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It's time to expect more from the games industry

don't think I've ever been this disinterested in a new console generation. I know it's been nearly a decade. And, sure, I've loved a lot of the games, I'll undoubtedly love some from the next. But Microsoft and Sony seem bored by their own might, and unwilling (and unable) to pitch their consoles as any more than iterations on iterations.

There's been a lot of chest-thumping already about FLOPS and hertz and native 4K. Phil Spencer decided to show off the chip powering the new Xbox by changing his Twitter avatar to a photo of it. Promises of real-time ray tracing and an elimination of load times.

But what does that get us? How will this fundamentally change the way developers make games or the games they're able to make? Everything so far just sounds like an incremental nudging towards everything we've been doing, but more expensive. More polygons, bigger textures, more square kilometres of Ubisoftian open-world spaces that need to be filled with *something* (whether it's expensive set pieces or dozens of hours of procedurally generated, minimap cluttering busywork).

The rest of this year, two giant corporations are going to try and convince us once again that their incremental hardware refresh is the one that will change our lives as gamers. That they're the ones who truly get us, they've got the exclusive games we want, and we absolutely should give them our £400-plus for the privilege.

Remember when Sony promised us the PS2 would be capable of rendering – in real time – the ballroom dance sequence from *Final Fantasy VIII*? Yeah, that never happened. But it felt inspired. Could you imagine Sony or Microsoft using Squall and Rinoa waltzing as promotional material now?

I'm tired. And really, there's no way to market around how tired I am. It's the same boring war that we've waged over graphics cards and processors, but somehow made more dire because multibillion-dollar companies have pushed billions into crafting a world where the console



DIA LACINA

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you buy isn't just how you'll be playing games, but your *entire* identity; your brand is an extension of their brand.

And right now their brands are literally stealth black slabs of boring plastic with more FLOPS than last decade, and a tepid gimmick. Enhanced haptic feedback? How long are we really going to hold onto rumble? I mean, really. More 'immersive' button-feel? Just more things to turn off. Sorry. A DualShock trigger will never feel like drawing a bow, and immersion used this way is tired marketing.

I guess that leaves backwards compatibility. Which *could* be nice, but it's literally looking into the past. At best it's a holdover until something more than a handful of probably uninspired launch titles drop. It's not a reason to invite new devices into my home, it's a reason to not keep my old ones around.

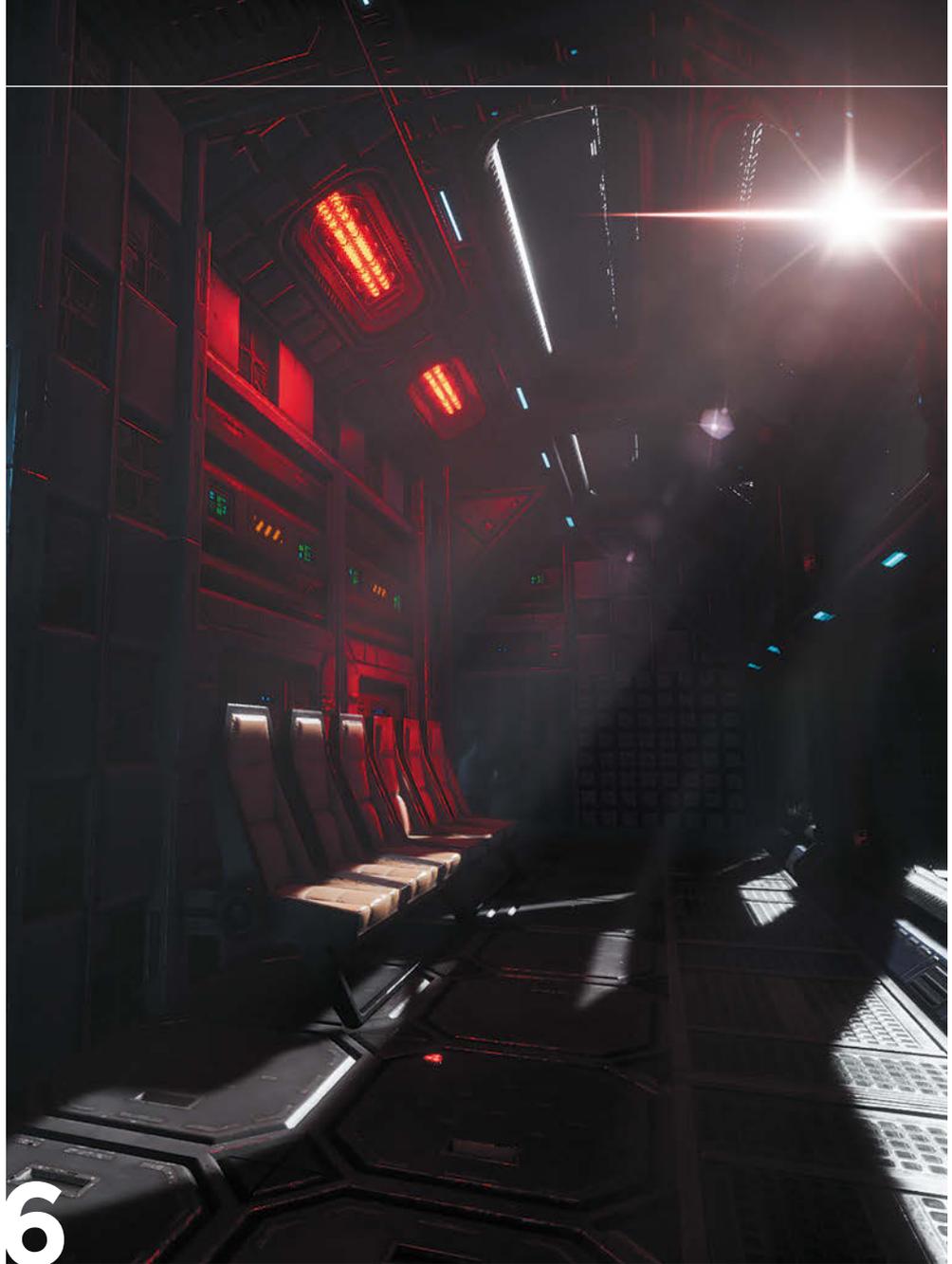
Where's the retirement home for old consoles anyway? Ultimately a landfill. Where they'll linger, basically for eternity. That sucks. It's not like new consoles aren't ecological nightmares to begin with, no matter what promises of lower power consumption they offer. Between the conflict minerals, manufacturing waste, planned obsolescence, shipping, to say nothing of the monumental labour issues, the socioecological handprint of consoles on a corporate scale cannot remotely be offset by a more efficient standby mode.

