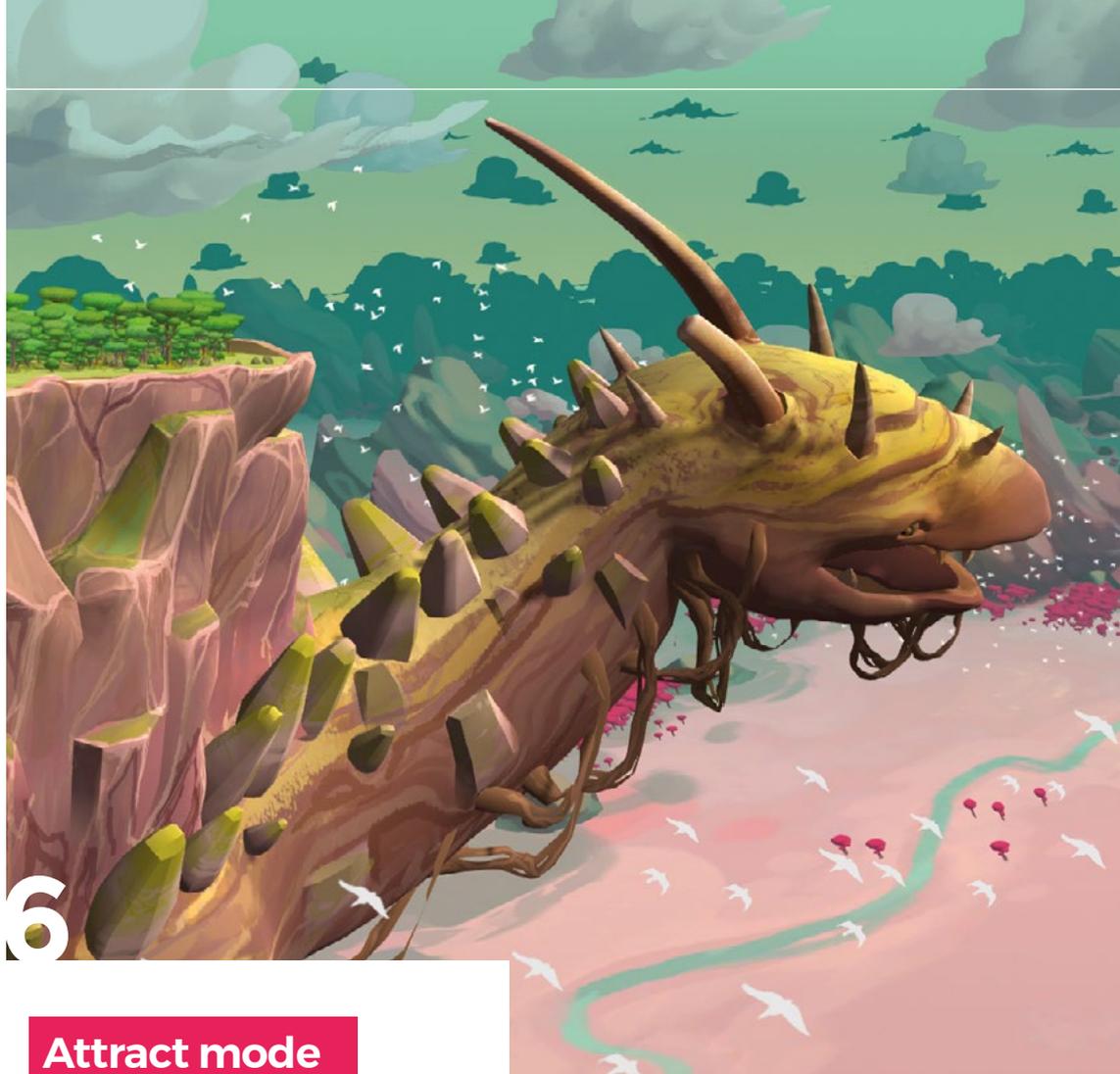
It's actually amazing; the little details that do not exist and yet your eye tricks you into thinking they're there. And yet the scanline-free versions, the ultra-precise pixel art we're all used to that are resolutely considered 'better', almost always come across looking worse.

Video games have been chasing realism forever, and I think that's a brilliant, brilliant thing. The sooner graphics look exactly the same as real life, the sooner we can all hook into a VR unit and promptly sod off to a much more exciting life. But let's get it out of our heads that 'realistic' universally means 'better', especially when it's minimising the hard work of people who really, really know what they're doing. 🤖

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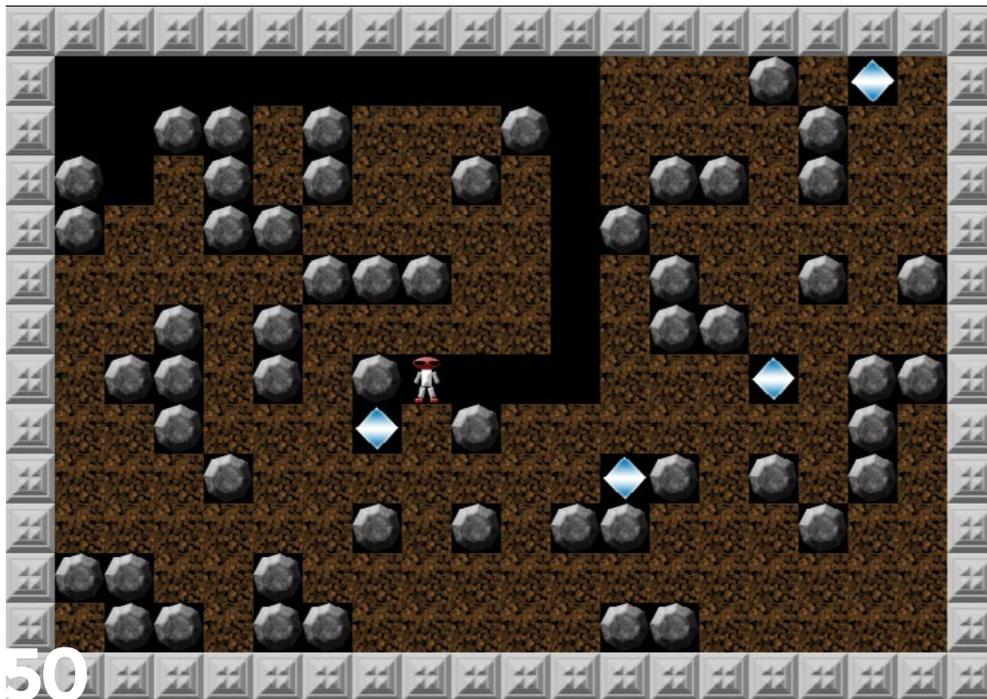
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WELCOME

Well, blimey, this snuck up on us. Just as we were putting the finishing touches to the current edition, we took another look at the calendar, and something dawned on us: this issue falls on our third anniversary. Yes, way back in the mists of time, on 8 November 2018, the first-ever edition of Wireframe hit newsstands. A lot has changed in that time, of course: for one thing, we've gone from a fortnightly to monthly schedule, thanks in no small part to another event – the global pandemic we've all had to work through in one way or another over the past 18 months or so.

One thing that hasn't changed over the past three years, though, is our enthusiasm for making the magazine. From the beginning, our aim was to make a games mag with a difference: one that celebrates games as a vibrant, inclusive, creative medium for everyone. With that in mind, we'd like to send out our huge thanks to everyone who's contributed to the magazine so far: to those who've written thought-provoking, in-depth, unusual features; those who've spent hours delving into the deepest crevices of a game to write a review for us; to our columnists, both regular and occasional; to the writers of guides, how-to pieces, and snippets of code.

Thanks, too, to the designers, sub-editors, and everyone at Raspberry Pi who's helped us make Wireframe the publication it is. And most of all, thanks to you, dear readers, for supporting Wireframe over the past three years. We wouldn't be here without you.

Enjoy the new issue!

Ryan Lambie
Editor



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WALKABOUT

Keeping an eye on the horizon in Stray Fawn Studio's *The Wandering Village*

What's our plan for the impending climate catastrophe? Ignore it until it all blows over and the billionaires are safe in their bunkers over in New Zealand? Well, not in *The Wandering Village*, the eco-themed city-builder that brings in elements of the survival genre. No, in this game, the denizens of a world that has become overrun with toxic spores have jumped aboard – literally – a unique solution.

You spend your time in *The Wandering Village* – as you might expect – wandering; you're tasked with the upkeep of a township sitting atop the back of a giant, lumbering creature. This beast makes its way through a changing landscape, keeping your people safe from the ravages of a world gone awry, but at the same time demanding you look after not *just* the people, but the creature itself, too. After all, what's the point in having anywhere to live if the place you live on is dead? It's not subtle; we can ascertain that much.

At first glance, things do seem to tick traditional *The Settlers*-like boxes – an agrarian society that grows slowly and steadily as you send your people out to gather resources, to build, to grow, to manage the natural world without over-exploiting it. Pull back though, and you're reminded of what your village has to thank for its mere existence, and when the toxic spores of this desolate world rain down on your hulking homeland, you must spring into action to keep the animal – and

ultimately yourselves – alive. As the game progresses, you'll head into different landscapes and environments. You'll also encounter different challenges and the corpses of other beasts, similar to the one on which you now live, acting as a stark reminder of just how much is at risk... and just how much rests on the shoulders – or back, more accurately – of this peaceful Goliath.

Stray Fawn Studio has made quite the pivot for *The Wandering Village*, its previous releases covering multiplayer arena shooters (*Retimed*), turn-based strategy/genetic modification simulations (*Niche – a genetics survival game*), procedurally generated action with crafting (*Nimbatus – The Space Drone Constructor*), and phone-based collect-'em-ups (*Niche – Breed and Evolve*). But every title from the ten-person team in Zurich has had *something* about it, something to keep you playing, to keep you engrossed, or just to lure you in to begin with – there might not be specific experience in the giant walking creature/village-building sim genre, but there's a strong pedigree from the team itself that instills confidence. And it's not just us saying it, with Xbox picking up *The Wandering Village* to show off as one of the big indie titles in its ID@Xbox Showcase earlier in 2021.

Suitably intrigued, we lumbered slowly into view of Philomena Schwab, co-founder of Stray Fawn Studio, for a chat about the game, the studio, and Bender from *Futurama*. ➔



NICHE – A GENETICS SURVIVAL GAME

2016 / PC, Mac, Linux, Switch, XBO, PS4

Over a hundred genes to play about with to create your perfect (or otherwise) creatures, *Niche* mixes the promise of *Spore* with an actual competent turn-based strategy game. Experimentation and imagination is encouraged, and sometimes rewarded, and even five years later it's still drawing a decent-sized crowd to play it.

Where did the idea for *The Wandering Village* come from? What was its genesis?

My colleague Micha and I were walking through an exhibition one day. There we saw a gorgeous piece of concept art hanging on the wall. It showed a giant turtle with a city on its back. We looked at each other and said at the same time: 'I've always wanted to make a game like this'. After telling the rest of our team about the idea and seeing them get excited as well, the case was clear.



^ Anyone who's played *The Settlers* or similar will recognise a lot in the city-building aspects of the game.

From that initial idea, how much has changed? Are we looking at something very similar to that first thought, or has its focus shifted significantly?

The game has changed quite a bit since we first started doodling out the concept. One example is the giant creature Onbu itself, which was first imagined as a beast made of flesh and blood. However, during early testing sessions with players, we found that they weren't very fond of planting their crops into the poor creature's skin and so we redesigned Onbu as a giant made of earth.

What prompted you to go the Kickstarter route for funding? Did the previous two crowdfunding successes factor in?

For our studio, Kickstarter is a great way to test whether there is actually a market out there for our game idea. Kickstarter is also a great way to build up a community around a project early on. This can make a big difference for your game's launch since you have people that help amplify news about the game when it comes out.

How was the Kickstart campaign for you? Nerve-racking? Straightforward? Something else?

Personally, I'm always super-unsure whether we will hit our funding goal. This time was especially nerve-racking since we didn't have a playable demo and therefore couldn't really work with YouTubers and

streamers to present the game as we usually do. However, after the first few days passed and we had already surpassed the initial goal, I was able to relax.

Is Kickstarter – or crowdfunding – something you'd go back to in future? Is it something you'd recommend to others?

Yes, it is very likely that you will see more of our projects on Kickstarter! I believe that especially for new developers, crowdfunding can be a great way to see whether their game idea is marketable. You get a whole month to try out all kinds of approaches and, if you are successful, you might even attract some attention from potential partners like publishers or platform holders.

How much of your experience with *Niche* and *Nimbatus* factors into *The Wandering Village*? What sort of tricks have you learned to make development flow that bit more smoothly?

Since all three games share the same base genre (simulation), I think there is definitely a transfer effect. One example is the rather steep barrier of entry in both *Niche* and *Nimbatus*. With *The Wandering Village*, we paid more attention to genre conventions early on, which will hopefully make the game easier to get into, especially for genre veterans.

I'm also very proud of our team in general; we have learned so much during



◀ Even atop your travelling friend, you're not immune from the impact of the broken world's toxic spores - get rid, lest they infect and destroy your only chance of survival.

the past years and are now able to solve problems that seemed impossible in past projects. Sticking with the same group of people for multiple games is something I believe to be very valuable for game devs.

You've opted for Early Access too - another thing you went for with previous titles. What's the appeal of an Early Access release?

"They weren't fond of planting crops into the creature's skin"

For us, Early Access is another step in the development process, where we can evaluate the game's appeal, very similar to Kickstarter actually. Our studio self-finances its games to stay as independent as possible. Working on a game for three years, never testing the market and then having it flop might be the end of our studio, so we like to test and iterate constantly.

Also, since we really enjoy developing games together with our players and since our game genre allows gradual expansion, we think Early Access is the best way to go for us.

When factoring in the thoughts and feedback of your players, how much can you actually take in from their suggestions? There has to be a point where you have to stop listening, for the good of the project... Yes, this is definitely true. If a suggestion doesn't fit with the project's vision or is

very hard to implement from a technical standpoint, we let our players know. For example, in our previous game, *Niche*, people wanted the creatures to build structures as well as mod support for the game. Both weren't possible for us. If we explained our reasoning to players clearly, they usually understood and accepted it. Some even started helping out by explaining the decisions to new players who joined the community.

Is the environmentalist message that seems to be present in *The Wandering Village* actually there - actually something intentional? Or is my imagination getting away from me?

Ha ha! No, it's definitely there! It seems our studio really seems to love making games with a scientific touch. *Niche* is about genetics, *Nimbatus* is about engineering, →



NIMBATUS - THE SPACE DRONE CONSTRUCTOR

2020 / PC, Mac, Linux

A lovely mix of construction, exploration, and combat, *Nimbatus* offers a good-to-great experience in every aspect of its varied game mechanics. Probably best of all, if you're not a dab hand at crafting your own drones, you can hop onto Steam's Workshop and browse through the genuinely amazing things people have been able to create. Brilliant stuff.

▼ When things are going well, it's a sedate, relaxing environment to be a part of. Things never go well for that long, though.



NICHE – BREED AND EVOLVE

2021 / Mobile

A spin-off of the bigger computer and-console game, *Niche – Breed and Evolve* mixes genetic manipulation with creature collection in a compelling and surprisingly rewarding little package. Best of all, while it's a mobile title, it doesn't demand all of your time, attention, and money via micro-transactions, instead relying on that old-fashioned method of 'you pay once, you've got the game'. *Wild*.

▼ The more your village grows, the more you'll need to zoom out. The more you'll need to zoom out, the smaller your village actually seems.



and *The Wandering Village* is inspired by ecology and biology topics. The core concept of the game is about symbiosis: how can humans and the giant creature live together and benefit from each other?

The lore of the game also relates to ecology quite a bit, but I don't want to spoil too much already!

What's the balance like between keeping your village going and keeping the creature you're riding on healthy? Was it a challenge to hit this balance?

As the game is still in development and we're still actively adding new features, we're still in the middle of the balancing act when it comes to that. But yes, I would say the villagers and Onbu need a similar amount of attention when it comes to meeting their needs. The problem is that their needs might not always be in line with each other, which leads to difficult decisions for the player.

Have you seen the episode of *Futurama* where Bender gets an entire civilisation living on his body, and is *The Wandering Village* a riff on this?

Ha ha! Have you seen the *South Park* episode with the fleas building civilisations in people's hair? Oh, and isn't there also a *Futurama* episode with worms that make Fry more intelligent? There are many cultural references that gave us inspiration for *The Wandering Village*! Our community



▲ It's nice to see a technologically simple village still maintains solid flamethrower-crafting skills.

loves to bring up Zou from *One Piece*, lion turtles from *Avatar*, and *Discworld*, of course. It's great that everyone has some story or image in their head which connects them to *The Wandering Village*. This makes it so much easier for us to market the game. But sometimes, we also have to restrain the fantasy of our community a bit so that their expectation and the final product don't diverge too much.

And the different biomes you encounter – how much of a change do they make to the way you're playing the game? Are we talking an entire redesign of the village you've already built, or something less drastic?

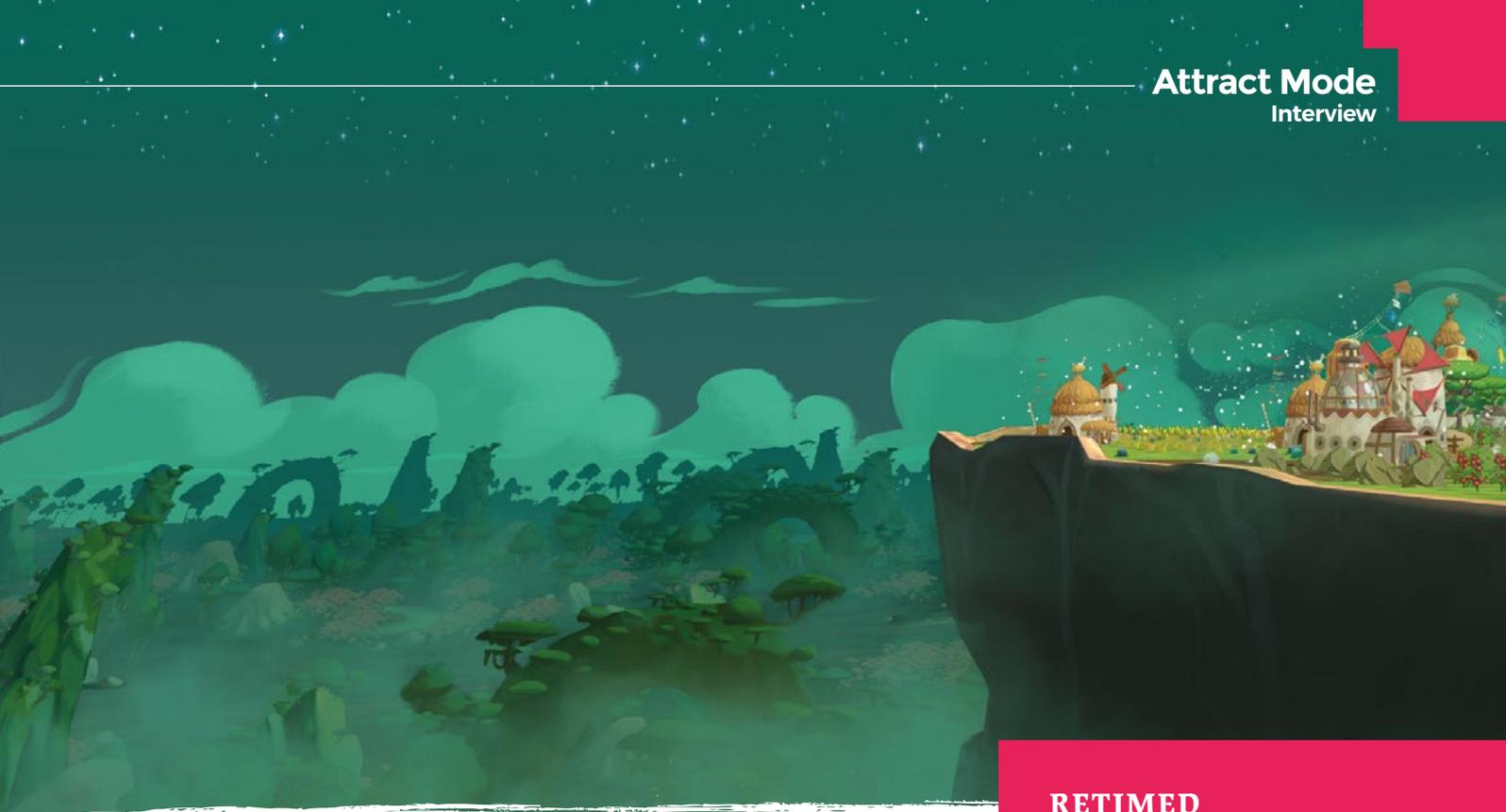
The biomes all feature different weather conditions, resources, and events. Some require you to stock up on food because nothing grows there; others are full of poison spores. Rebuilding your entire village might be a bit too much, but you definitely need to prepare for each! So make sure you build a scout tower early in the game.

What sort of level of player is *The Wandering Village* aimed at? Younger, older, the 'hardcore', something else?

I would say our core audience is 20–35 years old. But younger players can definitely enjoy the game too! Currently, I'd say the game is midcore, but hopefully, we can appeal to casual and hardcore players by offering different settings to play the game as well.

The game's visual style is distinctive and very pretty – how was this arrived at? And how important to the game is it?

Our animator, Markus Rossé (@ssero on Twitter), is a huge fan of Studio Ghibli, and he has been bugging us for a long time that he really wants to make a game with hand-drawn 2D animations. He made some



beautiful early mock-ups with our lead artist Stephanie Stutz (who painted the amazing cover art for this magazine). So that is how we arrived at the 2.5D graphics style. It's a great unique selling point for the game and, for me, it has a very immersive feel when zooming in closely, but, of course, it also added limitations to the game, such as being unable to rotate the camera sideways.

How helpful, or important, was it for *The Wandering Village* to be featured in the ID@Xbox Twitch showcase? Did it change your approach at all?

Working with Xbox has been really great for us this far. We never thought about porting a game this early in development. This time we planned controller support right from the start, which will hopefully lead to a better experience.

What engine are you building the game in? How has it been for you to use?

As with our two previous projects, we are using Unity. Our programmers, as well as our artists, were already familiar with it, so it made the most sense for us. It wasn't that easy to use though, since our unique visual style and the huge amount of entities in the game needed a very custom solution tailored to this project. On the other hand, Unity allows us to port the game to different platforms, like the aforementioned Xbox, so it's great that we can take advantage of those kinds of opportunities.

How many are working on the game? How has this differed – if at all – from previous projects?

Currently, our whole team – ten people – is working on *The Wandering Village* to some extent. For our two previous games, the team size was around five people. The experience has been quite a bit different since we now have 'section leaders' who have more autonomy compared to the previous projects where things were more controlled by a central 'vision keeper'. It has been fun to work in this new way so far, and I think the result is good.

What would you say is the most important lesson you've learned from *The Wandering Village* – but also from your previous releases? What nugget of info would you pass on to other developers?

For me, as the person responsible for marketing, I've seen a huge difference on how it feels to market *The Wandering Village* compared to our previous titles. The pitch and visuals for this new project are just instantly appealing, which gave us lots of opportunities to present the game at shows like E3.

If developers want to make a living out of the games they make, I believe it can really help to test a game's appeal early by posting it on social media and seeing how people react. The number of reactions you get can be an indicator as to how easy it will be to pique the interest of people in

RETIMED

2019 / PC, Switch, Mac

Developed by another Swiss indie, Maniix Games, *Retimed* was published by Stray Fawn. The game is an arena-based multiplayer shooter that at first glance offers little we haven't seen elsewhere – at least until you're about to get shot. Then, the world slows down (in a bubble around you), allowing you the chance to avoid the incoming attack and survive a bit longer. A neat gimmick, and a fun game.

the game before its release, which in return might influence its financial success. This isn't true for all games, of course, just one of many indicators.

And finally, once *The Wandering Village* is finished and out the door, what are your hopes for the game? And what are your plans for the future?

This is our first city-builder, so I really hope we can get it right! I hope players will enjoy *The Wandering Village* and that we can keep improving and enhancing the game together. We have some ideas for future games, but nothing too specific yet. I really hope that we can keep this cool team together and make many more awesome games in the years to come. 🍷

***The Wandering Village* releases late 2021 or early 2022, on PC and Xbox Series S/X.**



Capturing the apocalypse

Writer Kevin Sullivan chats to us about his studio's upcoming adventure, *Season*

Info

GENRE
Adventure

FORMAT
PC / PS5

DEVELOPER
Scavengers Studio

PUBLISHER
Scavengers Studio

SOCIAL
@SeasonTheGame

✓ The quiet tone and detailed clouds made us think of animated filmmaker Makoto Shinkai. "We looked at *The Garden of Words* as a reference for the rain VFX," Sullivan says.

Will the world end with a bang, or a whimper? Certainly, the gently melancholic tone of Scavengers Studio's upcoming *Season* suggests the latter. There are no crowds of screaming people fleeing in panic, or vast alien battleships flying overhead, or raging lava flows; there's just your lone protagonist, riding their bicycle, diligently taking down photos and sketches. As follow-up games go, *Season* couldn't be more different from the team's previous title, the chilly battle royale survive-'em-up, *Darwin Project*, though writer Kevin Sullivan says that embarking on a new creative direction wasn't a conscious decision when work on *Season*

began. "It was inspired by our experiences travelling," Sullivan tells us, "and a general sense of foreboding regarding the future."

That sense of foreboding is all over *Season*, even if it's a subtle background tone. It's a game we previously covered in our feature on photography in video games in *Wireframe* issue 53. "Your goal in *Season* is to bear witness to a world that's about to disappear," the studio explained to us back then, "in order to transmit what's important to future generations."

In essence, then, *Season* is a kind of road trip adventure, though your protagonist is at the helm of a bicycle rather than a car. According to Sullivan, the original idea was to have the player riding around on a motorcycle, but the slower pace of a pushbike was chosen to better fit the game's low-key tone.

"Even though you're still in the environment, [riding a motorcycle] made the landscape feel abstract and distant by virtue of the speed," he says. "We want you to feel that you're in, and subject to, the world around you."

As for the character you play, their identity and backstory is something you'll learn about as you journey through *Season's* quiet landscapes. "You'll have to learn about the main character in the game itself," Sullivan tells us. "As fantastic or strange as the world of *Season* is, I wanted it to feel emotionally grounded, so the best way of doing that was to write from experience whenever possible, so I knew the cast of characters would be diverse because





◀ Do you capture sprawling vistas, or tiny moments like the sound of a dragonfly's wings? The choice is yours.

DIGITAL POETRY

With the likes of *Alba: A Wildlife Adventure*, *Firewatch*, and *Life Is Strange*, to name but a few, there seems to be an increasing appetite for quiet, meditative, even poetic games.

"I think it's a combination of looking for something that resonates with our lives and a desire for new experiences," Sullivan says when we ask him about what might be a growing trend. "Both of those come down to wanting to feel something. My baby boomer parents never got into playing games, and myself and my millennial cohort never stopped playing games, so maybe the entire population is becoming more of a solid gold brick of gamers.

"I always imagined *Season* would, in some sense, be for the next generation, given the kind of loss they're going to see in their lifetimes. But by nature of the theme and tone, it is definitely for adults as well."

that's the world we live in. But beyond that specific desire, it came together quite naturally. The concept was done for the main character by the art department and it felt right, we never considered anything else. I find a lot of creative decisions are made intuitively and the explanation comes later, and is often articulated better by the audience than by the creators."

"It was inspired by... a sense of foreboding regarding the future"

In your role as documentarian of a world with an uncertain future, you're constantly faced with agonising decisions. Much like in real life, you can't possibly capture everything you see around you: the world is simply too big and too busy to record in its entirety.

Ultimately, then, it's up to you to decide what you'll photograph with your finite rolls of film, jot down in your sketchbook, or what sounds you'll capture with your portable tape recorder.

As the team succinctly put it to us in August, "We wanted the camera to play a central role in the experience. When you travel and visit foreign cultures, there's always that tension between being part of a moment or recording it. When you pull out a camera, you're not in the moment anymore; you've already extracted yourself from the experience to record it. In building the game, we're trying to capture that tension: 'Should I enjoy the moment, or should I record it?'"

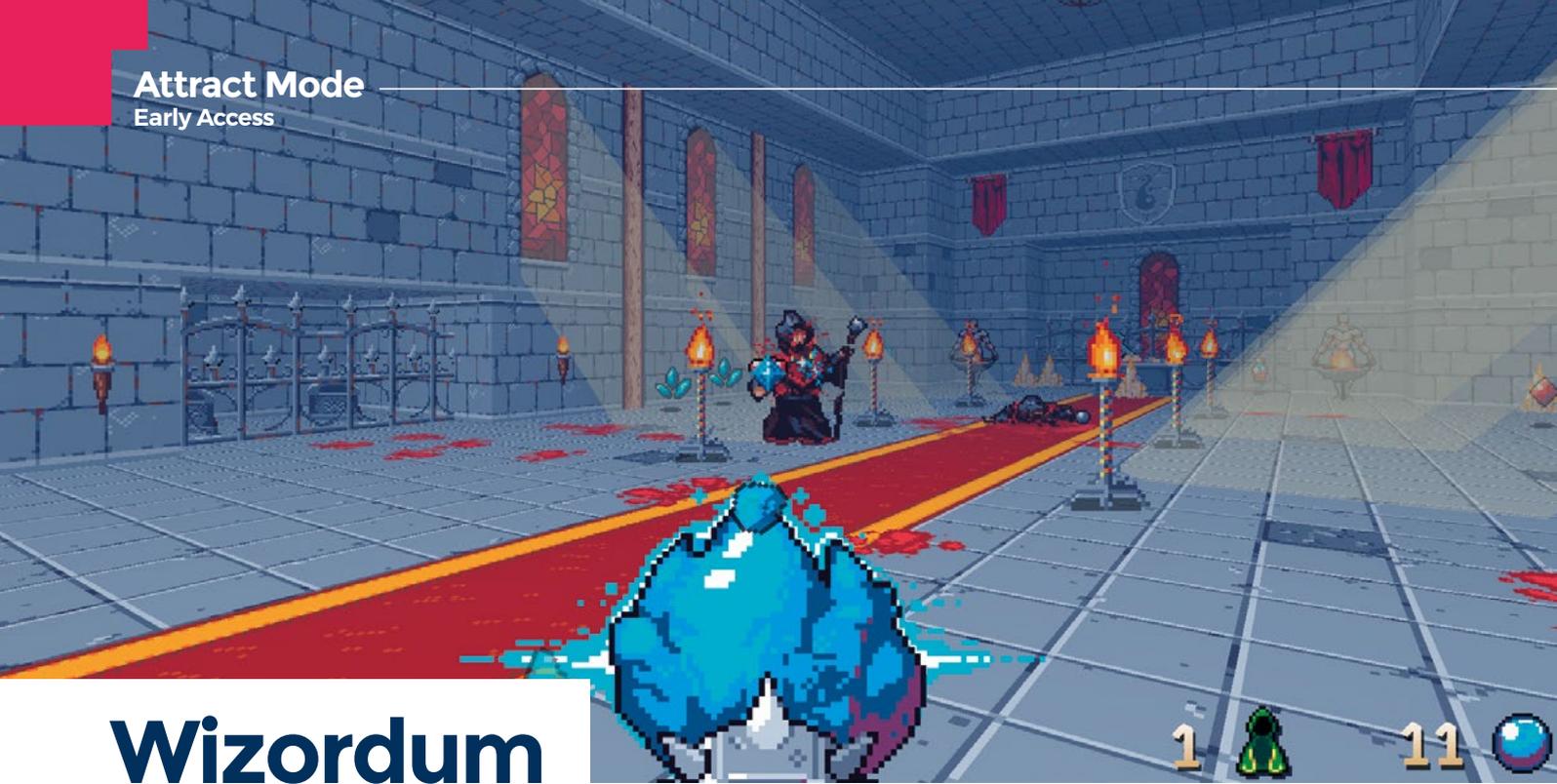
It hasn't exactly been plain sailing behind the scenes at Scavengers Studio, and it'd be remiss of us not to mention here that, following some serious allegations against its CEO and

creative director Simon Darveau, reported by GamesIndustry.biz, Darveau stepped down from his position in 2021.

It takes more than one allegedly toxic manager to make a game, though, and the rest of the creative team behind *Season* have evidently poured their artistry and passion into making what is shaping up to be an understated

and thought-provoking adventure. "Happily, the game is growing up," Sullivan says of the game's late stages of development. "I do hope *Season* will serve as both a refuge from our worries and a place to turn them over in our minds." 





Wizordum

Wiz-a-dor-ah, we adore her

Info

- GENRE**
First-person fantasy
- FORMAT**
PC
- DEVELOPER**
Emberheart Games
- PUBLISHER**
Emberheart Games
- RELEASE**
TBC 2022
- SOCIAL**
@wizordum

There's a satisfyingly gory splatter to every kill, and you do end up using corpses to remember where you've been previously. Ah, video games.



W

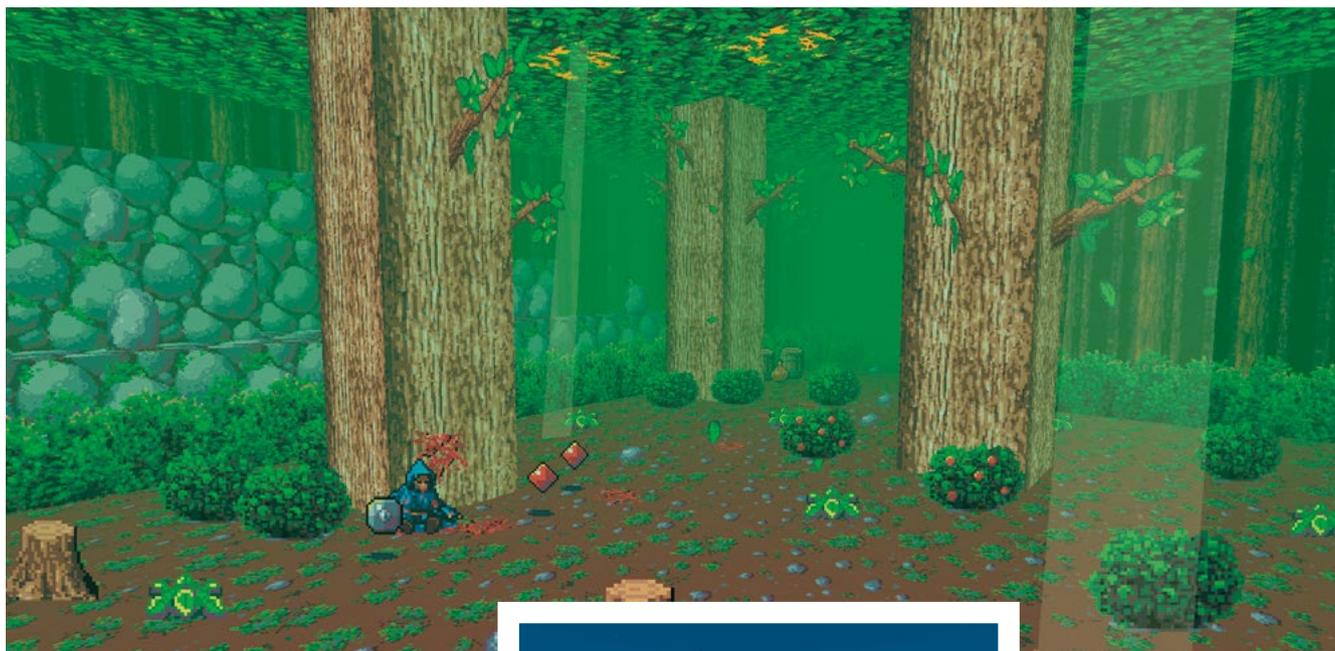
izordum looks in a slightly different direction to the recent crop of retro-inspired first-person shooters. Rather than the nod coming from *DOOM*, *Quake*, or *Duke Nukem 3D*, this Slovenian-made indie title takes its cues from the likes of *Catacomb Abyss*, *Blake Stone: Aliens of Gold*, *Heretic*, and *Hexen*. Those familiar with (three of) those games will immediately know what to expect: a kind of magic. With fantasy, goblins, fireballs, castles, and plenty of gold to grab along the way, *Wizordum* is already shaping up to be another fine mix of games from the past and more modern design sensibilities. Even though you're unable to look up or down in the game.

Speaking to Primož Vovk of Emberheart Games, it soon becomes clear where the enthusiasm for the project comes from: directly from the game's creator (and half of its development team). "I think the game is already fun to play at its early stage," he says.

"That's why we moved forward and made an official announcement at the Realms Deep festival and put the game on Steam for others to wishlist – so it's official now. It seems like others really like what they are seeing so far, which is another factor telling us that we're moving in the right direction."

Part of what has to be appealing to players is the relative simplicity of *Wizordum* – on playing it, you take all of five seconds or so to get accustomed to what you need to do, then you just get on with it. The baddies are there to be hit or shot at with your magic hands, some doors need keys, treasure needs to be hunted, and there's an exit to find. Again, all while you're not looking up or down – that pesky Y axis does tend to complicate things somewhat. And, as Vovk admits, removing your character's ability to bend their neck backwards and forwards was utterly intentional and core to the more simple approach to design: "We removed verticality of any sort because we want more simple and stressless gameplay like in the old times," he says. "Take away verticality, and all of a sudden, you don't have to worry about what's above or below – it takes some stress away."

At the same time, there is an acknowledgement that removing a dimension of consideration could make the experience a mite bland, meaning the two developers have to make up for this shortfall in other ways. And, of course, environments aren't solely on a flat plane – the visual aspects of *Wizordum* still factor in a good deal of verticality: "We are still having vertical level visual design so we can put



players in more immersive places like forests, caves, cathedrals, etc,” Vovk says. “At the same time, we optimise precious development time because we don’t have to worry about jumping; AI becomes more simple as well as level design.”

This push for the simple life sounds like a specific, focused approach to design... and it is. It’s a reaction, Vovk admits, to the ever-more complex and time-hungry designs of modern triple-A titles, all vying to steal dozens – hundreds – of hours of your precious time. Not to mention the complexity *beyond* just how much time you have to put into them. “When I’m playing modern games, I’m afraid to put them down for more than a few days because I’m lost when I return,”

Vovk says. “There are so many subsystems that are explained throughout the game – upgrades, gadgets, combos, shortcuts – that you easily lose track of if not playing constantly. With *Wizordum*, we want to keep it simple like in the old days, where you could simply load up the game after half a year and resume playing.”

Stylistically, *Wizordum* apes the brighter sprite-based graphics of the *Catacombs* and *Blake Stones* of the world, and it wouldn’t be daft to expect this to limit the game’s appeal as a result – what with it looking to lesser-known first-person titles for its inspiration. Not so, Vovk says, with both players of those original games reacting positively (as hoped), but also folks who never played any of those earlier first-person titles being drawn in by what is – to them – a

“That pesky Y axis does tend to complicate things somewhat”

new visual style for a retro-style FPS. After all, if you haven’t seen it, it’s new to you.

But the retro style does include those modern touches, of course – effects like screen shakes and particles, graphical flourishes that weren’t (easily) possible in the early 1990s, things like that. There’s also quality of life additions

like information-heavy navigational maps that help you keep tabs on where you’ve been, what you’ve found, and what else is in a level – handy

both in regards to respecting the player’s time, but also when it comes to the completionists of the world. *Wizordum* does reward exploration with sweet, sweet higher scores after all.

And if players reward Vovk and Emberheart Games with sweet, sweet sales after the game releases – and it will come with full modding tool and Steam Workshop support – there are plans to keep on supporting the game, adding to it, and helping the fan-built ecosystem thrive. Beyond that? “If the game is successful,” Vovk says, “I would gladly go for *Wizordum 2* – and who knows, we might even add vertical gameplay then!” 🐼

▲ There’s a definite beauty in the colourful simplicity of *Wizordum*. Also: you can smash the bushes!

◀ While you might not be looking up and down, environments are still designed to be pretty even for those able to crane their necks about the place.

UNITE

As with many gaming projects, *Wizordum* uses Unity to bring its fantasy world of magic and castles to life. As Vovk says though, it actually involves *more* effort to make a game appear old using the platform: “It is ironic that you need to put in some extra effort to make your project look older these days,” he explains. “*Wizordum* is using diminished lighting instead of real lights, so we had to go the extra mile by writing custom shaders that simulate that. Another thing is the level editor – we could use Unity’s editor for creating levels, but because we want support modding, we can’t do that, so we had to write our own level editor instead, for creating levels so that we can ship it with the game. As you can see, even if Unity is great for the base, we still have to write lots of custom code and tools to make it work as we want it.”



A new space

It's one small step from Kerbal to Balsa Model Flight Simulator

Info

GENRE
Flight sim

FORMAT
PC

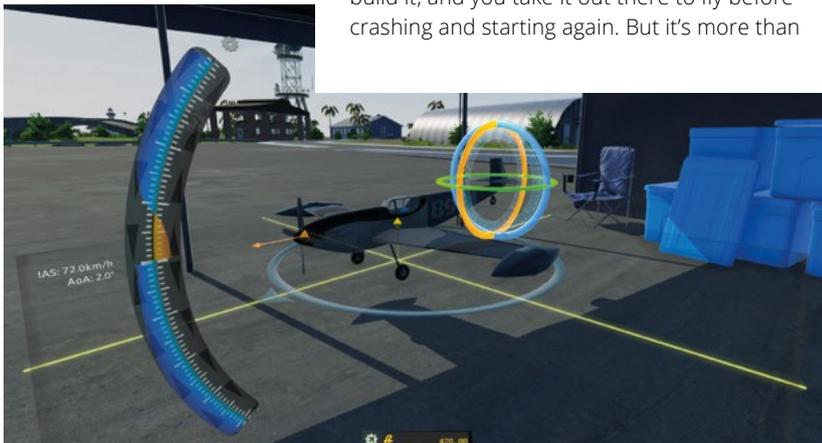
DEVELOPER
Floating Origin
Interactive

PUBLISHER
Floating Origin
Interactive

RELEASE
TBC 2022

SOCIAL
@BalsaModelSim

✓ As you'd expect, building the flying machine is a big part of the game's appeal - as well as a big reason behind you crashing a lot. Tip: it needs wings.