A new console generation means more expenses. Not just the cost to make games (though that's certainly true), but the human and ecological cost. I don't need more FLOPS measured in teras or petas. I need Sony and Microsoft (and Nintendo) to give a damn about their business practices, to care about the labour and lives of people making games for their platforms in a very real way, and to be open, transparent, and committed to real change with regard to the environmental havoc that multibillion-dollar multinational corporations bring with them. I need them to care if they're going to expect me to. And right now it seems like none of us do. 🙄

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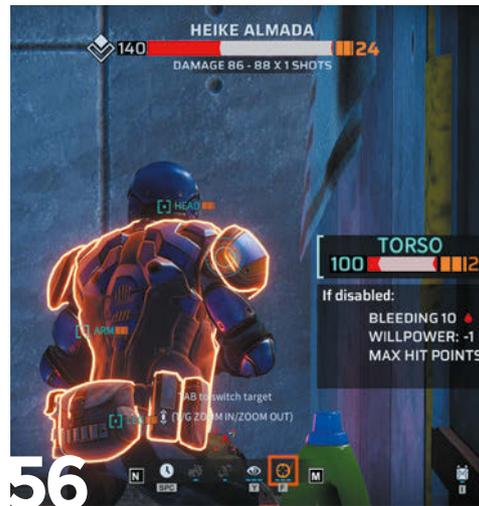
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WELCOME

Syd Mead, the late industrial artist and futurist who sadly passed away on 30 December 2019, wasn't best-known for his contribution to the video game industry. All the same, it's well worth taking a moment to consider just how important he was. Mead served as a concept designer on 1995's *Cyber Speedway*; designed the aliens in *Wing Commander: Prophecy* in 1997; and, that same year, consulted on Westwood Studios' fondly remembered *Blade Runner* adaptation.

Mead had other credits on video games, too – his reworked Light Cycle for *Tron 2.0* was another highlight – but it was his work in film that arguably had the biggest impact on our favourite medium. His concept art for *Blade Runner's* city of angular buildings and curvaceous flying cars resulted in a future we've seen endlessly borrowed from and referenced in video games since 1982. And his ships and vehicle designs for *Aliens* have left a similar impression on game designers as they've come up with their own futuristic military hardware.

Mead's grounding in industrial design meant that everything he created looked solid and functional, whether it was his Sulaco spaceship in *Aliens* or the creepy Voight-Kampff machine from *Blade Runner*. Given that video games are partly about making imaginary designs look like real, functioning objects and places, it's little surprise that Mead's work has left such a lasting after-image on video games.

Ryan Lambie
Editor



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SHOCK THE SYSTEM

The original kickstarted an undisputed era of classics; 2020's remake of *System Shock* wants to raise the bar again

This is the third time Nightdive Studios will have released a *System Shock* game. It's not *System Shock 3* by any stretch of the imagination – not least because there is a fully fledged sequel in the works, entirely unrelated to this project, from OtherSide Entertainment. No, this is a remake in the true sense; a step up from Nightdive's previous remaster-only projects, and the first time the studio has sat down and made something from scratch. On the one hand, you have to admire the boldness of taking such a step. On the other, it's a hard place to intentionally put yourself in, with fan expectations being of the sky-high variety.

Initially shown off as a Unity-made game and shopped out to Kickstarter, *System Shock* bagged itself \$1.3 million (£1m) before the campaign closed. But, as with so many projects, writing down what you intend to do proved quite different from *actually* doing those things. The project

faltered, many of the original project's developers left following disagreements with the game's direction, aspirations (and funding requirements) ballooned, additional funding wasn't secured, and ultimately the whole thing was put on hiatus while the future of *System Shock's* remake was refocused.

What re-emerged from the shadows was a different beast to what the project had become: now it would be a focused *System Shock* remake, made in Unreal Engine 4 – dropping Unity – and with a team of around 20 people working hard to bring a straightforward vision of a renewed, revitalised classic to the world. It's never nice to have to start over, but it looks like in this case it was the right thing to do.

Appetite for sci-fi terror suitably whetted, we sought out Nightdive Studios CEO Stephen Kick for a chat about all things *System Shock* – including the pleasure and pain of bringing back a beloved franchise for a modern audience.



as a character artist when I decided I needed to take an extended break from the industry. I quit my job and crossed the border into Mexico with my girlfriend, and for the next ten months we explored the country. We eventually travelled south through Central America, and one stormy night while staying in a hostel in the middle of the Guatemalan jungle I decided to play *System Shock 2*, but there was one problem... the game wouldn't run. I visited **GOG.com** but discovered it was unavailable, [and] also the most requested title on the site, so I decided to do some detective work. I discovered that the copyrights to *System Shock* had been transferred to an insurance company in the Midwest as collateral when Looking Glass went bankrupt in the early 2000s and the trademarks to the franchise were held by EA.

I wrote an email [enquiring about] the availability of the license and was responded to almost immediately, requesting a proposal for what I had in mind. I suggested that we re-release the originals [as was], they agreed, and Nightdive Studios was born. [EA's trademark had lapsed, and] a number of years later, we approached the insurance company and made an offer to purchase the rights to the franchise – they agreed.

If the opportunity to purchase the rights to a classic franchise presents itself, we always consider it. We've been lucky to acquire great franchises such as *Strife*, *Forsaken*, *Metal Fatigue*, and another property which [we haven't announced yet].

There has to be a unique form of pressure in working on such a beloved franchise and it not being 'yours'. How do you work under that spectre?

I would say that there was definitely pressure at the outset, but now that we've given the public a chance to demo the game, much of that weight has been lifted. Based on the feedback we've received, we feel that we've found a great balance between old and new, which required ➔

How much of a – to use a horrible word – 'journey' has the process getting to *System Shock* been for Nightdive?

When Nightdive first started, we only had the resources to do straightforward re-releases, which involved utilising open-source emulators such as ScummVM and DOSBox. As we continued to grow, we brought on engineers that would develop our proprietary KEX Engine that would allow us to remaster, enhance, and ultimately port games to console platforms. We've always had the ambition to create something original, but decided our first internal effort at a remake should be with the original *System Shock*.

We did release a source port of the original that made it accessible to a much wider audience, but during that initiative we discovered that the underlying mechanics made it a wonderful candidate for the remake treatment we're working on today. It took us just over four years before we were comfortable with undertaking a project of this scale.

How did the acquisition of the game's rights come about? Is that something you always attempt with franchises you revive on digital platforms?

I had been working at Sony Online Entertainment for a number of years

▲ As with the original, players have to make their way through an evil-AI controlled space station where things have Gone Bad.



^ You see a lot of pistols in these shots, but combat options are wide-ranging. Also: there's still a lead pipe.

some trial and error, but our perseverance has paid off. One piece of feedback we received was that the game was too difficult and that it didn't hold your hand enough, and while it was negative in tone, we took it as a victory – games from this era were difficult, they didn't hold your

“Not many people realise that *Shock* was one of the first games to introduce a completely non-linear, first-person experience”

hand, and they rewarded players who immersed themselves in the game world and solved problems without following breadcrumbs, waypoints, or objective markers. *System Shock* forces you to explore and scour for resources to survive. It'll give you an idea of what you need to do without explicitly spelling it out, and I think that shows an immense amount of respect to the player.

There's the \$1.3m of pressure from Kickstarter backers – how does that factor in?