"I've always been fascinated by everything that flies," explains Felipe Falanghe, creator of *Balsa Model Flight Simulator* and founder of Floating Origin Interactive. A fairly generic statement to make when talking about the game you're making and how it involves a realistic model of (model) flight. But factor in Falanghe's history in gaming and it feels like a vast understatement, with his past work on the now-legendary *Kerbal Space Program* not just having an impact on video games, but stretching into the wider world of *actual space flight*. The man's not lying when he says he has a fascination with flight.

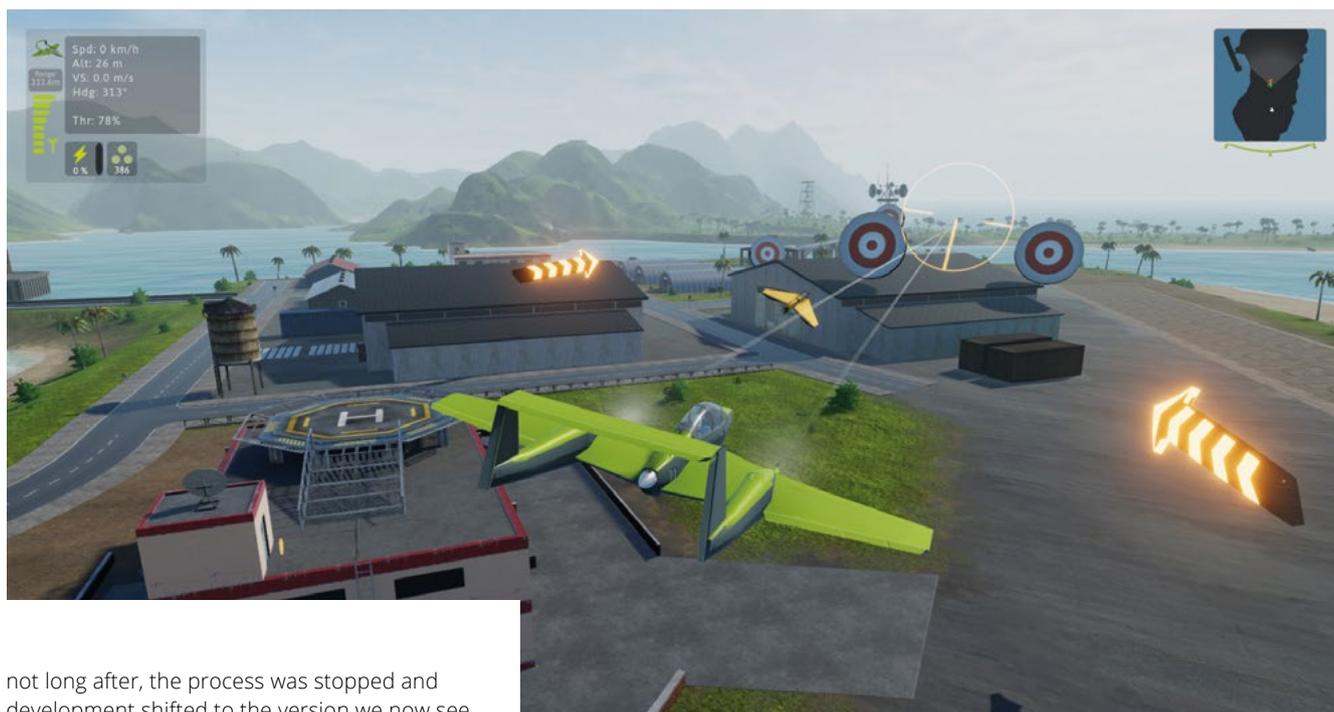
And it's from there the idea for *Balsa Model Flight Simulator* came - bringing together the handcrafted, customised nature of *Kerbal* and introducing it to the suborbital flying devices of model aircraft. You come up with the idea, you build it, and you take it out there to fly before crashing and starting again. But it's more than

just 'what if *Kerbal* but planes?' "I used to build my own balsa wood model airplanes when I was little, and that is one of the fondest memories I have of that time in my life," Falanghe says. "I was already building - and sometimes setting fire to - little model gliders well before [*Kerbal* even existed as an idea], but I was too young to be able to afford anything radio-controlled. I remember looking at display models at RC stores and just drooling over them.

"Now that I'm (externally) grown-up, I could finally get into this stuff, so a couple of years ago I went and got myself a drone. And in very little time it had found its watery end in a ditch. I realised then I'm not a great RC pilot, and you shouldn't trust me with one. There is still a drone battery at the bottom of an irrigation ditch somewhere in the state of Mexico. So, yeah, I guess you can say *Balsa* is based on a true story."

Work started on the game back in 2018, with the original idea for *Balsa Sim* being a 'simple multiplayer RC simulator for VR only'. After a few months, the vehicle editor came up as an idea and was introduced, and from there it just grew - aerial combat, AI, missions, career mode, and more. "I guess there was a lot of feature creep," Falanghe says. "But really, I knew I wanted this to be an Early Access project, so the first idea was something I deliberately wanted to keep vague and open-ended. This is what I think Early Access is about, to let players in on the process of creating a game, not just playing it once it's done, or well, before even that."

Balsa Sim actually released on Oculus platforms in its VR form back in 2018, but



not long after, the process was stopped and development shifted to the version we now see in Steam's (non-VR) Early Access program. "[The Oculus] experience wasn't great, to be honest," Falanghe says. "I made it available, and there was very little movement. Very few people saw that it even existed. I learned then that first, VR still has a very small player base, and more importantly, that Early Access, in general, is a very different thing compared to when *Kerbal* started out.

"I was in a tough situation at that time, because I was working entirely without funding, and I couldn't go much further. I was seriously considering having to abandon the project at that point. That was when I heard from people at Irregular, our publisher until earlier this year, and we signed up and that allowed us to continue working on the game."

And so work did continue – years beavering away behind the scenes before a more 'traditional' non-

VR version came out in Early Access. While experienced in the art of releasing games before they're finished, thanks to *Kerbal*, Falanghe admits it's an atypical approach. "It's a very different way to do things," he says. "I think this is one of the main things to keep in mind with an Early Access project – that it's not as simple as releasing a game before it's finished. The entire project needs to be planned out to be an Early Access project. It's a fundamentally different way to work on a game project, and I think it's not something that works for any type of game. The concept itself has to be something that is able to grow and morph while already being

"Balsa isn't a second step after Kerbal, it's a new first step"

played. Also, you can't have a solid vision of what you want from the game, because once you start getting feedback, whatever you had planned will almost surely change."

Feedback is sure to be more *intense*, let's say, than it would be with other titles thanks to Falanghe's work on *Kerbal*, and it's something he admits factors in to things: "There's definitely pressure there, but I'm actively trying to stay out of my own way with that, if that makes sense," he says. "It's important to state that *Balsa* isn't meant to be a follow-up to *Kerbal* in any way.

Balsa isn't a second step after *Kerbal*, it's a new first step. This was a project I started on my own, from my own game dev studio – which has a team of entirely two people. It was built from scratch, and the only things it takes from *Kerbal* are the lessons learned."

There's still a way to go with *Balsa Sim*, and a v1.0 release shouldn't be expected for some time. All the same, Falanghe is keeping his hopes for the game modest: "I'm trying my best to not have any," he says. "But at the very least, I'm hoping to see the beginning of a friendly and positive community, and ideally, that would be enough to allow us to continue development. It's very much like taking off in an airplane. You don't need to go supersonic right from the start, you just need enough to sustain flight. Positive climb, gears up, then off you go." 🗨️

▲ There's combat in the game, bringing a surprising competitive edge to proceedings. It's not exactly a warmongering gun-'em-up, mind you.

THE VR COMEBACK

Releasing on the Oculus platform might have been a tough experience for *Balsa Sim*, but Falanghe remains confident – or at the very least, hopeful – that one day we might see the game return to the realms of headsets and hand-waving. "I still think *Balsa* would be an excellent fit for playing in VR," he says. "Radio-control airplanes are a hobby that VR is able to deliver almost completely. That is, unless you find that dealing with hot glue or getting sunburned are very crucial parts of the experience. There's no aspect of flying an RC plane that VR doesn't represent one-to-one."

That was the month that was



02



01

01. FIFA is dead

Clickbait, gotcha! No, but seriously, FIFA has announced it will be broadening its horizons in future, with the international footballing governing body breaking away from EA Sports after a partnership lasting around 28 years. On the flip side of this very coin, EA Sports announced it was to rebrand the *FIFA* franchise in future instalments, with the main reason claimed to be *money*. As in, FIFA (the institution) pretty much doubled its fees to around £724m (\$1bn) for *FIFA* (the game series) to use its licence over a four-year period. EA said 'nope', announced it was rebranding, and trademarked the name EA Sports FC. Football might not be coming home, but it could be coming to more, different publishers in the near future.

02. Dreaded credits

Gaming site Vandal revealed a number of people involved in the development of *Metroid Dread* at MercurySteam had not been credited for their work, with people working at the studio for around a year not seeing their name in the end scroll. The developer offered a response stating that official policy required staff to have worked on the game for more than 25% of its development time, hence them missing out, but... yeah, it's all a bit icky. And this is by no means the first time names have been left off the credits – just ask Rockstar about that one.



03

03. Cottoning on

Cotton Guardian Force Saturn Tribute on the Switch provided something more than classic shooter action, as hackers discovered a Switch-specific Saturn emulator was powering the whole game. To the surprise of literally nobody, they then went about testing out other Saturn titles, modifying settings, and generally getting things like *Die Hard Arcade* and *Panzer Dragoon Saga* working more or less perfectly on Nintendo's handheld. GBATemp member lisareal2301 revealed the discovery, so kudos there, and we're not offering a guide or anything telling you how to do it here because Nintendo is *terrifying*.



Elden Ring delayed: 25 February 2022 is new launch date

Epic, meanwhile, seems to have no issue with NFT-sporting games on its store



04



05



06

04. NFT (“None of This”)

Steam is not allowing games “built on blockchain technology that issue or allow exchange of cryptocurrencies or NFTs” to be distributed on its platform. This came to light following comments from SpacePirate Games concerning its upcoming sci-fi action/puzzler *Age of Rust*, which will no longer be available on Steam. The point of contention appears to be that cryptocurrencies and NFTs can have real-world value, and Valve doesn’t allow things with real-world value to be distributed on the platform. There’s an argument about people selling Steam inventory items for real money to be made, given that does happen, but now’s not the time for that argument.

05. Preservation

A cache of high-resolution scans of SNES box art, cartridges, and PCBs has been unearthed by internet retro and preservation bod FirebrandX. The 70GB haul was rediscovered on a hard drive and is the fullest, most high-quality set of Super Nintendo artwork (et al.) outside of Nintendo’s non-public archives. The collection was painstakingly put together by hacker-modder-preservationist Near, who passed away in June of this year. There is at least some comfort knowing their work is going a long way to helping the ongoing community project to preserve gaming’s history. The scans can be found here: wfmag.cc/SNESscans.

06. Steamy windows

Let’s double-dip with Valve, eh? The upcoming Steam Deck handheld is getting full compatibility rankings across Steam, with the company putting in a fair few hours to test and categorise as many games as possible before the device releases. Said categories will be Verified, Playable, Unsupported, and Unknown – all pretty straightforward stuff, with the main difference being between the first two categories: basically Verified means it’s all tickety-boo, Playable means you might need to tinker a bit. The Steam Deck begins shipping in December, though you’re unlikely to be able to get hold of one anytime soon if you haven’t already pre-ordered.

Dragon Quest composer Koichi Sugiyama dies aged 90



PETA petitions Ubisoft to remove cockfighting from *Far Cry 6*, which honestly seems fair



08



07

07. Twitchy

The company put fears at rest when it revealed passwords had not been leaked, but the main point remains: the *entirety* of Twitch (well, except for passwords) was leaked online in a 125GB torrent. Included was the platform's source code with full commit history, details of payouts to streamers, SDKs, clients, and plenty more – it really does tick the big 'everything' box. Apart from passwords, at least. Still, a good idea to change your password and activate two-factor authentication on the platform if you've a membership there, and definitely a good idea to look up some of those top-earning payouts because apparently, you can earn millions of pounds a year by playing arena shooters and being a bit racist at times.



09

08. Hard reset

ResetEra, the popular gaming forum that spun off from NeoGAF back in 2017, has been sold to MOBA Network, the Swedish firm behind other online communities such as DOTAFire.com. The purchase will cost MOBA £3.27m (\$4.5m) in total – not bad for a 55,000-member forum, it's safe to say – and the new owners say they aim to unlock new revenue streams through the site via advertising, memberships, and more. As you can probably guess, the news has gone down *a treat* on the forum itself – though there doesn't seem to be much chatter at the time of writing about yet another spin-off.

09. Yakuza exits

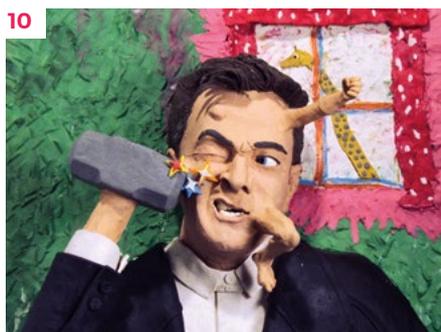
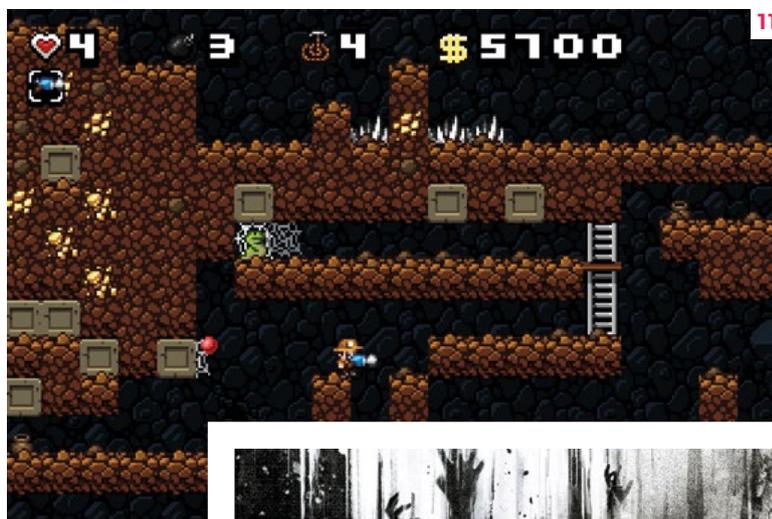
Yakuza creator* Toshihiro Nagoshi has left Sega for Chinese firm NetEase, along with long-standing collaborator Daisuke Sato. The rumoured departures were finally confirmed in a post celebrating Ryu Ga Gotoku Studio's tenth anniversary, which also announced restructuring in the team and hinted at work on an eighth mainline *Yakuza*. Masayoshi Yokoyama has stepped up as director of Ryu Ga Gotoku Studio, having worked on the team – and the *Yakuza* series – for over 15 years.

**the game, not the criminal enterprise*



New Mega Drive game to arrive soon: *Metal Dragon*. It's like *Mercs*!

Activision-Blizzard has fired 20 employees since ongoing sexual harassment lawsuit began



10. I wanna be

Activision-Blizzard subsidiary Sledgehammer Games has opened a UK studio, based in Guildford. The regional office of the *Call of Duty*-focused studio will, surprisingly, be focused on development support for the live service side of things in *Call of Duty: Vanguard*. Aside from helping to make the next jingoistic gun-'em-up, Sledgehammer UK will look to make partnerships with local educational institutions, hopefully giving student coders (and those in related subjects) a route into the games industry. Peter Gabriel was, sadly, unavailable for comment. And has nothing to do with the dev studio anyway.



11. BarryBad

A distressed *Spelunky* speedrunning community has been coming to terms with the fact that its once-world-record-holding player BarryMode, in fact, cheated his way to the now-rescinded record for completing the original version of the game the quickest out of anyone. The two-minute thirty-second run had been subject to scrutiny for some time until internet sleuths finally discovered the subterfuge: BarryMode had been using a mod that allowed for repeated runs of identical levels, thus allowing a perfect route to be memorised. Some video splicing later, a 'world record' was created. Not cool.

12. Dead light

We're risking looking *foolish* here, but it's just too peculiar not to mention: at the time of writing, the Switch port of *Dying Light* is unavailable for digital purchase in Europe. Why? Because the game is banned in Germany. And? Nintendo's eShop is registered in Germany, meaning *technically*, the game would have to be sold from Germany, and as such, cannot actually, legally, be sold digitally. It's sure to be sorted – probably by the time you're reading this – and if that is the case, let this be a time capsule reminder of a strange time in Nintendo gaming history.

Former Starbreeze CEO Mikael Nermark passes away following cancer battle



The Xbox Mini Fridge will be available for £89.99 at Game, on sale from December. Sigh.

Post Apocalypse

The price of Nintendo games, and your memories of the ZX Spectrum. It's this month's letters



Issue #55

Want to write to Wireframe?
Message us at wfmag.cc/hello
or tweet us
[@wireframemag](https://twitter.com/wireframemag)



Price tag

A few weeks ago, I saw a meme spread around on Twitter in which a screenshot from the upcoming *Kirby and the Forgotten Land* was shown alongside a capture from *Kena: Bridge of Spirits*. Kirby was labelled 'Nintendo AAA (\$60)' while *Kena* was labelled 'PlayStation AA (\$60)' – the argument being, I suppose, that a major release from Nintendo is technically inferior to a smaller game on a rival console.

I later saw a similar thing surrounding *Metroid Dread*: that its \$60 price tag isn't justified because it isn't a true triple-A game, like *The Last of Us Part II*. This begs the question, though: are only games with immaculate, photo-real graphics 'worth' high price tags? Are 100-hour, open-world epics the only kinds of games that deserve the triple-A moniker? Personally, I think not.

Steve, Bournemouth

Chills

Is it me or is it a bit cold in here?
Siobhan, Derby

Ryan writes:
It's pretty parky, isn't it. Best put an extra jumper on.

Ryan writes:
I saw some of this back-and-forth myself, and some of it left me scratching my head. Sure, *Metroid Dread* is a 2D game, and its budget was almost certainly a fraction of *The Last of Us Part II*'s. But it's also one of Nintendo's big releases of 2021 and based on one of the most recognisable properties in the firm's back catalogue. Whether you think *Metroid Dread* looks like a throwback or not compared to other recent releases, games are worth what customers are willing to pay for them, and if eager *Metroid* fans

are willing to pay whatever the local equivalent of \$60 is for *Dread*, then that's fair enough.

Besides, there's also the counter-argument that far too many smaller developers *undervalue* their games: there are some extraordinary little titles on Steam and Itch.io that are either being given away for free or for mere pennies. Just because a game isn't a vast, photo-real sandbox, doesn't mean there hasn't been a ton of valuable development time and artistry put into its production.



Shortcuts

We've been paying tribute to the ZX Spectrum this month, so we scrambled our followers on Twitter to give us their memories of Sir Clive's computer and its games



Memories? This is me two years ago giving a lecture about code optimisation. The ZX Spectrum made me the engineer that I am today.
@Matiaslacono

Zippering through the forest in *Deathchase*, wondering how on earth Mervyn Estcourt managed to cram such 3D magic into just 16K.
@CraigGrannell

Loading it up for the first time, *Thro' the Wall* in glorious colour on the family TV. Endless hours of playing *Atic Atac*, *Sabre Wulf*, *The Lords of Midnight*, *Turbo Esprit*, *Operation Wolf*... marvelling at how they did it.
@zx_spectrum_30

Got mine in 1984 aged nine. It came with a BASIC manual and I taught myself how to program. Thirty-seven

years later and I'm a full-time indie game developer and I have the Spectrum and Sir Clive to thank for that. Sadly, my Spectrum stopped working when playing *Starquake* so I got a C64!
@GreyAlien

Tim Danton made a brilliant point in PC Pro about Sir Clive constantly being pictured or represented by the C5, whereas if the Spectrum hadn't existed I wouldn't be reading either *Wireframe* or PC Pro... But fave game was *Target: Renegade* closely followed by *Fantasy World Dizzy* then any of *Match Day II*, *Footballer of the Year*, or *Emlyn Hughes International Soccer*. Absolutely loved Your Sinclair magazine as well.
@vincentbryson

Playing *Xevious* with my mom when I first got my Speccy. For a couple of days, she had the high score!
@reidarc

I got it summer of 84, but the cassette player I had at the time was not compatible, so I had to read the manual and start typing, starting a journey that has not ended. My fav game of all time was *Scuba Dive*, and the Ultimate classics.
@yokarticanim

The Spectrum+ was a Christmas present (1985, I think) after wishing for it so much. I played a lot of: *Freddy Hardest*, *Arkanoid 2*, *Fernando Martin BM*, *Phantomas 2*, or *Nebulus*. When I changed the character of a game from MicroHobby magazine, my friends were amazed! Thanks, Clive.
@AsteroideZX

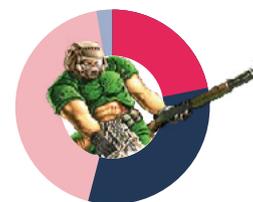
Renegade, *Operation Wolf*, and *RoboCop* were incredible! I had a 48K+ and had to load levels, which was always a tense moment when you finally progressed up and then it crashed! My friend totally lorded his 128K version over me with its built-in tape deck and no need to load levels. Do I have a photo of it to hand? Why, yes I do! Try to ignore the M.A.S.K. poster in the background - I was only young.
@richardnorris75



The burning question

Inspired by our handheld demakes feature on page 38, we asked Twitter: Which of the following miniaturised console games do you think is the best?

- **Driver 3 (GBA) - 21%**
- **V-Rally 3 (GBA) - 36%**
- **DOOM (GBA) - 39%**
- **Serious Sam Advance (GBA) - 4%**



Preview



Chocobo GP ↗

Latching on to the karting genre's recent revival, Square Enix brings back the long-forgotten *Final Fantasy* spin-off in the shape of *Chocobo GP*, smartly coming exclusively to Switch. It's a surprisingly long-awaited sequel to the 1999 PSone original, so expectations might be higher than you'd expect for this one.

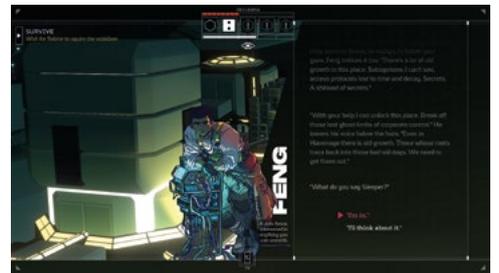


Pull Stay ↗

Let's not get ahead of ourselves here – *Pull Stay* looks janky, and has every chance of being awful. Equally, it has a chance of being a great in the daft-and-wacky genre, tasking players with defending a house from numerous invaders by beating them up with all manner of moves, weapons, and traps. This could finally be the *Home Alone* video game we've always wanted. Maybe. Possibly.

Innchanted ↘

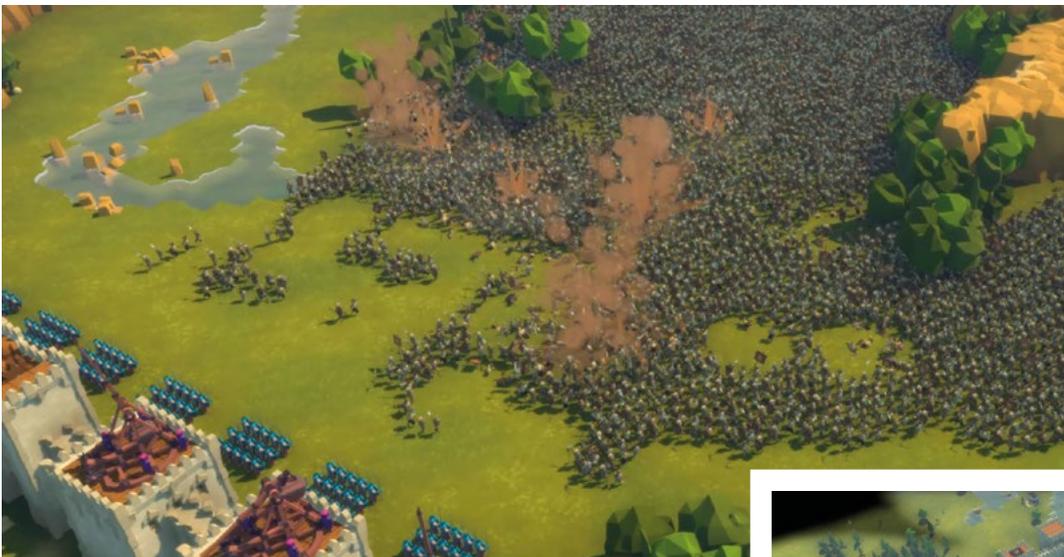
Brew potions, cook, and fight in your magical inn with up to four players engaging in manic destruction/service industry behaviours. It's not unfair to say *Innchanted* is pretty much *Overcooked* but with a pub and more magic – but that's in no way a slight on this upcoming game from developer DragonBear Studios. The proof will, of course, be in the brewing.



Citizen Sleeper ↗

Developer Jump Over the Age is following up its impressive debut *In Other Waters* with *Citizen Sleeper*, a sci-fi RPG that leans heavily on the adaptability and choice offered by tabletop games as its influence. Players must find a way to survive in a space station on the edge of an intergalactic capitalist society, with the added bonus that they take the role of a 'sleeper' – a digitised human consciousness inside an artificial body. Owned by a corporation. Which wants its property back. Ah, capitalism. Hopes are high, here.





Diplomacy is Not an Option ↗

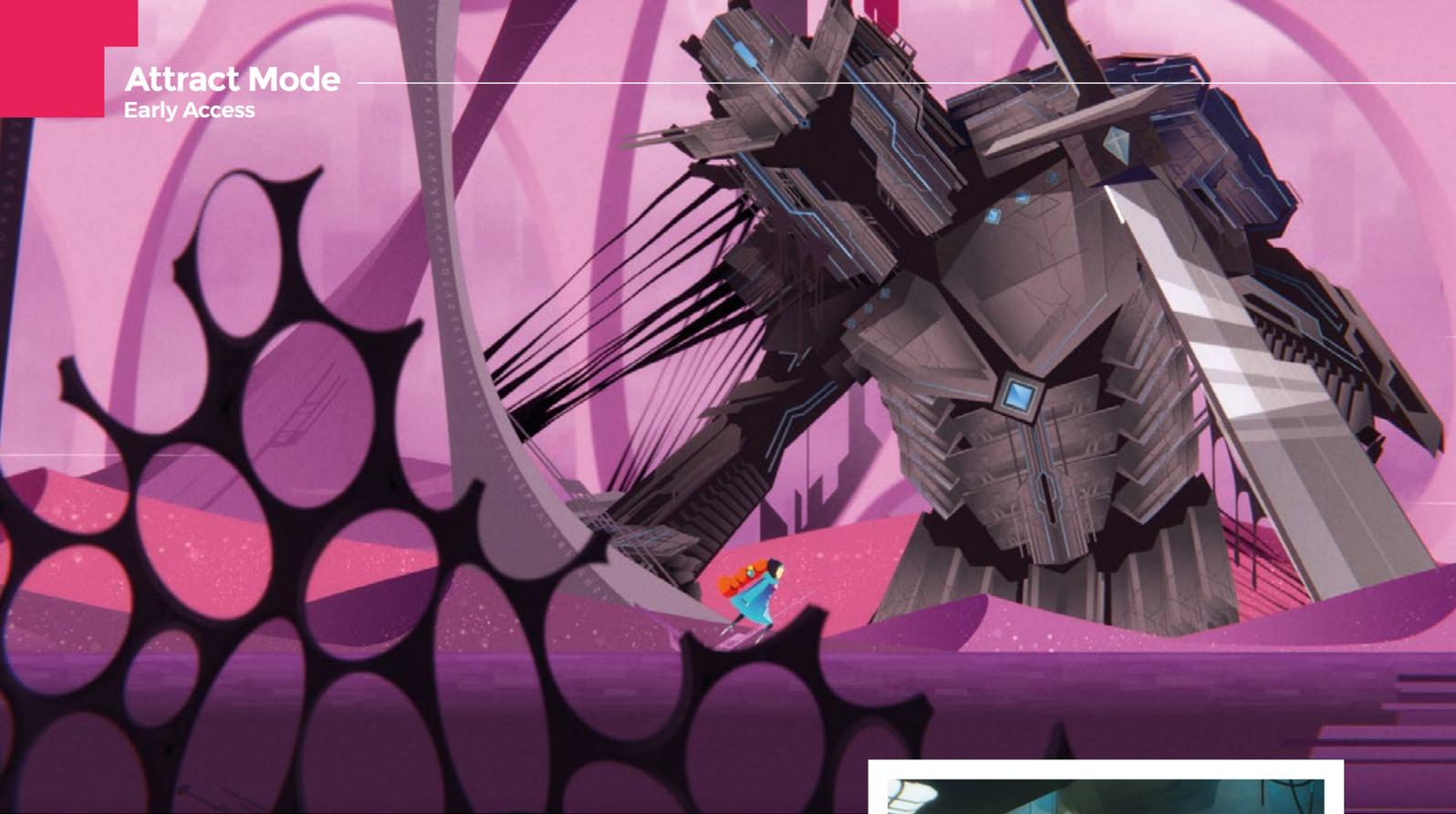
How is it possible to mix up the medieval city-builder genre? Why, by introducing a mid-life crisis, of course. *Diplomacy is Not an Option* puts players in the shoes of a feudal lord suffering from that point in existence when they want to *change things up* a bit. It's a setup rather than a key mechanic, with the rest of the game playing out like a fairly typical explore-expand-exterminate-'em-up; building settlements, behaving like a coloniser, throwing the odd lightning bolt at encroaching hordes, and more along those lines. Opting for realistic physics and battles potentially involving thousands of units means this one is almost definitely going to be a hoot to watch in motion, so, however well – or not – it turns out, we'll at least be able to rely on that for a chuckle.



8-Bit Adventures 2 ↶

8-Bit Adventures 2 takes its inspiration from the NES-era JRPGs, as you'd expect, but it throws in enough of the SNES and PlayStation-inspired elements to know that the title is, indeed, just that. Pedantry aside, this sequel is a real labour of love from developer Critical Games: about five years in the making, it mixes together classic elements like dinky characters, an overworld map, turn-based battles, and more, while at the same time modernising things enough to make sure it's not a chore to play like – let's be honest here – a lot of classic RPGs tend to be. So grinding, save points, filler storyline elements, it all ends up on the garbage pile resulting in an experience that (at least claims to) respect your time. That's music to our ears.

Brilliantly for the developer, *8-Bit Adventures 2* is making its way to all consoles as well as PC at launch, so there's the chance to bring in a wider audience to this follow-up to the small, but well-received original.



Aspire: Ina's Tale ↗

Our titular Ina awakes trapped inside a tower and must find her way out, engaging in discourse, platforming, and puzzle-solving along the way. *Aspire* comes from Wondernaut Studio and mixes some utterly gorgeous visuals with – what is promised to be – an engaging storyline backing up the jumpy/solve-y action. There's an *Another World* vibe to all of this, which definitely caught our attention.



Ripout ↗

A co-operative PvE shooter set in a dark sci-fi world is pretty par for the course in video gaming, but *Ripout* throws in a couple of unique selling points to grab the attention. First up, the enemies – genetically altered beasts capable of attaching *other* beasts to themselves, resulting in 'reconfigurable monsters' to face off against. Second, a 'living gun', which is referred to as a pet. Who wouldn't love a pet gun? Who, indeed.



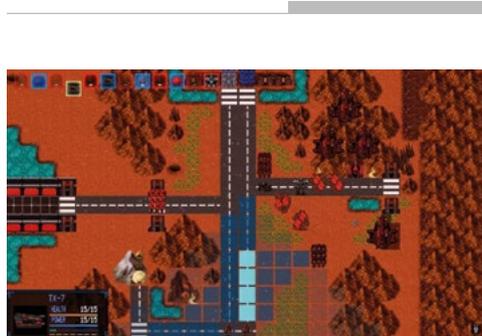
Perfect Dark ↖

While we've not had any information about the game proper following its announcement, one snippet of interest has shown itself: this reboot of the *Perfect Dark* franchise is still being developed by Xbox studio The Initiative, but co-development duties have been handed to Square Enix subsidiary Crystal Dynamics. It's certainly made the whole thing a lot more interesting.



Halo Infinite ↑

It's out very soon, even though this modern games-as-a-service thing means it won't be the full game for some time yet – but already opinions on *Halo Infinite* are crawling out thanks to the pre-release multiplayer beta that did the rounds. And, would you believe it, Xbox's flagship multiplayer (console) exclusive is really hitting the high notes with its (console exclusive) multiplayer. We've gone from zero to fairly keen as we get closer to the demi-launch, it's fair to say.



Star Shift ↑

Psychronic Game Studios has struck gold with its method of getting people interested in a game made by an as-yet unproven team: list your influences, and make sure they're bona fide bangers. *Star Shift* is a sci-fi JRPG-alike taking cues from the likes of *Suikoden II*, *Mass Effect*, *Final Fantasy Tactics*, and *Chrono Trigger*. The game itself sounds as ambitious as those high profile influences, mixing traditional RPG fare with tactical ship battles, base building, deep class and job systems, branching storylines, and more. There's no shortage of potential here, and we'll be very keen to see how it all, eventually, turns out.

The prequel chapter, *Star Shift Origins*, should be available right now if all things have gone to plan and the world hasn't exploded between writing these words and you reading them. Check it out here: wfmag.cc/ShiftyOrigins.

Selaco ↑

Selaco is a GZDoom mod, but – well, look at it, it's a bit more than a basic WAD edit that throws in some different enemies. No, this is an entirely new game built on the modified *DOOM* engine, and you really need to see it in motion to understand just why it's so impressive and engaging. Here, go have a quick look then come back: wfmag.cc/Selaco.

Right, now you're back we can all go a bit *squee* about the whole thing: *Selaco* mixes a gritty sci-fi aesthetic with an animation style we'll describe as post-*DOOM*, all wrapped up in a layer of intense, quick-paced, surprisingly tactical combat. Developer Altered Orbit Studios is keen to push that action as a big selling point, of course, but there's just as much emphasis on aspects like the destructibility of environments and – interestingly – the storyline backing the whole thing up. Playing as a security captain fending off the invading forces of an armed enemy might seem straightforward FPS chow, but *Selaco* states that its story will actually offer a more focused, personal take on the journey made by our protagonist Dawn, and her experiences in the underground facility that shares its name with the game.



Uncle Clive's Greatest Hit:

THE ZX SPECTRUM

We pay tribute to the computer that created
an entire ecosystem of programmers,
publishers, hardware makers, and gamers

WRITTEN BY RYAN LAMBIE



▲ Despite his befuddlement at the ZX Spectrum's success as a games machine, Sir Clive Sinclair was a regular sight in magazines covering the format.

One cold Christmas in 1977, Mel Croucher was at a house party somewhere in Cambridge. Wandering into the kitchen, Croucher encountered a tall man wearing large round spectacles, his bald head fringed with a thin halo of red hair. "We fell to talking about a forthcoming consumer opportunity for microcomputers," Croucher recalls. "He told me that the purpose of home computers was to conduct personal accounts, solve mathematical problems, and make inventories."

At this point, Croucher had recently already set up what is widely credited as the first video games company in the UK, Automata, which made titles for the Commodore PET. That December, Croucher used a local radio station to broadcast a blast of data, which listeners could then record onto audio cassette and load into their computer. With this in mind, Croucher was openly amused by the bespectacled party-goer's argument that computers were for boring things like accounts. "I told him that the purpose of home microcomputers was to be very silly and play games," Croucher says. "He looked at me as if I was bonkers, which indeed I was."

Not long after this exchange, the bespectacled man made his excuses and headed for the bathroom. Puzzled, Croucher tapped another party-goer on the shoulder and asked "who that miserable bald bloke with the shiny round specs was."

"The ZX Spectrum changed the world for everybody at that party"

"Him?" the party-goer replied. "Don't mind him – that's Clive Sinclair."

"A wee while later," Croucher says now, "the Sinclair ZX Spectrum changed the world for everybody at that party, and a whole bunch of people beyond."

For a generation that used it, the ZX Spectrum was the gateway into a whole new medium. At a time when computing was insanely expensive, it brought programming and video games within the reach of just about everyone. And then there were the indelible memories it left behind.

The clunk and click of a cassette going into a player. The bleep and chirp as games loaded – slowly – from yards of unspooling audiotape. The fleshy quality of the first generation computer's keys. Its instantly recognisable palette of 15 garish colours.

On its launch in 1982, though, the ZX Spectrum was still just the latest in a long line of products from Cambridge's Sinclair Research Limited. ➔

RUBBER KEYS

The original ZX Spectrum was designed by Rick Dickinson, and while not everyone warmed to those rubber keys, its compact form factor made it instantly recognisable. "Everybody remembers their first time," Mel Croucher jokes. "Springtime 1982, issue one, black cardboard box the size of a cat's coffin, polystyrene sandwich packing, crappy cassette that fell on the floor and cracked straight away, tasty black casing with that cheeky little rainbow bottom-right, kindergarten keyboard skinned with grey fetish rubber – the blue keys were for latecomers. But the most memorable thing of all was my excitement at having 48kB to play with. Wow! I started programming using punch cards and less than 1kB, on a mainframe that cost more than a house. The ZX Spectrum changed everything."



▲ The ZX Spectrum went through several iterations in its lifetime, from the tiny issue one pictured here to the chunkier +2, +2A, and +3.



▲ Programming twins Philip and Andrew Oliver still have an original ZX Spectrum in its box.

school playground, early game publishers, and the gaming magazines that did the real marketing for the Spectrum!"

Mel Croucher's Automata, which had moved from the Commodore PET to making games for the ZX81, was soon making some of the most innovative games for the ZX Spectrum by 1983. *Pimania* and *My Name Is Uncle Groucho*, *You Win A Big Fat Cigar* mixed video games with real-world adventuring, and physical prizes for the first people who could complete them. Then there was *Deus Ex Machina*: a kind of interactive prog rock album, with Ian Dury and Jon Pertwee providing voices.

As the video game market matured, games moved from being sold via classified ads and small conventions to major stores like Boots and WH Smith. It was the first clue that video games were truly becoming mainstream. All the same, many of the earlier games programmed for the ZX Spectrum retained a uniquely British flavour; *Skool Daze* was a slice-of-life adventure about a kid trying to steal his less-than-glowing school report from the headmaster's office. *Wanted: Monty Mole*, the first in a series of furry platformers, was inspired by the mid-1980s miners' strike.

"In my overly long experience, I have never known such a creative time for the British games industry as the early 1980s," Croucher tells us. "The progress we made and the originality we

COVERTAPE WARS

One of the major selling points for ZX Spectrum magazines were the cassettes that often came taped to the front. Initially, these contained one or two hand-picked games, some old releases, others original titles exclusive to a particular mag – the superb *Boulder Dash* clone, *Earth Shaker*, for example, was given away on the cover of Your Sinclair. Towards the end of the Spectrum's life, though, magazines began stuffing more and more games on their covers: the quality of the games became increasingly uneven, while the publications themselves grew thinner. "They were a mixed blessing, I suppose, and some were certainly better than others," Matt Bielby recalls. "But when I was editing YS, they helped us become the undisputed best-selling Spectrum mag, so I have that to at least partially thank them for."

force-fed the public has never been bettered since. Everything the global market takes for granted now was founded then in terms of concepts, protocols, and coding, all right here in our bedrooms and garages, and all without any involvement with the corporates."

At the time, many of the people developing these games weren't a great deal older than the kids playing them. Eugene Evans, the young co-founder of Liverpool's Imagine Software, leapt to national attention when newspapers began to report that his programming prowess had turned him into a sports car-owning prodigy with a reported annual salary of £35,000 a year. In reality, the Evans story was all so much marketing hot air, but it was emblematic of a new industry whose possibilities seemed limitless. Magazines often ran adverts from publishers looking for new games in exchange for cash; young designers like Matthew Smith, creator of *Manic Miner* and *Jet Set Willy*, were certainly doing well – if not exactly becoming millionaires – from the sales of their games. ➔



▲ Speccy games were easily recognisable thanks to their 'attribute clash', which meant only two colours could appear in one 8x8 pixel block.

Philip and Andrew Oliver, two kids from the West Country who started making games while they were still at school, had first begun programming on the Dragon 32 earlier in the 1980s. By the end of the decade, though, the Olivers had become arguably the most prolific programmers for the ZX Spectrum, having made the likes of *Dizzy* and its assorted sequels and spin-offs, and such titles as *Advanced Pinball Simulator* and *Grand Prix Simulator* for publisher Codemasters. "The low cost of the Spectrum and diverse catalogue games made it an affordable computer that inspired a generation of players and game developers," says Philip Oliver. "This created the perfect ecosystem for the British games industry to grow."

"Buying a copy of Your Sinclair in its heyday was like joining a club"

As the ZX Spectrum scene burgeoned, so too did the magazines that covered it, which soon evolved from stuffy hobbyist tomes to less formal publications that reflected their young, enthusiastic readership. Your Sinclair, for example, had begun life as the more serious

Your Spectrum, but by the late-1980s, had grown into an entertainingly anarchic publication with its own unique sense of humour.

Buying a copy of Your

Sinclair in its heyday was like joining a particularly friendly club: there were reviews and previews, as you'd expect, but then there were odd, surprising things like tabloid-style photo-stories, little cartoons, or letters pages full of curious observations from readers.

"It certainly reflected the types of people who read the magazine and interacted with the YS team on the regular," recalls Matt Bielby, who edited Your Sinclair from 1989 to 1991. "The letters page was extremely fun to do, as opening each day's post was always a bit of an adventure – you never knew what you were going to get. I loved the challenge of working with illustrators for the covers, and the thrill of getting the final painting in the post – a nerve-racking moment,



▶ The ZX Spectrum's legend continues to this day. Programmers are still making games for it, and the ZX Spectrum Next is a modern take on the original hardware.



RYAN'S TURN

▲ Another Julian Gollop classic, *Chaos*. When played with a group of friends, this turn-based wizard-'em-up truly lived up to its title.

as you never had the time or budget to replace whatever it was they'd done, so you really were at their mercy. And I loved the individual brilliance of some of our contributors. When Duncan MacDonald did a script for a photo love story, or Whistlin' Rick Wilson recorded the sweetest love song to fill up the end of a cover tape, you'd find me grinning from ear to ear."