The success of the Kickstarter proved to us that there were a large group of passionate fans who believed in what we were trying to accomplish and were willing to put their money down to see it through. We made some missteps along the way that betrayed their trust, but

since then, one of our main priorities was to ensure we were as transparent as possible with those backers. They have been extraordinarily patient and have provided us with constructive feedback which is more than we could have asked for. As much as it disappointed them to hear that we were starting over, I also feel there was a collective sigh of relief. They had been quite vocal

about the state of the project, and by listening and acting on their feedback, we regained their trust.

You didn't create the original *System Shock*, but you worked on the series not so long ago for the remasters. How has that set you up for the 2020 edition?

Working on the *Enhanced Edition* has definitely given us an insight into how the mechanics work from a programmatic standpoint. When first testing a new system, we'll implement the exact same mechanic from the original then iterate on it until it feels right from a modern design standpoint. In this way, we ensure that the foundation of the game feels like *System Shock*, from the mechanics to the environment and level design to the audio cues and storytelling. We also have developers on the team who are

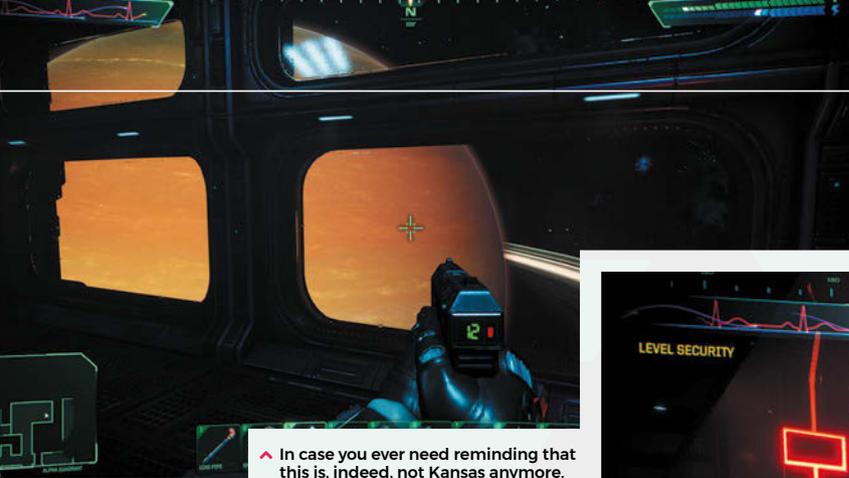
so familiar with the game that they can navigate the levels in complete darkness and can recreate them in a level editor by memory. Another advantage we have is a QA team that have tested the original and can apply their testing methodology to the remake – working on both titles has given them a very unique insight into what makes *System Shock* tick.

What, to you, are the most important factors to get right in *System Shock*?

There are a number of hallmarks that make *System Shock* unique, and as long as we translate those faithfully, we'll be successful in our remake. One of the first features you encounter is how *System Shock* handles selecting a difficulty setting. There is no, Easy, Medium, or Hard mode – instead, the player is given a range of customisable options, each pertaining to a different part of the game. Do you want to be pushed to the limit? Select the highest difficulty in the 'Story' section, and now you have a strict time limit. Want a more relaxing adventure game experience? Select the lowest option on the 'Combat' section, and none of the enemies will attack you, allowing complete freedom to roam the station and explore without fear of attack. This enables each player to create a custom experience which is a feature absent from almost every other game.

^ Environments have seen a modern-retro lick of paint over the original, while remaining utterly creepy.





▲ In case you ever need reminding that this is, indeed, not Kansas anymore.

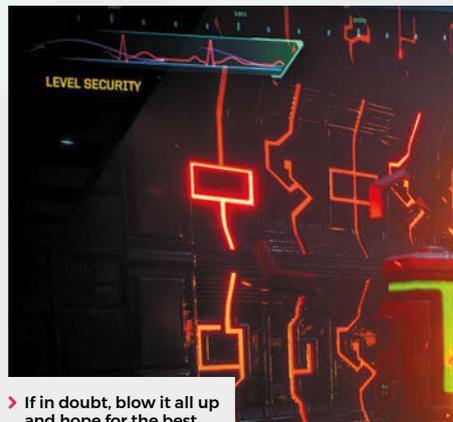
Another important factor is the art. *System Shock* is not a generic science fiction shooter. Every environment, prop, weapon, and enemy has a very specific aesthetic that draws inspiration directly from the original. To ensure we maintain that direction, we've hired the original artist, Robb Waters, who was instrumental in creating the look of not only *System Shock*, but the *BioShock* games as well.

Perhaps the most important thing is that we don't stray too far from the original by introducing modern mechanics that weren't present in the original, such as replenishing health bars, cover-based combat, or scripted sequences which take control from the player and break the immersive nature of the game.

The old-school fans are obviously on board, but what do you think *System Shock* has going for it to entice newcomers?

I think newcomers to the series will love the Metroidvania aspect of the level design, the difficulty, and the immersive atmosphere we've created in the Unreal Engine. Not many people realise that *Shock* was one of the first games to introduce a completely non-linear, first-person experience, and there haven't been many since then. By simply presenting the levels the way they were originally designed, I believe we'll introduce something many newcomers will greatly appreciate in a first-person shooter.

▼ Yep, that's definitely not terrifying at all. Nope. No brown trousers here.



► If in doubt, blow it all up and hope for the best.

[Also], the atmosphere in *System Shock* is unlike anything most people have experienced in a game before – it's a perfect blend of horror, suspense, mystery, and isolation, punctuated by visceral combat, scavenging for supplies, and solving puzzles. If we're able to capture those feelings in our remake, I'll consider our efforts a success.

What lessons have you learned during development that you might wish you'd have known earlier?

I wish that I had trusted my instincts after the Kickstarter ended. I allowed myself to be coerced into making certain decisions that at the time, I was vehemently against. It sounds crazy to think that's possible, but it happened, and I'm not ashamed to admit it. If you create something so many people love and are willing to donate over \$1.3 million for, chances are you're doing something right, and you should keep doing it. It was a very painful lesson, but one I'm ultimately grateful I learned.

What were you able to bring to the project from your other remastering experiences?

We've learned from experience that fans of certain games don't necessarily want every aspect of those games changed or improved. In most cases, updating the game to run at a high resolution, smooth frame rate, and implementing more intuitive and responsive controls is more than enough. People want to play the game they remember, not the game they played.

We are remaking everything in *System Shock* from scratch, but the DNA of the



original still exists. Very few aspects of the original design are changing, and if we do it right, fans will feel like nothing has changed at all.

Once *System Shock* is out the door, what next?

We have a backlog of remasters we're working on, but there have been discussions about using our KEX Engine to create an original title to showcase the tools and features we've developed. As for the *Shock* team, there's a high probability that a remake of *System Shock 2* will be next.

Finally, who decided to bring back *Bad Mojo*, and why?