While the games industry continued to grow through the late 1980s, however, the ZX Spectrum itself remained relatively static. The ZX Spectrum 128 belatedly emerged in 1985, upping the computer's RAM and adding a heatsink to the side, but Sir Clive seemed more smitten by the Sinclair QL: a high-end computer that, with a retail price of £399, was intended as the fancier counterpart to the ZX Spectrum. It wouldn't be a silly games machine like the Speccy, but instead, a deluxe business machine designed to compete with Apple and IBM's offerings. Released in 1984, the QL was a commercial failure, was discontinued in 1986, by which point the Sinclair brand had been purchased by Alan Sugar's rival firm, Amstrad.

The ZX Spectrum continued to evolve outwardly at its new home; the +2 featured a revised keyboard and integrated tape player; the +3 was the same again but with a 3-inch disk drive replacing the tape player. There was also a +2A, which, just to confuse everybody, was a +3 but with a tape player replacing the disk drive. Meanwhile, the ZX Spectrum even gained a foothold overseas, with the system enjoying a certain success in Spain and Portugal thanks to Timex's iterations of the machine for those markets, while unofficial clones emerged in eastern Europe and the USSR.

What never emerged, though, was a true, next-generation successor to the ZX Spectrum. The

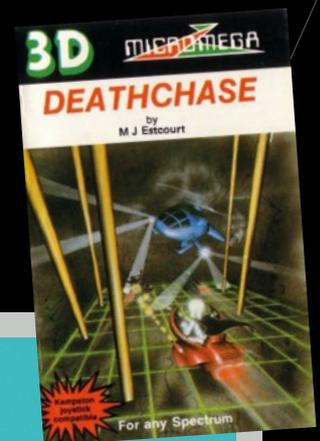
THE SPECTRUM'S FINEST

What was the best ZX Spectrum game ever made? For pure replayability, we'd plump for Julian Gollop's multiplayer strategy classic, *Chaos*. Others, like veteran editor Simon Brew, cite more action-heavy titles like *Midnight Resistance*, *Green Beret*, *Chuckie Egg*, and *Dynamite Dan*. One game often singled out as the ZX Spectrum's absolute finest, though – not least in the last edition of *Your Sinclair* – was *Deathchase*. A pseudo-3D shooter that riffed on a chase sequence from *Star Wars: Return Of The Jedi*, it was, as Kim Justice puts it, "Such a simple game yet so intense. You're weaving in and out of trees, trying to blow up bikers... classic."

Speccy's playground rival, the Commodore 64, got the 16-bit Amiga 500 in 1987, which soon became one of the best-selling computers for playing games in the UK. The closest the ZX Spectrum got to a follow-up was the SAM Coupé, a stylish-looking machine introduced in 1989 by a company called Miles Gordon Technology. It was compatible with the Spectrum, and with a faster CPU and more memory, could have been considered its logical successor. It was still an 8-bit computer at heart, though, making it wildly off-pace compared to the Amiga, and it was ultimately discontinued in 1992 following poor sales.

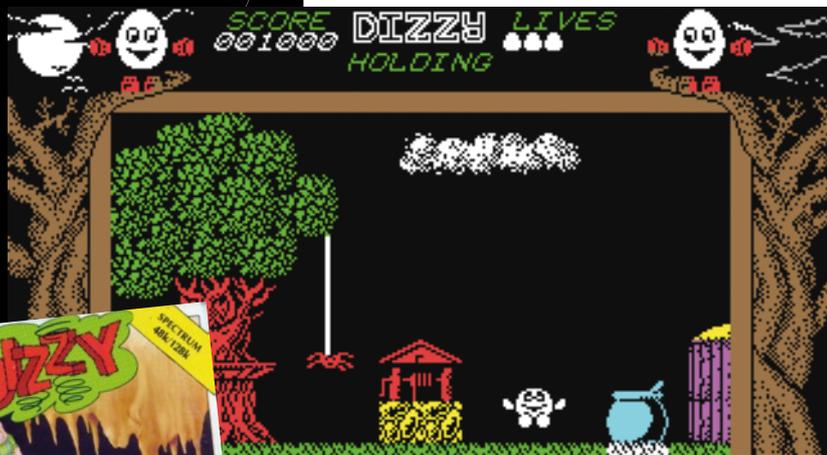
With the benefit of hindsight, it's hard not to wonder what might have happened had Sinclair put his restless energy into making a true ZX Spectrum follow-up: one that recaptured its ➔

▼ *Deathchase* – often called *3D Deathchase* – managed to wring a fast-paced and exciting shooter out of the Spectrum's 3.5MHz processor.



Interface

Uncle Clive's Greatest Hit: the ZX Spectrum



▲ The Oliveras programmed dozens of titles for the ZX Spectrum. *Dizzy* and its sequels are perhaps the most fondly remembered.

ease of programming and affordability, but in a package that could compete more directly with the Commodore Amiga. "Would it have been a hit? Perhaps, if it had been cheap and accessible enough," Matt Bielby says. "But Sinclair didn't feel like a company that had it in it to create a dynasty of products, like Apple has. The approach seemed more scattershot, with occasional hits and as many brave failures."

From the mid-1980s onwards, it was those brave failures that Sir Clive Sinclair would become widely known for: the C5, his noble yet somewhat undercooked electric vehicle, became the butt of jokes for years in the British media. Even add-ons for the ZX Spectrum, which might have enjoyed the benefit of its broad install base, struggled to take root: the ZX Microdrive, for example, was intended as a cheaper medium than a conventional floppy



▲ *Skool Daze* was quite ahead of its time: it was essentially a miniature sandbox where you could roam the school grounds, causing trouble as you saw fit.

disk, but it was still tape-based, like a cassette, and ultimately proved unreliable.

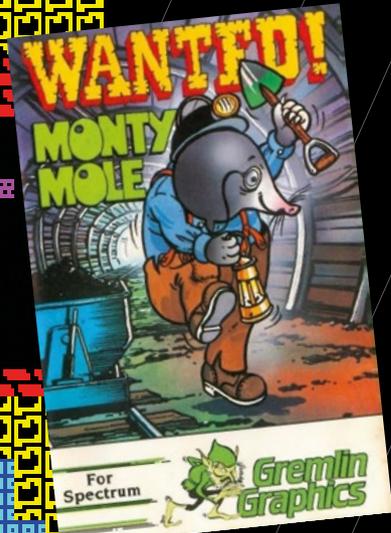
What's undeniable, though, is just how long lasting and loyal the ZX Spectrum's following remained. Sir Clive Sinclair may have come to resent his association with what had become a games machine, but its popularity remained strong over a decade after its initial launch. Even as the Amiga market grew in the early 1990s, games were still being made and enjoyed on the ZX Spectrum. Gradually, though, the magazines grew thinner as the 1990s went on; Crash was swallowed up by Sinclair User, which in turn ended its run in April 1993. Your Sinclair published its final issue that September. By this point, Matt Bielby had moved onto other magazines, including Amiga Power, Super Play, and Total Film, but the spirit of the ZX Spectrum and Your Sinclair remained with him long afterwards. "Part of the YS ethos – if somewhat disguised – remained with SFX and Total Film and whatever else. The idea we should always try harder than our rivals, attempt to be funnier, and embrace original ideas came from YS as much as it came from anywhere. I like a magazine that can surprise you, and there was always an element of surprise to Your Sinclair."

More broadly, the ZX Spectrum's impact on the British games industry has lingered, too. Some of its biggest names – Chris and Tim Stamper, whose studio Ultimate Play the Game later became Rare, XCOM designer Julian Gollop – first began making games on the Speccy. When Sir Clive Sinclair sadly passed away at the age of 81 on 16 September 2021, his contribution to computing and the games industry was widely – and deservedly – singled out for praise. The ZX Spectrum's impact was, Bielby argues, "Absolutely huge. It was so accessible and adaptable, and it encouraged a slightly anarchic, punky, do-it-

BASIC INSTINCT

The Spectrum's built-in BASIC brought programming within the reach of just about everyone, with a pair of manuals bundled with the computer, coaxing its owners into learning the language. Sadly, it was a skill that often fell by the wayside as Spectrum owners upgraded to newer, less open systems. "I programmed a BASIC adventure game, inspired by *Grange Hill*," recalls Simon Brew. "It was terrible, but it was mine. Well, until the tape bugged up and I lost the thing. I used to write little programs here and there, and was doing so right up until I eventually bit the bullet and asked for an Amiga for Christmas. When that arrived, the jump in programming skill was too pronounced, and it was a small hobby I never got back."

SCORE: 00090



▲ Before the big publishers started moving in later in the 1980s, Spectrum games – like *Wanted: Monty Mole*, shown here – often had a palpably British feel.

yourself approach to gaming. And it gave so many people access to technology they could never have afforded otherwise. Really, it was crucial.”

“Many of us owe our careers to Sir Clive,” concurs Eben Upton, creator of the Raspberry Pi, “either directly, having grown up programming the Spectrum, or indirectly, having grown up with the BBC Micro – Chris Curry of course having famously been a Sinclair employee before founding Acorn. Cambridge today is full of people and companies that can trace their heritage one way or another to Sinclair Radionics or Sinclair Research.”

Indeed, it’s hard to imagine a games industry without the ZX Spectrum. “Oh, it would have been

very different,” says YouTuber and Wireframe columnist Kim Justice, whose channel is a trove of stories about the British computing boom. “It probably would have been a lot harder for folks to get into, seeing as one of the big things about these computers was the low cost of entry. You could even argue that the world of computers would have looked completely different, seeing as Atari’s Jack Tramiel was inspired to make a budget computer from Sinclair’s systems. I think there’d have certainly been a lot less people making games, which would be a shame – you got a lot of character from Speccy games that were quite unique to it.”

“It encouraged a punky, do-it-yourself approach to gaming”

“Look around – look at the people who have stepped on its shoulders, and how people have stepped onto their shoulders in turn,” says Simon Brew, who edited *Micro Mart* magazine between 2000 and 2011. “It started a cycle that I don’t see stopping. Personally, the Spectrum is the reason I’m here. The Spectrum didn’t just get me into computing, it got me into magazines.”

“Sir Clive was the quintessential British boffin,” adds Philip Oliver. “But he was also flawed when it came to business, marketing, and his inability

to see games as the route to his success. Like many, including Steve Jobs, games were seen as a frivolous use of their powerful computers. We were

obsessed with making games and wanted to meet Sir Clive at a game show, but he never attended them, so we never met him.”

After that random encounter in 1977, Mel Croucher never got to meet Sir Clive Sinclair again, either. But like so many of us, he owes a debt of gratitude to the inventor who unwittingly helped create the British games industry. “While Clive Sinclair was alive, I never apologised for my sin of laughing at him, and I never thanked him for his gift to us all,” Croucher says. “So here goes. Sorry Clive, even though I was right and you were wrong. You enabled us all to be very silly and play games, and I am forever thankful to you.” 🐹

A restless farewell



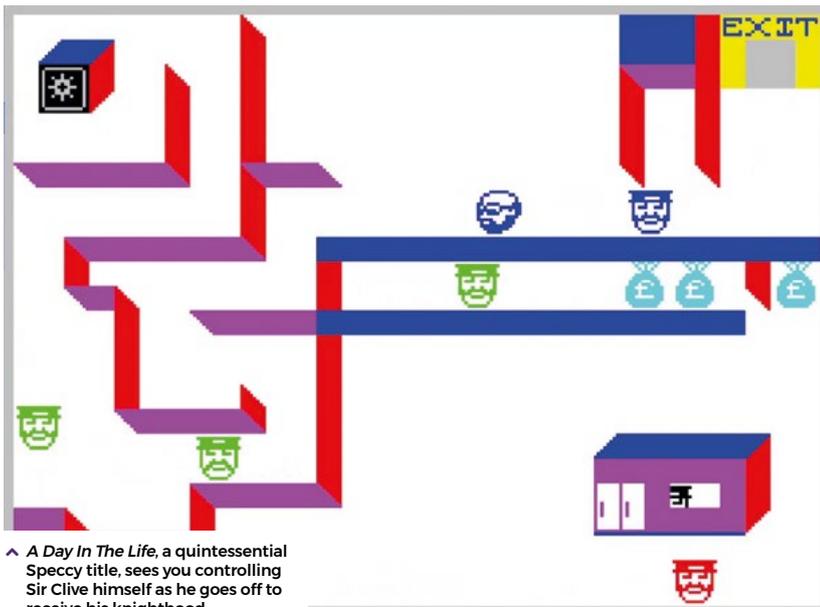
KIM JUSTICE

Kim Justice is a YouTuber, streamer, and writer who specialises in the world of retro gaming. If she isn't making lengthy documentary videos about old games and companies, she's probably chatting and mouthing off about them live to a dedicated handful of people.

Sir Clive Sinclair's passing on 16 September marked another ending in the saga of the Great British Inventor – those who pounded away in their sheds and changed the world, the John Logie Bairds and Trevor Baylises and what have you. The idea of the 'Great Inventor' is as much an image as it is a reality, of course – this is certainly true in the case of Sir Clive. For all the marketing there was of the Uncle Clive persona in the early 1980s, Sir Clive was more the boss of a skilled research team than he was a solitary man in a shed – but the products that Sinclair made were undoubtedly a product of his own vision and his character, for better or worse. Everything from the great successes like the ZX Spectrum and calculator ranges to the more infamous C5 and Black Watch have the man written all over it in ways that you simply don't get from products created these days.

Of course, one of the great paradoxes of Sir Clive is how he grew to resent the very creation, the ZX Spectrum, that made him famous and led to his recognition and knighthood – a large amount of that having to do with the cheap computer becoming a platform for playing games more than anything else. While we may never know if he shouted about being known as the man who brought you "Jet Set F***ing Willy" in the corridors of the Sinclair Building in Cambridge, we can certainly picture it occurring. He could never reconcile the less serious nature of computer games with his expressed intention of creating inexpensive, accessible computers that would teach the people the ability to learn how to code, something he felt was essential for the future – he didn't give thought to the idea that the Spectrum was succeeding at that, and computer games were what people were largely choosing to make. Indeed, this was a big reason why he threw himself into less advisable products like the business-g geared Sinclair QL – sadly his creative mind was never quite matched by his corporate acumen.

A large part of Sir Clive Sinclair's legacy can be found in just about every Spectrum game – few software libraries are so tied up with the philosophies of its creator, even beyond games that directly referenced the man, such as *A Day In The Life* and *Revenge of the C5*. The Speccy had a great deal of unique characteristics from the BASIC to the colour clash and the infamous rubber keyboard that coders worked with, often turning them from apparent weaknesses to strengths – and in any Spectrum game, those efforts are very apparent. Whether you play a classic from the machine's heyday or any one of the homebrew titles people are releasing on the Speccy to this very day, it's hard not to think of Sir Clive and his design philosophy – and in this way, his work will always be remembered long after other more modern computers have faded. 🐣



^ *A Day In The Life*, a quintessential Speccy title, sees you controlling Sir Clive himself as he goes off to receive his knighthood.

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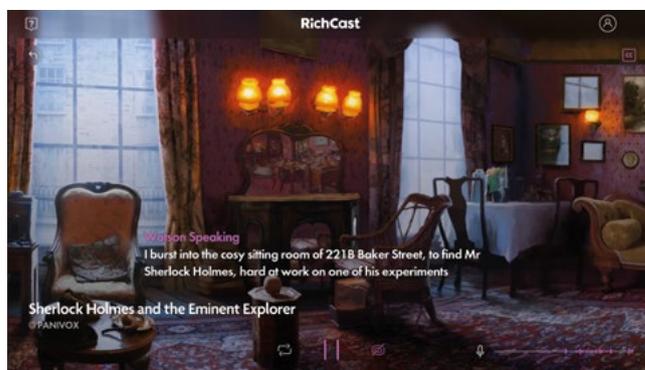
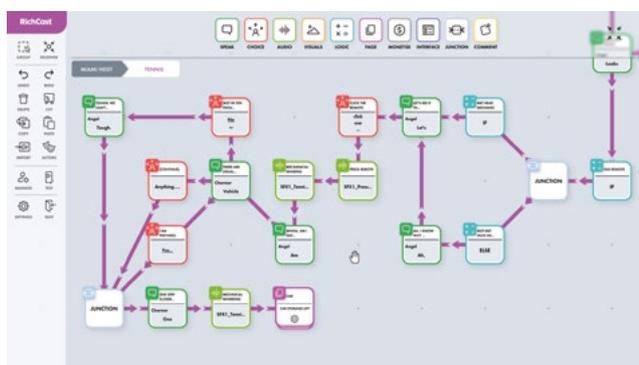
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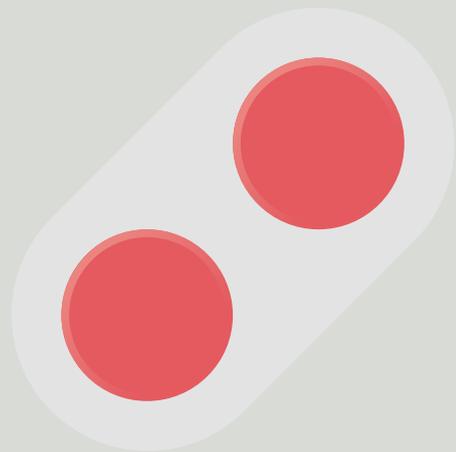
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The lost art of HANDHELD DEMAKES

As the lines blur between consoles and portable systems, we remember the conversions that pushed handheld hardware to its limits

WRITTEN BY ALAN WEN





Traditionally, handheld gaming hardware has always been a few steps behind its home counterpart, arguably the same way home consoles used to lag behind arcade boards. The arrival of the Nintendo Switch, however, became a significant step in eroding divisions between the two. Nintendo's hybrid is, of course, the most underpowered system of its generation, so there's still a kind of marvel when porting houses like Panic Button and Saber Interactive deliver 'impossible' ports like *DOOM Eternal* and *The Witcher 3*, respectively.

A cross-platform release, in fact, is becoming applicable to both home and portable platforms, as high-end smartphones mean games like *Fortnite*, *Genshin Impact*, and *eFootball* (formerly *PES*) ship with the same features, even capable of cross-play and cross-save, as their larger counterparts. Cloud gaming, on the other hand, means any game can technically play on any screen regardless of what's under the hood.

Platform parity is the utopia mainstream gaming has always been trending towards, and who wants to go back to playing the inferior handheld version of a blockbuster title that was meant for the big screen? In modern parlance, you could refer to handheld conversions as demakes: stripped-down versions of the original game, in some cases with the perspective shifted down from graphically intensive 3D to 2D.

As we discovered when we spoke to several developers who cut their teeth in this era of

demakes, though, it was also a thrilling creative frontier as they followed the late Gunpei Yokoi's philosophy of applying lateral thinking with withered technology.

ADVANCED TRICKS

The Game Boy Advance was a 32-bit handheld console, but it wasn't designed with 3D games in mind. Not that this stopped many plucky developers from making the attempt – indeed, one of the GBA's launch titles was *Tony Hawk's Pro Skater 2*, in which Vicarious Visions managed to take Neversoft's original PSone code and transfer it to the handheld, faithfully recreating ▶

- ◀ It may lack multiplayer, skater customisation, and a level editor, but *THPS2* on handheld really did retain the core Tony Hawk experience.
- ▼ While *THPS2* on GBA was greenlit after Tony Hawk himself saw early mock-ups, we doubt this included seeing his descaled pixelated figure.



- ▼ Naturally, *The Sims 3* had to be pared down for DS, though newcomers might prefer it over the more complicated PC and console versions.





▲ Matt Conte, once lead programmer at Vicarious Visions' handheld division Team Baisoku. These days his challenges lie in VR at Oculus.

the core experience, including the skaters and levels, in isometric 3D.

"That's why people still to this day say that it feels like it did on the PlayStation – it's because we're actually running the PlayStation code on the Gameboy Advance," explains Matt Conte, lead programmer on *THPS2* and part of Vicarious' handheld division, which called itself Team Baisoku. (This was an in-joke based on the one untranslated function from Nintendo's Game Boy Color documentation, which could set the CPU to double-speed; Vicarious Visions considered itself an underdog that had to work twice as fast as other studios.)

The *Tony Hawk* port was all the more miraculous, as Nintendo had told the Vicarious team that the GBA could only run C code, not C++, the language Neversoft's code was written in. "I did all the low-level hacking to get it so that C++ would work on the platform, gave that back to Nintendo, and they published it on their developer website," said Conte. "We were a little hungrier back in those days and weren't afraid to take some risks. Even when Nintendo, the platform owner, was telling us we couldn't do something, we went ahead and did it anyway."

Even the assets used were based on the originals, albeit scaled-down, while the environments had to be reinterpreted and rescaled to fit an isometric perspective. Perhaps the biggest challenge, however, was animating the skater. "This renderer was basically a size optimisation," Conte explains. "A lot of Vicarious Visions games up until that point had characters rendered in 3D but as a 2D sprite. But we couldn't do that from an

"Even when Nintendo was telling us we couldn't do something, we did it anyway"



▲ The DS's touchscreen undoubtedly made *The Sims 3* more feasible, saving both screen real estate and making it easy to drag and drop objects.

isometric point of view because the skater can go in literally any direction, so the storage space would have just been almost infinite."

Indeed, Conte estimates that *THPS2* had about 5000 animation frames, while the sequel went up to 7500 – all of which had to be stored in just a few megabytes of memory. "Memory was always an issue," he says. "On *THPS3*, the challenge was, if I can't get this optimisation to work, we'd have to cut a level out of the game. Those are the sorts of hard decisions and cuts you have to deal with in a super memory-limited environment." It's nonetheless a testament that this GBA port was a success – one that led to handheld treatments for subsequent iterations, and it was even used to adapt Sega's *Jet Set Radio* in a similar fashion.

SLIMMING DOWN SIMS

While handheld teams might feel like the B-tier of game development, having to make do with less powerful hardware, these smaller, often outsourced studios were also avenues for entering the games industry in a time before indies became prominent, not to mention an opportunity to work on big IPs without requiring the same big-budget resources. This included Daniel Collier, who was a producer and programmer at Exient, an Oxford-based

PORTABLE PIONEERS

There are many more stories of handheld ports we could have featured, including the wave of Sega titles handled by publisher THQ (*Super Monkey Ball Jr.* was arguably the best of these), but one team worth highlighting consists of programmer Fernando Velez and graphic designer Guillaume Dubail who made the GBA's only 3D platformer, *Asterix & Obelix XXL*. The duo released other 3D games on the system, including ports of *Driv3r* and *V-Rally 3*, while their last handheld title (under studio name VD-Dev) was the third-person shooter, *IronFall: Invasion*, which made use of the C-stick on the New 3DS. While the studio is still active, Velez sadly passed away in 2016.



◀ Developed by Climax London, *Serious Sam Advance* was a surprisingly solid shooter for the GBA.



company which had made many handheld ports for EA in both the GBA and DS era, including a port of *The Sims 3* to the latter in 2010, a year after the PC version released alongside other console platforms.

“Whenever you port something to a handheld, you’re going to be accused of crunching down a game,” he says, all too aware of the prevalent attitude that many handheld games are cheap lazy tie-ins that could be considered officially sanctioned knock-offs. That certainly could have been said for a few entries of *The Sims* on GBA, which really were just a series of minigames completely divorced from the core series. “That was one of the reasons for *The Sims 3*: we wanted to make a proper *Sims* game because we didn’t want that criticism.”

EA not only greenlit the port, but provided Exient with plenty of resources, including the largest ROM size available for the DS game cards, a year of development time (which was “a lot back then for a handheld title!”), and even the source code, though the latter was just for reference. What the team did take from the PC version of *The Sims 3* were the models and animations, which then had the details crunched down so that it was manageable on the DS. “I think the artists actually did have to take the model and scale it down, removing the polygons from it to make it workable, so there was a human process,” Collier adds. “I remember



◀ With just enough choreographed setpieces and explosions, you’ll never know that *CoD* was painstakingly boxed out for DS.

▼ Daniel Collier, a former programmer and producer at Exient, an Oxford-based studio he joined in 2003.

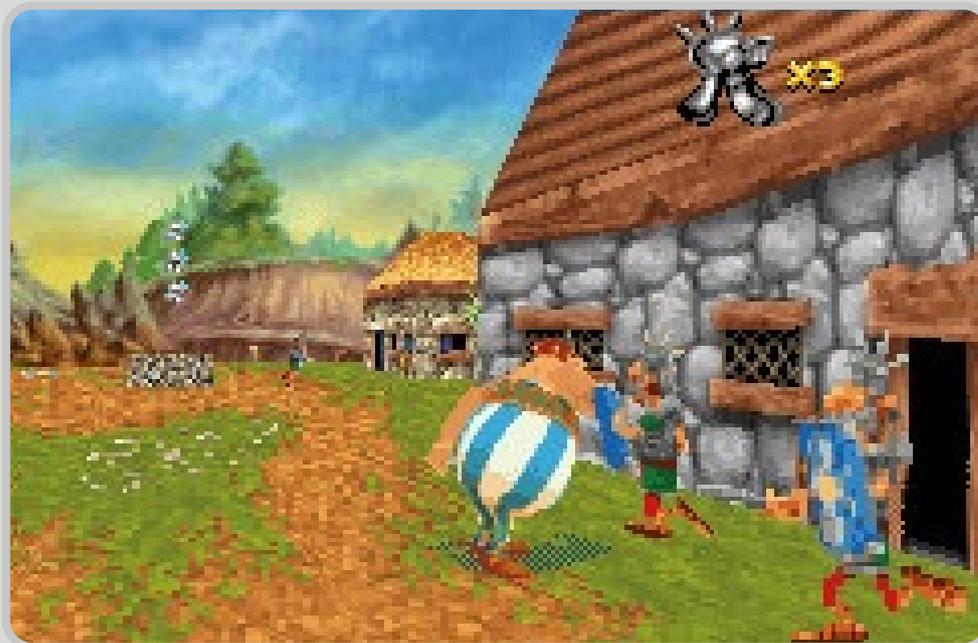
writing a tool to sort of crunch down animations, which the artists would also go in to tidy up.”

Not all features made it across, notably the absence of babies as well as *The Sims*’ famous woohooing – though it’s unclear whether that was down to technical limitations or because the DS version had a lower age rating – although having an outside world you could explore, new to the series, was something they replicated. “We were also going to just have a flat 2D map that you click to move to different places, but in the end, we were able to add a 3D world you could move around,” said Collier. “There were ▶



> Most developers would downsize a 3D platformer into a 2D side-scroller for GBA, but for Velez and Dubail, it was go XXL or go home.

✓ Michael S. Lee was producer of all the *Call of Duty* DS titles at n-Space from 2007 to 2011.



a lot of decisions to be made about what we would bring over, but generally we did try and get the essence of it brought across."

While still a far cry from a full-fat PC experience, the Nintendo DS nonetheless marked the first recognisable iteration of Maxis' life sim on handheld. The system's dual-screen also proved useful for handling real estate, as well as providing the ability to drag and drop objects and buildings. An improved version was even made for the 3DS later, though this one wasn't handled by Exient.

BEYOND THE CALL OF DUTY

If there's a great example of trying to make an action-packed triple-A blockbuster for a platform it was never intended for, it's surely the *Call Of Duty* series. The prospect wasn't quite as impossible as one might expect, though. After all, before Activision's military shooter became an annual tent-pole, it even had a game on the ill-fated Nokia N-Gage, while Florida-based studio n-Space had previously developed a first-person shooter engine for the DS with a port of *GoldenEye: Rogue Agent*. But though you could refer to *Modern Warfare* on DS as a port – it even shared the same box art as the other releases – producer Michael S. Lee corrects us: "There is actually nothing 'port' about it," he says. "You can't take anything from a console and put it on a DS – it just doesn't work."

The handheld version doesn't even follow the same story as the mainline version. In fact, Lee recalls there was something of a strange secretive dance the developer had to engage in with its publisher at first. "Activision basically said to us, 'We can't tell you where the mainline [game's story] is going. We can tell you 'It's kind of going to be the Middle East', and we can give you general things like that, but you guys have got to come up with your own storyline,'" Lee continues. The story would also need to be approved or steered in another direction in case it touched on anything that the main studio, Infinity Ward, was doing at the time.





▲ The dual-screen was useful for displaying a map and equipping weapons, but also an opportunity to include minigames such as bomb-defusing.

This resulted in n-Space opting to set its games up as ‘companion’ titles, as Lee refers to the handheld’s characters (and effectively acknowledging n-Space’s role) as the ‘B-team’. While the idea of playing as a secondary unit whose actions support the mainline scenario may also set expectations for what a DS game would achieve, the team certainly didn’t want to settle for a half-baked experience that would short-change fans of the *Call of Duty* brand.

There was still an onus on creating ‘wow’ moments, a dramatic sense of scale, and of course loads of the big explosions that the mainline series is known for. Due to the DS’s limitations, from only being able to fit a maximum of 2048 polygons and its meagre memory space, levels had to be painstakingly mapped out almost like box rooms – all while giving players the illusion they were roaming an open, realistic environment.

“We had to be very decisive in how we did things, to be mindful of every coded feature, from texture to audio to characters on screen, the number of AI on screen – all that takes up memory,” explains Lee. “We sat in so many meetings whiteboarding out just where memory was being spent. We had to know everything that went in that game, and we had to account for every byte just to squeeze absolutely everything in. But if we could gain just 10kB back from one feature code-wise, we could add this

cool explosion to counteract that. We were sort of robbing Peter to pay Paul in the end.”

These developers’ handheld adventures were more than a decade ago now – many of those involved have since moved to other fields. Lee is no longer in game development, while both Conte and Collier now specialise in VR, a relatively new frontier with its own limitations to consider. Still, they all have a sense of pride in the handheld games they made, even if history does tend to gloss over them. Describing *THPS2* as the favourite project of his career, Conte says, “I think there’s always going to be a place in my heart for handheld consoles. We had so many problems, and we just ran at them head-on.”

Collier even regards the Switch as a bit “dull”, despite its obvious plus points. “The DS and GBA in their time were new and exciting handhelds,” he says, “but because people understood they weren’t anywhere near console quality, you also had a bit more leeway in reimagining games, and new ideas can come out of that.”

“What I liked about the DS was the idea of not being able to just throw a ton of money or polygons at it to solve a problem,” says Lee. And while he recognises the development landscape has changed – with huge advances in portable tech, especially in mobile – there are still new hurdles to overcome. “The challenge is different, not on how to keep it afloat like we did – it’s more of how do we make it look as real, as authentic, as graphically innovative? How do we push the boundaries?” ^W

PLAYDATE WITH DESTINY

While this feature is primarily looking back on and, therefore, lamenting the age of bespoke handheld experiences, indie company Panic looks set to keep that spirit alive with the Playdate, a 1-bit monochrome handheld with a unique hand crank controller. Don’t expect attempts to demake any current-gen releases, though: rather, the system will host ‘seasons’ of exclusive games from acclaimed indie creators like Keita Takahashi, Xavier Nelson Jr., and Lucas Pope. Panic is also collaborating with Sweet Baby Inc, which is mentoring up-and-coming developers from marginalised communities.



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Toolbox

The art, theory, and production of video games

- 46. CityCraft**
Exploring Bloodhunt's virtual take on Prague
- 48. Design Principles**
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Make your own hazard-strewn level editor in Python
- 58. Zero-sum games**
What it is and how to use it in your own game designs
- 64. Narrative Design**
Three simple rules for making great investigative games
- 66. Source Code**
Code a bouncy homage to Bubble Bobble



▲ Design your own rock-strewn maps with our *Boulder Dash* level editor. See page 50.



▲ Take a look at how *Vampire: Masquerade - Bloodhunt* recreates the city of Prague - see page 46.

Designing Bloodhunt's battle royale city

Sharkmob's game director talks us through the design decisions that shaped Vampire: The Masquerade – Bloodhunt's Prague



AUTHOR
KONSTANTINOS DIMOPOULOS

Konstantinos Dimopoulos is a game urbanist and designer combining a PhD in urban planning with video games. He is the author of the *Virtual Cities* atlas, designs game cities, and consults on their creation. game-cities.com

I wouldn't dare call myself a connoisseur of battle royale games, but both pen and paper RPG Vampire: The Masquerade and the city of Prague hold a certain, almost unavoidable allure. I simply had to try *VtM: Bloodhunt* by Sharkmob, then, for it is indeed a battle royale game set in Prague, and one that also lets players run around and kill each other using interesting weapons and supernatural, vampiric powers. All in the middle of stunning re-creations of the city's landmarks and cobblestone streets.

Admittedly, I found myself thoroughly entertained by the actual game, and often impressed by the urban environment Sharkmob has crafted. Also, I had questions. Here, then, is Craig Hubbard, Game Director of *Bloodhunt*, to answer them, and tell us more about the urban and level design considerations that shaped the team's version of the city.

♥ Ensuring each district has a distinct visual character adds variety, believability, and makes the game easier to navigate.

If you had to describe *Bloodhunt's* Prague in a few words, how would you do it?

Craig Hubbard: It's a stylised, reimagined version of Prague's Old Town, that tries to capture and honour the beauty and spirit of the city. It also embellishes the geography, architecture, and character of certain districts, both for tonal and gameplay variety reasons, and to suit the IP.

Did setting *Bloodhunt* in the *Vampire: The Masquerade* universe influence your approach to city design?

Very much so. Our vampires spend a lot of time on rooftops, so it was important to pay attention to, and vary roof architecture and materials. The Environment Art team took a 'biome'-type approach, thinking of certain areas almost in terms of terrain features. Some areas have thickets of antennas and chimneys, some are more geometric and modern, some can be flatter or steeper, and so on.

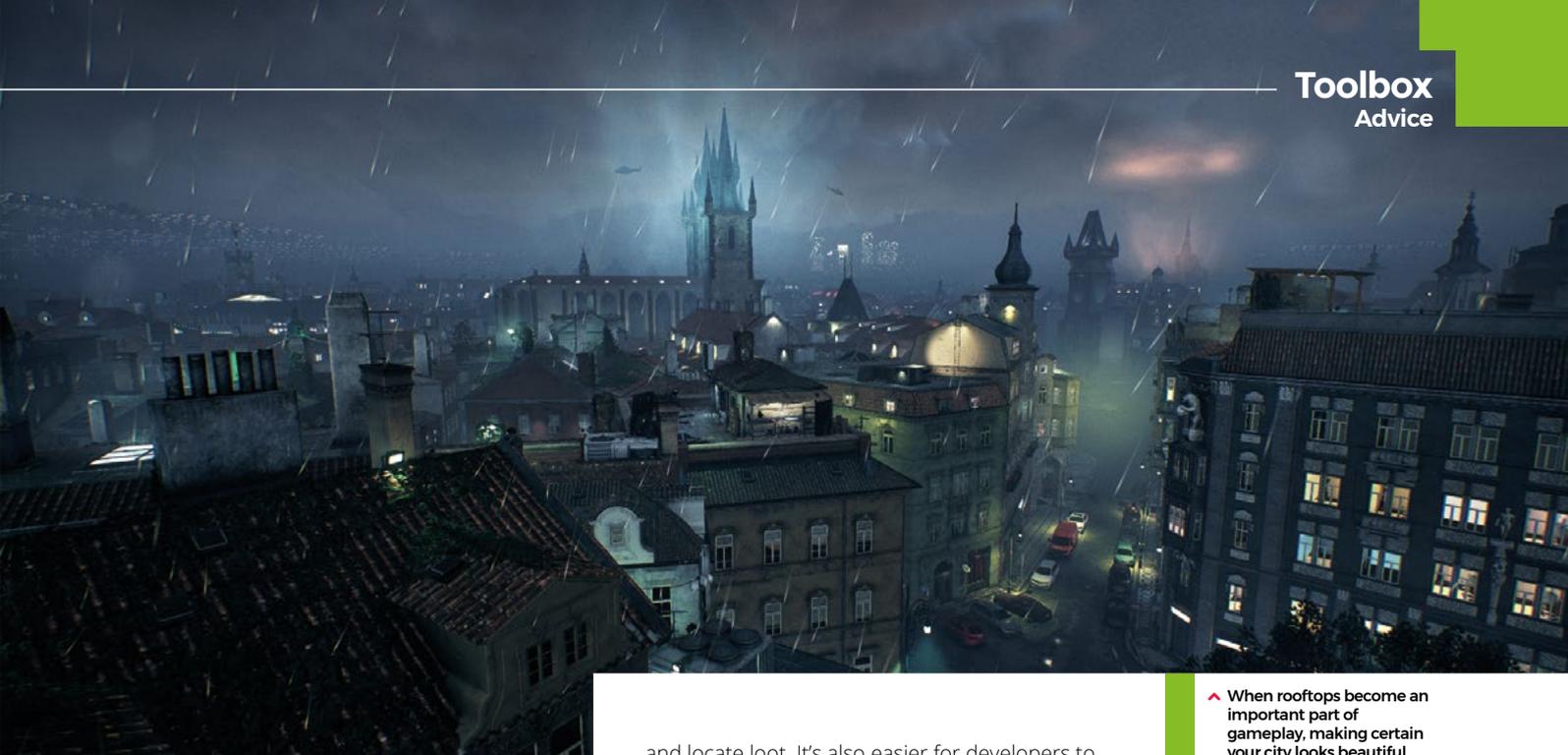
How much of the real Prague can we find in *Bloodhunt*?

The game includes a section of town east of the Vltava. Some of the more dramatic changes we made are at the periphery of the playspace, with the train station moved closer, an industrial-themed area added to the south, the unfinished mall and parking lot in the north-east, and so on.

What are your favourite places in your version of Prague?

Aesthetically, I'm very fond of the areas along the river, especially Rudolfinum and Charles Bridge.





I like to go to different parts of the map from session to session.

Condensing a city the size of Prague is always a challenge. How did you approach it?

The team decided on locations that had to be represented accurately, such as the Charles Bridge, the Astronomical Clock, Rudolfinum, and so on. We then determined where there was an opportunity or need to vary the landscape and add more exaggerated landmarks.

We started with a rough, basic layout that we could run around in, then continuously iterated to replace placeholder assets with increasingly polished versions. When the architecture and props had been placed, bug-fixing had taken place, and performance optimisations were done, we moved on to finalise lighting and colour-grading to try and provide each area with its own character and emphasise its atmosphere.

How faithful were you to the actual city?

I'd say the game is very faithful in certain places, especially when it comes to some of the more famous attractions of the city, and takes complete liberties in others, for all the reasons I mentioned. I guess it's somewhat similar to how cities are represented in films, where locals will notice that things are in the wrong places and some locations are dressed up a bit more dramatically than they appear in real life, but you can also recognise a lot of the actual geography.

What does a game city need in order to host a battle royale game?

Most battle royale games are set on terrains with structures scattered around, which makes it fairly easy for players to find their way around

and locate loot. It's also easier for developers to make sure that different locations provide varied combat experiences. Setting this kind of game in a high fidelity city at night with complete freedom of movement introduces a lot of challenges. It's easy to get lost or turned around and fights could get samey if the architecture were the same everywhere. Part of the solution was the biome-like approach I mentioned, but for gameplay variety and navigability, we decided to feature some landmarks that fit the themes and lore of the game, such as a big Gothic cemetery, an abandoned, under-construction mall, an entire block being torn down for renovation, etc.

How can city design also accommodate vampiric superpowers?

Once the setting was chosen, it became a filter for evaluating gameplay ideas. Basically, everything we did needed to work in our version of Prague. That went not only for the movement-oriented abilities, but also for the tactical or combat abilities. Ultimately, Prague is such a core part of the game's identity that it's not even something the team needed to consciously think about. It was just a given.

Urban rooftop battles are a fascinating idea. What were your level design considerations?

Being able to climb any surface presented a lot of challenges and headaches for level designers and environment artists. There was so much beautiful architecture in the city that is amazing to behold, but also presented challenges for our movement mechanics – it's very easy to get hung up on visually interesting irregularities and protrusions. So, there was a lot of iteration, and many compromises were made on the physical surfaces you interact with and the geometry you see. That's true in most games, of course, but it was especially important for us. 🗺

▲ When rooftops become an important part of gameplay, making certain your city looks beautiful from above is a clever idea.

PEN AND PAPER

Interested in seeing what playing *Vampire: The Masquerade* feels like in its natural habitat (that is, the tabletop)? Well, I suggest you grab a few friends, dice, snacks, and pencils, and then download the free *VtM 5th Edition Quickstart* booklet. It should be a nice introduction to pen and paper RPGs and role-playing as a vampire; it's also available right here: wfmag.cc/masquerade.

The principles of game design

How did the leap to 3D affect the games industry?
Profoundly, Howard writes



AUTHOR
HOWARD SCOTT WARSHAW

Howard is a video game pioneer who authored several of Atari's most famous and infamous titles. His new book, *Once Upon Atari: How I Made History by Killing an Industry*, is out now. onceuponatari.com

W

e've chatted about 3DO [see Wireframe issue 49, page 46 – Ed]. Now let's drop the 'O' and talk about 3D. Specifically, the transition from 2D to 3D.

It changed everything on both sides of the video game equation. 3D made the job of creating video games a lot harder, and it made the experience of playing a lot richer. 3D added a lot more than one dimension to the industry.

For developers, these differences mainly showed up as complexity. Making a 3D game is more involved than a 2D game at every level. Even the computer architecture is more complex. Handling polys, textures, and lighting requires specialised processors capable of managing all the additional calculations. This means more areas of programmer specialisation.

Of course, the increased workload on programmers is nothing compared to the

uphill climb faced by art and asset developers. Drawing a basic 2D bitmap graphic requires artistic talent and a drawing tool. Creating/animating a wireframe object and coordinating all the associated textures to make it look right requires a degree in mechanical engineering (nearly). In addition to a drawing tool, the 3D modelling artist must be able to use CAD systems and sophisticated animation tools. Managing all this while simultaneously accounting for changing camera positions and lighting, that's a lot of complexity. In 2D, the way you view the game rarely changes, but in 3D, the way you view a scene (the direction and lighting) all become much more significant factors. It's a whole new aspect of the gaming experience. And anytime you create a new aspect of the gaming experience, you create the potential for new and radically different gameplay options. That's tremendously exciting... to a game designer.

Is game design more involved in the 3D world? I guess it depends on your point of view (POV). Do you want to innovate? If so, you can start playing with POV because in a 3D world, the POV is simply the camera location, and that can become part of the gameplay! Shifting and changing your POV during play introduces a whole new style of gaming. I can use the camera to help me understand my position in the game scene (third person), or I can lock the camera in front of my face (first person) so that I see the world but never myself (which saves me an asset since I don't need a player avatar). Or I can allow the player to switch between the two for strategic advantage. 3D environments provide tantalising possibilities for game mechanics and



► The coin-op classic, *Defender*. No 3D software packages were required in the development of this game.



◀ Rockstar North spent \$5 million on the making of *Grand Theft Auto: Vice City*. Some of that money went to Danny Dyer, who did some voice work.

visual presentation. However, one corollary of complexity is: more possibilities, more problems.

With 3D, every aspect of video game creation becomes more complex, which means managing a development requires much more thought, attention, and flexibility. What with video game developers being the rogues' gallery they tend to be, it takes a very special kind of person to be able to coordinate and guide them without inspiring animosity or even mutiny. 'Herding cats' is the phrase frequently associated with managing game devs. It's a challenging job, to be sure, and one I have really enjoyed. But 3D made that a lot more work than it used to be.

As I mentioned at the outset, there are two sides to the video game token: making them and playing them. The advent of 3D has vastly increased the complexity of the play experience as well. For one thing, it makes playing video games more immersive and more visceral. As a point of reference, I remember playing *Defender* and *Robotron: 2084* back in the day, I would be so deeply into the experience I would 'kick-the-cabinet' in frustration on losing my last life. But I remember another time while playing *GTA: Vice City*, which was a truly 3D game. At one point, I accidentally jumped off a building into free fall. As I did, I felt my stomach in my throat: I had so bought into the game experience, that I genuinely felt as if I was falling in that moment. Holy crap! *That* is what I mean by 'immersive'.

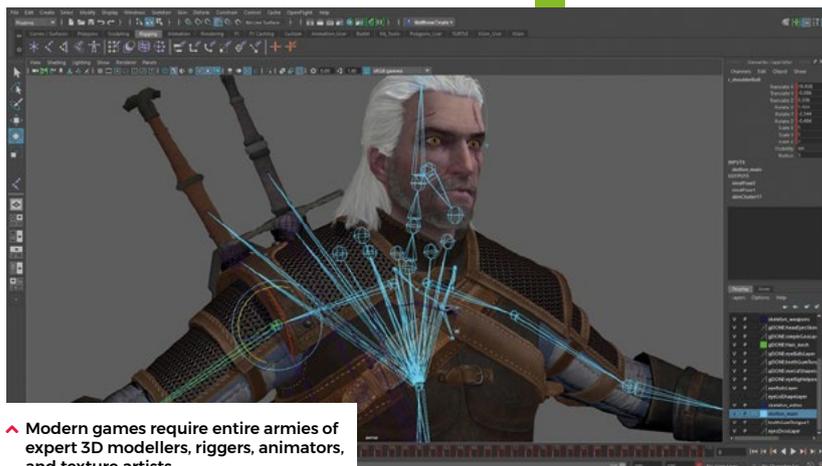
The advent of physics engines has a tremendous impact on the look and feel of a game, bringing them more in line with real life. As games become more realistic, the potential for immersion also seems to grow. Initially, there wasn't enough memory or speed to do

real physics in games, and they were sufficiently abstract that no one expected them to be real. Games just needed to be consistent within themselves and the player adapted to (and accepted) this world. The Uncanny Valley had yet to be formed. Games were compelling, but seldom mistaken for reality. 3D was the biggest step in the road to real-life simulation. It started to allow games to simulate worlds that increasingly matched our expectations of reality, and mixed it with our projections of what an imagined life *could* be. That's some powerful medicine. It can test (and sometimes shatter) boundaries. And raise important questions... Where does the game stop and life begin?

As our tech moves forward, so will our tech-integrated lives. The coming revolutions in virtual reality (and especially augmented reality) will take us a few miles further down the road toward Cyborg Junction. But I believe when historians retrace the journey, they will say the most significant step in reaching that destination was when video games made the transition from 2D to 3D. 🎮

NOW HIRING

Has 3D video game development changed the world? Absolutely! We started with 'one game, one programmer'. Now, many more programmers are needed to support the complexity. Oodles of artists are employed in various niches of asset creation. The penchant for world-creation invited by 3D has led to the hiring of many actors, musicians, and testers who might otherwise go unemployed. Colleges now have video game-oriented Engineering, Art, and Design curricula. Video game competition and spectatorship are growth industries. In a few short decades, game development has gone from 'What is that?' to 'What I want to be!'. 3D did that.



▲ Modern games require entire armies of expert 3D modellers, riggers, animators, and texture artists.

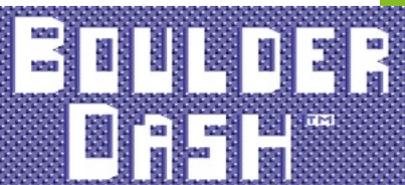
Source Code DX: make a Boulder Dash level editor in Python

In a Source Code special, Mark shows you how to create an entire Boulder Dash construction kit from scratch



AUTHOR
MARK VANSTONE

Mark Vanstone is the technical director of TechnoVisual, author of the nineties educational game series, *ArcVenture*, and after all this time, still can't resist game coding. education.technovisual.co.uk



Boulder Dash was a popular video computer game in the mid-eighties, and in Wireframe issue 30 (wfmag.cc/30), we showed you how to code your own miniature remake.

This time, we'll expand on that program to make a level editor, which you can then use to design your own puzzles for other players to navigate.

Before you get started, be sure to have a look through that previous Source Code article to familiarise yourself with how the program works – you can get the code and assets for it from that issue's GitHub: wfmag.cc/wfmag30. As a quick reminder of how the game works, it saw intrepid hero Rockford dig his way through underground caves to find gems, all the while avoiding the falling rocks. Those rocks not only fall downwards

if there's nothing to hold them up, but they'll also roll down onto other rocks if there's nothing to the left or right of them. Rockford's controlled with the cursor keys, and the aim is to collect all the gems to complete the level.

We'll continue writing our code in Pygame Zero based on the original program, but to incorporate an editor section, we change our window size to add an extra 200 pixels to the width. As before, our game screen is defined by a two-dimensional list which, in our original program, we filled with random items. For this version, we'll set the play area to a 'default' layout of all soil blocks with wall blocks around the outside to stop Rockford from going off the screen. Each location in the list matrix has a name: either **wall** for the outside boundary, **soil** for the diggable stuff, **rock** for a round, moveable boulder, **gem** for a collectable jewel, and finally **rockford** to denote our hero. Rockford is also defined as an Actor, as this makes things like switching images and tracking other properties easier.

The first thing to do to our program is to add a switch to turn the editor on or off. To do this, we'll define a variable called **editorState**. If this variable's set to True, we open the program with an extra 200 pixels on the right-hand side of the play area using **WIDTH = 1000**. When this area is



> The original *Boulder Dash* had its own level editor called the Construction Kit.



◀ When we first load the program, we fill the game area with just soil and a wall border.

shown, we'll need to draw all the elements we need to see in the editor. First, to keep things tidy, we make a function called `drawEditor()` which will be called from the `draw()` function. We probably want to display a title for the area – something like 'EDITOR' will do the job – and then underneath, print 'ON' if the `editorState` variable is True. We can toggle the `editorState` variable with a key press such as the `SPACE` bar. We do this by defining the `on_key_down(key)` function and then capturing the key press value. If the `SPACE` bar is pressed, we set the `editorState` to the opposite of what it is. The code below shows you how we do this.

```
def on_key_down(key):
    global editorState
    if key == keys.SPACE and WIDTH > 800:
        editorState = not editorState
```

To write an editor for the game, we need to be able to change the blocks that are in the play area. So here's the plan: we'll create a visual list of the available blocks which are clickable. When the block's clicked on, it becomes the currently selected item. Then if we click in the play area,

“We need to be able to change the blocks that are in the play area”

it will change the block to be the item we've selected. All we need to do to change what's in the play area is to change the item name in the items list and the display will update. We'll be using a small set of blocks for this example, but you can add new ones yourself. If you want to create new images for any new blocks, you'll

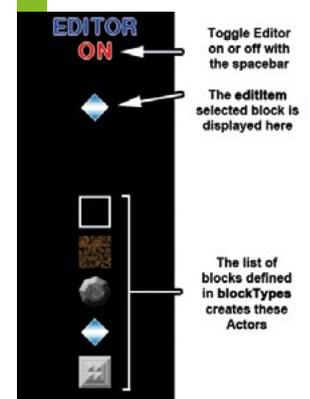
need an image editing program. If you don't have Photoshop, you can create new graphics with programs like GIMP or even Microsoft Paint.

There are also free online alternatives such as Photopea, which can export graphics as a PNG file – this is what you'll need for any new blocks. The block images are 40 pixels by 40 pixels in size and should be saved in the images directory alongside your program file.

BLOCK FALL

To create our visual list of blocks, we can create a list of Actors which will mean we can test them for mouse clicks. We'll call the list `blockTypes` and define them at the start of the program. Notice how we can define a screen position for them so we can have them neatly arranged in a line. If we had more blocks then we could arrange them in a grid format. You can add your own ▶

▼ The editor panel. This could start to look a lot busier once you start adding your own block types.



Toggle Editor on or off with the spacebar

The editItem selected block is displayed here

The list of blocks defined in blockTypes creates these Actors

► Our earlier Source Code *Boulder Dash* game from issue 30 had randomly generated blocks.

EARTH SHAKING

If you owned a ZX Spectrum in the early 1990s, you may have encountered one of the best *Boulder Dash* clones ever made: *Earth Shaker*, programmed by Michael Batty and given away as a cassette on the cover of Your Sinclair magazine. With large scrolling levels and a complex array of additional block types – such as a Gravity Stick, which made rocks and other items float for a period – it was a slick and polished iteration of a familiar classic. A few months later, Your Sinclair published a level editor, which, like the one introduced here, allowed readers to design, save, and play their own maps in the original game. You had to type in reams of BASIC, though, but thanks to the wonders of the internet, you can now download it from World of Spectrum: wfmag.cc/earthshaker.



blocks here if you want to expand the game, and you can define new blocks in the same way with their name being the file name of the image without .png at the end. To display our list on the screen, we'll need to add a `draw()` command for each item on the list. See the code below to learn how the list is defined and how our `drawEditor()` function is shaping up.

```
blockTypes = [
    Actor('blank', center=(900, 250)),
    Actor('soil', center=(900, 300)),
    Actor('rock', center=(900, 350)),
    Actor('gem', center=(900, 400)),
    Actor('wall', center=(900, 450))
]

def drawEditor():
    screen.draw.text("EDITOR", center = (900, 20),
        owidth=0.5, ocolor=(255,255,255), color=(0,0,255)
        , fontsize=40)
    if editorState: screen.draw.text("ON", center
        = (900, 50), owidth=0.5, ocolor=(255,255,255),
        color=(255,0,0) , fontsize=40)
    for b in range(0, len(blockTypes)):
        blockTypes[b].draw()
```

We should now see the editor panel (with the 'ON' indicator) and a column of blocks. Next, we

need to make them clickable. To do this, we'll need to define an `on_mouse_down(pos)` function. In this function, we'll check we're in the right `editorState` (True) and then check each of the `blockTypes` on the list with the `collidepoint(pos)` function to see if the mouse down event was over the block in the editor section. If it was, then we can set a variable to represent the currently selected item called `editItem`. This variable will be defined at the top of the program and set as the name of the block that was clicked. As things stand, we won't have any visual indicator of which block is currently selected, so we can remedy this by drawing a copy of the `editItem` block in the editor above the list with `screen.blit(editItem, (880, 100))`.

We should now have an editor with a list of blocks which can be clicked to set the currently selected item, which is then displayed above the list. Once we've selected a block, we then want to be able to place it in the game area so it changes the map. To do this, we need to check the mouse click position to see if it's over the play area. Then we need to work out which square on the map has been clicked and change that item in the data to be our `editItem` value. Each of the blocks on the map are 40 pixels by 40 pixels, so we can find the position we need in the items list by dividing the mouse position by 40. However, the game area's displayed starting at 40 pixels down the

screen (to give room for information prompts), so we subtract 40 from the mouse y position before we do the division. The code below shows you how this calculation and testing for clicks on the blocks in the editor is written in the `on_mouse_down(pos)` function.

```
def on_mouse_down(pos):
    global editItem
    if editorState:
        c = int(pos[0]/40)
        r = int((pos[1]-40)/40)
        if r > 0 and r < 14 and c > 0 and c < 20:
            if editItem != "blank":
                items[r][c] = editItem
            else : items[r][c] = ""
        else:
            for b in range(0, len(blockTypes)):
                if blockTypes[b].collidepoint(pos):
                    editItem = blockTypes[b].image
```

GRID LOCKED

If you've added some extra blocks to the list, you should be able to select and place them on the map at this point. If you want them to behave differently than other blocks in the game, though, you'll need to add some code. The code you write will depend what you want the blocks to do. For example, if you wanted to add a fire block which will sizzle Rockford if he walks over it, you'd need to put some code to test the block directly under Rockford to see if it's a fire block; if it is, set `gameState` to 1. You'd need to put that code in the `moveRockford(x, y)` function. If you want to add extra blocks, have a look at the full listing at the end of this tutorial to see how different types of blocks are dealt with in that function.

So now we should be able to go from a default play area with just soil, border wall, and Rockford to generating a set of boulders and walls with gems for the player to collect without getting squished.

There are many ways to arrange the boulders and walls to make it difficult for the player to get the gems without clearing the soil or moving boulders in the right order. (Of course, you'll need to make sure that it's actually possible to collect the gems.)

Once you've laid out some blocks on the game area, you can test the level by hitting the **SPACE**



^ Repton: a lot like Boulder Dash, but set in a posh boarding school. (We may have made that last bit up.)

bar to switch the editor mode off and then start moving Rockford around the play area to see how the boulders react. The only problem with this situation at the moment is that as we move Rockford around, he's changing the map we have made. The rocks start moving, the gems get collected, and the only way to get the original map back is to make it again in the editor. What we need is a way of saving and loading maps. Let's make a couple of buttons to load and save maps, then. We can position these down at the

bottom of the editor.

They'll be Actors and respond to a mouse click like our blocks, but when clicked, we'll call functions `saveMap()` and

`loadMap()`. There are several ways we can save data from our program; if the data was more complicated, we might want to look at the JSON format to save our game maps, or we could use a comma-separated text format. In this case, though, a really effective way of saving this data is to use a library called Pickle. This provides data serialisation functions, which means translating structured data into and from a suitable file format. By opening a file and then calling `pickle.dump`, we can take a lot of the headache out of saving our maps. Conversely, when we want to load our map back in, we just open the file and call `pickle.load` and the data is read back into our items list. Have a look at the code overleaf to see the basics of our save and load functions. ➔

```
import pickle

def loadMap():
    global items
    with open('mymap.map', 'rb') as fp:
        items = pickle.load(fp)

def saveMap():
    with open('mymap.map', 'wb') as fp:
        pickle.dump(items, fp)
```

LOAD AND SAVE

You'll see that we're using a fixed file name for saving the map. If you wanted to have the user change the file name, you might want to have a look at the `filedialog` part of the `tkinter` library to provide a load or save dialog window to enable choosing a file name for your map. For the purposes of this article though, we will stick with a fixed file name for our map.

Currently when our save function is called, there's no feedback to the user that anything has happened, which may be a bit disconcerting for some. It's probably wise to add some messages into our routines, then: we'll want to have a confirmation that the file has been saved or if there was a problem saving it. We can make a simple messaging system by having a global variable `editorMessage` and a countdown variable

`editorMessageCount` to display the message for a period of time and then stop displaying it. If we set the `editorMessage` variable to something like 'MAP SAVED' and the `editorMessageCount` variable to 200, then we can check to see if this variable is greater than zero in the `drawEditor()` function, then, if it is, display the message on the screen using `screen.draw.text()`. After displaying the text, we decrement the `editorMessageCount` variable by 1. This will mean that after 200 cycles of the `draw()` function, our message will disappear.

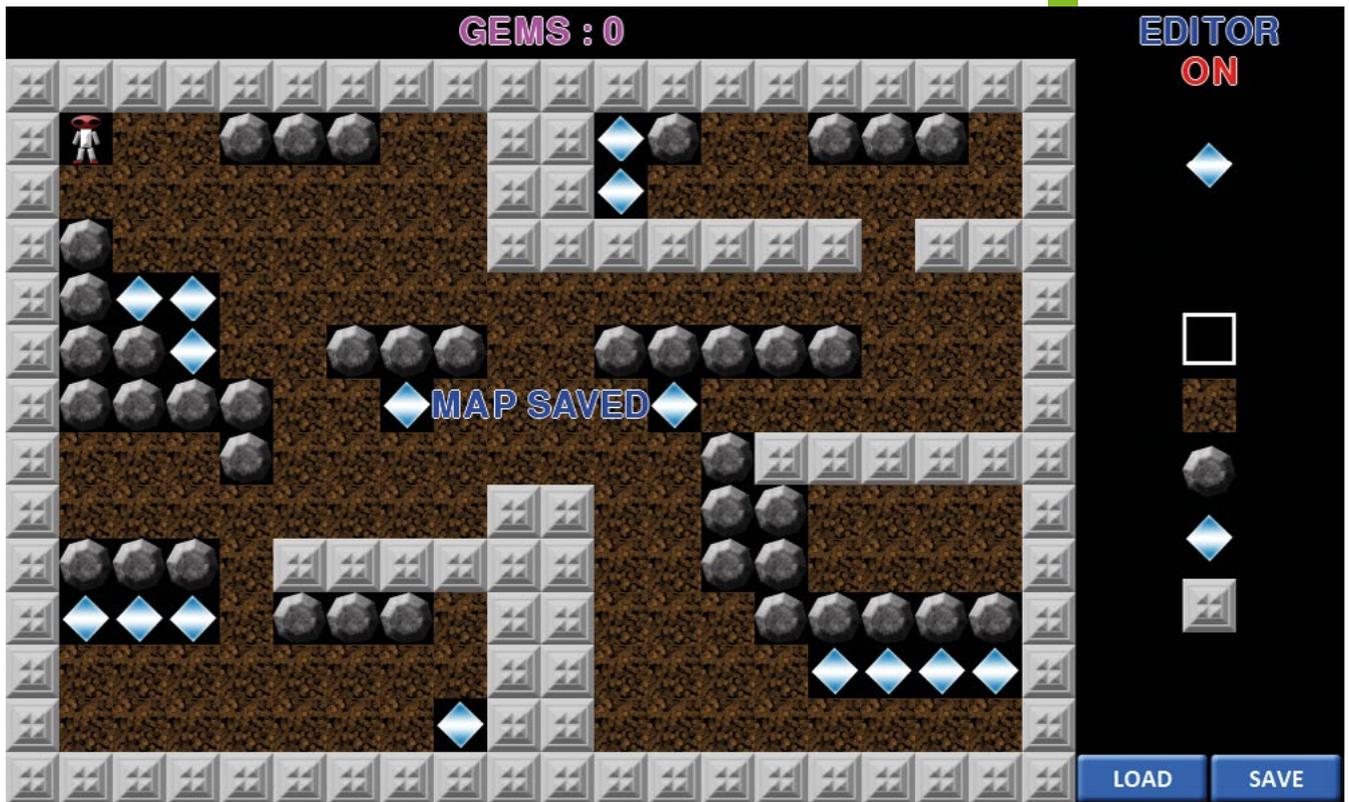
What if the saving operation failed? There could be all kinds of reasons why this might happen, and it's always a good policy to check when files are loaded or saved that the data transfer actually happened. To check that our file save didn't encounter an error, we can use a `try:` and then an `except IOError:` structure. Underneath the `try:` command we open our file, use `Pickle` to dump the data to the file, and then set our `editorMessage` to confirm the file's saved. Then we use the `except IOError:` command, and under that, we set our `editorMessage` to display an error message. This means that if an error occurs while saving, we'll see an error message; otherwise, we'll see the confirmation and know that our map file has been saved. Look at the code below to see the updated `saveMap()` function with error checking.

```
def saveMap():
    global editorMessage, editorMessageCount
    try:
        with open('mymap.map', 'wb') as fp:
            pickle.dump(items, fp)
        editorMessage = "MAP SAVED"
        editorMessageCount = 200
    except IOError:
        editorMessage = "ERROR SAVING MAP"
        editorMessageCount = 200
```

Our save function is now complete, so we'll turn our attention to how we load the map back in. We have the basics of the loading routine using the `pickle.load()` function, but what happens if we haven't created a map yet? The loading routine would fail and we wouldn't have any map data to work from. We can use the same technique we used with the `saveMap()` function to catch an error if it can't load the file. By using `try:` and `except IOError:` again, we can display a message to say the map has loaded if no error

▼ *Earth Shaker* was one of the best Boulder Dash clones on the ZX Spectrum.





^ The finished editor. See how devious you can make your own puzzles!

occurs, and if the map isn't loaded, fill our items list with the default map layout (just soil and boundary walls) and display a message to say that the default map has been loaded. Having put all this in place, we can then add a call to `loadMap()` when the program first runs. If we have an existing map file, the program will load it, and if not, it will load the default map. This means we don't need to generate the default items list at the beginning of the program as the `loadMap()` function will do it for us.

FILE HANDLING

Now we have an editor that will automatically load the last map we saved or make a default map, allowing us to edit all the blocks in the game area, save the map, and then test it with Rockford. If we test our puzzle layout and find that Rockford gets squished, then at the moment all we can do is close the program and restart it to get back to the saved map. That's going to get very tedious if we're testing over and over. What we need is a reset key. We can check for the escape key in the `on_key_down()` function, and when that's detected, we need to set our `gems`, `collected`, and `gameState` variables all to zero, redefine the Rockford

Actor to be back in the top corner, and then call `loadMap()`. This will set everything back to the way it first loads in.

Our editor's nearly finished now, with just one more thing to do. When we've made and tested our fiendish map, we'll want to challenge our friends, family, or random passers-by to solve it. In other words, we want to let them play the game

without the editor section. All we need to do is change the `editorState` at the top of the program to `False` (this will mean the editor section will not be shown) and add a new variable, `editorEnabled` (also set to `False`), which we will check before letting the `SPACE` bar switch modes. The game is then playable by a non-editing user.

You now have a fully functional *Boulder Dash* editor! Have a look at the full listing to see how everything fits together. You could, of course, expand this to add more block items for Rockford to deal with, or enable multiple levels by loading in different maps as the player completes each one. You could add more tools for the editor, such as file load and save dialogs so you can choose the file names you use for your maps, but we'll leave you to have fun adding those extra features. ☺

“Now we have an editor that will load the last map we saved”

Boulder Builder

Here's Mark's code for a full-featured *Boulder Dash* construction kit. To get it running on your system, you'll need to install Pygame Zero. Full instructions are available at wfmag.cc/pgzero.

```
# Boulder Dash Editor
import pgzrun
import pickle

editorState = True
editorEnabled = True

if editorState:
    WIDTH = 1000

gameState = count = 0
editItem = "blank"
editorMessage = ""
editorMessageCount = 0

blockTypes = [
    Actor('blank', center=(900, 250)),
    Actor('soil', center=(900, 300)),
    Actor('rock', center=(900, 350)),
    Actor('gem', center=(900, 400)),
    Actor('wall', center=(900, 450))
]

loadButton = Actor('load', center=(850, 580))
saveButton = Actor('save', center=(950, 580))
items = [[] for _ in range(14)]
gems = collected = 0
rockford = Actor('rockford-1', center=(60, 100))

def draw():
    screen.fill((0,0,0))
    if gems == 0 and collected > 0: infoText("YOU COLLECTED ALL
THE GEMS!")
    else: infoText("GEMS : "+ str(collected))
    for r in range(0, 14):
        for c in range(0, 20):
            if items[r][c] != "" and items[r][c] != "rockford":
                screen.blit(items[r][c], ((c*40), 40+(r*40)))
            if gameState == 0 or (gameState == 1 and count%4 == 0):
                rockford.draw()
                drawEditor()

def update():
    global count, gems
    mx = my = 0
    if count%10 == 0:
        gems = 0

        for r in range(13, -1, -1):
            for c in range(19, -1, -1):
                if items[r][c] == "gem":
                    gems += 1
                if items[r][c] == "rockford":
                    if keyboard.left: mx = -1
                    if keyboard.right: mx = 1
                    if keyboard.up: my = -1
                    if keyboard.down: my = 1
                if items[r][c] == "rock": testRock(r,c)
                rockford.image = "rockford"+str(mx)
                if gameState == 0 and editorState == False:
                    moveRockford(mx,my)
                    count += 1

def on_mouse_down(pos):
    global editItem
    if editorState:
        c = int(pos[0]/40)
        r = int((pos[1]-40)/40)
        if loadButton.collidepoint(pos): loadMap()
        if saveButton.collidepoint(pos): saveMap()
        if r > 0 and r < 14 and c > 0 and c < 20:
            if editItem != "blank":
                items[r][c] = editItem
            else : items[r][c] = ""
        else:
            for b in range(0, len(blockTypes)):
                if blockTypes[b].collidepoint(pos):
                    editItem = blockTypes[b].image

def on_key_down(key):
    global editorState, gameState, rockford, collected, gems
    if key == keys.SPACE and editorEnabled:
        editorState = not editorState
    if key == keys.ESCAPE:
        gems = collected = gameState = 0
        rockford = Actor('rockford-1', center=(60, 100))
        loadMap()

def infoText(t):
    screen.draw.text(t, center = (400, 20), owidth=0.5,
ocolor=(255,255,255), color=(255,0,255) , fontsize=40)

def moveRockford(x,y):
    global collected
```

```

rx, ry = int((rockford.x-20)/40), int((rockford.y-40)/40)
if items[ry+y][rx+x] != "rock" and items[ry+y][rx+x] !=
"wall":
    if items[ry+y][rx+x] == "gem": collected +=1
    items[ry][rx], items[ry+y][rx+x] = "", "rockford"
    rockford.pos = (rockford.x + (x*40), rockford.y + (y*40))
if items[ry+y][rx+x] == "rock" and y == 0:
    if items[ry][rx+(x*2)] == "":
        items[ry][rx], items[ry][rx+(x*2)], items[ry+y][rx+x]
= "", "rock", "rockford"
        rockford.x += x*40

def testRock(r,c):
    if items[r+1][c] == "":
        moveRock(r,c,r+1,c)
    elif items[r+1][c] == "rock" and items[r+1][c-1] == "" and
items[r][c-1] == "":
        moveRock(r,c,r+1,c-1)
    elif items[r+1][c] == "rock" and items[r+1][c+1] == "" and
items[r][c+1] == "":
        moveRock(r,c,r+1,c+1)

def moveRock(r1,c1,r2,c2):
    global gameState
    items[r1][c1], items[r2][c2] = "", items[r1][c1]
    if items[r2+1][c2] == "rockford": gameState = 1

def drawEditor():
    global editorMessageCount
    screen.draw.text("EDITOR", center = (900, 20), owidth=0.5,
ocolor=(255,255,255), color=(0,0,255), fontsize=40)
    if editorState: screen.draw.text("ON", center = (900, 50),
owidth=0.5, ocolor=(255,255,255), color=(255,0,0), fontsize=40)
    for b in range(0, len(blockTypes)):
        blockTypes[b].draw()
    if editItem != "":
        screen.blit(editItem,(880,100))
    loadButton.draw()
    saveButton.draw()
    if editorMessageCount > 0:
        screen.draw.text(editorMessage, center = (400, 300),
owidth=0.5, ocolor=(255,255,255), color=(0,0,255), fontsize=40)
        editorMessageCount -= 1

def loadMap():
    global items, rockford, editorMessage, editorMessageCount
    try:

```

```

        with open ('mymap.map', 'rb') as fp:
            items = pickle.load(fp)
            editorMessage = "MAP LOADED"
            editorMessageCount = 200
        except IOError:
            editorMessage = "DEFAULT MAP LOADED"
            editorMessageCount = 200
        for r in range(0, 14):
            for c in range(0, 20):
                itype = "soil"
                if(r == 0 or r == 13 or c == 0 or c == 19): itype
= "wall"
                items[r].append(itype)
                items[1][1] = "rockford"

def saveMap():
    global editorMessage, editorMessageCount
    try:
        with open('mymap.map', 'wb') as fp:
            pickle.dump(items, fp)
            editorMessage = "MAP SAVED"
            editorMessageCount = 200
        except IOError:
            editorMessage = "ERROR SAVING MAP"
            editorMessageCount = 200

loadMap()
pgzrun.go()

```



^ Enter the code shown here (or download it from our GitHub) and you'll be designing your own cunning stages in no time.

Zero-sum gameplay and loss aversion

Tapping into player psychology can enhance the tension, drama, and impact of your games, but these powerful techniques need handling with care



AUTHOR
STUART MAINE

Stuart Maine has been a designer for 23 years, across PC, console, and mobile. He helped set up Well Played Games, and is currently working on an unannounced title.

Zero-sum gameplay and loss aversion are seemingly unrelated topics that can work together to create tension and make a game more appealing to competitive, thrill-seeking players.

Let's look at each area separately and then explore how they can be used together.

ZERO-SUM GAMEPLAY

A game is considered to be zero-sum when one player can only gain something by causing another player to lose an equal amount. This

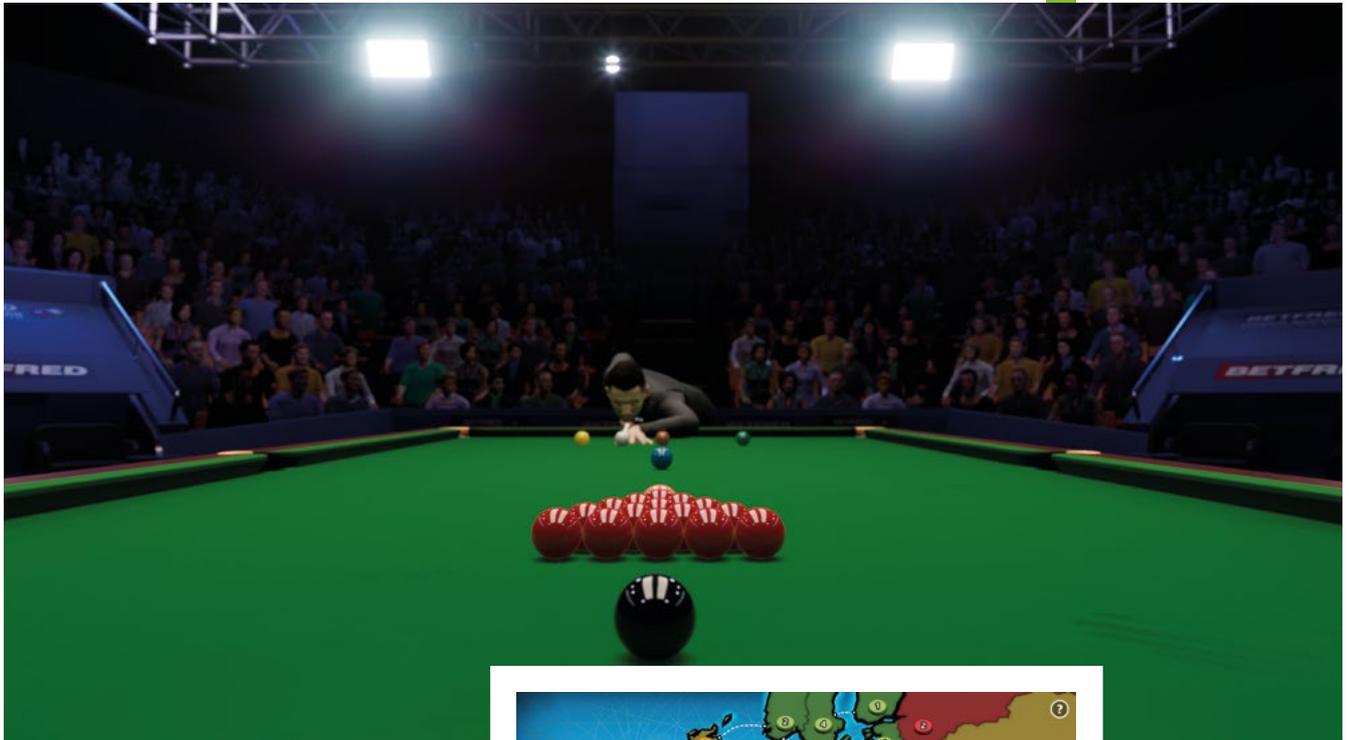
contrasts with non-zero-sum, win-win gameplay, where both players can gain 'stuff' irrespective of what the other is doing.

For example, football and rugby are not zero-sum sports because one team scoring a goal/try has no bearing on the other team's score. Therefore, both teams try to score as many points as they can and the team with the most when time runs out is the winner. Contrast this with chess, which for our purposes can be considered zero-sum because if I take one of your pieces, I have gained 'power' over that game and you have lost power. No more of this power is added to the game from some outside source – for one of us to gain it, the other must lose it (the 'promotion' rule muddies this a little, but that still costs you one of your pieces to convert it to another piece).

The term zero-sum is used because if the total 'stuff' in the game always remains the same, then as one player gains it the other must lose an equal amount, causing the gain/loss sum to equal out to zero. Mathematics aside, another way to look at it is that zero-sum games are always competitive, with one player forced to lose so the other can win. Contrast this to non-zero-sum games which can be competitive or co-operative, with players able to take actions that help them both equally (such as by adding more 'stuff' to the game).

✓ Aside from psychological factors like increased confidence, one team scoring a goal doesn't prevent the other from doing the same, so football is not zero-sum.





COMPLICATION THROUGH SCORING

Returning to sporting examples, things get interesting with sports like snooker, where each player is independently trying to achieve the highest score, irrespective of the other player's actions, but coloured balls that are potted are removed from the game (so one player's gain reduces the maximum available points for the other player). Or racing, where competitors are all trying to do their best to cross the line first, but overtaking someone lowers that person's position in the race by the same amount it increases yours.

ZERO-SUM STRATEGY GAMES

The board game Risk is zero-sum because the world is divided between players at the beginning, so the only way one can gain territory is by taking it from someone else. Whereas *Civilization* doesn't start as a zero-sum game but gradually moves in this direction once all the territory is claimed and there's no more room to expand without attacking each other.

With only two players in a game, zero-sum gameplay may naturally slide towards the winner winning faster, because not only have they increased their own power, they've lowered their opponent's ability to recover. But territory control games don't have to follow this rule, and in fact



could penalise players as they gain more and more territory (representing stretched supply lines, for example), allowing the losing player to catch up. There's no right or wrong approach – it depends if you want short, decisive games or longer back-and-forth matches. Either way, two-player zero-sum games can be quite intimidating because unless you introduce elements of chance, victory comes down to pure skill – to which one of you is better at the game.

Things get more complex with three or more players, because you introduce political balancers like alliances, kingmaking, and backstabbing to the experience. Something to be aware of is ensuring any zero-sum multiplayer game can continue functioning when a player quits mid-match. This is a common problem with zero-sum gameplay because if a player starts falling behind, the logical choice for everyone else is to take advantage by continuing to attack them and taking more and

- ▲ Snooker is more nuanced, because points are added to the game 'from outside', but players can remove each other's opportunities to score by potting colours.
- ◀ We looked at kingmaking in Wireframe 38, player types in issue 39, and lessons from warfare in Wireframe 47, with each relevant to player psychology.

GAME THEORY

Talk of zero-sum gameplay and loss aversions are part of a branch of economics called 'game theory'. This breaks down problems using maths, allowing you to work out the best possible decision in any given situation. Game theory suggests that if a game has an element that's more powerful than others then you should use it. This leads to more and more people employing that approach until players shift their tactics to beat it (as they know people will be using it). This whole process repeats forever and is known as a 'metagame'.

Toolbox

Zero-sum gameplay and loss aversion

- In the same manner as football, one team scoring points in *Rocket League* doesn't reduce the other side's score by that amount. But it could...
- ▼ The tension of teams' fortunes swinging back and forth as players die has made *Counter-Strike* remain a phenomenon.



NO RESPAWNING

Games like *Counter-Strike* utilise the excitement benefits of zero-sum gameplay by having all of their resources (in this case, players) present in the game from the beginning, and only going down over time. When you kill an opposing player, not only are you reducing that team's ability to dictate the match, you're increasing your own team's control over it. Cleverly, the game avoids this causing a 'death spiral' by including other ways to compete. Bombs and hostages mean that even as a team rapidly loses control over a match, there's always a chance for them to suddenly win.

more of their stuff. This allows those players to continue making gains without the risk of directly attacking the most powerful players (yet). The end result is that unless your game includes methods for these losing players to band together, some players can be effectively out of the game when it still has a long way to go. The strategy game *Solium Infernum* solved this with clever ways for losing players to still be involved and perhaps sneak a win, whereas the *Game of Thrones* board game really suffers here, to the extent that one of its expansions had to introduce rules for when a player wants to leave mid-game and an 'AI' needs to take over.

COMPETITIVE PLAY

A strategy game being zero-sum isn't good or bad, it's a choice of how tense and cut-throat you want your gameplay to be. Each of the games I've mentioned above could be made co-operative, with players working together against the

computer, but that would fundamentally change who is likely to enjoy playing them. Taking on other players adds unpredictability and excitement to a game, and making that gameplay zero-sum adds a whole other level on top.

So how can you apply this to other video game genres? One way games can be made zero-sum is simply by changing their scoring parameters. For example, most deathmatch games increase a player's score when they kill another player, which is non-zero-sum because stuff (score) is being added to the game from 'outside' each time.

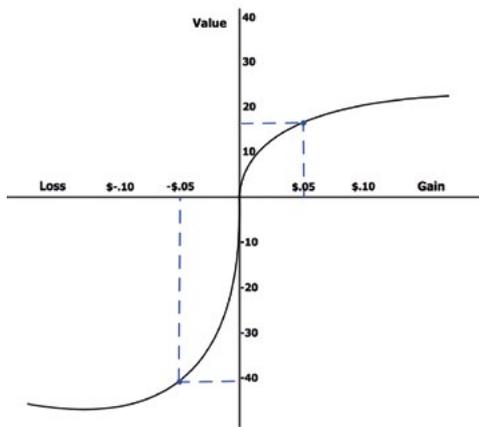
But what if all the players began the match with an equal score and when a player killed another they took a point from the victim and added it to their own score? Now it's a zero-sum game, and even though we haven't changed the base gameplay in any way, the stakes and competition are suddenly much higher. I'm no longer simply

"I'm no longer increasing my score, I'm taking something from you"

increasing my score, I'm directly taking something from you. This adds tension because it turns out people don't like it when their stuff is taken, and the reason for this is loss aversion.

LOSS = PAIN

There have been all sorts of studies which demonstrate that the effect of losing something we already have is much more emotionally powerful than gaining something we don't yet have. To put it another way, we feel pleasure when we gain something, but it's way less than the pain we feel when we lose something.



^ Studies consistently show that the fear of losing something is much more powerful than the chance of gaining it. How can your games use this?

This aversion to the prospect of loss is so strong that it leads to people making bad decisions and going too far to keep hold of something they have (see 'Sunk Cost Fallacy' box). Looking into loss aversion will lead you into all sorts of related human behaviours, such as why we hoard possessions, rich people being miserable (they worry they have a lot to lose), and people reacting to price increases much more strongly than decreases. It even applies to our thoughts and ideas, explaining why we find it so difficult to 'give up' something we believe and why it's so difficult to change someone's mind. A quick search online will reveal a whole host of articles on just how strong loss aversion can be, and while many of them – such as wfmag.cc/loss-aversion and wfmag.cc/more-loss-aversion – are focused on the area from a financial point of view, loss aversion can be a useful tool for game developers, too.

RAISING THE STAKES

Because the fear of loss is so painful to us, I think the deathmatch scoring example from earlier will evoke much more intense emotions than a simple 'get a kill, score a point' system: me killing you not only gets me closer to winning, but it also moves you down the leaderboard, potentially losing you your position by dropping you below other players. Of course, a side effect of this change would be that matches could take a long time to resolve, with points traded back and forth rather than always accumulating. Maybe these matches end on a timer, maybe you take increasingly large amounts of points from opponents you keep killing, or maybe you use the *Battlefield* series' 'tickets' system, with players eliminated when they run out.

Leaving details aside, if you think about the change logically, it makes no real difference, as me moving up the leaderboard or you moving down is effectively the same thing – I'm now doing better than I was relative to you. But study after study demonstrates that humans definitely do not think logically; our emotions get involved and we begin taking greater risks or get more and more angry as we continue to lose what we had.

Real-time strategy games are another example, with players sending 'gatherers' out to harvest resources on the map in order to build their base and armies. Technically, these aren't quite zero-sum games because the resources tend to regrow (albeit very slowly), but finding a patch of depleted resources is galling because not only can you not harvest them, you know your opponent took them. If the game kept telling you when this happened, I'd propose it would be much more emotionally powerful than both players simply receiving resources 'from the bank' over time. You need to get out there and harvest those resources before your thieving opponent gets their grubby hands on what's rightfully yours!

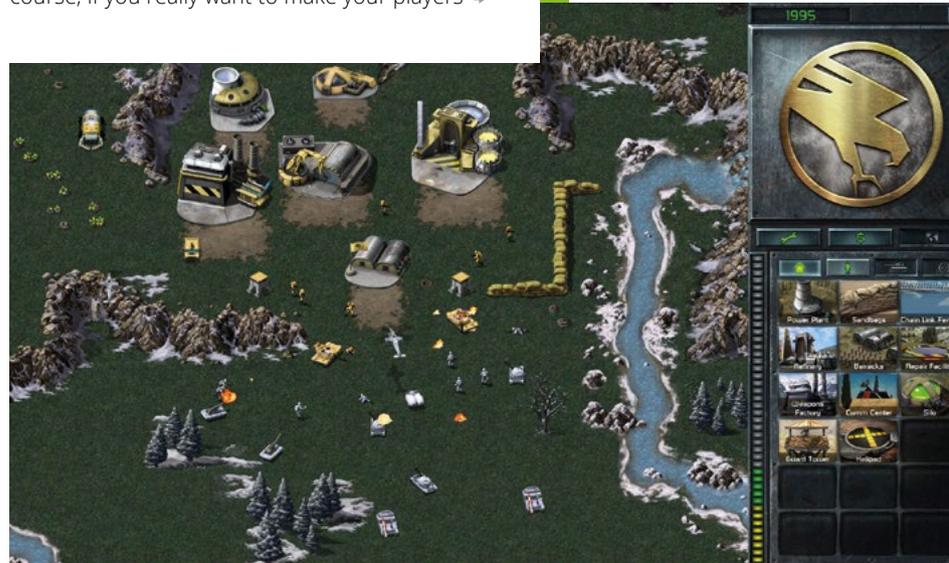
A final example of raising a game's stakes is to show players the rewards they'll get if they place highly in a battle before that round begins. Even though players don't actually have any of those rewards yet, their mind has already imagined having them, so that battle will be more tense than if players were just told they'll get some nice prizes if they win. And, of course, if you really want to make your players →

BEHAVIOURAL ECONOMICS

The field of behavioural economics came about as people realised that humans are driven by emotions, while the economic models being used to predict stock markets were strictly driven by logic. This led to events like market crashes when people panicked and made emotion-driven choices rather than doing the 'correct' predicted thing.