I'll take credit for that! It was one of my all-time favourite games as a kid, and I made it a very high priority to re-release under Nightdive. One of the things I'm most proud of is spending the time and resources necessary to rescue titles despite their obscurity. Did it sell well? No, but it's a wonderfully unique game that deserves to be playable again. It's my hope that games like *Bad Mojo*, *Noctropolis*, *Timelapse*, *Harvester*, and other niche [titles] help inspire the next generation of developers to make more strange, weird, and beautiful games. ☺

***System Shock* releases on PC, PS4, and Xbox One in 2020**



Islands of Memories

Director Anjin Anhut speaks to us about the pressures of playing a hero in Minute of Islands

Info

GENRE
Narrative adventure

FORMAT
PC / Mac / PS4 /
Xbox One / Switch

DEVELOPER
Studio Fizbin

PUBLISHER
Mixtvision

RELEASE
Spring 2020

✓ No need for confusing inventories: Mo's handy Omni Switch is all you need.



Having started out with the humorous point-and-click adventure series *The Inner World*, as well as working on children's games for local German TV stations, Berlin-based Studio Fizbin's next game is an evolution of its earlier work. Moving away from point-and-click mechanics, *Minute of Islands* is a real-time puzzle platform adventure, and although it still has you playing the role of a child protagonist and features gorgeous hand-drawn art, game director Anjin Anhut says his latest project is intended for an older audience. "The themes are actually pretty mature," he explains. "Even though there's little to no violence, things get a bit gruesome on the emotional side. So we wouldn't expect the story to resonate with young children."

Driven primarily by the team's art director, Tim Gaedke, *Minute of Islands'* art style is influenced by French and Belgian comics such as *The Adventures of Tintin*, which have a similar tradition of merging adult storytelling with stylised characters and environments. "[Gaedke] basically insisted on making something that doesn't look like a game," says Anhut. "And we think it allows us to connect to the character better than doing something where we risk going into the uncanny valley with photorealism. We think that the language this offers us, whether in character design or environmental design, is a stylisation that players can translate for themselves. And we think that this translation process makes it more accessible, and more endearing."

The detailed, handmade visuals certainly look incredible, and Anhut stresses that the team refrained from reusing assets as much as possible – which is pretty impressive, given there's a considerable amount of them across a narrative adventure designed to be completed in a few hours. The story's set on an archipelago consisting of seven islands, where an unknown calamity strikes at the start, releasing a mysterious cloud of poisonous spores. Naturally, it's up to a young hero to save the day: it's a popular trope Anhut admits they're piggybacking on, but also deconstructing. "This [trope] of



▲ Grotesque images like these make it clear the game isn't meant for young children.

video games – putting all the pressure of saving the world on your shoulders – is normal [in everyday life] for a lot of people, even if they don't realise it," says Anhut. "And this is what the game explores with our protagonist, Mo, who finds that it's not as easy as just drawing a sword from a stone, and being the chosen one."

Despite the sword-wielding Arthurian allusions, however, Mo is actually a mechanic, which is actually quite apt given the general mentality among the archipelago's populace, where even the most beat-up things are cherished, and objects are constantly being reused and fixed up rather than discarded. Mo's equivalent of the Master Sword, then, is the Omni Switch, which has the appearance of a magic wand but, as the name implies, functions as an all-purpose tool for solving puzzles. More specifically, the Omni Switch is essential for fixing machines that have been keeping the spores away all this time, and which were built by a race of giants who've all but vanished from the surface. Exactly where these giants are now, and why Mo is the sole character capable of wielding the Omni Switch, are both secrets Anhut is keen to keep to himself.

What's also different is that, while most hero journeys often involve discovering new places, these islands are actually places that Mo has visited before; her home sits on one of the larger central islands, where most of her people also live. It's interesting traversing these

environments and interacting with objects that don't just trigger descriptions, but are pointedly memories, of which there are many to find. "They're like a completionist mechanic, but they also have intrinsic value to round up the story and help you understand what Mo is going through in each specific island," explains Anhut. "Depending on what each island is for in the story, these memories will get enhanced, and we hope that people want to trigger all of them to get the full picture."

Of course, for players, these encounters will all be new, but in Mo's context, she's examining things she either forgot about, had pushed away, or had missed out on, so *Minute of Islands* is, in a sense, about reconnecting with the

past. "Everything we designed is tailored for the emotional journey. The things she encounters are in a very specific order and have a specific purpose for her discovery," hints Anhut, a bit cryptically, on the significance of both the islands and the game's title, which refers to the unit of time, he confirms. "Actually, everything in the game is an externalisation. Without Mo at the centre, we wouldn't need to shape the islands like we have. That doesn't mean that everything is in her head – it just means that we use everything to tell her story." 🗨

“Even though there's little to no violence, things get a bit gruesome”



▲ You'll encounter the giants, the creators of the strange machines, on your journey. Or are they merely hallucinations?

▼ Ladders and switches open up shortcuts, although progress is still mostly linear as you move from island to island.





Table Manners

A physics-based Tinderbox

Info

GENRE
Horror
FORMAT
PC
DEVELOPER
Echo Chamber Games
PUBLISHER
Curve Digital
RELEASE
14 February 2020

▼ See, this isn't realistic. It needs more sedated tigers and pictures of groups with no identifying information of who an individual is.

Dating is, as we all know, rubbish. Modern dating more so, as your soulmate swipes the wrong way because your main image wasn't quite well-lit enough, or your first date comes to a crashing halt because *their* main image was of a different time and place in their life. And a different person. It's hard, is what I'm saying, and I wouldn't recommend it to anyone – even if it is necessary in many ways. So why not mine this particularly rich vein of game-ore? Why not indeed – and it's just what Echo Chamber Games has done for *Table Manners*.

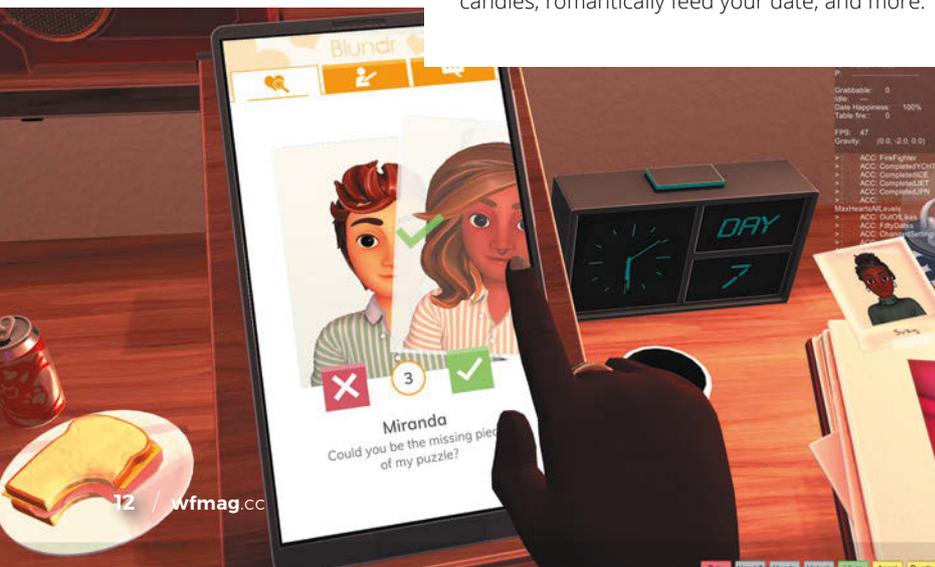
Rather than focusing on the human interactions of a date – that same batch of questions (“What do you do, where are you from, do you know Wacky Baz from round here?”) asked ad infinitum and pretending to know and care what an executive marketing product ninja is – *Table Manners* puts things firmly in the realms of physics: you need to pour drinks, light candles, romantically feed your date, and more.