Rather than ignoring this, people now study how to make use of these biases and assumptions. Professor Dan Ariely has several entertaining books on the subject that are worth checking out, for insights into the mistakes people will make because of factors like loss aversion.

^ While units are added to RTS games 'from outside', the resources needed to make them can only be claimed by one player, depriving everyone else.



SUNK COST FALLACY

A fascinating angle of loss aversion is that we don't just fear losing something we have, we equally fear the loss of something we consider to be ours even if it's not yet in our possession. This is seen when gamblers lose several bets in a row and rather than accepting those losses and walking away, they choose to 'double down' in an attempt to keep hold of their winnings (even if they never actually held those winnings). Or when people refuse to sell failing shares because they're convinced they haven't lost anything until they give up.

✓ *Escape from Tarkov* appeals to a specific audience, but the tension and drama its design creates are incredibly effective at keeping that audience engaged.

super-competitive, you can assign the rewards to players at the start and then have their opponents steal them when they win.

But all this talk about 'psychological pain' sounds horrible, right? Surely no game would actually use these techniques?

CASE STUDY: ESCAPE FROM TARKOV

Which brings us to Battlestate Games' *Escape from Tarkov*. A first-person shooter/survival/crafting game, *Tarkov* is a masterclass in the power of loss aversion.

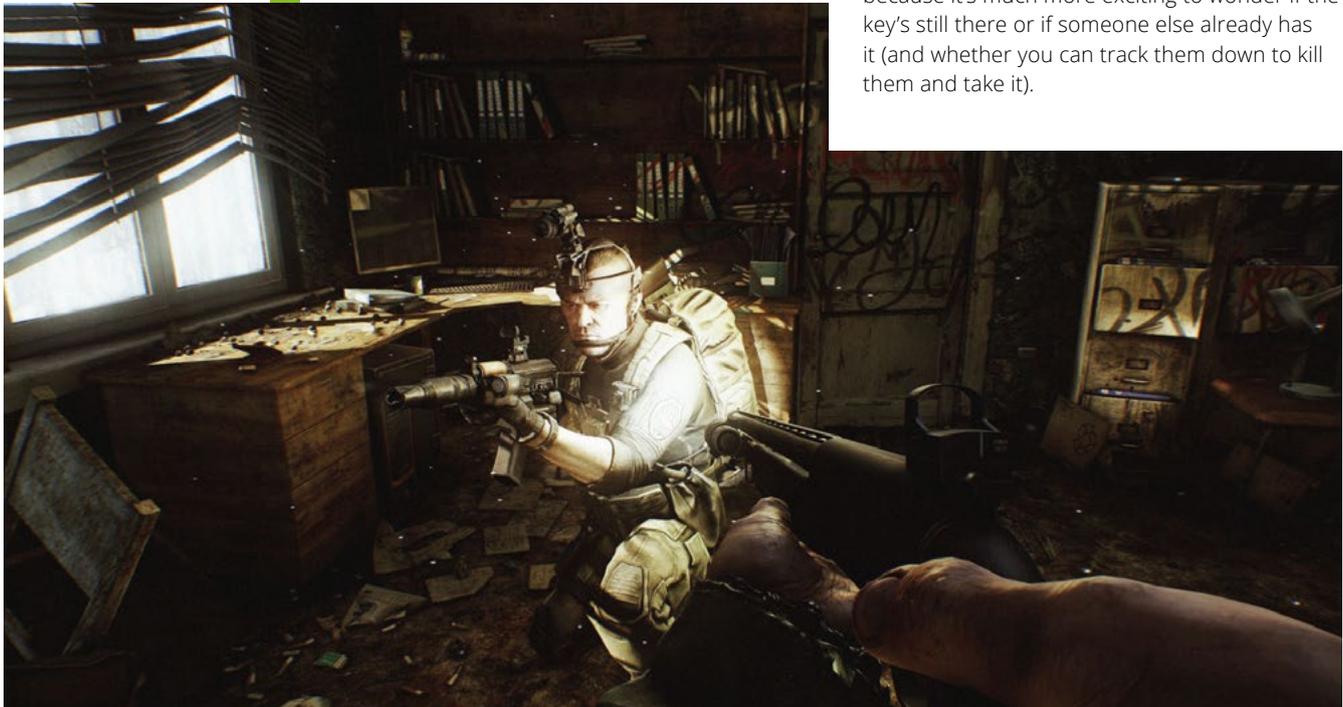
First, players have to explore maps to find the resources they need and then safely extract from the map to keep those items. As you can imagine, if you find a rare or valuable resource, the tension shoots up dramatically, because while just a second ago you had nothing to lose, now it's down to chance and skill whether you get to keep your precious resource.

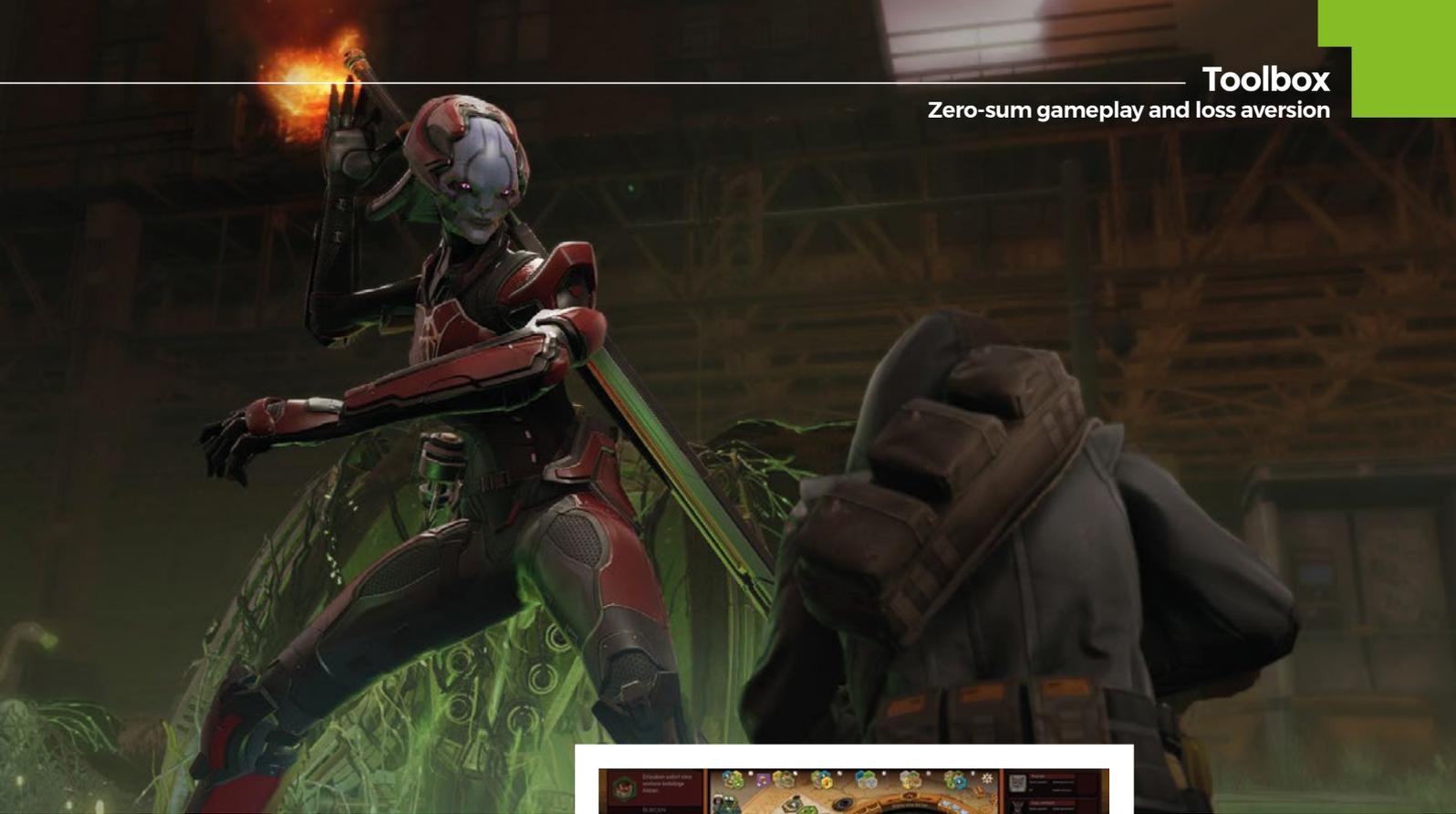
If that wasn't stressful enough, if you're killed in *Tarkov*, you drop more or less everything you were carrying at that spot. While you can pay for insurance for the game to return what you were carrying when you were killed, if another player finds and searches your body then they

– and not you – get whatever you had. Now we have loss aversion and the knowledge that some other scumbag has your stuff, which is emotionally powerful, even though you literally just gained those resources as a lucky find a few minutes before.

For example, you head into a map to find some common goods you need, but your searches turn up an ultra-rare item. You're suddenly forced to make a whole stack of decisions and predictions: should you stick to your original plan or abandon it and get out now? But wait, the game punishes players if they leave maps too soon, so should you take that hit or find somewhere to try and hide? And which extraction point should you head to anyway?

Escape from Tarkov perfectly demonstrates the power your decisions as a developer can have in how a game feels and who it appeals to. Consider it this way: in real life, if I pick up something, then of course that thing isn't available when you get there. *Tarkov* uses aspects of zero-sum gameplay to model this, but it doesn't have to – the resources in a game aren't real, after all. There's no reason that a coat pocket in *Tarkov* can't provide every player that searches it with the same key, but it doesn't because it's much more exciting to wonder if the key's still there or if someone else already has it (and whether you can track them down to kill them and take it).





FINAL QUIRKS

A couple of other weird aspects of loss aversion to wrap things up. First, while we tend to favour gain over loss, you can enhance or tone down either aspect. Studies show that we prefer our gains spread out (+2, +2, +2) but our losses in one go (-6). Therefore it's better to extend the pleasure by giving players multiple smaller increases than one big reward later.

Also, because losses have more 'psychological weight' for us than gains, you need to make it very clear to players when something is actually a better choice even if it does include some losses. For example, I can look at a new sword that makes +2, +2, -2 changes to my character's stats and understand that the net result is positive. But when you're throwing around multiple large numbers – like *Diablo* or *Borderlands*' weapons do – then it gets very difficult to understand if I should swap or not (remembering that just the presence of negative numbers outweighs positive ones in the player's mind).

CONCLUSION

So, to sum up, making a game zero-sum increases its competitiveness, and alongside that, the effects of loss aversion add tension, so using both in a game is likely to shift it towards a 'hardcore', excitement-fuelled audience. Whether stuff is added to your game by the bank or is finite and can only be gained



- ^ You feel the effects of loss aversion when a soldier dies in *XCOM*, a run ends in a roguelike, or you die in *Dark Souls*.
- < Board games like *Castles of Burgundy* have a central pool of choices, adding tension because as I take one it reduces what's available to you.

“We prefer our gains spread out but our losses in one go”

from someone else's loss is entirely down to developer choice. Are you looking for players to fight each other for what they need, whether that's resources or score? Or can they do well irrespective of what others are doing? Can they co-operate to produce more resources, or is the only way to get something to take it off another player's body?

None of these options are better than the others, it's simply down

to the audience you're trying to attract. Many people will be turned off by only being able to succeed at the cost of others, or by the threat of losing their precious stuff to someone else. But if you want to engage competitive players, then small changes to make your game zero-sum or to introduce loss aversion can really ratchet up the tension and drama. This is why it's a good idea for developers to read up on psychology. Once you've decided on your game's audience, understanding what makes those players tick can help you home in on the most effective techniques to deliver a game they'll enjoy. 🗨

GAMING PSYCHOLOGY

If you'd like to read more about areas of psychology from a video games angle, I can recommend these. *The Psychology of Video Games* by Jamie Madigan (psychologyofgames.com) has lots of articles and podcasts on applying lessons from psychological studies to games. *The Gamer's Brain* by Celia Hodent (wfmag.cc/hodent) is a Game Developers Conference talk on how we perceive things and then use that to make decisions in games. *Social Design Practices for Human-Scale Online Games* by Daniel Cook (wfmag.cc/cook) sounds scary but is about how multiplayer games and friends interact.

The three pillars of investigative gameplay

Ever wanted a player to more deeply engage with the details of your story? Here's how



AUTHOR
ANTONY DE FAULT

Antony is Wireframe's writing and narrative design columnist. He's also a freelance video game storyteller, and you can find his work on [default.games](#) or [@antony_de_fault](#) on Twitter.

As long-time readers will be aware, I have something of an obsession with techniques which make the act of investigation in games compelling. After years of thought, analysis, and work on such games, I've arrived at three Pillars of Investigative Gameplay, and I share them here in the hope that you use and build on them.

PILLAR 1: **DEDUCTIONS MUST BE VALIDATED**

This requires that, after investigating, the player must be able to input their deduction. This inputting can be explicit, such as typing in an answer and having the computer evaluate it

(like *Her Story*), or implicit, such as walking their character to a location they've deduced might hold treasure and seeing if treasure is present there (like *Red Dead Redemption 2*'s treasure maps).

There's no need to validate every little deduction possible during an investigation, but generally, most plot-consequential deductions should be validated. Forgoing validation in the case of a consequential deduction is risky, but can be used for artistic effect, i.e. major mysteries that you *want* the player to never feel certain about, such as *Heaven's Vault*'s ancient history.

Validation doesn't always require success or failure states. It's enough that the computer acknowledges and responds in some way to the deduction, it doesn't always need to actually judge it as true or false; ambiguity can be much juicier (like *Paradise Killer*'s trial).

Most importantly, the game must *not* validate deductions before the player inputs them. For example, just because a player has discovered a city map (A) and street address (B), that doesn't mean they've paid attention and know which building to go to (C). Giving hints or other subtle support is fine, but the game should *never*, on the player finding A and B, direct them to C.

PILLAR 2: **PLAYERS MUST FEEL OWNERSHIP OF DEDUCTIONS**

This requires that the player has come up with their deduction without *feeling* overly influenced by the game's content or design. In reality, this can be an illusion and the designer can have sneakily

✓ **RPG quest systems notoriously over-assist players, with waypoints precluding their opportunity to investigate for themselves and objective lists negating the need to pay attention.**





▲ Make a few incorrect choices in *Ace Attorney* and you're punished with a Game Over, then irritatingly must repeat unskippable content.

guided them quite substantially, but they must *feel* independent. Players can be over-influenced by content if, for example, an in-game character often blurts out answers or hints that are too helpful, such as Lara hinting at puzzle solutions in *Shadow of the Tomb Raider's* Easy mode. This robs the player of the feeling that they've made the deduction themselves.

Players can also be over-influenced by a game's design. For example, if I have to deduce which of many NPCs is an assassin, and all are generic except for one who has a unique character model, then the game's *design* has likely given away the answer, again robbing the player of ownership. Offered the chance, many players will ignore the in-fiction clues and instead try to second-guess the designer, so unless your game breaks the fourth wall like *Metal Gear Solid*, avoid this at all costs.

On this point about design, the most important factor in a player feeling ownership of a deduction is the size of the possibility space. The possibility space is the sum total breadth of all possible answers the player could input, regardless of correctness. For example, if the player needs to deduce which of four items they must show to a character in order to get a confession, the possibility space is small: just four possibilities (see: interrogating witnesses in *Ace Attorney*). If a player must deduce which English words to type into a database search in order to find a confession, the possibility space is nearly infinite (see: *Her Story*). Selecting a specific answer from a large possibility space makes it feel *personal*.

PILLAR 3: INVESTIGATION IS RESEARCH

This last pillar simply means that investigative deduction, instead of a hot-seat quiz, is the act

of exploring a body of information, eliminating answers, and testing hypotheses before finally arriving at a conclusion.

Generally speaking, having a high cost associated with the player making an incorrect deduction is a bad idea. The player having wasted a small amount of time or resources is often enough to dissuade them from attempting to brute-force their way through a deduction puzzle, and often the player needs to input incorrect solutions in order to test hypotheses on the way to their final conclusion. Harsh punishments for incorrect deductions, like *Ace Attorney's* 'three strikes and you're out' system, are often a crutch used in games with very small possibility spaces, and are frustrating at best.

If for narrative reasons your player only has one chance at a solution to a particular deduction, then rewarding an incorrect deduction with a *slightly* worse outcome is vastly preferable to an outright fail-state. For example, if the player accuses the wrong suspect, it's much better to have that character simply be offended than require the player retry the whole scene.

APPLYING THE PILLARS

These principles are, in my opinion, simple to apply to your own designs. First, players should have a method of inputting deductions for the computer to then respond to. The game should feature this input stage *prominently* if it wants to promote investigation or deduction, and should never validate deductions before the player has inputted them.

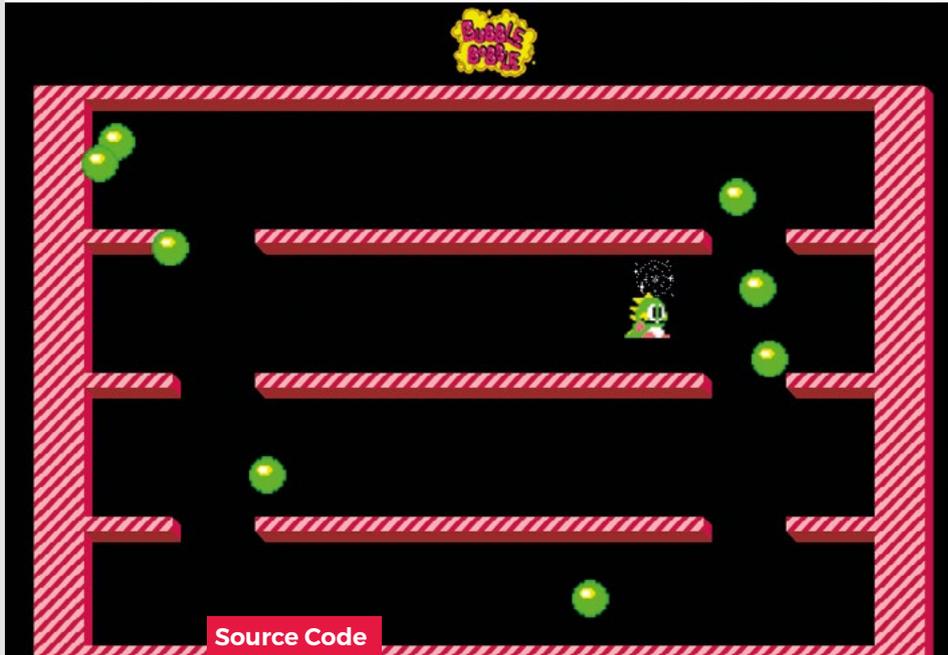
Second, the subtler the hints and the broader the possibility space, the more ownership the player feels of their answer, and the smarter they feel for getting it right. Finally, and simply, if an investigation is 'testing' the player's deductive skills, think of it as a graded open-book challenge rather than a pass-fail exam. ☺



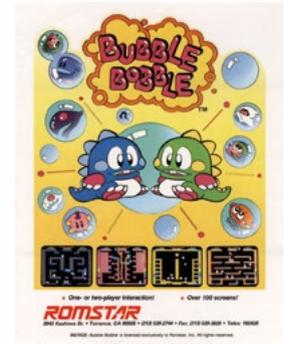
BROADER IMPLICATIONS

Investigative play encourages the player to really engage with narrative content. They must stop, think, and understand the finer details of what you've written. They aren't begrudgingly *forced* to slow down and pay greater attention, they're made to *want* to. I've recently been playing *Divinity: Original Sin II*, and had begun glazing over text in favour of following map markers. But 60 hours in, I *finally* taught myself the names and identities of the very plot-relevant gods. Why? Because I wanted to solve an optional riddle involving their statues. Surely any story experience would benefit from increased engagement.

◀ For certain quests in *The Witcher 3's* Novigrad, deducing which house to visit from hundreds of buildings provides an ample possibility space.



Source Code



▲ *Bubble Bobble* brought us a whopping 100 levels to explore.

◀ Our homage to the classic *Bubble Bobble*. No monsters, but the bubble floating and bursting mechanics are spot on.

Code an homage to Bubble Bobble



AUTHOR
MARK VANSTONE

Blow bubbles and burst them in our tribute to an arcade classic

Released in 1986, *Bubble Bobble* looked quite unlike any other game available in arcades at the time. Designed by Taito's Fukio Mitsuji, it was a cooperative game in which two players took control of a pair of dragons, Bub and Bob, and blew bubbles to trap enemies, which in turn could then be popped. This nobbled the enemy inside and released bonus items which could be collected for extra points. Unlike the various shooting, driving, and fighting games at the time, *Bubble Bobble* was a cartoon-like game with a broad appeal; Mitsuji said in later interviews that he wanted the game to be enjoyed by couples. Maybe this is partly why *Bubble Bobble* was a big hit for Taito, and remains one of its most widely ported and fondly remembered games of the 1980s.

For our Pygame Zero sample this month, we'll concentrate on the game's bubble mechanics and see how we can fire them, push them around, and pop them as they float around the level. To start with, we'll need a set of platforms for our little dragon

to run around on. We'll keep it simple for this example and have a border of walls and three levels of platform that we can define with a simple nested loop. Each of the platform blocks are Actors which we put into a list before we start the main program. Our `draw()` function is quite simple, drawing our background, then the platforms, our bubbles, and finally Bub, our little dragon.

To move Bub around, we can detect the arrow keys in the `update()` function. We cycle through three frames to make him walk along the platforms and then apply some gravity to him so that if he walks off the end, he'll fall down to the next level. To get Bub jumping, we use the `on_key_down()` function and test to see if he's on the ground, and if so, set the Bub Actor property 'jump' to 60, which will set off upward motion for 60 frames – at which point Bub will start falling back down as our gravity check takes over again.

Now for the bubbles. We detect the `SPACE` bar being pressed, create a new bubble, and add it to a list. To start with, it will fly out horizontally in the direction

Bub is facing. We can check how far it has travelled with the status property of the new bubble. After the status property reaches zero, we stop the bubble moving horizontally and let it rise upwards using the `driftx` and `drifty` properties. We can change these properties at random to give the bubble a bit more of an uncertain direction. We can also reverse the properties to make the bubble bounce off the side and top walls. We check all the bubbles each frame to make sure they aren't colliding with any other bubbles, too.

We'll also want to check for collision between Bub and any bubbles. If he runs into a bubble, we want him to push the bubble along, but if he jumps and hits the bubble with his spikes, the bubble will pop. There's also a timer property on the bubbles that means after a while the bubble will burst by itself. So that's the basics of the bubbles – you may want to add some monsters and goodies for Bub to collect, or perhaps make the platforms more complicated. As always, we'll leave that for you to work out. 🐉

Blowing bubbles in Python

Here's Mark's code, which re-creates *Bubble Bobble's* blowing-and-bursting mechanics in Python. To get it working on your machine, you'll first need to install Pygame Zero. You can find full instructions at wfmag.cc/pgzero.



Download
the code
from GitHub:
[wfmag.cc/
wfmag56](https://wfmag.cc/wfmag56)

```
# Bubble Bobble
import pgzrun
import random
bub = Actor('bubr0', (400, 300))
bub.direction = "r"
count = bub.jump = 0
bub.onground = False
platformActors = []
bubbles = []
for r in range(40):
    for c in range(20):
        if c == 0 or c == 19 or r == 0 or r == 39 or ((r == 10 or r == 20
or r == 30) and c != 3 and c != 4 and c != 15 and c != 16):
            platformActors.append(Actor('platform11', (50+(c*37), 80+(r*12))))

def draw():
    screen.blit("background", (0, 0))
    drawPlatforms()
    drawBubbles()
    bub.draw()

def update():
    global count
    if count%20 == 0: bub.image = "bub"+ bub.direction + "0"
    if keyboard.left:
        moveBub(-1, 0)
        bub.direction = "l"
        bub.image = "bubl"+ str(int(count/8)%3)
    if keyboard.right:
        moveBub(1, 0)
        bub.direction = "r"
        bub.image = "bubr"+ str(int(count/8)%3)
    checkGravity()
    updateBubbles()
    count += 1

def on_key_down(key):
    if key.name == "UP":
        if bub.onground == True: bub.jump = 60
    if key.name == "SPACE": fireBubble()

def drawPlatforms():
    for p in range(len(platformActors)): platformActors[p].draw()

def moveBub(x, y):
    if bub.x+x < 720 and bub.x+x > 80:
        bub.x += x*2
        for b in range(len(bubbles)):
            if bubbles[b].collidepoint((bub.x, bub.y)): bubbles[b].x += x*2

def checkGravity():
    if bub.jump > 0:
        if bub.y > 85: bub.y -= 3 + (bub.jump/30)
        bub.jump -= 1
        if bub.jump <= 0: bub.y = (bub.y // 2) * 2
        for b in range(len(bubbles)):
            if bubbles[b].collidepoint((bub.x, bub.y)) and bubbles[b].
status == 0:
                bubbles[b].countdown = 10
                bub.jump = 0
                bub.y = (bub.y // 2) * 2
                bub.onground = False
                for p in range(len(platformActors)):
                    if ((bub.x > platformActors[p].x-20 and bub.x < platformActors[p].
x+20) and bub.y+18 == platformActors[p].y-14): bub.onground = True
                    if bub.onground == False: bub.y += 2

def fireBubble():
    bub.image = "bub"+ bub.direction+ "3"
    bubbles.append(Actor('bubble4', (bub.x, bub.y)))
    bubbles[len(bubbles)-1].status = 20
    bubbles[len(bubbles)-1].direction = bub.direction
    bubbles[len(bubbles)-1].driftx = 0
    bubbles[len(bubbles)-1].drifty = -0.5
    bubbles[len(bubbles)-1].countdown = 1000

def drawBubbles():
    for b in range(len(bubbles)): bubbles[b].draw()

def updateBubbles():
    for b in range(len(bubbles)):
        if bubbles[b].status > 0:
            if bubbles[b].direction == "l":
                bubbles[b].pos = checkCollision(bubbles[b], -bubbles[b].
status, 0)
            else:
                bubbles[b].pos = checkCollision(bubbles[b], bubbles[b].
status, 0)
            bubbles[b].status -= 1
        else:
            bubbles[b].pos = checkCollision(bubbles[b], bubbles[b].
driftx, bubbles[b].drifty)
            if random.randint(0, 500) == 1: bubbles[b].driftx = (random.
randint(0, 4)-2)/10
            if bubbles[b].countdown > 10: bubbles[b].image =
"bubble"+str(int(bubbles[b].status/5))
            else: bubbles[b].image = "bubble-1"
            bubbles[b].countdown -= 1
            for b in range(len(bubbles)):
                if bubbles[b].countdown < 0:
                    bubbles.remove(bubbles[b])
                    break;

def checkCollision(o, xinc, yinc):
    if o.x+xinc > 720 or o.x+xinc < 80 or o.y+yinc < 90 or o.y+yinc >
550:
        o.drifty = o.drifty *-1
        o.driftx = o.driftx *-1
        return o.pos
    for b in range(len(bubbles)):
        if bubbles[b].collidepoint((o.x+xinc, o.y+yinc)) and o !=
bubbles[b]:
            bubbles[b].x += xinc
            bubbles[b].driftx = (random.randint(0, 4)-2)/10
            return o.x+xinc, o.y+yinc

pgzrun.go()
```

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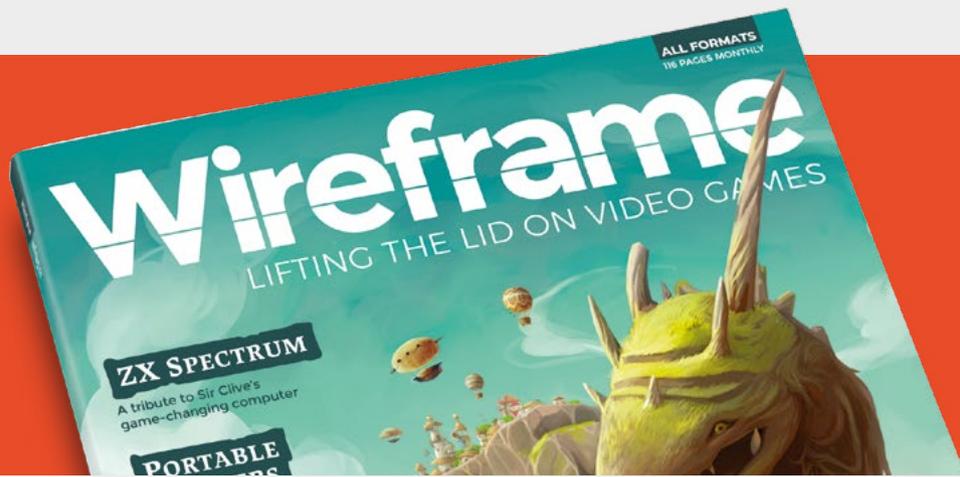
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ENHANCED MODE

THE CHALLENGE OF GIVING

GAMES A NEXT-GEN UPGRADE

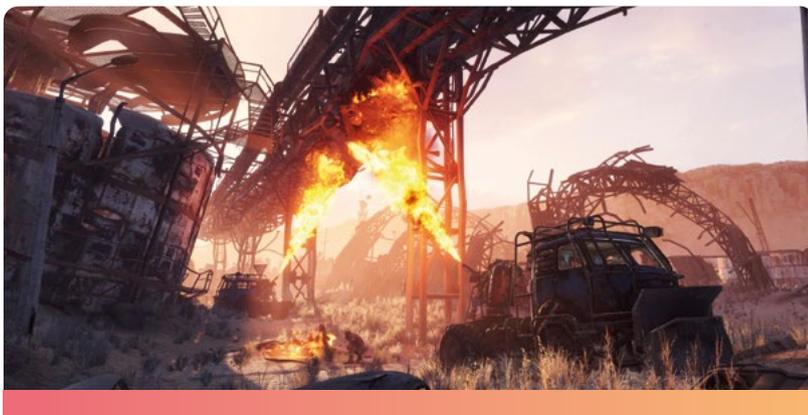
With true PlayStation 5 and Xbox Series exclusives still few and far between, we speak to the studios updating their titles for the next-gen era

WRITTEN BY AARON POTTER

After what seemed like an age, last November saw the next generation of consoles officially land with Sony's PlayStation 5 and Microsoft's Xbox Series.

Players were feverish. Expectations were high. Excitement was rife over what all this extra processing power and graphical fidelity would mean for triple-A games in the future.

▼ Exploring The Caspian section during the height of summer looks warmer than ever in *Metro Exodus - Complete Edition*.

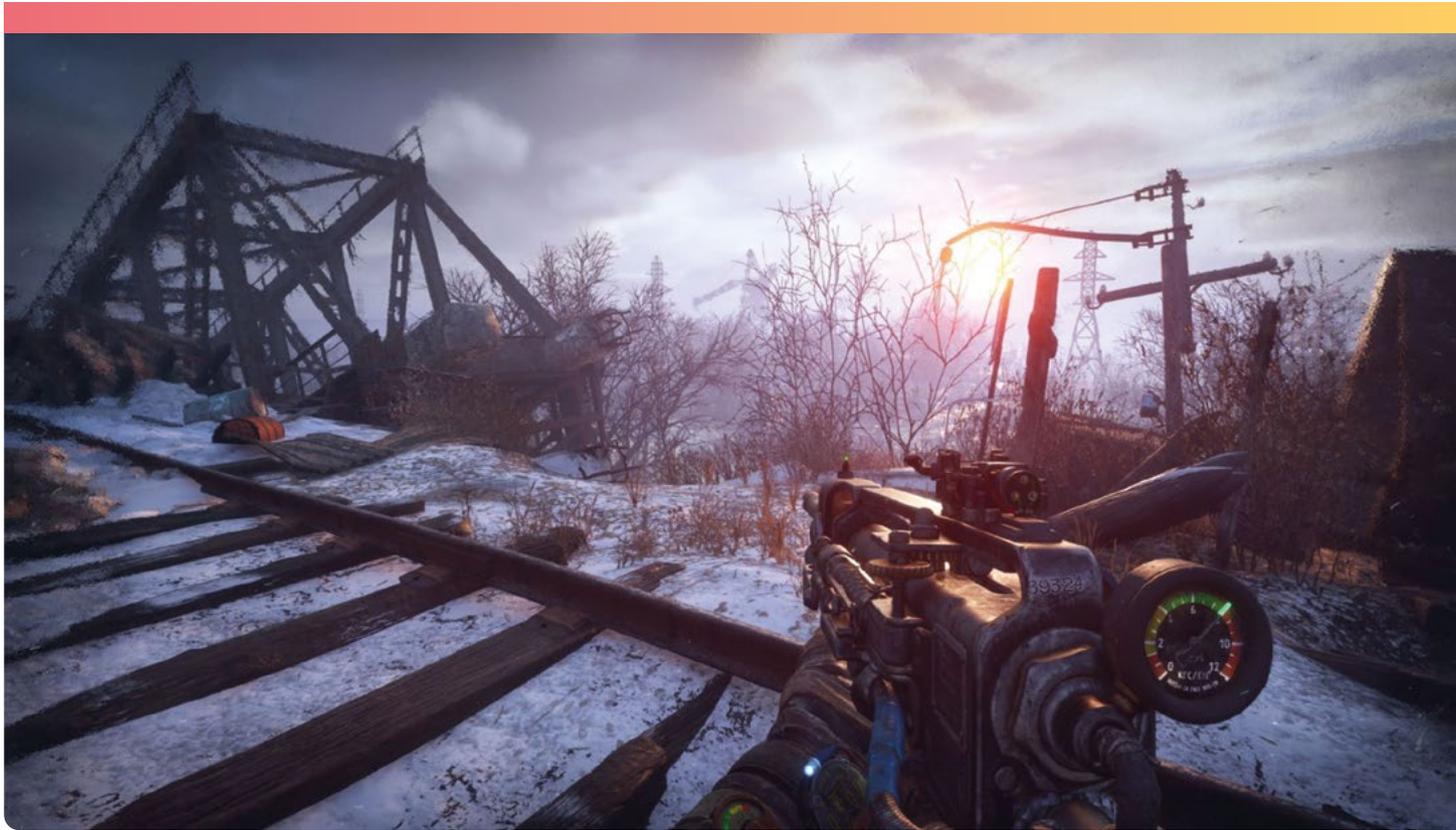


Throughout most of 2021, however, early adopters weren't exactly showered with next-gen exclusives. Instead, most developers have taken a different approach: giving existing games an enhanced lick of paint.

The process of porting a game from one platform to another is, of course, nothing new. But throughout this year, there's been a sense that, while the industry takes its time to get used to developing for these new machines, next-gen updates or so-called enhanced editions of pre-existing titles have been relied on more than ever to fill the release gaps. But what is the act of updating, say, a PS4 game to PS5 actually like? After all, the demand from players for games to look better than ever – preferably with 4K visuals, 3D audio implementation, and ray-traced lighting – is at a high. So what's the appeal of working on a next-gen upgrade for a studio?

"It depends on the developer, of course, but I think there are a couple of situations where it's a pretty clear-cut benefit," says Ben Archard, senior rendering programmer at 4A Games, the studio behind the *Metro* franchise. "There's the fact that you already have all the content made





and the vast majority of development is done. Therefore, it won't be the whole team working on that upgrade. It'll be a much smaller subset of the programmers and a few artists for polish tasks. But if that team can implement a set of engine-level improvements, with a noticeable impact on the final product, then they can potentially give that game a new lease of life and hopefully reach new fans."

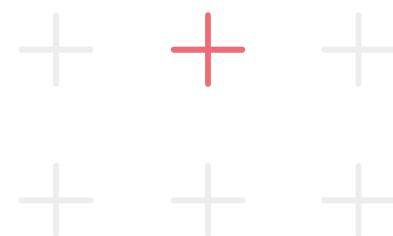
Metro Exodus released in 2019 to critical acclaim, with many praising its open-ended level design, bleak atmosphere, and strong survival elements. It was also hailed as one of the prettiest games available at the time. The PC version, in particular, impressed through its Nvidia RTX support, which enabled 4A Games to deliver true global illumination. The game's release hit right at the start of the ray tracing boom, but the team always had ambitions to make *Exodus'* settings even more believable – especially after learning that ninth-generation consoles were being built with this tech in mind.

“YOU ALREADY HAVE ALL THE CONTENT... THE VAST MAJORITY OF DEV IS DONE”

This eventually led 4A Games to relaunch *Metro Exodus* this year, both as an *Enhanced Edition* on PC and a *Complete Edition* for next-gen consoles. The latter introduced ray tracing to this bitter world of monsters and mutants for the first time, alongside a whole host of visual improvements. Above all, though, the endeavour was an excuse for Archard and his team to learn the architecture of these new consoles.

“There are tools and processes you need to understand how to work with before you can even touch the hardware,” Archard reveals. “In our case, we already had a feature set available on PC, but we really didn't know how much of that we'd be able to bring across until we started.” This led 4A Games to err on the side of caution at first, experimenting with how much “infinite bounce” lighting the PS5 and Series X could handle before finding a good optimisation level. “Beyond that, once you're up and running and working with a console, the main challenge becomes balancing your code for specific →

- ^ *Metro Exodus* has you venture through all four seasons, each with their own distinct colour palette and lighting setup.
- ✓ Ben Archard, the *Metro* franchise's senior rendering programmer.





LESSENING THE LOAD

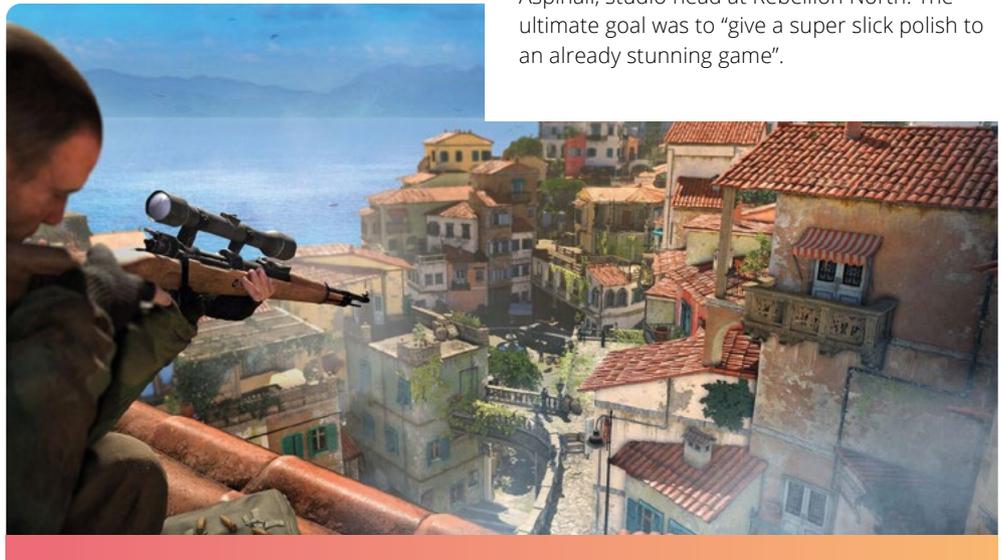
More so than most other next-gen updates, it was a priority for 4A Games to have light and God rays bounce around more believably in real time. The onset of ray tracing superseded the previous way of faking it, which was key to making the world of *Metro Exodus* look more life-like. Archard explains: "Ray tracing does the job that [we originally] hoped to achieve – and more accurately so, at that. There were so many lighting assets placed throughout the game's levels designed to mimic the effect of bounce lighting. All of these came with their own processing overhead and their removal was a great efficiency boost for us."

aspects of the individual architectures. For us, this meant things like moving features around in our rendering pipeline."

Sometimes the act of updating a last-gen game for modern consoles opens up opportunities the developer originally might have thought weren't possible. Because while most players might say they'd be happy with 4K visuals and a smooth 60fps simultaneously, often the make or break in developing a good enhanced edition is found in the finer details – the kind of difference that can only be made when the game's already been out for a while,

technology has moved on, and there's been ample time for re-evaluation.

This was the case for Rebellion Developments, the Oxford-based studio primarily known for its work on *Zombie Army* and *Sniper Elite*. Earlier this year, it released a free next-gen upgrade for *Sniper Elite 4* to existing players, while being eager to entice new ones with the promise of an increased 4K resolution and 60fps frame rate. Both elements aren't always possible, but it was a challenge the team strived to take on. "Right out of the gate, we knew we wanted to take advantage of the extra power provided by the latest generation of consoles," says Arden Aspinall, studio head at Rebellion North. The ultimate goal was to "give a super slick polish to an already stunning game".





▲ Locations like Italy are testament to how beautiful *Sniper Elite 4* was always intended to appear.

Fortunately, unlike some other developers, Rebellion came into the process with an enhanced version of *Zombie Army 4* already under its belt. Even then, implementing next-gen updates was still far from simple. Aspinall explains: “The challenge with *Sniper Elite 4* is that the game was based on an older version of our engine, so some modernisation had to take place and care had to be taken to limit unforeseen issues that the infrastructural changes would make. Having our own engine with solid design principles gives us the edge in these situations.”

The act of sniping Nazis and popping off headshots from afar already played and looked great before, but such a long gap between the PS4/Xbox One original and upgraded *Sniper Elite 4* resulted in a noticeable difference. “We’re always looking to push the hardware to its limit,” says Aspinall. “Whenever some new hardware comes out, it offers an irresistible opportunity to dial the quality up higher and higher. Whether that’s boosting the frame rate, increasing resolution, or even adding new tech, we know our players love this, and as developers, we do too.”

What was the new tech in *Sniper Elite 4*’s case? “One feature we were keen to implement was a full-screen post-process effect for contrast sharpening – AMD FidelityFX CAS. This allowed us to make details really pop – sharpening areas with less detail while not over-sharpening areas with high levels of detail. The end result is fewer visual artefacts and an overall sharpness not seen in the original game.” Such a visual flourish is a strong example of an aspect even players mightn’t know they’d want from an enhanced edition, since it subtly operates in the background.

If there’s been one slight downside to this new era of console upgrades, it’s been the constant confusion as to whether the enhancements are worth paying for. System-wide features like

“UPDATING A LAST-GEN GAME OPENS UP OPPORTUNITIES”

Smart Delivery on Xbox Series S and X take the complication out of the process by automatically upgrading players to the best version depending on their console, and equally publishers like Ubisoft seeking to streamline the upgrade path in cross-gen titles like *Immortals Fenyx Rising*, *Assassin’s Creed Valhalla*, and *Watch Dogs: Legion*.

Others, meanwhile, find themselves in a more awkward position. Because while previous console generations deemed it OK to charge extra for remasters, straight ports, and digital re-releases, the expectations of modern audiences have changed. If a player purchased a game not too long ago, does improving lighting and texture detail in the next-gen version warrant an added fee? Studios like 4A Games and Rebellion don’t think so, while a platform-holder such as Sony thinks otherwise with upcoming first-party titles like *God of War: Ragnarok* and *Gran Turismo Sport*.

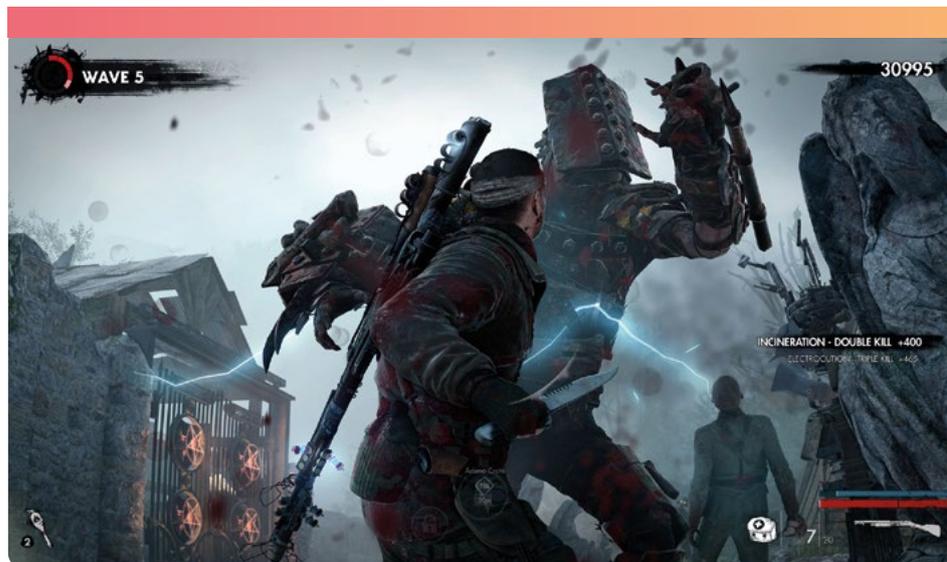
It helps in such instances, therefore, to sweeten the deal

by leaning on an older tactic: offer players who’ve invested in a new console additional content only available in the next-gen version. This was the route Square Enix’s *Final Fantasy VII* remake went down when releasing its *Intergrade* “enhanced” edition exclusively on PlayStation 5. Another developer that saw the generation jump as a chance to entice players with extra DLC →



▲ Arden Aspinall is the studio head at Rebellion North.

▼ Rebellion’s more recent work on *Zombie Army 4* (built in its latest engine) informed *Sniper Elite 4*’s enhanced edition upgrade.





▲ The next-gen upgrade works wonders for the smoky industrial atmosphere found in *GreedFall*'s towns.

SWITCHING PLATFORMS

Certain developers are so eager to get their games onto the PS5 and Xbox Series X, they'll hire an external team to take on the time-consuming task of porting it across. This was the case with Tarsier Studios' *Little Nightmares II*, which received a free enhanced edition just six months after its original release back in February. Adding in more atmospheric visual flourishes like volumetric lighting, ray-traced reflections, and improved particle effects, the next-gen version was worked on by Supermassive Games – the studio most known for *Until Dawn* and its *Dark Pictures Anthology* horror series.

was *GreedFall* from Spiders. An open-world RPG set in the mercantilism era, like *Metro Exodus* and *Sniper Elite*, it doesn't charge pre-existing owners, though new purchasers do gain access to the 'De Vespe Conspiracy' story add-on when picking up the game's next-gen *Gold Edition*.

"It's really interesting for any developer to take advantage of all the technical improvements brought by a new-gen console," says Spiders' Wilfried Mallet, technical director on *GreedFall*. "Developing that edition allowed us to learn the new architecture of the consoles and the new development environment too. Thanks to this [Gold] edition, we've also been able to make some massive changes to our engine, in particular porting it from an optimised DX11 version for consoles to a version using a DX12 philosophy entirely on all platforms."

Mallet agrees with Archard in that spending the time to update and enhance a game for a release on PS5 and Xbox Series X holds certain benefits. It's now become accustomed, for example, for load times to be a lot snappier, which can help the play experience in games like *GreedFall* by not breaking immersion so much. It's a testament, then, to platform-holders Sony and Microsoft that even last-gen versions running on new hardware can gain certain visual and mechanical improvements. Yet, as all the developers we've spoken to tell us, the result will never be quite as good as a dedicated next-gen edition.



GreedFall, while drastically updated on PS5 and Xbox Series X, is emblematic of another common trend that a lot of developers face with next-gen upgrades: simultaneous 4K 60fps simply isn't possible in every last-gen game due to how it was engineered, so instead, the player is given a choice between selecting dedicated Quality and Performance modes. The former prioritises visual resolution and fidelity, while the latter emphasises a fast frame rate. Early examples of this already existed before, with the launch of PS4 Pro and Xbox One X as mid-generation updates – and now it's only become more frequent.

So why, unlike *Metro Exodus* and *Sniper Elite 4*, are *GreedFall*'s enhancements handled differently? Mallet explains: "The game wasn't developed and optimised with that in mind back at the time. Our environments are too big, and there's too much content for that." But could that ever change? After all, even the PS5 version of Insomniac's *Spider-Man: Miles Morales* offered two visual modes, before offering a best-of-both mixture. "If the game had been directly developed on this gen, we would have probably been able to do even better," he says, "but given what we had, we're really happy with the result. The better frame rate enhances the animations, of course, and with the 4K graphical upgrades, we were finally able to highlight the beauty of the environments on consoles."

If the circumstances surrounding the game's original development are the issue, then it's only a matter of time until studios grow wiser and more accustomed to developing for next-gen architecture – until eventually, that's no longer the case. Already, we've learned that the PS4-to-PS5 and Xbox One-to-Xbox Series X process has inspired these developers to update their engines, firmly placing them in a position to excel in future projects. The only remaining obstacle to enjoying near-limitless visuals and performances, then, are cross-gen titles. But, as history so often proves, this will soon iron itself out once next-gen consoles become more widely available.





For 4A Games' Ben Archard, however, the work to get a game looking as good as possible is never finished. "There's always room for more features," he explains. "Our engine is in active development, and we have plenty of plans for the future." Such persistence is what enabled *Metro Exodus* to largely avoid the need to separate the PS5/Series X experience into either a 'performance' or 'quality' mode. Instead, there's just one improved edition for all next-gen players. "Performance and quality modes are not a concept we outright dismiss. You have to be a bit careful, though, and weigh their value against providing a solid 60fps experience."

Ultimately, while replaying polished-up games originally released for last-gen consoles isn't what most people buy new hardware for, in 2021, the practice has served as a necessary stopgap until the next-gen exclusive titles arrive. It's also an exercise primed to benefit both players and developers, making already-great games look and run better, while laying the technological foundations for future experiences to surpass even those results.

When asked what they think players expect from so-called enhanced editions on PS5 and the Xbox Series, all agree that it's about giving them a glimpse at what's to come using familiar

templates. "They've bought expensive new consoles, and they really want to benefit from their capacities, which is understandable, and that's what we tried to offer," posits Mallett. "Most of the players who already played the game on the previous-gen want to rediscover what they loved in the original version, but better, more beautiful, and faster."

Aspinall concurs: "[We] can crank up the visuals and provide a silky-smooth gameplay experience beyond what was possible for the original release. Players are always keen to play our games on the latest hardware – as developers, it's our job to make sure we bring the best of the technology to bear on this".

The implementation of any new feature is complex. That's why, new game or not, dedicating resources to squeeze the best performance out of new-gen machines is a worthwhile endeavour. Studios get accustomed to the machines they'll be developing on for the next decade or so, while an upgraded version of a game rewards existing fans (and hopefully attracts new ones). Plus it's not always *just* about pushing the boundaries of graphical fidelity, but rather discovering new programming solutions allowing all of a game's features to, as Ben Archard sums up, "evolve together". 🐜

“UPDATING AND ENHANCING A GAME HOLDS CERTAIN BENEFITS”

- ▲ As well as improved visuals and reduced load times, *CreedFall's Gold Edition* upgrade doubles the frame rate in Performance mode.
- ▼ Wilfried Mallett, technical director at Spiders.





Interactive / Death Drives A Bus

Developer Ben Burnes tells us about the process of making a 2D puzzle game with a deathly twist

Are you a solo developer working on a game you want to share with Wireframe? If you'd like to have your project featured in these pages, get in touch with us at wfmag.cc/hello

Like most mortals, the Grim Reaper has a job to do: collect the souls of the dead and deliver them to their final resting places. But even the Grim Reaper's horse is subject to the gloomier forces of nature, and so when the poor steed breathes its last one day, the Grim Reaper makes a practical decision: he gets a minibus.

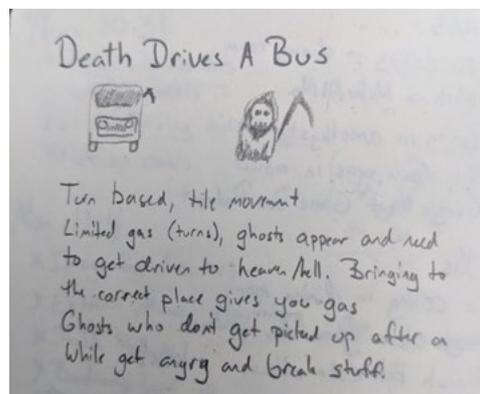
It's a scenario Minnesota-based developer Ben Burnes at Tallbeard Studios came up with while stuck in traffic. "I'd daydreamed about a puzzle game where you drive from place to place collecting and delivering things," Burnes tells us. "It was partly inspired by the old *Ghostbusters* game on the NES where you needed to drive around town and capture ghosts."

When the global pandemic began to take hold about a year later in 2020, Burnes returned to

the idea of Death and his bus full of lost souls; it was, he tells us, his "quarantine" project: "something to keep me occupied so as not to go crazy." And so it was that, while his wife sat on the sofa playing *Animal Crossing: New Horizons* on the Switch, Burnes got to work on what would become *Death Drives A Bus*. It's a charmingly lo-fi puzzle game in which you guide your bus-driving soul harvester around simple mazes of public highways, picking up colour-coded souls loitering by the side of the road.

There are several rules to make things interesting: first, souls have to be taken to their correct destination. Yellow souls are good, so need to be driven to the portals which lead to heaven, marked by yellow clouds on the map. Red souls are bad, so they need to be taken to The Other Place, as indicated by red bonfires. The second rule is, you can only have six souls on your bus at a time (which is probably still an improvement over the number of souls you can stick on the back of a horse, thinking about it).

Other complications crop up: your van has fuel, which means you have to do all your soul pick-ups and drop-offs in so many turns. Later, you'll encounter damaged roads that can only be travelled over once before they become impassable, and later still, other road users who'll block your path. "I always try to introduce new mechanics in an isolated state, free of other mechanics that muddy the waters," Burnes says. "That way the player hopefully understands how it works before things get complicated again..."



▲ One of the game's trickier levels. This one has crumbling roads and other vehicles that'll block your path if you get your timing wrong.

▶ Here it is, in print for the first time - Burnes's original design doc for *Death Drives A Bus*. We admire its brevity.



◀ You can see the souls filling up the seats on your bus on the bottom right. Top right is the ID of your latest pick-up.

Many of the modern 3D *Super Mario* games have the same formula for teaching their players: introduce a mechanic in a safe space, reinforce that mechanic with some kind of danger, and then start mixing mechanics together for complexity and challenge."

There's a pleasing difficulty curve to the levels, and the overwhelming sense that when you inevitably make a mistake and run out of fuel or render a road impassable, you'll figure out the solution if you just give it another go. The jolly, ZX Spectrum-like graphics and humorous touches add to the appeal: each soul you pick up has a little ID card that flashes up on the top right, telling you who they were and what they did when they were alive. Look, I just picked up an ex-chap named Mark Kowalsky, who was a YouTuber. Inevitably, he's going to hell. Peter Hearn was a cashier who was hugged to death. He's fortunate enough to be going to heaven. As you've probably gathered, we're rather taken by *Death Drives A Bus*. There's an easy-going vibe to it which belies the reality that it was made during a stressful, once-in-a-generation pandemic.

Game development isn't Burnes's day job – "I have a nine-to-five helping manage a team of developers at a bank," he tells us – and nor is it his only creative outlet. He's also a musician, and releases albums and DMCA-free tunes at a prolific rate, but he hopes he'll be able to devote more time to making games in 2022. "I have two games in the works right now," Burnes says.

"I always try to introduce new mechanics in an isolated state"

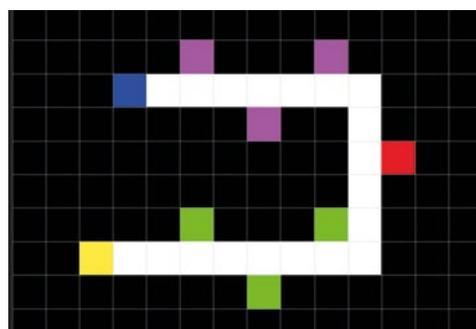
"One is called *Pawndamonium*; it's like a chess-based tower defence game. The other is *Hyperthread*, a mash-up between a *Cookie Clicker* and a skillshot game. *Pawndamonium* will hopefully be released late 2021, then I will likely start working on *Hyperthread*."

But what about *Death Drives A Bus*, we wondered: isn't it the kind of game that's crying out for a construction kit of some kind, like our *Boulder Dash* level editor on page 50? "I think that making custom levels is something that's so powerful in the longevity of the game," Burnes says. "Honestly, I'm still figuring out how to implement something like that... With *Death Drives A Bus*, all the levels are saved as tiny PNG files.

I imagine that I could find a way for players to manually open a custom PNG of their own."

And what about a Switch port? "I've applied to Nintendo for a Switch dev kit several times, with no luck," Burnes reveals. "Hopefully, someday, it'll happen. I do think this would make a pretty fantastic Switch game."

We concur. How about it, Nintendo? 🗨



STEAM OR ITCH?

"I've been struggling with this question a lot lately," Burnes says when we ask him whether Steam or Itch have served him better as an indie developer. "Maybe this is a controversial opinion, but I feel that Steam is becoming less and less relevant to small indie developers. I find that if you don't have your own reach on social media, your game will get buried pretty quickly on both Steam and Itch... I tried to market *Death Drives A Bus* once it hit Steam and so far it's only made \$150 there after a year. Granted, the game is only \$1, so I likely undervalued it by a lot. Conversely, giving away my games on some of the Itch bundles really expanded my reach. Many people heard of *Color Jumper* and *Death Drives A Bus* by getting them in those bundles. The people who followed me on Itch may also buy some of my future projects because of it."

Yes, you read that right: *Death Drives A Bus* is only \$1. You can buy a copy now at tallbeard.itch.io.

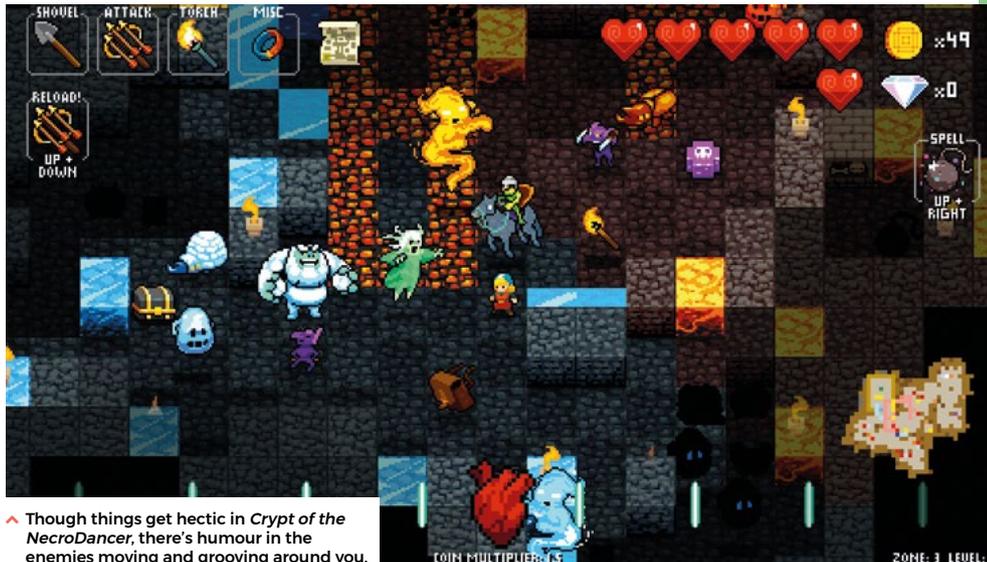
◀ Burnes designs and stores all his levels as minuscule PNG files. Here's the first stage reduced to its essentials.

beyond rhythm

How experimental developers are
remixing rhythm and gameplay to
create unique experiences

WRITTEN BY
ED NIGHTINGALE

How many of us have an attic full of plastic instruments? Rhythm games reached a peak in the mid-noughts with the *Guitar Hero* and *Rock Band* series, games that presented the fantasy of music-making with a few well-timed button presses. These were quintessential rhythm games – the pinnacle of beat-matching. But while those games were purely about music, indie developers have since experimented further by adding rhythm elements to other genres. Beyond simply beat-matching, these unique experiences integrate rhythm and traditional gameplay to put an interesting spin on established genres. Further, they allow developers to think differently about player inputs and musical outputs. But how did these genre remixes come about? And what unique challenges did development present? We spoke



▲ Though things get hectic in *Crypt of the NecroDancer*, there's humour in the enemies moving and grooving around you.

to three developers using rhythm to varying extents in their games to find out more about their novel approach.

rhythm is a necrodancer

For Ryan Clark, lead designer of *Crypt of the NecroDancer* from Brace Yourself Games, the rhythm was added almost by accident. "My goal was to make a 100% 'fair' roguelike game, but I wanted to keep as many of the true roguelike trappings as I could, including the turn-based nature of the game," he says. "I started out by bringing skill into the equation by forcing the player to take turns quickly. But moving quickly felt kind of like moving to a beat. So I tried playing to the beat of *Thriller* by Michael Jackson, and it felt great!"

The result combines beat-matching with roguelike mechanics, where rhythm is as integral as strategy. As explorer Cadence, you move around each grid-like dungeon, defeating enemies and collecting power-ups, all while the beat incessantly pulses across the bottom of the screen. The gameplay is akin to a dance; it can even be played using a dance mat.

Some players, though, find the heightened intensity of beat-matching a daunting prospect. That's why for Wan Hazmer, founder of Malaysian developer Metronomik, the company's 2020 release

No Straight Roads used rhythmic gameplay to a less strict extent. "I love rhythm games," he says, "but the problem was I couldn't get other people to play with me, because when they see me play, they get scared. I wanted easier access for people to get involved in music."

No Straight Roads is an action-platformer that sees a pair of musicians from an indie rock band defeating an evil EDM empire. While the platforming and boss fights may seem

straightforward, aligning the action with the rhythm of the music provides an extra layer of complexity. Hazmer explains: "[In *NSR*] the attacks all follow

the music, but at the same time, we don't want to scare people when they come in and they feel there's a pressure to follow the music."

Repetition also eases the player into the game, allowing them to learn the enemies' rhythmic patterns and react accordingly. Ironically, the infamously tough *Dark Souls* provided inspiration here: "When you play it again and again, you get the rhythm of when the enemy's going to attack. That kind of instinct is what we wanted in our game," says Hazmer.

In *No Straight Roads*, each of the bosses is a physical embodiment of a particular genre of music, which is then demonstrated through their movements. Take, for example, DJ Subatomic Supernova: his egotistical nature is reflected in his attacks. ➔

"I tried playing to the beat of *Thriller* by Michael Jackson, and it felt great!"

tales from the crypt

It's a testament to the uniqueness of gameplay in *Crypt of the NecroDancer* that it was picked up by Nintendo for the *Zelda* spin-off, *Cadence of Hyrule*, released in 2019 for the Switch and again developed by Brace Yourself Games. Here, the rhythm gameplay merges with action-RPG mechanics and *Zelda* tropes, allowing fans to battle along with well-known series tunes. It provides yet another unique spin on this type of gameplay – clearly, triple-A developers are taking note.



▲ The bosses in *No Straight Roads* range from towering colossi to smaller enemies, each one reflecting varying musical genres.

"The idea is he thinks everything revolves around him, so we made it in such a way that he spins the planets instead of discs, to show that he's in control of the universe and in the centre of it," explains Hazmer.

the power of song

Both *Crypt of the NecroDancer* and *No Straight Roads* take very different approaches to the idea of rhythmic combat. Where the former is tied strictly to beat-matching, in the latter you're actively avoiding those beats.

By contrast, *Wandersong*, a 2018 puzzle-platformer by Greg Lobanov, eschews rhythm entirely. Instead, it's a musical game about self-expression. "I was interested in how to make a game controller into a musical instrument that felt playful and expressive," says Lobanov.

"The idea was to build a musical instrument and then build a game around it."

That musical instrument is the human voice, inspired by Lobanov's own reaction to singing along to music in his car. In *Wandersong*, a bard is sent on a quest to save the world, which he does by singing to enemies to defeat them. A wheel appears around the character, and players must select colours and directions that relate to different pitches, seeking relevant hints in the world to solve puzzles and interact with a plethora of vibrant characters. Yet none of this gameplay is set to rhythm or tempo, giving the game a more free-form and expressive quality. There are sections of *Wandersong*, meanwhile,

where the rhythm is tied to the narrative: one scene sees the bard at a mentally low ebb, and Lobanov uses highly structured rhythmic gameplay here to illustrate his depression.

The focus, then, is on narrative over gameplay, reflected in the use of rhythm. *Wandersong's* central theme is the restorative power of music and its ability to connect with people. "In *Wandersong*, everything is about telling a story and about trying to get the player to make things up and have fun in a playful way that's separate to logic and problem-solving," says Lobanov. "It's all stuff that's very ephemeral and character-driven."

Each of the three games covered here employ rhythm to varying extents, bringing unique challenges for their developers, particularly in terms of difficulty. Should rhythm make games more or less accessible? In *Crypt of the NecroDancer*, the

"Rhythm is inherently unplayful - it's structure, and you can be wrong"

use of rhythm provides added challenge for the player, which needs to be carefully balanced. As Clark explains: "Since players must move to the beat of the music, the game's difficulty is tied closely to the tempo of that music. And since we want the difficulty to ramp up over time, that means the music tempo must increase slowly over time. This is pretty restrictive, and means we can't always use music in the ways that games normally do!"

He continues: "If we wanted a particular boss battle to feel slow and melancholy, for example, we'd have to lower the BPM of the music to make it audibly feel that way. But since lowering the tempo would reduce difficulty overall, we'd



▲ Playing through *Crypt of the NecroDancer* often feels like an intense musical game of chess – not just in this boss fight.

have to compensate by increasing enemy health, movement speed, pattern complexity, or quantity.”

This resulted in *Crypt*'s 'Deep Blues' boss – a play on blues music and the chess-playing computer, Deep Blue. Here, the dance-rock inspired music slows to a blues shuffle, and the player is given an entire chessboard's worth of fast-moving enemies to defeat.

By contrast, Lobanov wanted to make a game his mum could enjoy. “*Wandersong* is about the emotional experience, and I was surprised to realise that has nothing to do with difficulty. Playing something really hard isn't the same as feeling something. And finding ways to make people feel things without having that frustrating difficulty was a new thing for me to figure out.”

With *Wandersong*, Lobanov aimed for a gentler experience centred on creativity and playfulness. That led to an improvised spirit for the bard's singing, something more akin to a jam session that abandons rhythm in favour of accessibility. In doing so, he side-stepped the difficulty wall of more notes to hit at a faster tempo. “What made the singing interesting in *Wandersong* was being able to make stuff up, to be playful,” says Lobanov. “Putting that into rhythm detracts from the part that makes it fun, which is being expressive and playful. Rhythm is inherently unplayful – it's structure, and you can be wrong.”

For Hazmer, the use of rhythm in *No Straight Roads* brought a unique design challenge: timing. In most games, enemy attacks are given visual cues so the player can react accordingly. *No Straight Roads* throws musical cues into the mix, which must be anticipated by the player in tempo. This means character animations needed to precisely match the music. For example, with the DJ boss: “To make sure he spins on the beat, we need to know how many frames of animation are before that [action] and start the animation [in time],” says Hazmer. With so many bosses and

musical styles, this presented a huge challenge to ensure “not every boss is the same”.

What's more, the soundtrack gives the player feedback. Each track is replicated in three genres (rock, funk, EDM) and divided into three channels: backing, melody, and rhythm. The designers can then switch between different genres and channels dynamically, depending on how the player performs. Do badly, and the music will be pure EDM. Do well, and you'll hear rock music seeping in, remixing the audio on the fly. “It's a lot of effort,” says Hazmer, “but the reason we're doing this is because I care about user experience, which is that your music can change the world – we took that and applied it to everything.”

power fantasies

So what's the impact of this rhythmic gameplay for the player? If many video games present the illusion of power, rhythm is an accent, providing added oomph to every sword swing, every leap of faith, every punishable miss. It adds readability to gameplay. It can heighten tension, or it can provide freedom of expression. And for all its complexities in melody, harmony, and rhythm, music is universal. The result is three games that explore the power of music and its influence on the game world. More than just strumming a plastic guitar, there are narrative and gameplay consequences to the use of rhythm.

As Lobanov says: “I think it's a really fun power fantasy – what if you could just spread that [musical] energy in such a powerful way that the world changes around you? How do you make a game about that?” 🎵



▲ In *Wandersong*, electing colours from the wheel allows the bard to sing and interact with the world and its characters in unlikely ways.

upbeat music

Wandersong is a game all about spreading positivity, inspired by Lobanov's reaction to Gamergate. “I wanted to make something that was so overpowering with positivity and wanting to spread something good,” he says. “It felt like everything sucked in life and I wanted to try and make something that fought this tide of hatefulness that seemed to be spreading.” Music became a way of overcoming hatred through optimism – something that also comes through in the whimsical art style.

Interface Online Diary



Online Diary

GITTIN' GUD

Another delve into the jungle of licensed tie-ins – it's Predator: Hunting Grounds

WRITTEN BY IAN "AIN'T NO MAN" DRANSFIELD

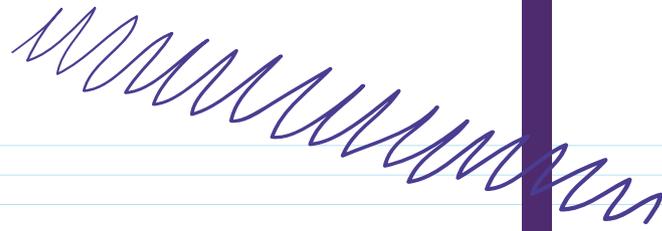
▲ The game does a wonderful job of making your entire squad shoot wildly into the trees when they think they've seen something moving.

Last month I tried the let-down that was the *Aliens* tie-in, *Fireteam Elite* – itself now on the receiving end of stories about its near-complete lack of playerbase, mere months following launch. Probably the impact of last month's column, let's be honest. But that licensed aspect stuck with me, and with PlayStation Plus (fairly) recently offering up *Predator: Hunting Grounds* as a freebie, I thought 'Why in heckeroonie not, eh?'

First up, and most importantly, nobody had told me Arnold Schwarzenegger had reprised his role as Dutch from the original movie to record some audio diaries, giving an insight into what the big burly boy got up to in the wake of his

adventure in the Val Verde meat-grinder during the late 1980s. It's fanfic spoken by the man who actually played the character, and it is *absolutely the thing I am living for*. But that's beside the point; we're here for the game. Apparently.

Hunting Grounds is a 4-v-1, team-versus-individual, first-person/third-person, shooter/shooter-slasher, mission-based/hunt-based... *game*. On one side you play as a soldier in a fireteam of four – hyper-macho hombres and mujeres kitted out with all the equipment they need to head into sovereign nations and destabilise legitimately elected governments. I mean, you don't appear to actually do that, but if there were CIA-themed DLC at some point in the near future, I wouldn't bat an eyelid.



▲ Knocking down the predator doesn't mean you've won: there's usually a very large explosion to contend with (and run away from), as seen here.

Jumping into different – but functionally identical – jungle environments, you're tasked with completing a few missions before running away, getting to the chopper, and evacuating. It involves a lot of killing truly stupid AI troops, holding buttons on things for a while to activate them, and defending positions for a couple of minutes for *stuff* to happen to push the mission forward. If this were the whole game, I'd have given up within minutes because it is rather intensely boring. Thing is, while it's all going on, I

was both hearing the telltale drumming of a very familiar, *Predator*-shaped soundtrack, as well as the odd bit of audio here and there reminding me there was indeed something in those trees.

Because yes, you're being hunted by a predator the entire time – and that predator is controlled by another human player, so the experience varies wildly. One time we finished the entire mission without so much as hearing the big alien bugger, while another playthrough saw the whole squad separated from their... well, torsos within a couple of minutes of starting. I'm not sure I found any of this a reliably *fun* experience, but there's a certain power involved in getting the atmosphere, the music, the sound effects right in something like this. It definitely made the nostalgia gland stand to attention, even if it didn't make me want to bother playing the game any more than I already had – except to unlock more of Dutch's diaries, because I am nothing if not a disgusting consumer who laps up cheap tricks like that.

The other side of this coin is, of course, playing as the predator. The Yautja. Marvin and his Massive Mandibles. The Kevin Peter Hall Experience. It's distinctive, and not just

“A reminder that there's never been a truly good, Predator-focused game”

because the perspective shifts from first to third-person. You're alone, so no relying on Xxx_GAMERELITE_69x420_xxX to watch your back while you're hacking satellites or blowing up counterfeit money printers. You've significantly better technology to track and – yep – *hunt* the fireteam, though no on-screen markers telling you precisely where to go as with the human team. You can take a hell of a lot more punishment than the pink-and-fleshy folks can, too, though, in a stand-up, face-to-face fight against all four, you *will* lose. It's difficult to get the hang of, I found, but there's a genuinely impressive balance at play with the asymmetrical 'sides' you play on.

Slapping on your invis-camo, activating heat vision, hiding up a tree, and blasting soldiers with a plasma caster on your shoulder is gleeful. Brilliant. A reminder that there's never been a truly good, solely *Predator*-focused game.

But this isn't a truly good game, sadly. It's loose and unfulfilling, and the good ideas behind the lopsided (yet balanced) play soon get drowned out in favour of playing a regular game of sprint-to-the-objective-and-ignore-everything, as with many mission-based online games.

It might initially have felt like one to *stick around* with, but I doubt I'll be coming back *over here* to *Predator: Hunting Grounds* anytime soon; it's not the *sexual Tyrannosaurus* I was hoping it would be, and in fact feels more like the sort of experience I wouldn't wish on a *broke *cough* dog*. Sadly though, it being a digital download, *it doesn't bleed, so we can't kill it*. Back to *pushing too many pencils*, methinks. *Ain't got time to bleed. Deeper than an Alabama tick. Get to the chopper*. Quotes! ^W



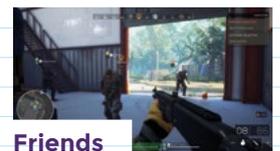
▲ When will hunting using heat vision ever not be fun? Never, that's when.

Payback time



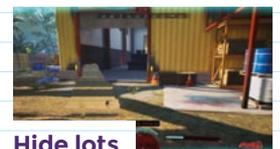
Mud up

Mud exists on the floor. Interact with the floor to apply mud to your body, thus creating what scholars call 'that bit from the film where Arnie gets mud on him and the Predator can't see him'.



Friends

It also helps to just pepper some passes around, usually from your back four, pinging from one to the next and back again to frustrate and tire your opponent, who will inevitably be running at full pelt to tackle you.



Hide lots

You're not fully invisible most of the time as the Predator when cloaked, but you're as good as. So yeah, use the tools nature ('alien technology') gave you and you might get some new skulls for the mantelpiece.



System Profile

Nintendo GameCube

How Nintendo's dinky console won over the gaming public's hearts and minds

▼ Although it was originally made for the N64, *Animal Crossing's* global popularity began with its superbly localised GameCube iteration.



Nintendo ended the 1990s knowing it had a big fight on its hands. Sony's PlayStation had vastly outsold the N64 by the end of the decade. Then, in the late nineties, Microsoft offered to buy Nintendo for \$25 billion, a sum the Japanese firm turned down flat. Nintendo, therefore, resolved to make a follow-up to the N64 capable of meeting its opposition head-on: a console that was technically capable, easy to develop for, and affordable for consumers.

As work began on 'Project Dolphin' – what would become the GameCube – Nintendo was bullish about the system's

prospects in the face of its rivals, the PlayStation 2 and Xbox. "I don't think the Xbox will do very well in Japan," Nintendo boss Hiroshi Yamauchi predicted. "The same old genres and development methods still work in America, but they won't interest the more discriminating gamers of Japan. The PS2 was just discounted too, but I can't expect that will have much of an effect."

Ultimately, Yamauchi's confidence was misplaced: the sixth generation ended with the GameCube selling about 22 million units – less than the Xbox at 24 million, and considerably less than the PlayStation's soaring sales of 155 million. Muted though its performance was on



◀ It's hard to imagine now, but the 'toon' look unveiled for *The Legend of Zelda: The Wind Waker* caused quite a bit of controversy.

▼ You could play handheld titles on a proper telly, thanks to the Game Boy Player. Just don't lose the disc, for heaven's sake.



release in 2001, the GameCube was nevertheless one of the most significant hardware launches in Nintendo's history as a console maker. No, it didn't redefine the entire gaming market like the NES or the Game Boy before it, but the GameCube undoubtedly informed Nintendo's design, marketing, and technical choices for the next 20 years.

Never again would the big N try to keep pace – or even outpace – its rivals in terms of processing power or advertising.

Never again would it wilfully ignore online gaming – even if its subsequent efforts to make headway in this space prove to be more than a little flawed.

It's easy to forget just how much power was tucked away inside the GameCube's diminutive, boxy shell. As unassuming and faintly toyetic as it looked, the system was more than a match for its contemporaries, the PS2, Xbox, and Dreamcast. With its solid 'Flipper' GPU (created by ArtX, a firm snapped up by ATI not long before the console's launch) and 485MHz 'Gekko' CPU, the GameCube was capable of some

“The system was more than a match for its contemporaries”

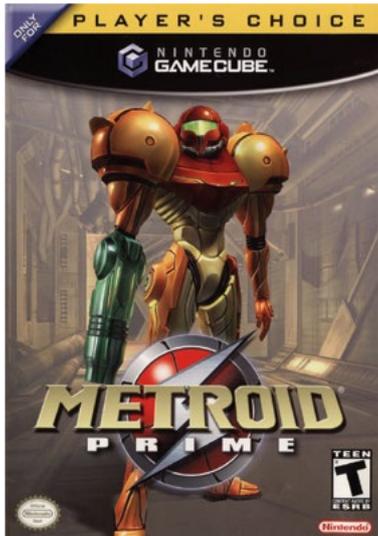
seriously impressive visual feats; to this day, the sheer smoothness and speed of *Star Wars Rogue Squadron II: Rogue Leader* and *F-Zero GX* remain something to behold. And yet the horsepower contained in the GameCube itself didn't tell the full story: ever fearful of pirates eating into its bottom line, Nintendo went for a proprietary, disc-based medium

that amounted to a mini-DVD.

On paper, this might have sounded like a reasonable compromise

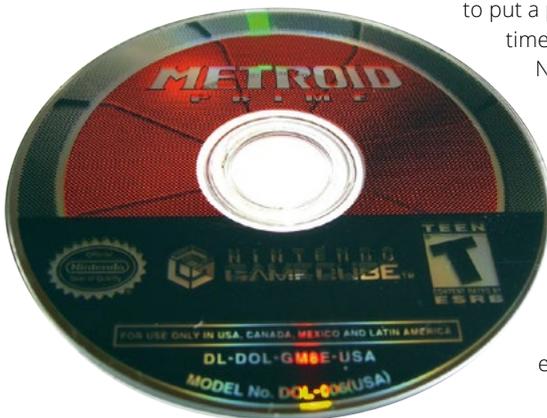
when compared to the N64, which remained stubbornly married to chunky, expensive cartridges even as the rest of the industry moved onto discs. The GameCube's 8 cm DVDs represented an attempt to meet the market halfway, then: cheaper to produce than the cartridges of the last generation, but more difficult to reproduce by sneaky pirates. The size came at a cost, though: where the standard discs used by the PS2 and Xbox could hold up to 8.5GB of data on a dual-layer disc, the GameCube's media could hold just 1.5GB. This meant that ➔





^ Nintendo gambled when it handed one of its most beloved properties to Retro Studios. It paid off: *Metroid Prime* is one of the GameCube's finest games.

^ The GameCube's mini-DVD media meant developers were limited to a relatively tight 1.5GB per disc. It certainly looked cute, though.



for all the processing power put out by the platform itself, developers would often have to cut corners in order to fit a cross-platform game onto a GameCube disc. (Alternatively, there was the awkward option of spreading the data over two discs – an approach taken by Capcom when it made its *Resident Evil* port for the GameCube in 2002.)

Media aside, Nintendo tried hard to act on the issues raised during the Nintendo 64 era. The fifth-generation console was a success, certainly, even if it did ultimately lose the sales race to the PlayStation by a hefty margin. But the N64's architecture was also criticised for being difficult to develop for; Nintendo's Shigeru Miyamoto tried to put a positive spin on this at the time, effectively saying that the N64's fiddly architecture

was a necessary "rite of passage" that "weeded out weaker developers at an early stage".

Behind the scenes, though, Nintendo clearly realised that it needed to make the system more approachable for external developers, since the

GameCube was a far friendlier beast than its predecessor. Indeed, reports soon circulated that the console was easier to work with than the PS2.

Lowering the barrier to entry could only do so much to boost the third-party interest that Nintendo wanted, however: while developers like Capcom and Sega pledged their valuable support early on, the GameCube's library of third-party

games topped out at around 600 in 2007; better than the 393-ish games made for the N64 in its lifetime,

but markedly less than the roughly 3800 reportedly released for the PS2. One other clear blow for Nintendo was the loss of Rare, the British studio that had added untold value to the SNES and N64's libraries with such games as *Donkey Kong Country* and *GoldenEye 007*. Rare's 2002 acquisition by Microsoft – a canny strategic move on the latter's part – suddenly left Nintendo without one of its key external pillars of support. *Star Fox Adventures* would be the last game that Rare made for Nintendo.

Not that Nintendo helped itself much when it came to the GameCube's launch. Just as the N64 arrived several months later than billed, giving Sony over a year's head start with its new-

"The GameCube was a far friendlier beast than its predecessor"



◀ As well as the indigo version seen at launch, the GameCube was available in a variety of colours, including the Japan-only 'spiced orange' edition.

fangled competitor, the PlayStation, so the GameCube failed to emerge in 2000 as originally planned. This gave a valuable head start to the PS2, which appeared globally in 2000, and put the GameCube's release in the same month as the Xbox, a system that was in many ways the polar opposite of the GameCube.

Launched in the US in November 2001, just three days before the GameCube, Microsoft's offering was big, chunky, and aggressive, while the GameCube was dainty and cute; the Xbox had *Halo*, a boisterous and genre-redefining console shooter, while Nintendo initially offered the soft-edged, ghost-busting fun of *Luigi's Mansion*. The Xbox had proper online gaming support in the shape of Xbox Live; the GameCube had a modem adapter, sold separately, which was only supported by a tiny number of games.

Throughout the eighties and nineties, Nintendo had largely dominated the video game market, particularly in the United States. After falling to second place in console sales in the N64 era, the GameCube marked the point where the firm was really beginning to look out of step with the times. The Xbox and PS2 were playing host to edgier titles like *Grand Theft Auto III*; Nintendo relaxed a little bit and allowed darker games like *Eternal Darkness: Sanity's Requiem* and

Resident Evil 4 onto the GameCube, but these did little to change the perception that the system was aimed at a younger market.

The sheer financial clout of Nintendo's new rivals didn't help matters, either. Approximately \$50 million was spent on marketing the GameCube at launch, which sounds like a lot, until you learn that Microsoft pumped a startling \$500 million into selling the Xbox. Figures like this reveal just what an uphill battle Nintendo faced during the sixth generation of consoles, an era that saw Sega finally throw up its hands and withdraw from the market following the slowing sales of its Dreamcast.

To make matters more difficult, truly system-shifting titles were in worryingly short supply in late 2001. The GameCube's *Super Mario* entry was delayed, and the next *Zelda* game was still months away, so early adopters had to make do with the likes of *Luigi's* →



Cube design

When it came to the look of the GameCube's case, all kinds of ideas were thrown around during early development. According to hardware designer Kenichiro Ashida, one concept resembled a flying saucer. A cuboid shape was ultimately chosen to make the system look friendly and less utilitarian; as for that now-famous handle, this was intended to underline the console's easy-going style. "The reduced size of the GameCube allows you to carry it from room to room quite easily," Shigeru Miyamoto said in a 2002 interview with Nextgame.it. "Every family has at least two TV sets at home, and it is very easy to bring the GameCube from the living room to the sleeping room... We looked for simplicity and practicality: GameCube wants to be a console that fits all the family, from the youngsters to the elders."

◀ As well as new entries of standing franchises, Nintendo created some new properties for the GameCube, including *Pikmin*.