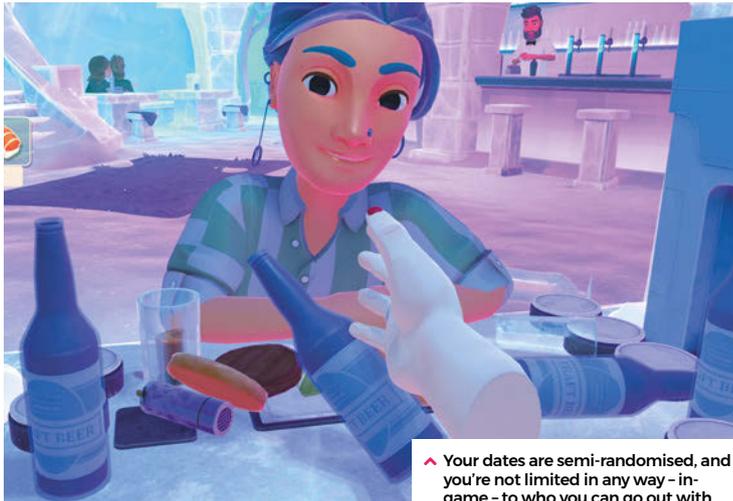
And it's all done in that classic half-controllable hand way, like *Surgeon Simulator* and its ilk.

Tim Lewis, studio director at Echo Chamber, explains the decision: “We’ve found, and I’m sure most would agree, that dating can be by far the most excruciatingly awkward experience that anyone can go through; and we couldn’t think of many ways to make it worse than to put it through a physics simulation. We wanted to double down on the chaos, on the calamity, and hopefully the comedy of what happens when everything on a date goes wrong.”

The game itself was the product of the Ludum Dare game jam, with a smaller-scale idea – as is usually the case – flowering into the finished article, thanks in no small part to enthusiastic coverage from big-name influencers like Jacksepticeye. But as Lewis explains, a lot has changed since that initial idea: “We basically put the game jam aside and started from scratch. We knew the idea, and we knew the bits that were fun, but we wanted to go way, way, way beyond what we’d imagined for the game jam and introduce some really interesting physics environments that would completely change how players tackle the in-game challenges.” Said environments include a yacht – and all the fun of oceanic waves – a private jet, an ice bar, and others, all bringing something different to the experience. “It was incredibly important to us that we only included environments which served a unique gameplay purpose,” he says.

But as Gavin Stewart, design director on the team, says, there's learning that's been done in the back while making the game: “Honestly, one of the biggest challenges that hit us early

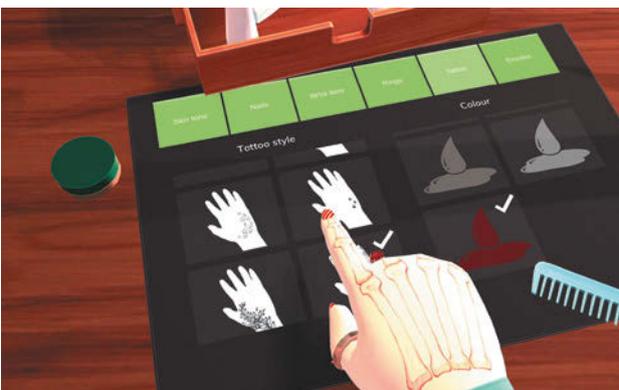




^ Your dates are semi-randomised, and you're not limited in any way - in-game - to who you can go out with.



^ As we all know, pouring drinks on a boat at high seas is awkward at best.



^ Your date either doesn't understand what you're trying to do, or is grinding their teeth incredibly hard and eyeing up the nearest exit.

on was the amount of time that's spent on running a business," he explains. "There were days where we had to draw our attention away from developing the game to focus on some of the more laborious parts of running a games company. Sometimes it was difficult to switch off at night and keep work separate from life, but now that we've been in our stride for a year we've got pretty good at keeping a healthy balance between the two."

Back in the game proper, there's also been a drive from Echo Chamber to... well, step outside of the echo chamber, and offer a game that's backed up with a real nod to inclusivity. Basically, your hand can be customised, and the people you date aren't limited in any real way. It seems like a small thing, but it's a nice element to highlight. But, as art director Hannah Payne points out, you're always looking at grounded interactions in the game - the core mechanics revolve around the physics. "We generally tried to keep the interactions grounded," she says. "And then

"It was difficult to switch off at night and keep work separate from life"

many of the things that can go wrong come about organically, thanks to the clumsy, physics-based nature of the game. This is something we wanted to tap into right from the start, and is what made the physics genre such an unlikely partner for a dating sim."

There's a fine line to walk here - *Table Manners* focuses most of its attention on the physics aspect of things, and, as such, that really has to have the right *feel* for the game to succeed. We all remember *Surgeon Simulator* with an air of fondness, but the fact is as a game - and not as a stage show where everyone's hooting with laughter - it just wasn't much fun. Echo Chamber needs to be sure it nails that balance between control and lack thereof to ensure your physics-based dating disasters are enjoyable failures, rather than frustrating exercises in lovelorn futility. 🙄

THROWING A CURVE BALL

Echo Chamber's work paid off when publisher Curve came on board, and it sounds like - according to Lewis - the team's hard work ahead of the pitch paid off: "One of the first publishers we met was Curve Digital. After playing the game, and having a lot of fun throwing spaghetti at their date's face, we got about four words through our pitch before Simon Byron, publishing director at Curve, said they were in. From there, we've been lucky enough to have an incredible experience, and form an amazing relationship with Curve."

Headlines

from the virtual front



01. Stadiums redux

Releasing a game alongside Google's Stadia back in November might not have been the world's best idea, with most attention at launch being dedicated to the system's more... let's say 'lacking' elements, rightly or wrongly. Tequila Works CEO Raúl Rubio, whose studio launched *GYL* exclusively alongside Stadia, has reflected on the platform and its early days, offering a refreshingly open personal opinion to cut through the Big G's corporate spiel. "People are totally right to be wary," he said. "It's a new technology; historically, streaming solutions didn't work. I think it's the time, in a sense, in that the technology is there and the audience is there, and to be honest, the content wars are here... (Stadia) has a lot of potential, it hasn't reached its full potential yet." We genuinely hope that's the case.

02. Blocky roads

Tetris 99 has received quite the praise, with the original game's creator Alexey Pajitnov calling the battle royale-inspired block-em-up "absolutely great." In an interview with USGamer, the co-founder of the Tetris Company voiced his love for Nintendo's Switch in general, and made a bit of a case for *Tetris* to evolve beyond where it's currently at. "I love Switch. (Nintendo) did a great job on it," he said. "*Tetris 99* is absolutely a great title. Basically, I think the one-player version of *Tetris* has been more or less stabilised over the years. That's good, and we're just adjusting the game to new user interfaces. But for two-player modes and serious competition, there are several challenges to overcome. I really want *Tetris* to establish itself as an esport. We're getting there very slowly but surely."