Add-ons

If playing the GameCube's own library of games wasn't enough for you, there were plenty of ways to broaden the console's horizons. A special link cable allowed you to connect the Game Boy Advance to its bigger sibling, unlocking an array of extra gameplay options in the likes of *Animal Crossing* and *The Legend of Zelda: Four Swords Adventures*, as well as use the GBA as a second screen. This latter function came into its own in games like *Pac-Man Vs.*, where the player holding the GBA had a different view from those looking at the television – an idea Nintendo explored further with the Wii U. A more flexible peripheral was the Game Boy Player, which suddenly meant you could play a wealth of Nintendo's handheld games on your living room television. God help you if you lost the tiny disc that came with it, though, as it rendered the hardware that sat under the GameCube useless. A quick check on eBay suggests there are far more peripherals than discs still out there in the wild.

^ *Super Mario Sunshine* wasn't available until well after the GameCube's launch, but it proved worth waiting for.

Mansion, *Super Monkey Ball*, and *Wave Race: Blue Storm*. In retrospect, these were all decent, even great games; at the time, the line-up was met with a smattering of disappointment.

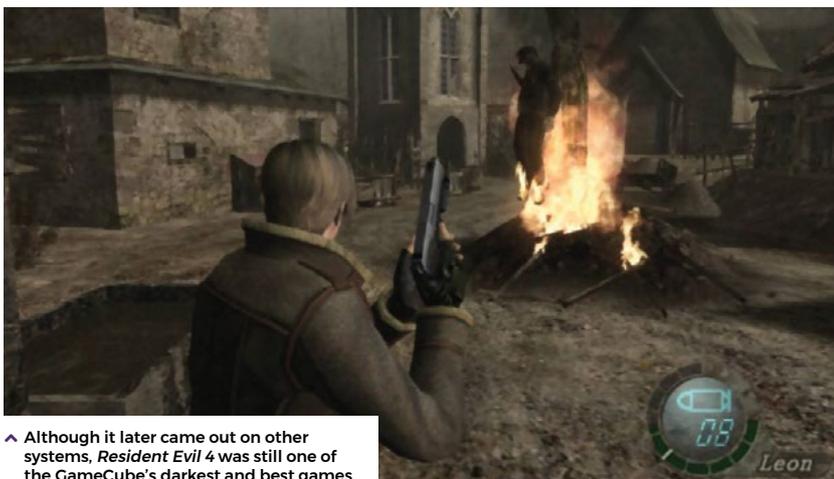
Certain segments of Nintendo's fandom were loudly disappointed with other aspects of the GameCube's launch, too. With its diminutive form factor and carrying handle, didn't the console look a little, well, childish? That controller: why was the C-Stick so small? Did the D-Pad have to be in such an awkward place? More grumbles were to come in the months that followed: the new toon-shaded aesthetic in *The Legend of*

Zelda: The Wind Waker was met with a certain amount of consternation over its perceived naivety.

In many respects, time was kind to the GameCube and its games, though. The brilliance of its controller snapped into focus with the launch of *Super Smash Bros. Melee*, to the point where pad and game are now inseparable; even today, fans are still playing *Melee* in competitive tournaments. USB-enabled versions of the GameCube controller are also out for the Nintendo Switch – handy for bouts of *Super Smash Bros. Ultimate*.

The great gaming public was eventually won over by *The Wind Waker's* toon styling, too, and it's an aesthetic that stuck around for several *Zelda* outings in the years that followed – most recently in *Tri Force Heroes* on the 3DS.

Certain titles announced as GameCube exclusives didn't remain that way – Capcom's franchise-refreshing *Resident Evil 4* was ported to the PS2 and later PC – but still, the GameCube's library is, in retrospect, positively stuffed with absolute classics. *Animal Crossing*, ported though it was from the N64, was a joyous, bravely relaxed life sim whose popularity only gathered momentum from generation to generation. *Paper Mario: The Thousand-Year Door* was a peerless action RPG made with real humour and warmth; *Pikmin* was a real-time strategy



^ Although it later came out on other systems, *Resident Evil 4* was still one of the GameCube's darkest and best games.



▲ Of the five titles Capcom announced as GameCube exclusives, only one remained so: P.N.03, Shinji Mikami's flawed sci-fi action title.

game that just about anyone could get into. Then there was Nintendo's real coup of the GameCube era: its acquisition of US developer, Retro Studios. Under the watchful eye of Nintendo, the firm created *Metroid Prime* – a triumphant return for a franchise that had lain dormant for years, and arguably one of the GameCube's finest action titles.

Little wonder, then, that as the GameCube's 20th birthday arrived in September 2021, the overwhelming sentiment on

social media was of celebration. For a younger generation of gamers whose early memories sprang

from the GameCube and its games, the cloud of disappointment that hung over the system simply never existed.

The GameCube certainly wasn't a disaster, as the Virtual Boy was. In terms of games and longevity, it far outpaced the muddled, overlooked Wii U (a console that'll likely enjoy a reappraisal of its own in the fullness of time), and the GameCube certainly didn't sound the death knell for Nintendo as a hardware maker, as the Dreamcast had for Sega.

All the same, the GameCube proved to be a pivotal moment for Nintendo. Following its launch, the company quietly returned to the 'withered technology' ethos dreamed up by eminent Game Boy designer Gunpei Yokoi. The GameCube's successor, the Wii, would use fundamentally the same architecture as the GameCube for its hardware. The Wii was more powerful than the GameCube, admittedly, but in terms of processing grunt, it lagged far behind its

contemporaries, the PlayStation 3 and Xbox 360. It's a practice that continued with the Wii U (an even bigger sales disappointment for Nintendo than the GameCube) and its thumpingly successful replacement, the Switch.

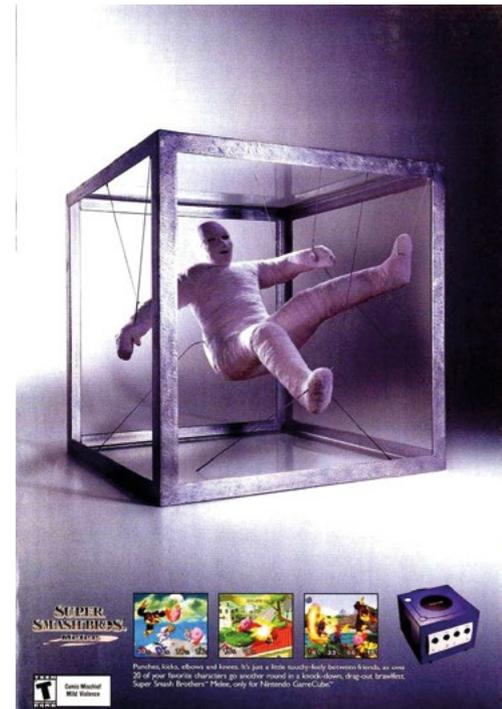
Nintendo learned other lessons from the GameCube, too: it finally moved to regular DVDs for the Wii's media, and following criticisms of the GameCube's lack of online support, addressed the issue (albeit with mixed results) with its successor. The GameCube's successors would also finally garner the third-party support that Nintendo had craved in the early 2000s: indeed, shop shelves positively heaved with Wii titles, and more recently, the Switch has become a miniature haven for indie developers.

The GameCube has been on quite a journey over the past 20 years, then. In retrospect, it sits in the middle of Nintendo's video game lineage, with

the likes of *Donkey Kong* and the *Game & Watch* series putting the firm on the map at the start of the 1980s, and

the GameCube marking another turning point two decades later. For a while, the GameCube looked destined to be remembered as a missed opportunity: less successful than the NES or SNES, and less innovative than the N64. Viewed in 2021, though, the GameCube has an almost timeless allure: its design feels cosy and intimate, and its games are some of the most unique and important in Nintendo's entire catalogue. What a difference a couple of decades makes. 🎮

“The GameCube proved to be a decisive moment for Nintendo”



▲ Nintendo spent millions marketing the GameCube over the course of its lifespan, and the ads became increasingly odd towards the end of its reign.

▼ Only available briefly, the Panasonic Q was an oddball marriage of GameCube and conventional DVD player, sold at a hefty price at launch. It's now quite a collector's item.



Fortnite, everynite



STEVE MCNEIL

Hi, my name is Steve, and I'm an addict.

“That all sounds incredibly sinister, and maybe it is”

I've been asked a few times recently about *Fortnite* by fellow parents and, to my shame, as 'Mr. Games', I'd never really played it. If you're like them, fear ye not, as I've now fallen down the hole so that you don't have to. The core game is simple. You get plopped on an island with 99 other people, and the goal is to not be dead. To the casual observer, that might seem like it would soon get repetitive but, every day, a 'Punchcard' containing three new quests is delivered to you. Successful completion of these grants you a pile of XP, which allows you to level up, granting you 'Battle Stars' which you can spend on cosmetics like emojis and graffiti to personalise your experience.

Occasionally you can even get free 'V-Bucks', the in-game virtual currency that you can blow on various other items/avatars in the in-game Item Shop. Theoretically, if you played the game (which, itself, is also free) for three-and-a-bit seasons (approx ten months) you'd have enough V-Bucks to pay for the game's premium 'Battle Pass' (which gives you a wider range of items to spend your Battle Stars on) without it costing you any real money. Once you have that, it rewards you more than enough V-Bucks each season (1500) to never have to shell out cash again, if you're prudent with them.

Of course, that won't happen. If you're playing this game regularly for the best part of a year, you love it, and, if that's the case, you'll have seen

so many things in-game you 'need', to customise your experience. To really tempt you, the game's Item Shop refreshes every 24 hours with a different selection of virtual merchandise. This, of course, creates artificial scarcity of the many items that *could* appear each day, as you can only buy them when they appear. As a result, if you log in and see a cool skin you saw someone else using a few weeks ago, you're compelled to grab it before it's gone again the next day.

Going back to those Punchcards, there's a weekly one too, as well as a plethora of Character ones, guiding you to complete quests for the world's cast of in-game NPCs. Both of these rain yet more XP down onto your grateful, addicted, head and also ensure that every time you play, you've got something different to do to keep things fresh, as a sort of sub-quest alongside the primary goal of not getting dead.

And the world itself isn't even static. Hour by hour, day by day, the map is evolving, and different game mechanics come and go, as the game's metanarrative plays out slowly over weeks, months, years through its chapters and seasons. In short, if you're wondering why your kids seem obsessed with it, it's because it will almost endlessly reward you with something new for giving it your time, attention, and, in all likelihood, money.

That all sounds incredibly sinister, and maybe it is. But the game also offers a way to play with your friends, wherever they are, whatever platform they're on. Nintendo Switch, PC, PS5, Xbox, even your phone – *Fortnite* is everywhere, and cross-platform play is a breeze. And it's entirely free. Theoretically. As a result, it's been a source of comfort and happiness for a great deal of people through lockdown, and that is a Very Nice Thing.™

If none of this made sense... basically, if your kid loves *Fortnite*:

1. Buy them the Battle Pass (works out at about £2/month)
2. Buy them as many V-Bucks as you can afford

Alternatively, if you want to spend less money and ensure they're not so addicted, start them on cigarettes instead. ☹️



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Reviews, retro games, and lots more besides

- 92. Hoa** PC, PS5, XB S/X, PS4, XBO, Switch
- 94. Road 96** PC, Switch
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- 96. JETT: The Far Shore** PC, PS5, PS4
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▲ Page 96: *JETT* is hype-powered, but our review doesn't think it's enough to keep it going.

OUR SCORES

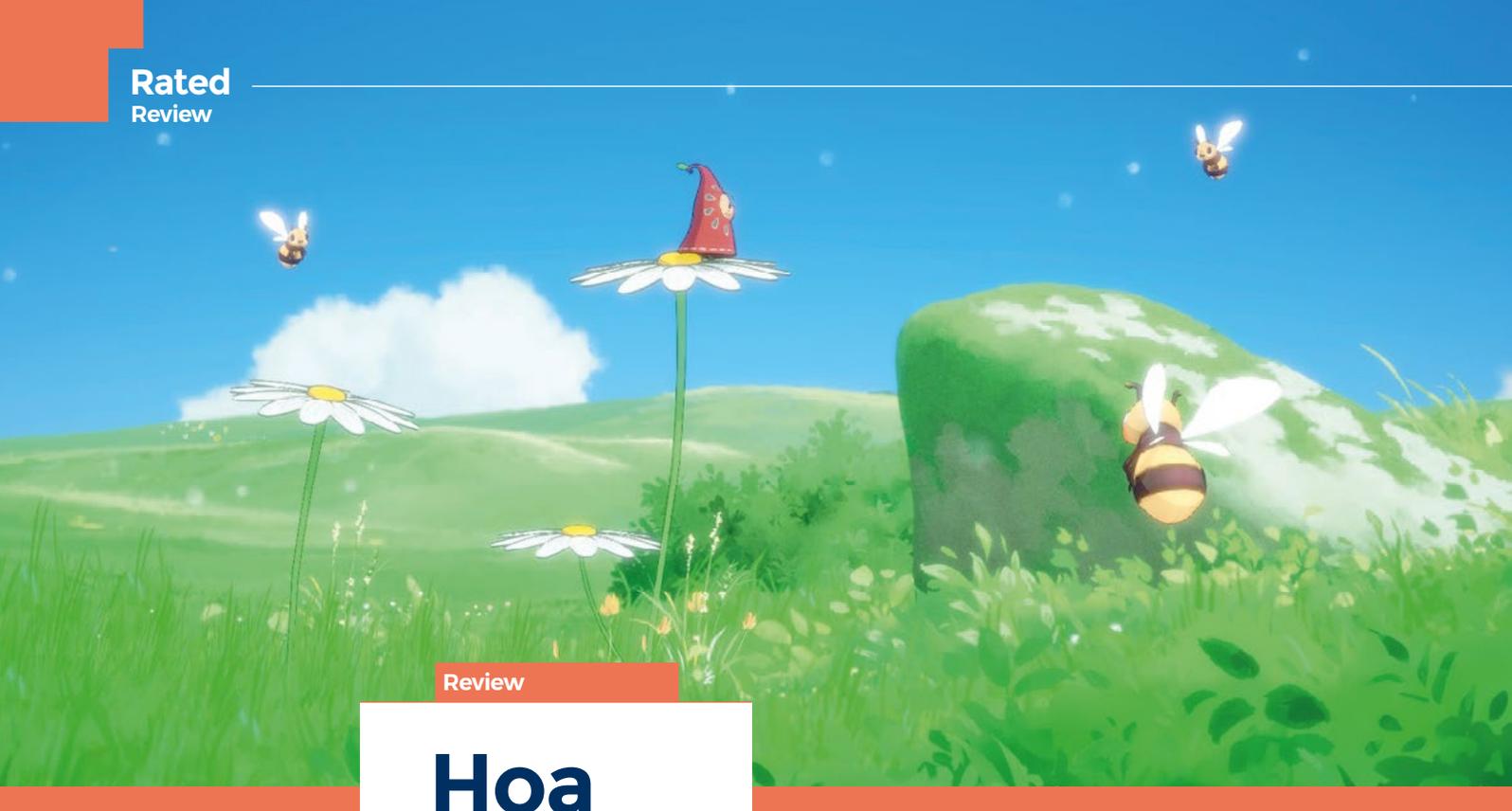
- 1-9**
Trash. Unplayable; a broken mess.
- 10-19**
A truly bad game, though not necessarily utterly broken.
- 20-29**
Still awful, but at a push could be fun for two minutes.
- 30-39**
Might have a redeeming feature, but otherwise very poor.
- 40-49**
Adds in more redeeming features, but still not worth your time.
- 50-59**
Average. Decent at best. 'Just about OK'.
- 60-69**
Held back by glitches, bugs, or a lack of originality, but can be good fun.
- 70-79**
A very good game, but one lacking spit and polish or uniqueness.
- 80-89**
Brilliant. Fabulous fun. Everyone should at least try it.
- 90-99**
Cutting edge, original, unique, and/or pushes the medium forward.
- 100**
Never say never, eh?

PLUS

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This month it's the golden touch with Mr Midas
- 102. The HOTLIST**
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Catching up on Golf Story and the remastered Alan Wake



▲ Page 104: Clean-up on aisle Nintendo; it's a bit of a grimy one this month.



Review

Ho

Sunny delight

Info

GENRE

2D Platformer

FORMAT

Switch (tested) / PC /
PS5 / XB S/X / PS4
/ XBO

DEVELOPER

Skrollcat Studio

PUBLISHER

PM Studios

PRICE

£11.99

RELEASE

Out now

SOCIAL

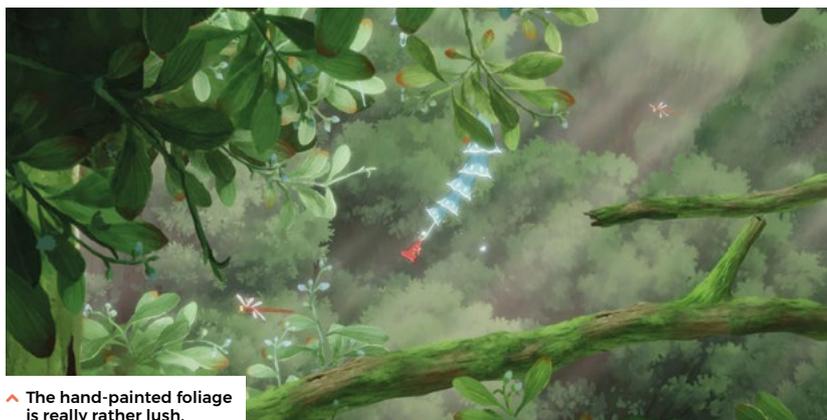
@hoathegame

One way *Ho* differs from most platform games is that its world seems happy to have you. It's not a hostile place, nor does it burden your actions with regrettable consequences. For the most part, it's content to be positively lovely. OK, it briefly ponders the destructive encroachment of technology on nature, and the hope for harmony between the two. But unlike many mechanically stripped-back indies of its kind in recent years, it's not designed to mirror the stages of grief, or dig into existential anxieties or anything like that. *Ho* would rather give you a big cuddle and a relaxing foot bath, and honestly, that's quite refreshing. Who doesn't want that kind of treatment from time to time?

You should feel its welcoming energy right from the start. Little *Ho* – a diminutive creature shrouded in what looks like a wizard's hat, their face poking through a hole in the side – awakens on a leaf, drifting across a lake, then beaches at the edge of a fluorescent meadow. As you take control and begin to dash and skip, you're instantly surrounded by bright blue and green. You can almost feel the brush of the grass and the warmth of the sun, and the whole ecosystem acknowledges your arrival. Daisies spread their petals, ivy leaves sprout as you approach, presenting themselves as platforms. Bees and dragonflies flit with intrigue, rotating to track your movements with childlike curiosity. Bulbous stag-beetles scurry in your wake on tiny legs, ready to lend their carapaces as stepladders to higher ground. Everyone's just so nice.

There's little peril to contend with here, and certainly no death. The worst you'll receive is a swift boot across the screen from one of a smattering of rusty robots that stalk the tree branches. *Ho*'s manageable for anyone with basic platforming skills – the last thing it wants is to risk a rise in your blood pressure.

You don't have to worry about getting lost, either. Levels are open but compact and self-contained. Each centres on a slumbering woodland elder – a butterfly, a great beetle – that you have to rouse by seeking out engravings in the vicinity. At that point they tell you how pleased they are to see you, of course, before instructing you to collect little golden



▲ The hand-painted foliage is really rather lush.



HIGHLIGHT

There are some great little scenes of insect life for you to stumble into and lightly interfere with, like a stag beetle colosseum, where two males are wedged in a head-butting stalemate. Hop on one of their backs and your chosen champ surges towards victory, allowing you to reach a higher platform across the screen.

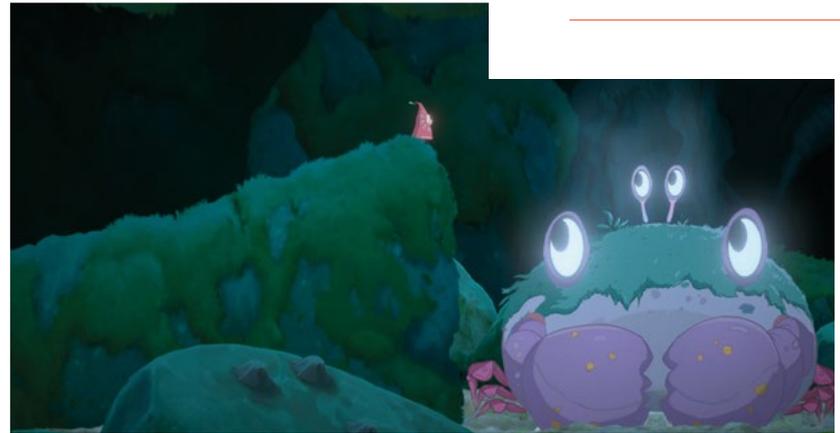
butterflies (marked on the map to ensure you can't miss them) so they can grant you a new skill that opens up the next area. The first of these is a double jump, naturally, then the ability to push blocks, briefly hover, and so on. It's not exactly a Metroidvania – you see all there is to see in a single sweep – but it ensures some light evolution, a different technique for the game to exploit each time you move forward.

If that sounds limited, or unambitious, well, it kind of is. There's little here that a seasoned 2D platform gamer won't have jumped over and through a hundred times before. Yet rarely has it been framed to feel so soothing, and adorable. Instead of grabbing a rope to swing between tree branches, you dangle from a string of tinkling bluebells. Instead of springy blocks or platforms, plump green larvae invite you to bounce off their backs like trampolines. This personality and ambience, inspired by glorious painted landscapes

and lighting, drives *Hoa* forward, until it's hard to resent merely competent level design. There's a friendly familiarity in the Ghibli-ness of its lines, shading, and colours. Or, in old money, it captures the grinning wonder of playing Disney Mega Drive games starring Mickey Mouse and Donald Duck. And astride its visual richness perches another star performer – the undulating score, conveying more pathos than any character or colour, led by a rolling piano and backed by purposeful violins. Powerful instruments indeed.

Perhaps the real surprise in all this is that *Hoa* doesn't quite sustain its gentle weave to the

“*Hoa* would rather give you a big cuddle and a relaxing foot bath”



▲ Late in the game, diving into deep waters, even the jellyfish and crabs are helpful.

end. There's a sinister story running beneath the greenery, after all. The game takes a dark turn that's hinted at throughout, and adds a little more punch and impetus to your quest, but nevertheless lands out of tune with much of what's gone before. It also leads to a final stage that's more surreal and experimental, playing with your perception and control in a way that previously felt beyond its capabilities. A sprinkling of such alternative thinking throughout could have elevated the whole. Or it might have muddled the comforting simplicity. Either way, introducing it late on asks more questions than it answers.

Despite these late shifts, *Hoa* could still be the perfect gateway game to prepare younger kids for more daring platform challenges. Like running and jumping with the stabilisers on. But equally, it's a thoroughly pleasant experience for veterans seeking some self-care between more hard-boiled endeavours. *Hoa* won't change the world, but for a handful of hours, it makes it feel like a nicer place. 🌱

VERDICT

A simple platform experience with plenty of winning charm.

72%

HIGHLIGHT

Minigames have always divided opinion. *Road 96*'s could feel banal and overly simplistic for their familiarity, but are excellent because they're diegetic. Anyone who's ever been bored on a long journey and whipped out the Travel Connect Four to appease the gods of the road will crack a wry grin.



Review

Road 96

Warning: contains mild peril and travel board games

Info

GENRE
Narrative adventure

FORMAT
PC / Switch (tested)

DEVELOPER
DigixArt

PUBLISHER
DigixArt,
Plug In Digital

PRICE
£16.99

RELEASE
Out now

SOCIAL
@Digixart

REVIEWED BY
CJ Wheeler

VERDICT

A frequently compelling mix tape, *Road 96* fumbles its important message by lacking any significant challenge.

70%

What a time to release a game about refugees, eh? *Road 96*, from Montpellier-based developer DigixArt, offers an enthralling series of stories about vulnerable people risking their lives to escape the fictional regime of Petria. Let's get it out of the way: this *could* have been game of the year material. It isn't – the horrifically real context it emerges into proves too much to confront – but that doesn't mean this procedurally generated series of one-way road trips has nothing worthwhile to say. Certain larger French companies should take note that, yes, it's possible to make games that are appealing, meaningful, and overtly political.

After an obtuse start, *Road 96*'s charm is revealed through choose-your-own vignettes that form the travelogue of each young refugee. These short tales, many titled after famous songs, really feel like a composition, too. Collecting cassettes that play tunes from the soundtrack is among the memorable smaller experiences that turn *Road 96* into a broader, personal story, while every successful escape speeds Petria towards a presidential election that promises to ignite the nation. Inhabiting a sequence of desperate, silent protagonists hunting for a route out feels less jarring than you'd expect, thanks to repeated encounters with the well-written and capably performed travellers of Petria's highways.

The people you meet on these hitchhikes are the compelling heart of *Road 96*. Every road

trip with another teen making their escape intertwines with the unfolding narrative of seven other characters travelling the landscape. Choosing to walk or flag down a ride triggers interactions that, in turn, reveal a wider story of domestic terrorism and family drama. All of these personalities straddle the political divide: a burly but kind-hearted trucker, a murderous taxi driver, and a crass TV presenter who serves as the totalitarian president's mouthpiece. Sometimes a character will grant a skill like lockpicking, hacking, or improved luck that helps with future escapes.

What lets *Road 96* down lies not with why the young are fleeing the country but how. It's straightforward to achieve. The nameless, faceless escapees pass through Petria mostly uninhibited. Food, money, and cars are pretty much everywhere they go. Even the finale of each run, where you pass through the mountainous border looming over the country at the titular *Road 96*, often poses little bother. As long as you're willing to conserve energy and cash early on, and demonstrate flexible morals, what seems like the riskiest thing in the world is hassle-free. Care too much for those met along the way though, and end up in prison – or worse.

Still, *Road 96* is worth playing. It places vulnerable people and their stories at the core of its crisis, and it's arguably vital that more games address difficult issues such as these. If just one person comes to sympathise with the plight of refugees because of *Road 96*, then DigixArt has achieved a great deal. 🐻



HIGHLIGHT

The campaign in *Hot Wheels Unleashed* is framed as one of those road map rags you or your best friend had as a kid. Unlocking new blind boxes and time-based vehicle drops means working your way through it by competing in Quick Races, Time Trials, Boss Challenges, and more.

Review

Hot Wheels Unleashed

Die-cast and Furious: Toybox Drift

Fury is being beaten to the finish line by a truck fashioned in the style of a triceratops. That is what *Hot Wheels Unleashed* has taught me. It's also taught me just how much of a difference witnessing toy cars race from a rear view, rather than isometric or top-down (as has historically been the case), has in selling you on the concept. Said approach adds a heightened sense of scale as you put your pedal to the metal in a selection of die-cast vehicles. The result is a near photorealistic joyride that plays and handles just as well as any other beloved arcade racer. Only this one has a turbo boost's worth of childhood nostalgia built in.

This technically being a licensed game, it's easy to be initially sceptical. *Hot Wheels Unleashed* admittedly doesn't make the best impression either, by presenting your first three randomised cars by way of blind boxes. Fears ease, however, as soon as you realise unlocking new vehicles is done solely using in-game currency. And that, if anything, watching your next reward blast out of a plastic tub isn't too dissimilar to ripping open a Hot Wheels box on Christmas Day. In all these ways and more, developer Milestone gets what it means to be a collectable car fiend.

The same can be said for events on the track. Getting ahead against eleven other rivals is a simple case of timing your drifts so as to never topple out of bounds, all as you earn boost to

blast your way through every straight available. This you do across six real-life environments which constantly remind you that, for as grand and fast-paced as spinning your tyres looks, you're still just a little Mattel miniature zooming and loop-de-looping through oversized skateparks, garages, and more. What could have easily been a campy racer featuring tracks littered with zany power-ups akin to *Mario Kart* actually has the ambition and creativity to take itself seriously – and delivers the driving mechanics to back it up. You just might start races by zooming out of a giant plastic dinosaur's mouth sometimes.

Even on the regular difficulty level, *Hot Wheels Unleashed's* AI presents an ample challenge. Just one wide turn is all it takes to send your burger van or Dodge Charger spinning out of control, especially during moments of the race where you're forced to go off-road and away from the safety of the plastic barrier. It's in such moments where any toy-like sensibilities quickly fade away, and you realise taking first place on the podium means mastering each track's twists and turns (and learning when to drift) is key.

It says a lot that your mileage with *Hot Wheels Unleashed* isn't dependant on your affinity for the brand. It's just a solid and inventive arcade racer, pure and simple. One of the year's biggest surprises, it's a reminder of how fun tearing up the track can be for players of all ages. 🏆

Info

GENRE

Arcade racing

FORMAT

PS5 (tested) / XB S/X
/ XBO / PS4 / PC
Switch

DEVELOPER

Milestone

PUBLISHER

Milestone

PRICE

£39.99

RELEASE

Out now

SOCIAL

@MilestoneItaly

REVIEWED BY

Aaron Potter

VERDICT

Tearing around a plastic track has rarely been so thrilling.

86%



Review

JETT: The Far Shore

A tale of star pilgrims that's more 'grim' than, er, 'pil'

Info

GENRE

Explore-'em-up

FORMAT

PS5 (tested) / PC / PS4

DEVELOPER

Superbrothers
/ Pine Scented
Software

PUBLISHER

Superbrothers
/ Pine Scented
Software

PRICE

£24.99

RELEASE

Out now

SOCIAL

@jettxyz

REVIEWED BY

Jim Trinca



▲ *JETT* starts with a stark ecological message: an Earth gone badly wrong, and civilisation gone a bit fash.

The first 30 minutes of *JETT* are amazing. Straight away, it smashes every expectation you might have of a Space Game. For one, it starts in a yurt. For two, you're part of a fictional space program that isn't an unconvincingly rebadged NASA. Even the design of *JETT*'s titular aircraft defies convention, sporting three dorsal fins like a mutated shark, the stubby landing struts of a bull terrier, and the face of a grinning killer whale.

The civilisation that built it is similarly patchworked: at once evocative of Mongolian nomads, northern European tribes, and Native Americans, it's also shot through with mid-20th century American optimism and the oppressive touch of the Eastern Bloc. Their Earth is on the brink. Their seas are littered with the refuse of brighter days long gone. Hope arrives in the form of the hymnwave, a mysterious signal emanating from a far-off world. An invitation, according to the prophets of a religion sprung from its discovery, to settle on shores light-years beyond and make a fresh start for humankind.

You are an anchorite, a type of religious seer, but also a hotshot pilot who's on the scouting team of an expedition to find the source of the signal. You say goodbye to your kin, and set off for the cosmodrome in your Jett, a journey which serves as a tutorial and a survey of the ecological damage wrought on humanity's cradle. The rhapsodic sounds, the desolate images, the sheer boldness of this opening chapter is something to behold; from tent to rocket, in equal parts scientific and spiritual,

the beautiful heart and terrifying impulses of humankind are deftly summarised in a half-hour of genuine art.

Some 1001 years later, you make planetfall, and the game proper begins. This, sadly, is where *JETT* starts to sputter.

It quickly becomes clear that the game underpinning all of its artistic goals just isn't very good. Aside from too few first-person interludes which advance the story and let you talk to your fellow space pilgrims, the bulk of your time is spent hopping around the nooks and oceans of an alien world in your sprightly little craft. Given that this, and not contemplating humanity's place in the cosmos, is the real focus of the game; the Jett should feel great to fly. It does not.

Though not for lack of trying. Every now and then, it does exactly what you want it to with exhilarating, balletic grace – but it's a skittish, fiddly little grasshopper that hugs the ground and never quite goes fast or slow enough. It can dodge, leap, jump, and pull a mean handbrake turn – but rarely satisfyingly. It behaves too inconsistently, and frustrates too often, for fleeting glimpses of its magic to ever make up for.

You can't even enjoy it when you hit a wide patch of ocean or plain, because having to manage the heat of your scramjets (either by keeping the throttle at half-mast or darting about to collect engine-cooling 'vapour' from the environment) prevents you from really opening 'er up until the last third – and even then, only for the briefest of moments.

Mission objectives tend to stay rigidly among the 'find thing' and 'move thing' variety, with



the odd kolos (really big animal) encounter or scramble for shelter to break things up. That is shelter from the 'dreadwave', a big red glowy thing that periodically sweeps over the planet and kills you if you're not hunkered down.

None of these challenges are particularly hard to overcome. *JETT* offers very little to tax the fingers or the mind. It's mostly laborious. Go there, do that, listen to your co-pilot drone on about something or other before you get your next waypoint. The craft's abilities evolve over time to mitigate the various annoyances designed into it, but the traversal element, which basically is the game, never really comes together.

Its scanning mechanic, lifted from the other 9000 games with scanning mechanics, is similarly afflicted. Ostensibly, it's there to catalogue life forms and phenomena, and display useful clues about how they interact with other entities. This can be used to your advantage – for example, shock eels can be lured to 'ghokeblooms' which require electricity to react. It suggests an experimental puzzle

“The Jett should feel great to fly. It does not”

element to the game's various interlocking systems that might put you in mind of something like *Zelda: Breath of the Wild* or *Metal Gear Solid V*. Sadly, however, these interactions only become useful at key moments in the story, at which point your co-pilot who never shuts up will just explain them to you.

It's remarkable how constantly *JETT* teeters on the edge of fulfilling its lofty ambitions without ever doing so. It's a warehouse full of 'close' while all the cigars are stuck at Dover. Even its performance issues follow this pattern: it runs just well enough that you can tell how smoothly it should feel, but it's plagued by microstuttering, and momentary freezes when new areas load in. Yes, this is on the next-gen version. Yes, even with the PS5's impossibly fast SSD, which was supposed to revolutionise game design and end world hunger.

And then, after around twelve hours, it's done. Somehow there isn't enough game here for it to not constantly repeat itself over such a short runtime, but it paradoxically feels too quick. There's something potentially very special here that remains frustratingly undercooked when the credits roll; a classical science fiction epic that's almost worthy of comparison to Asimov or Bradbury, cruelly let down by the unripened game that makes its pages turn.

A mixed bag, then. On the one hand, *JETT* is a stirring, stunning tale of humanity's spirit, told from the perspective of a fascinating composite culture for whom there is no distinction between scientific endeavour and religious pilgrimage.

On the other, it's just a bit crap. 🗿

^ “I'm just chasing waveforms...”

HIGHLIGHT

The sound design is incredible. Terrifying WHOMPS and BAUMS cut through you when danger abounds, while a brilliant score by scntfc (which is “scientific” with the vowels removed, fact fans) rounds off the soundscape and makes you feel every bit the galactic pioneer with pulsating rhythms and heart-swelling overtures. It's one of the few elements of the game that doesn't miss the mark.

VERDICT

For a game about making planetfall, *JETT: The Far Shore* never quite lands.

52%

▼ It's never a good sign when the best bits of a flight sim are outside the cockpit.



Rated
Review

Light Attack: X
Heavy Attack: Y
Dodge: B

HIGHLIGHT

Boyfriend Dungeon is an experimental game that'll appeal to visual novel and RPG fans. Players can choose who they want to romance, but the game highly encourages simultaneous dating. While offering a serviceable combat experience, it really shines in the story and music departments.



Review

Boyfriend Dungeon

Time to sharpen those swords, and steel some hearts in this dungeoning-date simulator

Info

GENRE

RPG

FORMAT

XB S/X (tested) / PC
/ Switch / Linux /
XBO / Mac

DEVELOPER

Kitfox Games

PUBLISHER

Kitfox Games

PRICE

£15.49

RELEASE

Out now

SOCIAL

@KitfoxGames

REVIEWED BY

Jervon Perkins

VERDICT

Boyfriend Dungeon is a short, genre-bending title that isn't perfect but is worth experiencing.

75%

Boyfriend *Dungeon* places its feet in two genres: dungeon crawler and dating sim. It's thoughtful in its approach to combining the two, but the melding isn't perfect. Players take on the role

of a silent protagonist who visits the fictional town of Verona Beach for the summer. You can choose to be a male, female, or non-binary character, and with the protagonist's cousin acting as matchmaker, you're encouraged to date more than one of the seven characters at once.

Boyfriend Dungeon's most unique element is that each of the datable characters becomes a *literal weapon* that can be equipped for use in dungeons. These dives into the dark aren't going to sate the thirst of hardcore delvers – the combat's functional, boiling down to dodges, light and heavy attacks, and not much else, and there only being two actual dungeons, twelve floors on each – so there's not much underground adventuring to get lost in.

Above ground, the player's weapon of choice is their phone – an important part of *Boyfriend Dungeon's* story and dating mechanic. Texts come in hordes from potential dates, and are adorably written. Through engaging conversations and the occasional emoji, each of the dates feels unique. The story focuses on themes like fear of intimacy and change, and darker concepts like obsession and abuse. Even though the term *Boyfriend* is used in the title, the dating options are inclusive. Valeria is a female option and Rowan and Sawyer

are non-binary. Isaac, Sunder, and Seven are the cisgender romantic options. There's even a cat that players can hang out with; a fine option for the misanthropes among us. All of the datees feature different – and rewarding – personal narratives.

Aesthetically, it mostly looks and sounds amazing. It takes inspiration from a certain vision of the eighties, with a vibrant colour scheme accentuating the summertime setting and invoking a warm sense of nostalgia. Unfortunately, your player character's a bit generic-looking. While this isn't exactly game-

breaking, a more detailed character would help make careening through a dungeon, swinging your date wildly around, that bit more immersive. Luckily, there are

enough clothing and hair options to keep it from being a completely dull affair.

Boyfriend Dungeon's music, meanwhile, is amazing. Dungeons include techno-lite, eerily echoing beats that give a haunting vibe as players face the manifestations of their fears. Original pop songs play during the dating sim sections, which is a welcome inclusion given there's a lot of non-voice-acted text to read here.

Boyfriend Dungeon lasts about eight to twelve hours, and from beginning to end, it's a game created with heart. It's well-made, and most importantly, the story is engaging and doesn't outstay its welcome. Players looking for a gender-inclusive, thoughtful narrative-driven RPG should pick it up. 🗨

“Each of the characters becomes a literal weapon”



Review

HIGHLIGHT

No More Heroes 3 is a masterclass in style over substance – but what style! Suda51 is clearly having a blast doing a Tarantinoesque magpieing of game references (which shouldn't be spoiled) while also riffing other media, from the way chapters begin and end with credit sequences that look like they're from a 1980s anime to parodying Netflix, not to mention random chats about prolific Japanese director, Takashi Miike.

No More Heroes 3

Third strike's the charm

It's been a long time since the last *No More Heroes* game, at least if you don't count the 2019 spin-off – and most disappointed fans probably wouldn't – which should make foul-mouthed anti-hero Travis Touchdown something of a relic in modern games that demand more depth from their protagonists. But with beam katana in hands, leaving enemies in his bloody wake, you have to admit that on a primal level, Travis still has it.

The stakes have risen greatly since the last ranked assassin battle, as this time Travis is pitted against a group of elite alien 'superheroes' who seemingly have the power to decimate all human life as fast as Thanos' snap. But to give Earth a fighting chance, their bloodthirsty and hot-headed leader FU goes along with the United Assassins Association's structure of fights, which means Travis is back to coughing up exponentially higher entry fees before he's able to take on each intergalactic competitor.

Traditionally, this used to mean grinding through a lot of menial jobs to raise funds, and some of these are certainly in the sequel – mowing grass, unblocking a toilet (which once again act as save points) – but the good news is that you're never forced to repeat these. More likely, you'll earn the necessary fee just by partaking in designated fights (a few of which are mandatory). These are self-contained arena battles where you take on alien enemies, and these have more variety and challenge than the human meat puppets of

previous entries. Meanwhile, a new Death Glove also adds cooldown-based skills to your repertoire, from drop-kicking enemies to blasting them backwards with Jedi force powers. Making use of these skills, upgrading your stats, and even getting buffs by eating sushi are key as early battles can wipe the floor with you more quickly than you might expect (although after dying, you can retry and spin a wheel for the chance of a helpful boon).

But whereas the previous game, *Desperate Struggle*, went for a leaner structure, *NMH3* brings back the original game's bland and rough-looking open worlds, expanding beyond Santa Destroy to a few other underwhelming locations. The frame rate isn't, thankfully, the choppy mess that early footage indicated, but the activities here remain forgettable, with minigames that are initially amusing but whose appeal

soon palls. More annoyingly, designated battles are marked by a wilfully vague radius, meaning you'll have to wander around aimlessly trying to find them.

Nonetheless, when distilled to its riotous combat – and a pulpy story that takes boss encounters down some unexpected paths – this is a return to form for Suda51. Or at least a return to form for fans who appreciate that Suda51 form has always been scrappy and indulgent. Then again, this is a game where recharging your weapon still requires a bout of simulated onanism... so no, there hasn't been much growing up done in the past decade. 🍷

“On a primal level, you have to admit Travis still has it”

Info

GENRE
Hack-and-slash action

FORMAT
Switch

DEVELOPER
Grasshopper Manufacture

PUBLISHER
Grasshopper Manufacture

PRICE
£49.99

RELEASE
Out now

SOCIAL
@Grasshopper_EN

REVIEWED BY
Alan Wen

VERDICT

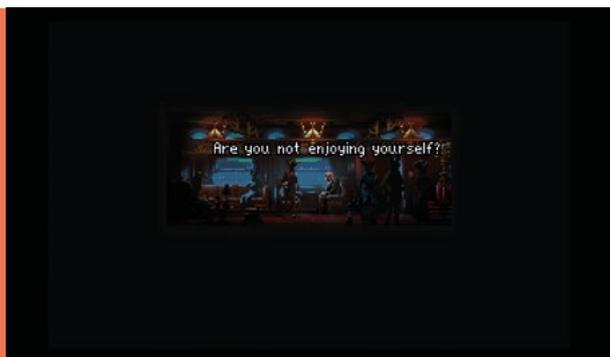
Scrappy, excessive, indulgent, maddening, inspired; *No More Heroes 3* is a Suda51 joint, for sure.

70%

Why not try...

Itch.io roundup

Nic Reuben picks out some of the platform's standouts



If On A Winter's Night, Four Travelers

Laura Hunt / Name your own price / wfmag.cc/loaWN

Winter's Night opens on a masquerade party in the carriage of a train hurtling through the snow, at once lavish and bare, comforting, and otherworldly. It's an immediately arresting framing device for this point-and-click adventure, taking the seeming graphical limitations of early 1990s offerings and turning out detailed and dusky mise-en-scène.