03. No E3 for Sony

Sony has turned last year's absence into this year's full-on abandonment, with the company revealing it will not be attending 2020's E3 in any official capacity. The decision is down to the ESA's 'vision' for the event, though what exactly that means is something we can merely speculate on. What we do know is the ESA leaked the email addresses of loads of games journalists last year and wasn't even slapped on the wrist for it. Pertinent to this story? No. Ah well.

"After thorough evaluation, SIE has decided not to participate in E3 2020," a Sony Interactive Entertainment spokesperson told GIBiz. "We have great respect for the ESA as an organisation, but we do not feel the vision of E3 2020 is the right venue for what we are focused on this year." A separate event at the same time (or thereabouts) as E3 to show off the PS5? It's not exactly a *wild* guess, is it?



Horizon Zero Dawn rumoured to be coming to PC

Epic Games Store brought in £520m-plus in 2019. So much for the boycotts, eh?



04

All these stories
and more
(we have more space
on the internet)
can be found over on
wfmag.cc



04. When it's ready

A Valve Time reference when it's not directly related to Valve might seem a bit unfair, but... well, it probably is. Regardless, September has turned into an important month after two big names for 2020 slipped until that very month. *Cyberpunk 2077* has been pushed from April to 17 September, with CD Projekt Red asking for a few extra months to "make the game perfect," while its recently confirmed multiplayer version is unlikely to see daylight until 2022. *Marvel's Avengers*, meanwhile, will now launch on 4 September, with the adventures of a metal narcissist and a group that tolerates his presence needing a few extra months of baking, so it releases with "the high standards our fans expect and deserve." In short: they'll be out when they're ready.



05

05. Free V

Actually, it's more 'open V' but 'free V' rhymes, so that's what we'll have to go with. *VVVVV* recently celebrated its tenth anniversary, and creator Terry Cavanagh surprised everyone by releasing the game's source code publicly. What wasn't surprising was the vocal contingent of *those people* criticising the state of Cavanagh's code, as if the fact that one of the all-time greats came out of it was in some way compromised by things not being the neat-and-tidiest on the backend. Ah, the internet – never change. Anyway, you can get the code at wfmag.cc/Vees



06

06. Rationalising Game

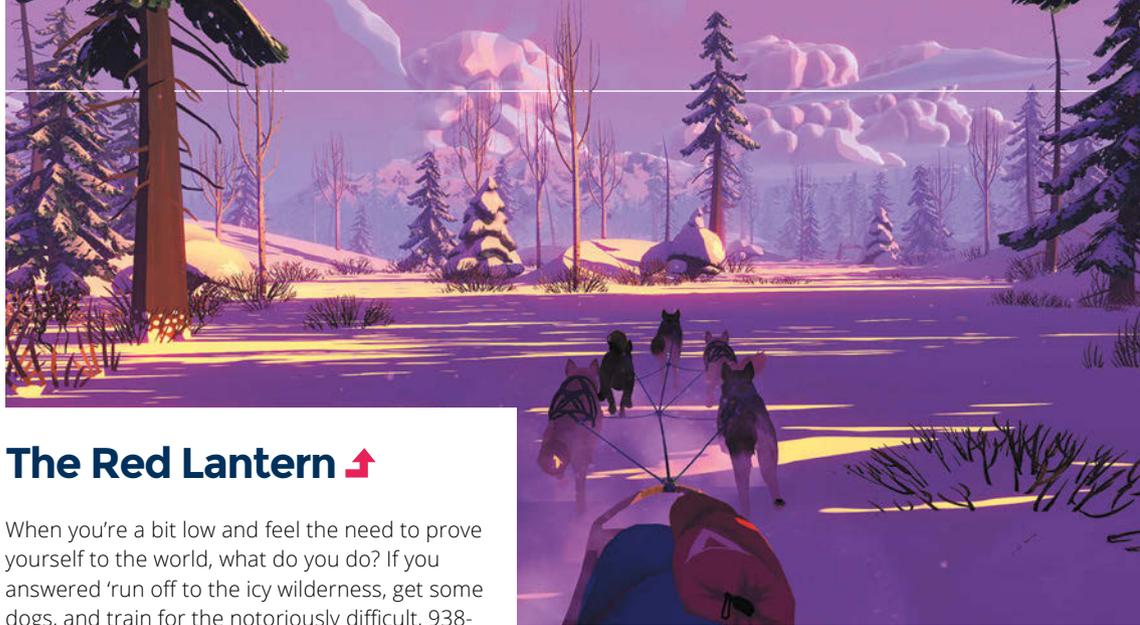
Top tier corporate nonsense-speak from Frasers Group (you may know it as Sports Direct), with the owner of high street chain Game stating it would be looking at a 'store rationalisation programme' for the video game retailer just over six months after it took the embattled group over. This doesn't necessarily mean closures for every store – though 27 shops have already been confirmed to be shutting down, including Canterbury, Watford, Mansfield, and Leicester. Instead, the 'rationalisation' could mean some stores being flipped into Belong esports arenas, likely with more favourable rental agreements in place as a result. As always, our thoughts are with the people this always hits the hardest: the store-level employees.

DICE Awards on 13 February:
Disco Elysium up for plenty of gongs



Modder Shank Mods creates
GameCube Joy-Cons; we want them

Attract Mode



The Red Lantern ↗

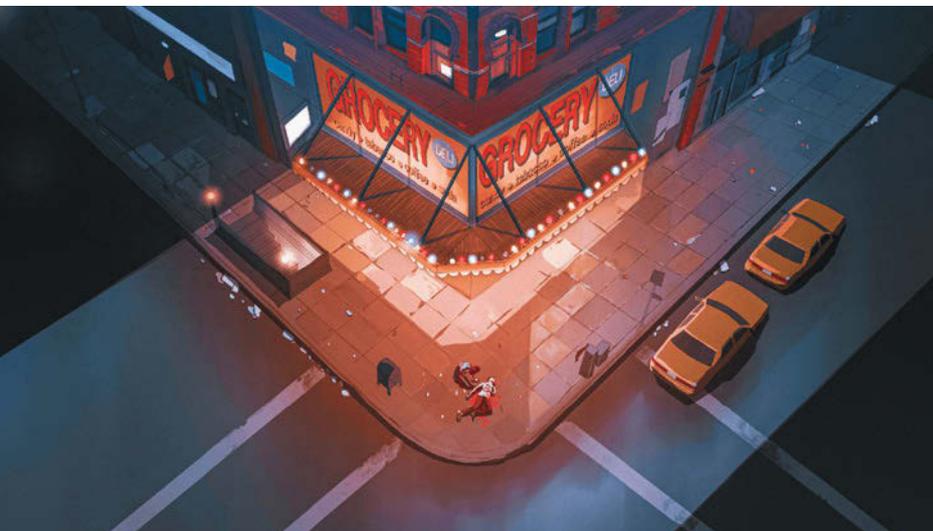
When you're a bit low and feel the need to prove yourself to the world, what do you do? If you answered 'run off to the icy wilderness, get some dogs, and train for the notoriously difficult, 938-mile Iditarod race', you'd be onto a winner. But this isn't a one-and-done thing: *The Red Lantern* is a rogue-lite, and as such will see you failing repeatedly in your attempts to attempt to make it to the finish line, or to just get home. Bear attacks, dog problems, frostbite – there's plenty out there to get in your way and put challenges in your path.

Backing up the try and try and try again formula is something you don't always see in the genre, though: a strong narrative backbone. *The Red Lantern* is telling a story as it goes: its protagonist, The Musher, has something to prove to the world, and maybe an element of herself to discover along the way. Your relationship with your dogs is something Timberline Studio has touched on, too, and this debut release from the team could well hit on a lot of areas we didn't even realise we wanted hitting.

We'll be taking a closer look at this one in a future issue, because a) it looks and sounds superb, and b) it features dogs as a central element, and Wireframe likes dogs.

Final Fantasy VII ↘

Square Enix has delayed the long-awaited remake of its most-loved RPG, with *Final Fantasy VII* now hitting 10 April. It's fine though, we can wait a little bit longer – it's already been 23 years or so, what's a couple of extra months? *Nothing*, that's what. Gives us more time to prepare for the inevitable [spoiler] of [spoiler].



↙ Corner Wolves

New studio Brass Lion Entertainment, formed by *Fallout*, *Mass Effect*, and *Skyrim* alumni, is "focused on creating original fictional universes that centre on black and brown characters, cultures, and stories." Its first game, *Corner Wolves*, doesn't look like it will disappoint. Set in a fictional Harlem of the 1990s, the game sees a young Afro-Latina woman trying to discover who killed her father, backed by an environment of hostility and the war on drugs. As well as the game aspect, *Corner Wolves* will be dipping into things like podcasting, so it's one to watch on a number of fronts.



An Airport for Aliens Currently Run by Dogs ↗

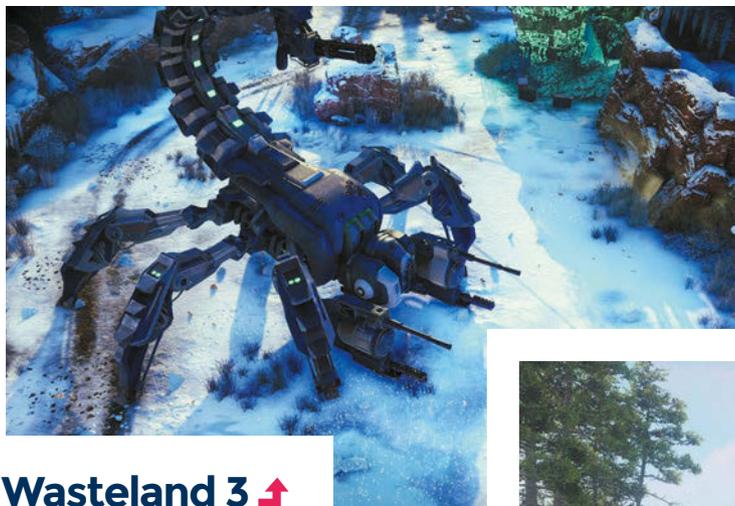
Wireframe favourite Xalavier Nelson Jr. is behind this one, a first-person narrative/puzzler in active development over on Patreon. You chat with pictures of dogs, translate alien languages, travel to other airports, and a bunch of other

stuff, as well as try to reconnect with your ever-travelling partner while all this is going on. It looks, sounds, and already feels fantastic and, as Nelson himself said: "This project single-handedly made me love making games again." Can't argue with that.



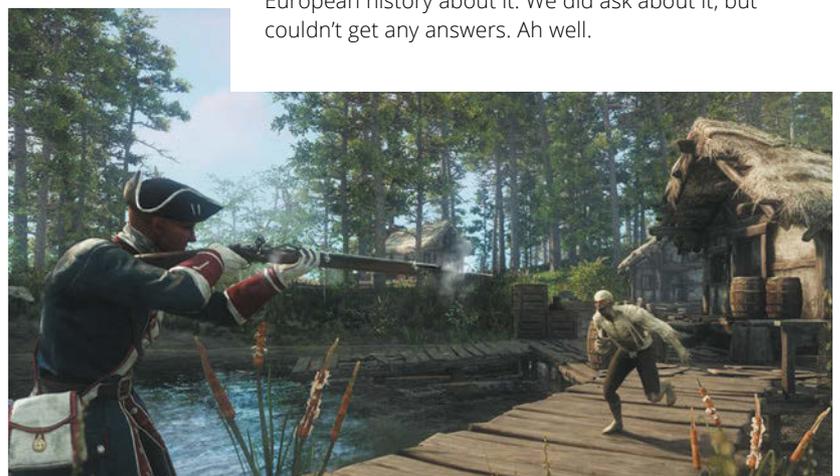
Dreams ↗

Mere months before the launch of Media Molecule's latest and we're still a bit adrift, honestly, as to what exactly it is. Alright, it's a game where you make games, and everyone shares them – that's not so hard to understand – but just how this will all come together, how it will all play out, is a bit of a mystery. Will it even work? No idea, but it'll be a lot of fun finding out.



Wasteland 3 ↗

One of many acquisitions by Xbox Game Studios, inXile's *Wasteland 3* will nonetheless still be releasing on multiple formats. And that's a good thing, because its predecessor was an understated lesson in great CRPG making, and we all need a bit more of that in our lives. *Fallout's* progenitor's third entry, again backed by millions in crowdfunding cash, introduces two-player co-op among many other elements. It's looking good so far.



New World ↘

Amazon might actually end up releasing a game that isn't based on a bunch of middle-aged men trying to pretend they're not quite as racist as they probably are. Instead, *New World*, the upcoming MMO, is based on... colonialism? Well, the devs would argue otherwise, but it certainly has a stench of that terrible page in white European history about it. We did ask about it, but couldn't get any answers. Ah well.

Interface

Return of the ninja





NINJAS ARE MAKING A COMEBACK. ESPECIALLY IN INDIE GAMES. BUT WHY NOW? ED FINDS OUT

WRITTEN BY ED NIGHTINGALE

It's not just fashion that follows trends – we see it in video games, too. Gritty World War II shooters come in and out of vogue; interest in colourful, cartoon platformers waxes and wanes. Right now, though, it's ninjas that are stealthily working their way into games large and small – with a handful of samurai warriors following not far behind. There are triple-A games such as FromSoftware's *Sekiro: Shadows Die Twice*, Team Ninja's *Nioh*, and Sucker Punch Productions' *Ghost of Tsushima*, due out later in 2020.