The 1920s provide a backdrop for the game's vignettes. The player's instinct to catalogue the interactables of a delirious countess's bedchamber unravels a familiar space drained pale through dissociation. A chirpy love affair soon clashes against the ignorance of the age. Puzzles are brief, but the stories they punctuate are vivid and haunting.

Gob

Gamma Girl / Free / wfmag.cc/Gob

"Every character should want something, even if only a glass of water," advised Kurt Vonnegut. *Gob* is a bite-sized, grungy claymation-style adventure game about a spiky-haired, sweater-clad gremlin who wants a sausage sandwich.

Gob's scrappy and unpolished but massively charming, and more interestingly, proof of what can be done by building on top of the commercial walled garden that is Media Molecules' *Dreams*. "Much of the game's visuals were created by sculpting with *Dreams* and digitally painting on top," says Gamma Girl. *Gob* feels all the more punk for it.

Find Love or Die Trying

Auden Jin / Name your own price / wfmag.cc/FLoDT

Battle royale meets dating reality show in this idiosyncratic and goofy visual novel, made captivating by a script that probably could have used an editor but undoubtedly would have lost something in the process.

You play as a contestant trying to find love, and the only contestant privy to the show's secret: fail to find romance, and you'll be killed. Tell anyone else what you know, and they'll be killed too. *Find Love* feels both joyfully self-aware and completely on board with its own nonsense. It's also frequently genuinely funny, at least until you think about the fact you're effectively a prisoner in this glossy staged reality.



4 Days

DHMelon / Name your own price / wfmag.cc/4Days

Taken alone, *4 Days* is a sparse, sombrely atmospheric narrative puzzle game, with some absurdist high school banter brightening up a dark story. But what really caught my eye here was the story of *4 Days'* development, a week-long process that 17-year-old creator DHMelon has chronicled in a YouTube video.

DHMelon had some previous experience coding, but that one-week period included learning Unity, alongside creating assets and composing music. *4 Days'* central puzzle, which requires the player to choose in what order to speak to friends, to prevent arousing suspicion of a suspected murderer, is a clever example of both in-game narrative and real-world time economy. Inspiring stuff. 🎮

▶ STREAM OF CONSCIOUSNESS

This month we embrace the golden touch with **Mr Midas**

What's your favourite game?

It's a difficult question for me – there are so many games that define me as a gamer, so many moments I get lost in, but if I had to narrow it down, then there are two games that define me.

The original *Final Fantasy VII* on PlayStation (yes I'm old, but I still look good!) and *The Legend of Zelda: Ocarina of Time* on N64. These games are the reason why I call myself a gamer, the reason why I work in the industry, and the reason why I love gaming.

And why is that? What is it about those particular games that resonates so much with you?

My favourite part of gaming is stories. I love a great story; I love to get lost in a world, to be taken on a journey, taking hold of a badass character and seeing them grow and defeat their past and overcome evil. Yes, I love destroying a friend on *Street Fighter* but putting on my headphones and being taken to another world is priceless.

I love seeing people experience these same kinds of things in new games like *Breath of the Wild*. No other medium can make you feel like that; that feeling of power only a gamer gets.

What game was it that got you into gaming to begin with? What are your enduring memories of it?

I've been gaming since I was very young – *Alex Kidd in Miracle World* was one of my first games.



I grew up a Sega kid playing *Sonic the Hedgehog*, but what really changed my life was going to an arcade – hearing the loud noises and seeing the bright colours coming from the machines... I remember the first time pulling off a Hadouken as Ryu. I felt like I was a boss!

Has there ever been a point you've been put off gaming? If so, why?

I've never been put off in gaming, though there was a long time I didn't game as much. When you get older, get more hobbies, start dating... I wasn't able to put as much time into gaming as I do now, but every Christmas and birthday, I would have a week or two just to catch up on all my favourite games.

I play mostly single-player narrative games, but like most black gamers, I have had to face the lack of diversity in the gaming industry – and even worse, the childish and bad racist behaviour of some of the online community. It's shit when it happens, but when it does, I usually report them then try to dominate the fools in the game itself.

What's the appeal of playing games for an audience – whether that's pre-recorded or livestreaming?

I think it differs for all gamers and creatives – a lot are very shy and like to game with a small audience they see as friends. I'm a performer – I used to be a recording artist and I've been a TV presenter for years, even before I got into the gaming industry.

I love gaming, but I also love to talk about games and engage with the community. The best thing is just by loving and enjoying gaming, people have been able to create careers for themselves. It's a lot of work for some streamers, to stream and entertain for ten or twelve hours every day. We do this as we love gaming and love how the audience reacts to it. 🎮

Mr Midas can be seen on GINX Esports TV, GRM Daily, and on YouTube – or find him on Twitter: wfmag.cc/Midas



“My favourite part of gaming is stories. I love a great story, I love to get lost in a world”

The Wireframe **HOTLIST**

The best PC games, according to Wireframe, catering for whatever your mood might be



The games for... **BIG ADVENTURES**

- Assassin's Creed Odyssey** / *Ubisoft* / **93%** (Issue 1)
- Yakuza: Like a Dragon** / *Ryu Ga Gotoku Studio* / **90%** (Issue 45)
- Amnesia: Rebirth** / *Frictional Games* / **87%** (Issue 46)
- Death's Door** / *Acid Nerve* / **87%** (Issue 55)
- The Last Campfire** / *Hello Games* / **86%** (Issue 47)
- Resident Evil 2** / *Capcom* / **86%** (Issue 7)
- Journey to the Savage Planet** / *Typhoon Studios* / **84%** (Issue 33)
- The Outer Worlds** / *Obsidian Entertainment* / **84%** (Issue 28)
- Monster Boy and the Cursed Kingdom**
/ *Game Atelier* / **84%** (Issue 6)
- Nioh 2** / *Koei Tecmo Games* / **80%** (Issue 38)

The games for... **REPEATED PLAY**

- Hades** / *Supergiant Games* / **94%** (Issue 44)
- They Are Billions** / *Numantian Games* / **88%** (Issue 20)
- Sekiro: Shadows Die Twice** / *FromSoftware* / **87%** (Issue 11)
- Streets of Rage 4** / *DotEmu/Lizardcube/Guard Crush* / **86%** (Issue 40)
- Trials of Fire** / *Whatboy Games* / **84%** (Issue 50)
- Katamari Damacy REROLL** / *Monkeycraft* / **84%** (Issue 4)
- Spelunky 2** / *Mossmouth* / **83%** (Issue 44)
- Hitman 2** / *IO Interactive* / **82%** (Issue 3)
- Alba: A Wildlife Adventure** / *ustwo Games* / **82%** (Issue 46)
- Slay the Spire** / *Mega Crit Games* / **81%** (Issue 45)

The games for... **SOLID STORY TIMES**

- Disco Elysium** / *ZA/UM* / **94%** (Issue 28)
- Mutazione** / *Die Gute Fabrik* / **86%** (Issue 26)
- Whispers of a Machine**
/ *Clifftop Games/Faravid Interactive* / **85%** (Issue 14)
- The Forgotten City** / *Modern Storyteller* / **85%** (Issue 55)
- Mythic Ocean** / *Paralune* / **84%** (Issue 36)
- Sunless Skies** / *Failbetter Games* / **83%** (Issue 7)
- Arise: A Simple Story** / *Piccolo Studio* / **82%** (Issue 31)
- Assemble with Care** / *ustwo Games* / **81%** (Issue 27)
- The Walking Dead: The Final Season**
/ *Telltale Games/Skybound Games* / **81%** (Issue 11)
- The Procession to Calvary** / *Joe Richardson* / **80%** (Issue 40)



The games for... **FIRING UP BRAIN CELLS**

- Telling Lies** / *Sam Barlow* / **92%** (Issue 24)
- Kentucky Route Zero** / *Cardboard Computer* / **90%** (Issue 33)
- Slipways** / *Beetlewing* / **90%** (Issue 53)
- Heaven's Vault** / *inkle* / **89%** (Issue 12)
- The Pedestrian** / *Skookum Arts* / **84%** (Issue 35)
- The Legend of Bum-Bo** / *Edmund McMillen* / **83%** (Issue 31)
- A Monster's Expedition** / *Draknek & Friends* / **82%** (Issue 47)
- Total War: Three Kingdoms**
/ *Creative Assembly/Feral Interactive* / **82%** (Issue 16)
- It Takes Two** / *Hazelight Studios* / **81%** (Issue 51)
- Wanna Survive** / *PINIX* / **80%** (Issue 42)



The games for... **HIGH-INTENSITY PLAY**

Tetris Effect / Monstars Inc./Resonair / **90%** (Issue 4)

Sayonara Wild Hearts / Simogo / **89%** (Issue 25)

Chivalry 2 / Torn Banner Studios / **88%** (Issue 54)

Star Wars: Squadrons / EA / **86%** (Issue 45)

Devil May Cry 5 / Capcom / **84%** (Issue 10)

Black Bird / Onion Games / **84%** (Issue 3)

BPM: Bullets Per Minute / Awe Interactive / **83%** (Issue 45)

Resident Evil Village / Capcom / **82%** (Issue 52)

Catastronauts / Inertia Game Studios / **82%** (Issue 1)

Olija / Skeleton Crew Studio/Thomas Olsson / **81%** (Issue 48)



The games for... **CURING THE INDIE ITCH**

If Found... / DREAMFEEL / **92%** (Issue 44)

Can Androids Pray
/ Natalie Clayton/Priscilla Snow/Xavier Nelson Jr. / **90%** (Issue 21)

Tales From Off-Peak City Vol. 1 / Cosmo D / **89%** (Issue 39)

Baba Is You / Hempuli Oy / **88%** (Issue 10)

Afterparty / Night School Studio / **86%** (Issue 33)

Witcheye / Moon Kid / **86%** (Issue 30)

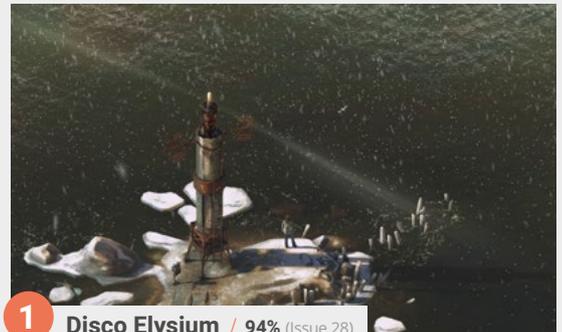
Hypnospace Outlaw
/ Tendershoot/Michael Lasch/ThatWhichIs Media / **86%** (Issue 11)

Haunted PS1 Demo Disc / The Haunted / **85%** (Issue 39)

Chicory: A Colorful Tale / Greg Lobanov / **83%** (Issue 54)

Xeno Crisis / Bitmap Bureau / **81%** (Issue 33)

PC Top 10



1 Disco Elysium / **94%** (Issue 28)

Smarter and deeper than anything else; truly an RPG in a class completely of its own.

2 Hades / **94%** (Issue 44)

Proving 'roguelike' isn't a dirty word, learning-and-dying is a joy from start to finish.

3 Assassin's Creed Odyssey
/ **93%** (Issue 1)

The point where Ubisoft realised over-the-top adventures were the right direction.

4 Telling Lies / **92%** (Issue 24)

This FMV mystery asks more of the player than most, with rewards to match.

5 If Found / **92%** (Issue 44)

A compelling and beautifully illustrated narrative, as moving as it is memorable.

6 Yakuza: Like a Dragon / **90%** (Issue 45)

A bold, brash, and joyous rebirth for the long-running gangster series.

7 Tetris Effect / **90%** (Issue 4)

The question is 'how do you better *Tetris*?' The answer is: like this. This is how.

8 Kentucky Route Zero / **90%** (Issue 33)

Abstract style meets concrete commitments in this fantastic magical realist adventure.

9 Can Androids Pray / **90%** (Issue 21)

A healthy dose of existential anxiety in a minimalist, bite-sized package.

10 Slipways / **90%** (Issue 53)

A focused puzzle game masquerading as space empire-based grand strategy.

Backwards compatible

WRITTEN BY RYAN LAMBIE

Utter filth

I generally try to take a 'first, do no harm' approach to old hardware – which is to say, I'll leave a console as close to its original state as I can unless it's properly falling to bits. Which brings me to my latest project: a DMG-01 Game Boy I recently bought from eBay, which was falling to bits. "The housing of the console may be slightly discoloured and have some marks to it," read the seller's description – and they weren't kidding. When the handheld arrived a few days later in a jiffy bag, I sat marvelling at just what a hard life the poor old thing must have had. Its once creamy-grey shell

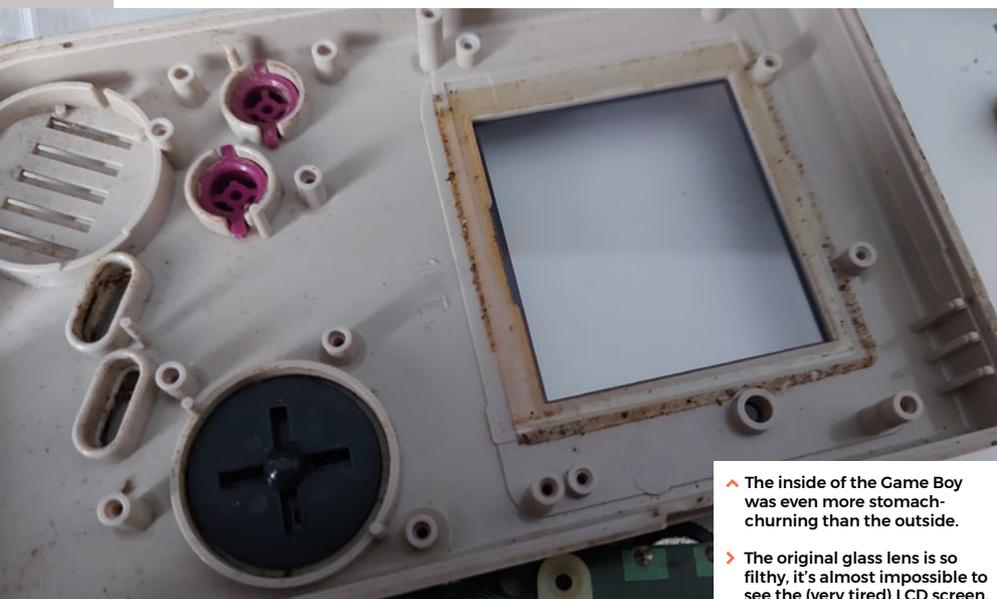
had degraded over the 30-or-so years to a queasy brown, like tobacco-stained fingers. Every crevice and engraved bit of detail was packed with grime. If I didn't know better, I'd say it'd been dredged out of a canal, along with an old boot and a mangled bicycle.

The innards weren't much better. It powered on OK, but cartridges initially refused to boot up. The screen had also seen better days: its edges had faded to a milky hue, like the corners of an old pirate treasure map. Grimacing slightly, I got my set of screwdrivers out and started to investigate further. Turns out, there were

more gruesome discoveries awaiting inside: circuit boards covered in dust and muck, what appeared to be a bit of earwax, and clear evidence of corrosion all over the place. Presumably, the Game Boy had a drink or two spilled all over it at some point in its history – or maybe it really had been fished out of a canal.

My next job, then, was to disassemble the entire console and give it all a good bath in some isopropyl alcohol – a pretty grim task, but quite satisfying once all the years of umska gradually lifted from the various components. The big surprise was the LCD screen – some of that damp had evidently damaged some of the pixels around the edges beyond repair, but a lot of it was just caked in yet more dirt. It was a similar story with the cartridge slot. Once I got this cleaned, I loosely put the system back together, shoved in a *Super Mario Land* cartridge, and was pleased to see it immediately loaded. Result.

I then set about putting the Game Boy's tired innards into a new home: a clean, shiny shell from RetroSix (retrosix.co.uk).



- ▶ The inside of the Game Boy was even more stomach-churning than the outside.
- ▶ The original glass lens is so filthy, it's almost impossible to see the (very tired) LCD screen.





▲ My Game Boy, now in a new, Famicom-themed shell. Note how much easier it is to see the image through that new lens.

Blissfully grime-free, the new housing and buttons immediately made my ageing Game Boy feel about 30 years younger; for one thing, the new, clean glass lens means I can actually see what's left of the LCD screen. There's still lots more to do: I'm hoping to replace that failing screen with a new one in the near future, and maybe upgrade the scratchy old speaker to something a little clearer-sounding.

Mostly, though, I'm just stunned that such an old, uncared-for bit of tech can still work after all these years of neglect. The Game Boy wasn't a particularly advanced console even when it came out in 1989, but crikey did Nintendo build these things to last.



Burning Ravager

After years in development limbo, *Metroid Dread* finally gave us a 21st-century take on Nintendo's side-scrolling sci-fi franchise. If you're looking for a Metroidvania that's truly retro to its core, though, you should check out indie developer Sinclair Strange's recent creation, *Burning Ravager*. Brought to life with colourful sprites I feel duty-bound to describe as 'chunky', it's your typical action-platformer that takes in lots of exploring, slashing and shooting enemies, and collecting loot. All the cash you collect can be spent on useful updates for your squat little mech, but there's a twist:

equipping too many upgrades can cause your character to overheat and eventually explode, so you'll have to carefully equip and unequip weapons and armour to manage your temperature. What's worth noting about *Burning Ravager* is that it was programmed in just 72 hours – it's Sinclair Strange's entry in the Ludum Dare 49 game jam. The odd rough edge here and there is inevitable, then – the push-scrolling between screens is noticeably slow – but it remains a solidly entertaining way to while away a lunch-break or two. It's also free: you can get the latest build on itch.io at wfmag.cc/burnrav.

Flying heads

One of the weirdest games ever made should be available to download from Steam and the Switch's eShop by the time you read this. *Abarenbo Tengu* was originally released for Japan's Famicom in 1990 and later appeared in a slightly reworked form as *Zombie Nation* on its western counterpart, the NES, the following year. In essence, it's a side-scrolling shoot-'em-up in which you control a giant, disembodied flying head (a mask in the Japanese version, and a samurai head in the North American version). You hover from left to right, destroying the hordes of enemies brought to life by an alien force named Darc Seed (though oddly, you also expended quite a bit of firepower on razing entire skyscrapers). Thanks to Japanese firm City Connection, this 8-bit oddity is getting a re-release in both of its original forms: imaginatively titled

Abarenbo Tengu & Zombie Nation, the package will also include some modern additions, including quicksaves, a rewind feature, plus a couple of other modes to spice things up a bit. Its oddball stylings certainly won't be for everyone – we can only guess at what original developer KAZe was thinking when it made it – but for connoisseurs of Japanese obscurities, *Abarenbo Tengu & Zombie Nation* is well worth a look.



Backwards compatible

WRITTEN BY IAN "JUSTIFIER" DRANSFIELD

Shoot them up

Old consoles had lightguns. The PS2 and before, basically. Most had a plastic gun-shaped thing you could point at a screen and shoot baddies/ducks/targets with. Lightgun games were fantastic fun, but then suddenly died; a victim of the steamrolling that is technological progress, as modern flat-panel displays were suddenly incompatible with the old guns. Your options for playing lightgun games on original hardware have been severely limited for the past 20 or so years, with the choice being either to use a CRT television or... to just not be able to play anything lightgunny.

Well, friends, that's all over now. At least on PlayStation and PS2. The incredible Sinden Lightgun – a modern lightgun made

mainly for use with PCs (both for PC games and emulators), but able to be used with Raspberry Pi and some other devices – can be used with old-school Sony hardware, at least after a bit of tinkering, crimping, and *spending* has been done. This is no secret, nor is it particularly new – before the Sinden even released, there were demos of it working on the original PlayStation. What makes things different today? Well, I've gone and done it myself.

First and foremost, this isn't a straightforward process, and it definitely isn't a cheap one. I went for the PSone option, which required: a PlayStation (£10 used), a Sinden Lightgun (around £80), a Raspberry Pi 4 (from £34), an Arduino Uno R3 (around £20), one of an OSSC, RetroTINK



5x-Pro, or PS1Digital (£110, £220, or £120, respectively), and all the other controllers, cabling, a memory card and what have you (variable, probably about £50). So at a conservative minimum, you're looking at upwards of £300 to start out. It's not cheap. It's not for everyone. I cannot overstate this fact. But my word, I was desperate to play *Time Crisis* on PSone properly.

The actual method of putting this all together was pretty straightforward, thanks in no small part to the excellent guide from Titchgamer (see here: wfmag.cc/sindps1). In abridged form, it went as follows: chop up a PSone controller extension lead, strip and crimp the wires while testing them to see which colour matches which pin, pop them in a housing, and insert them into certain holes in the Arduino. Program the Arduino using a pre-written bit of code you can download. Download a pre-made image file for the Raspberry Pi 4 and flash it to a microSD card. Set up the Raspberry Pi – as with everything – according to the instructions in the video. Plug in the Sinden and Arduino to the Raspberry Pi, plug in the controller connector to the PSone, load up the Sinden software on the Raspberry Pi, and load up the PSone game. Finally, importantly, use the OSSC/RetroTINK/PS1Digital to overlay the screen with a white border on all sides, so the Sinden knows where it's looking. And that's about it.

Obviously it's more involved than that and takes a while to get up and running –





plus you might run into issues that need debugging, as I did – but the end result is a proper lightgun that works (properly) on proper lightgun games. It's accurate, but even if it isn't, it's configurable enough that you can *make* it accurate. And, well – it just works. It's incredible. The nostalgia washed over me powerfully, in a way I never expected, and powering my way through *Time Crisis* was a genuine, unabashed joy. Loading up *Point Blank* was just as rewarding; the first challenge offering one bullet and five seconds in which to shoot a falling leaf: *pop*, done. Next challenge, please. It's so utterly joyful to have this once-dead (to most of us) way of playing games rise again, even if it is, as I keep saying, not for everyone and definitely expensive.

Even more excitingly – it seems some enterprising sort on the world wide interwebs has only gone and released a bunch of patches for a few titles that were originally only compatible with Konami's Justifier lightgun – or at the very least *not* compatible with the G-Con 45. It's not an exhaustive list, but it does mean the likes of *Die Hard Trilogy's* second of the three games, Hideo Kojima's *Policenauts*, and the *Lethal Enforcers* double-pack all work

perfectly with the Sinden too. I would offer fair warning, though, that moving straight from the more modern feel of *Time Crisis* to the original *Lethal Enforcers* – it being little more than a fairground-style 'pop up and shoot' gimmick – is... jarring. Where there's proper, intense fun to be had with Namco's game, Konami's police-'em-up is a mite less engaging and falls firmly into the 'nostalgia and not much more' camp.

So what have we learned from all of this? Not how to crimp wires, that's for sure. But with a fair old chunk of spending on luxuries, a bit of work, some troubleshooting, and the innate desire to play *Point Blank* properly one more time, we can end up with an accurate, modern lightgun that works nigh-on perfectly with original hardware from 25-plus years ago, *and* that works on modern screens too. It's niche. It's expensive. It's probably more trouble than many can be bothered with right now, I'm sure.

But this is exactly the kind of new solution to an old problem I'm into – the sort of thing I snuffle around in random GitHubs and across countless Discords trying to find out about. And I honestly never realised how much I missed *Time Crisis* until very recently indeed.

Make it again XII

Now that we live in a world where lightguns can work again – not Wiimotes or Move controllers waving reticules about, but proper meaty brightly coloured guns in our hands – we need to get the petition going for a new *Time Crisis*. The last game, *Time Crisis 5*, was an arcade-only affair in 2015, but it would serve whoever's kowtowing to our demands here to go back to the original game for the inspiration. Less silliness, fewer gimmicks, just a straight-up challenging, tightly designed mix of skill, score attack, and speed. And all done with a proper lightgun. While I'm waiting for *Neo Time Crisis*, I'll be making my way through the original game on PSone, on repeated play, probably for the rest of my life.

What a game.



Shine a light

Ryan grabs his trusty torch and revolver for a replay of Remedy's newly remastered *Alan Wake*

In the eleven years since I last played *Alan Wake*, I'd forgotten what a complete plonker the titular novelist is. Right near the beginning, Alan's thoroughly rude to an elderly fan who politely asks if he'd like to appear on his local radio show. He's horrible to a waitress in the small-town diner near his holiday home ("What an airhead"). And when Alan's long-suffering partner Alice unveils a typewriter, in a well-meaning attempt to cure Alan's writer's block, he screams in her face and looks, for one horrible second, like he might even hit the poor woman.

Yes, I've been playing *Alan Wake Remastered*, which is the same action-horror game from 2010 but with a high-def lick of paint. But while the game now supports 4K tellies and has fancy water effects, Remedy's polished what wasn't

broken and left the flaws intact. As a horror game, it isn't that frightening, and this is from someone who jumped a couple of times when playing *Luigi's Mansion*. Some of the game's writing and design is downright goofy. And again, Alan's a bit of a plonker.

What remains true, though, is how good the action bits of *Alan Wake* are. Remedy's great at making games with satisfying shooting mechanics, and *Alan Wake* follows the trend: you stop the marauding ghouls in their tracks with your flashlight in one hand, then finish them off with a few bullets from whatever firearm you're holding in the other. It's less eye-catching than *Max Payne's* bullet time, but it's intuitive, snappy, and has enough depth to remain enjoyable from the beginning of the campaign to the end. (Though admittedly, I'm less taken by the sequence where you have to zap dozens of angry crows from the sky with your torch.)

Unfortunately, there are other design ideas that undercut the unsettling atmosphere. One example arrives within the first few minutes: Alan's running in abject terror through the night. With a supernatural entity on his heels, his survival hinges on getting to the safety of a lighthouse: a rectangle of light from the doorway guides his steps as he runs, gasping, from the threat behind him. But then Alan notices a Thermos flask glinting on a bench nearby, and for just a second or two, Alan's obsession with caffeine overtakes his fear of the unknown and



Are the locals giving you trouble? Just say the word, and I'll hop on a plane and come make sure that you're left alone, Al.



I'd forgotten there were still places like this -- towns where everybody knew everybody.

he stops to pick it up. It's only a small thing, and sure, you're controlling Alan, so you can ignore the Thermos if you want. But the mere presence of a collectable trinket reminded me, in this moment of tension, that I'm just sitting in a chair playing a game.

There are other design oddments that reveal *Alan Wake's* eleven-year vintage. In a diner, your path is blocked by a serving trolley. In real life, you'd wheel it out of the way to shorten your path to the loo; because this is a game, you realise the designers want you to take the long route round, past a pair of old geezers arguing about the music on an ageing juke-box.

When *Alan Wake* came out in 2010, Remedy widely described it as a psychological horror – a genre that, for this writer at least, the game never really fits. Psychological horror is usually subtle: it's storytelling told at a whisper. It's marked out by subtle suggestions of nightmarish things happening. It's *Jacob's Ladder*, not Sam Raimi's *The Evil Dead*. In *Alan Wake*, the horror's about as subtle as a shotgun blast: Alan and Alice's supposedly idyllic holiday retreat is called Cauldron Lake Lodge, and is so patently terrifying that it's a wonder the pair don't look at the crows roosting on the gate, immediately run back to their car, and drive back to New York. Enemies, meanwhile, will frequently yell stuff at you that is presumably meant to be menacing, but more often sounds comical: "Fishing is only permitted for those visitors who purchase a park fishing licence!" roars one possessed local.

"Who the hell wears a black hoodie over a suit jacket, anyway?"

Then we come back to Alan: nominally a down-on-his-creative-luck writer, but really just another one of those generically handsome Video Game Guys with chiselled features and perma-stubble. He's Nathan Drake with a publishing deal. For some reason, even Alan's clothing rubs me up the wrong way: who the hell wears a black hoodie over a suit jacket, anyway?

There's an earnestness to Remedy's horror opus, however, that makes it endearing. Steeped in the novels and film adaptations of Stephen King – there are unmissable references to Stanley Kubrick's *The Shining* – *Alan Wake* works

as pure pulp. The horror clichés are so numerous, you can have fun checking them all off: the woodland cabins; figures wielding axes; long, swooping

shots of mountains shrouded in mist. Remedy doesn't get everything right when it comes to storytelling, pacing, or characterisation, but the team's affection for horror is infectious. They even took the time to make their own homage to *The Twilight Zone* that appears on random TVs.

Maybe I'm being a bit hard on *Alan Wake* because Remedy's most recent game, *Control*, is still fresh in my mind. That game got everything so right: the story ripples with mystery and tension; the level design and setting merge seamlessly; the protagonist is likeable; and, once again, the action mechanics are spot on. Perhaps it's appropriate – given the game's literary theme – that while *Alan Wake* is by no means a bad game, when compared to *Control*, it feels like an entertaining yet flawed first draft. 🙄

Wireframe Recommends



Deadly Premonition

PC, SWITCH, XBOX 360, PS3
Hidetaka "SWERY" Suehiro's infamously jank-laden mystery adventure channels the spirit of *Twin Peaks* with its all-American small town and coffee-sipping FBI agent hero, but it's also surreal, Lynchian, and just plain baffling in ways its creator probably didn't intend.



Oxenfree

PC, SWITCH, IOS, PS4, XBO, MAC
Night School Studio's indie darling managed to conjure up the picturesque beauty and humdrum boredom of living in a small town in a remote part of the US. Full of well-observed teen characters, it also succeeds in being really eerie at times.



Night in the Woods

PC, SWITCH, IOS, PS4, XBO, MAC
Like *Oxenfree*, this is another superbly written and realised evocation of ennui and everyday life in a small town. The quality of the script is such that, after just a few minutes, you don't even notice that the characters are all talking animals.

Now playing
Four-year strong

357.1Y

WIND
2Y

SLOPE
SLIGHT

NORMAL

DRIVER

PRO WOODS



TEE
OY RANGE

Four-year strong

Took a while, but Ian's finally knuckled down with *Golf Story*

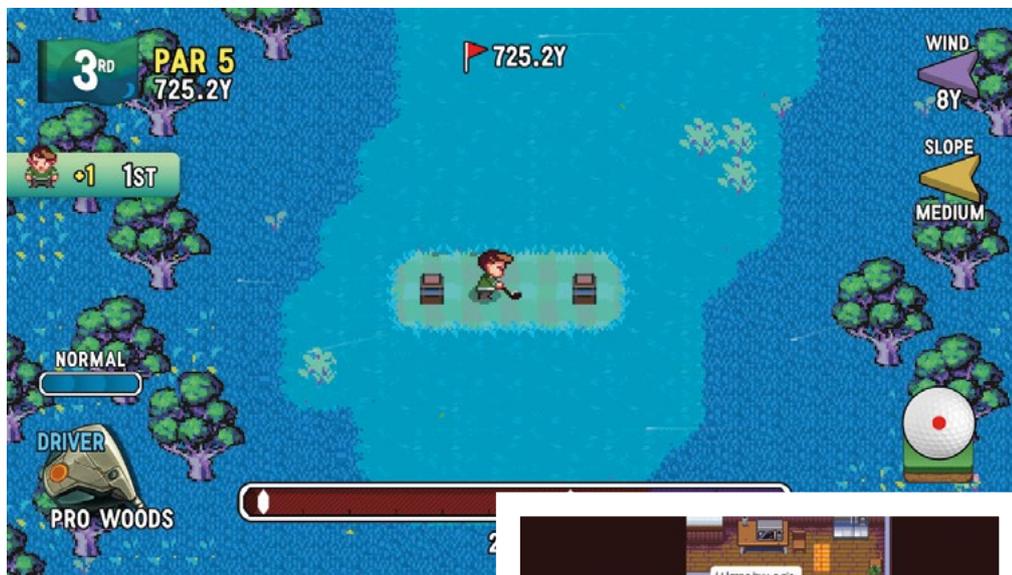
Literally the first game I downloaded on my Switch: *Golf Story*, from Australian dev Sidebar Games. Readers of Wireframe #54 will have picked up on a certain fondness for golf games – especially those of the three-tap variety – and writers of Wireframe #54 will have been influenced to pick up a thread they dropped what seems like forever ago. That being: to actually power through and finish *Golf Story*, four years after first starting it. Well, dear reader (not writer) – I only went and ruddy well did it, didn't I?

No idea why I stopped, to be honest. *Golf Story* is a wonderful little package – a mix of cracking, straightforward video game golf, a light RPG with levelling and side quests, an overarching storyline to wade through, and some genuinely funny banter throughout. It's one of the most characterful games I've played in recent (and longer) memory, and while it might be a bit simplistic – especially for those looking for a *hardcore golf simulation* or a *hardcore RPG* – I can think of no real criticisms to level at the game.

Still, I did stop playing it. I picked it up periodically from September 2017 to September 2021 – an early burst of half-a-dozen hours four years ago, followed by a number of years of one mission or two here and there, eventually finished off with another committed burst of action just recently. £15, I think this game cost. Four years of (on and off) entertainment. Nothing about it let me down. That's a hell of a game, it's fair to say.

But what is it that kept me coming back and, eventually, made me just crack on properly? It's hard to narrow down. The story – start at the bottom, work to the top – is simple, but told well enough with a bunch of characters who, while you might not deeply *care* about, you will find engaging and entertaining. Apart from Max Yards, who is a wallower in more senses of the word than just one. Those RPG mechanics are definitely on the lighter side, as mentioned, but





add enough to keep me wanting to come back and finish off all the side missions, so I can both level up as much as possible (and customise my abilities as a result) and purchase the very best equipment the world has to offer. As well as the vintage clubs.

The golf, meanwhile, is a mix of intensely satisfying and in no way comparable to the purist entries to the ball-thwacking genre. Aside from the obvious *Mario Golf* influences, the closest to *Golf Story* is probably *Everybody's Golf* – and even that's quite far off, comparatively. It's complex enough to include more than just fairways, bunkers, and greens – while silly enough to include birds and moles that steal your ball and throw it somewhere else on the course from where it lands. It's involved enough to allow you fine control of the ball both in power and spin – while its 2D presentation precludes seriously tricky obstacles like, say, entire mountains to get in the way. It's the perfect golf game to pick up and play for ten minutes at a time, lose yourself in, not be *too* challenged by, and come out the other side from with a wee grin on your face.

Which, I would say, probably explains why it took me so long to finish *Golf Story*. It's not that it isn't satisfying to play for long stretches – there's always something going on, somewhere new to explore, someone new to underestimate you. It's not that it's too simple to feel like you're in full control – if anything, it often feels like you have *too much* control over things, given the amount

“What a great game. I'm genuinely sad it's over”



of chip-in eagles and holes in one I netted. Holed. Whatever.

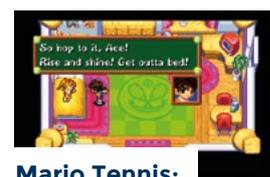
No, it took so long to plough through the game because I didn't want it to end. Given the choice between playing something utterly wonderful over a handful of multi-hour sessions, or over a period stretching into months and, eventually, years – I'll take the latter option. It's a game that

has lasted me from day one of my Switch ownership through to just the other month, at the time of writing, and I would wager I'll be going back to it again in the not-too-distant

future. It's never going to be a true game of the year contender, but in my personal awards scheme – The Dransfields (I'm bad at naming awards) – *Golf Story* will always be a winner.

And all this without even going into excruciating detail about why the game's persistent need to undermine and underestimate your character – who himself does the very same *to* himself – is both very funny and very refreshing in a world of games where you are the Great Hope and always The Best. It's never nasty, but *Golf Story's* always ready with a dig from the very first swing of a club through to the very last podium you stand on. What a great game. I'm genuinely sad it's over. 🍷

Wireframe Recommends



Mario Tennis: Power Tour

GBA

An obvious influence on *Golf Story* (as with the GBA *Mario Golf*), *Power Tour* brings RPG-lite mechanics and a bright sense of humour to some solid sporting action.



Yoku's Island Express

PC, PS4, XBO, SWITCH

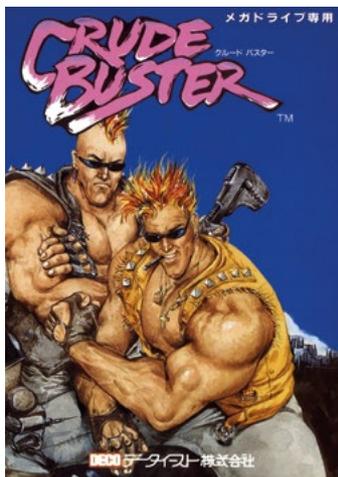
It's not quite a platformer, and it's not quite a pinball game – it's just *Yoku's Island Express*. Another title perfect for those who can't quite commit to a game that's *pure* in its focus.



Sports Story

SWITCH

Alright, it's not out yet – and is in the midst of a year-plus-long delay at the time of writing – but it's the follow-up to *Golf Story*, so will clearly be excellent and is easy to recommend already.



Two Crude Dudes

Looking back at a brawler that stood out from the arcade pack thanks to a unique throwing mechanic

DATA EAST / 1990 / ARCADE, MEGA DRIVE, PC, SWITCH, WII

After Irem established the genre with 1984's *Kung-Fu Master*, the side-scrolling beat-'em-up was well and truly established by 1990. There was, after all, only so much you could do with a genre that only allowed you to walk left and right, punch, kick, and maybe jump up to different platforms if you were lucky. And with the likes of *Double Dragon* and Capcom's *Final Fight* adding a modicum of strategy by letting players walk in and out of the screen, the traditional side-scrolling brawler was beginning to look decidedly staid by the end of the eighties.

With *Two Crude Dudes* (alternately known as *Two Crude* or *Crude Buster* in certain regions), however, Data East managed to spice the genre up a bit with a cunning new concept: giving players the ability to pick stuff up and throw it. Data East wasn't a stranger to making big, brash brawlers by 1990: two years earlier, it came up with *Bad Dudes Vs DragonNinja*, in which you and a friend battered an army of villains who'd somehow kidnapped the US president – unabashedly modelled on Ronald Reagan. In some respects, *Two Crude Dudes* was more of the same: you and your equally beefy compatriot trudged from left to right, pummelling everyone and everything that strayed into view.

The ability to throw stuff, however, completely changed the game's feel. Bits of scenery, ranging from steel girders sticking out of the scorched earth to street signs, could be

used as blunt instruments – something gamers had already seen in the aforementioned *Double Dragon* and *Final Fight*, which both made a feature out of injuring strangers with assorted bats and knives left strewn on the ground. But then the realisation dawned that just about everything else in *Two Crude Dudes* could be picked up and lobbed, too.

See that row of five or six goons running straight at you? Grab the unlucky chap who's at the front of the group, and you can throw him at the idiots following behind, knocking them all off the screen in one devastating move. Those cars left to rust in the apocalyptic landscape? Try picking one of those up and watch what happens when you throw it at anyone foolish enough to get in the way.

It was also possible to punch and kick in *Two Crude Dudes*, of course, but Data East evidently wanted the focus to remain on throwing things: while old-fashioned fists

and feet had their uses, they were far less powerful and satisfying than, say, flinging a dog straight into a discus-throwing strongman's face.

With all this power at the player's disposal, you might be wondering about *Two Crude Dudes'* balance. How can you make a game where two mountainous guys throw cars clear across the screen even remotely challenging? Data East evidently struggled with this area, since they essentially made the enemies increasingly cheap as the game goes on: there are curious little individuals that hop around too quickly for

“How can you make a game where guys throw cars across the screen challenging?”



you to grab; those dogs have a tendency to clamp their little jaws on your exposed nipples if you don't time your attacks correctly; and then there's the demented 'Psycho Santa'. This squat parody of Saint Nick carries a sack full of deadly bombs and hypodermic needles that leave you constantly left stunned and open to yet more attacks if you don't dodge them in time. Like a lot of arcade games of the era, these moments are nakedly designed to empty your pockets of spare change.

Still, *Two Crude Dudes* is simply too brash, kooky, and downright fun to be entirely sunk by its clear lack of balance. In 1990s arcades – and later on the Sega Mega Drive (see box) – there simply wasn't anything else that looked or played quite like it. Come to think of it, there hasn't been a brawler like *Two Crude Dudes* since, either: developers large and small have long since raided gaming history for mechanical ideas, yet nobody appears to have thought of making another game where just about everything in sight can be picked up and flung about with gleeful abandon.

If there's an indie studio out there thinking of making a modern take on *Two Crude Dudes*, with a bit more depth to the combat but still plenty of picking up and throwing random bits of scenery, we'd happily play it. 🍷

Fine Port

Unlike a lot of brawlers of the era, *Two Crude Dudes* wasn't widely converted to home systems. The Mega Drive version, however – for years, the only port of the game – is an impressively faithful one. The number and variety of enemies takes a hit, and there's an odd change to the mechanics where you have to duck before throwing an object if you want to hit most of the rank-and-file bad guys. Those gripes aside, it's a corking version of the arcade original: the muscle-bound, cartoonish violence is present and correct, and the Mega Drive edition is also a little better balanced, with fewer energy-sapping enemies piling on you late in the game. This version also adds a new minigame that wasn't in the coin-op: a vending machine you can repeatedly bash until energy-replenishing cans of fizzy drink start to spill out.



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Editorial

Editor

Ryan Lambie

Email ryan.lambie@raspberrypi.com

Features Editor

Ian Dransfield

Email ian.dransfield@raspberrypi.com

Sub-Editors

David Higgs & Vel Ilic

Design

criticalmedia.co.uk

Head of Design

Lee Allen

Designers

Sam Ribbits, Lucy Cowan

Contributors

Jon Bailes, Antony de Fault, Konstantinos Dimopoulos, Kim Justice, Stuart Maine, Dan Marshall, Steve McNeil, Ed Nightingale, Jervon Perkins, Aaron Potter, Nic Reuben, Jim Trinca, Mark Vanstone, Howard Scott Warshaw, Alan Wen, CJ Wheeler

Publishing

Publishing Director

Russell Barnes

Email russell@raspberrypi.com

Director of Communications

Liz Upton

CEO

Eben Upton

Advertising

Commercial Manager

Charlie Milligan

Email charlotte.milligan@raspberrypi.com

Tel +44 (0)7725 368887

Distribution

Seymour Distribution Ltd

2 East Poultry Ave, London EC1A 9PT

Tel +44 (0)207 429 4000

Subscriptions

Unit 6, The Enterprise Centre, Kelvin Lane,
Manor Royal, Crawley, West Sussex, RH10 9PE

To subscribe

Call 01293 312192 or visit wfmag.cc/subscribe

Subscription queries

wireframe@subscriptionhelpline.co.uk



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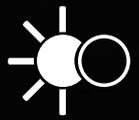
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