But there are plenty of indie games, too, combining ninja characters and retro aesthetics, which hark back to the arcade action games of

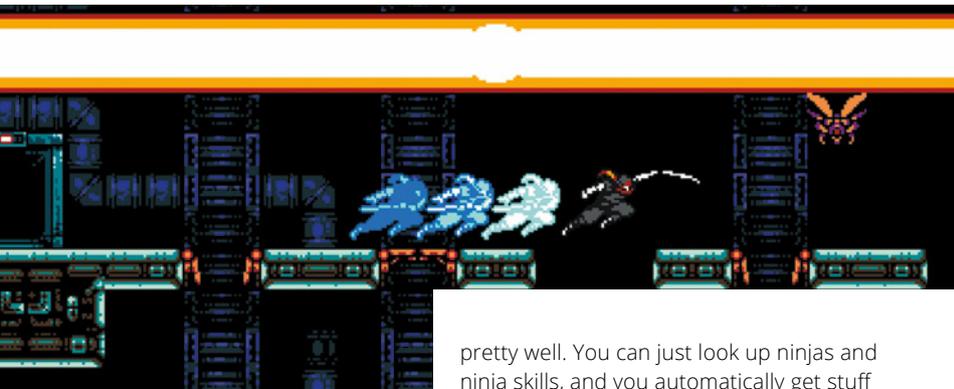
the eighties and nineties. But why ninjas? And why now? We spoke to the creators behind *The Messenger*, *Cyber Shadow*, and *Katana ZERO* to find out more.

SHADOW WARRIORS

So what makes a ninja the ideal video game protagonist? Certainly, they look exotic and appealing, with their black robes, shuriken stars, and predilection for wall running and front flips. As Aarne Hunziker, creator of forthcoming release *Cyber Shadow*, explains, much of those trappings translate readily into a video game.

"Firstly, ninjas just look cool, and they're exotic.

Ninjas lend themselves to video game characters ▶



▲ Speedrunning features heavily in *Cyber Shadow* DLC, where advanced techniques will be necessary to finish levels in time.

NINJA ORIGINS

The look and abilities of ninjas have been defined more by pop culture and folklore than history books. While there are historical accounts of ninjas – or, more accurately, shinobi – serving as mercenaries and spies in feudal Japan, it was in folk tales and art that their more outlandish attributes began to appear. The classic black jumpsuit is widely attributed to the artist Hokusai, who likely based his design on the garb worn by stage-hands from kabuki theatre. It's this image that has been iterated on in popular culture both in Japan and the west, whether it's in martial arts movies like *Enter The Ninja* and *American Ninja*, or the stylised ultra-violence of the more recent *Ninja Gaiden* games.



▲ Sega's *Shinobi* and Tecmo's *Ninja Gaiden* did much to establish the ninja's look and abilities in eighties video games.

pretty well. You can just look up ninjas and ninja skills, and you automatically get stuff that's going to be interesting in a game. And I think that's the reason a lot of ninja games are successful – they're equipped with solutions to different problems, whether those solutions are from history, or fictional. So it makes the game design easier."

Moreover, ninjas tie into an action game's need for sharp reactions and laser focus. Hunziker describes *Cyber Shadow* as the "quintessential ninja action game", with a level of challenge to match. "When you play the game at the highest level, it's going to require so much focus that it becomes immersive," he says. "I'd like [*Cyber Shadow*] to make you so focused that it tries to harden your senses and make you sensitive to the story and the world." In short, you'll need the reflexes of a ninja to beat the game.

Thierry Boulanger, creative director of 2018 side-scrolling action game, *The Messenger*, takes things further. "I think, from a design perspective, the ninja is the perfect hero in the way that it's not a strong

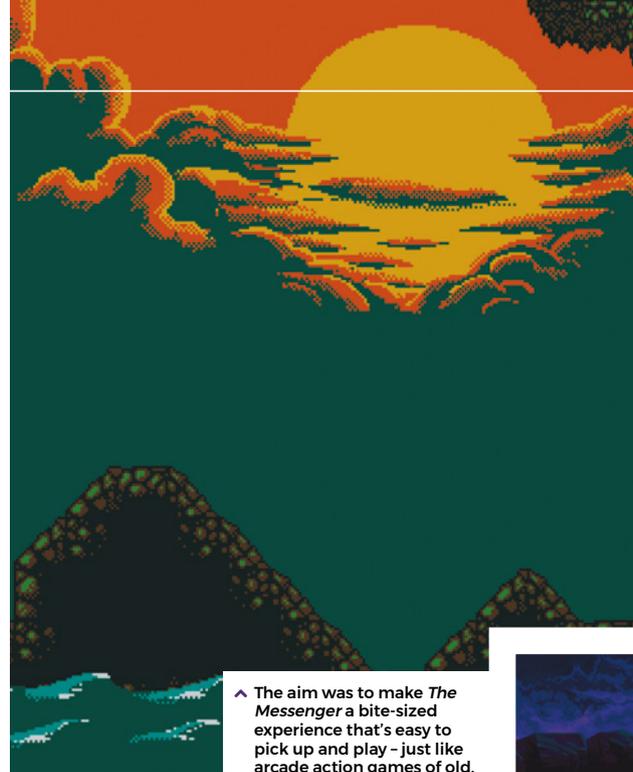
personality that the player can reject – it's just a shadow, a function of the assassin," he says. "It's not about emotion.

There's no time to explain – leave for your quest! It's not really complicated: grab the scroll, fight some demons, and front-flip."

Boulanger sums it up even more simply: "I jump, therefore I am."

For 2019's 2D action-platformer, *Katana ZERO*, developer Justin Stander created a hybrid samurai-ninja character to complement both the gameplay and the somewhat bleak story. "The central theme of *Katana ZERO*," Stander explains, "is addiction." The game's protagonist, Zero, is hooked on both drugs and violence, believing they're a necessary evil. "Zero's obsession with samurai culture is a way for him to justify his violence," says Stander. "He idolises samurai as they're portrayed in movies – characters

"I STARTED DRAWING NINJAS AND DEVELOPING STORIES IN MY HEAD OVER PRETTY MUCH 25 YEARS"



▲ The aim was to make *The Messenger* a bite-sized experience that's easy to pick up and play – just like arcade action games of old.

who find morality, and even a nobility, in a life centred on violence."

There's another equally big reason for the abundance of ninja protagonists in the games we've explored so far, however: nostalgia.

RECAPTURING YOUTH

"When I was eight, *Ninja Gaiden 2* rocked my world," Boulanger enthuses. "I started drawing ninjas and developing stories inside my head over pretty much 25 years."

Ninjas are closely tied to eighties and nineties culture: the Hong Kong martial arts films of the seventies led to the release of countless ninja movies in the following decade, which in turn provided an inspiration for video games.

The late eighties alone saw the release of Tecmo's original *Ninja Gaiden* games on the Nintendo Entertainment System, Sega's *Shinobi*,

Natsume's *Blue Shadow* (better known as *Shadow of the Ninja* in the US), and the first of several games based on the ubiquitous Teenage Mutant Ninja Turtles. All these titles – and many more besides – have had some sort of influence on the makers of this century's ninja games.

"The idea was to try and capture what it felt like to grow up in the nineties," Boulanger says of *The Messenger*. "Put your big t-shirt on over your knees, and then play some of those games." Ninja games, then, are the comfort food of the gaming world. This is why *The Messenger* is a homage to Boulanger's beloved *Ninja Gaiden* series – though he says nineties RPG *Chrono Trigger* was another influence on its lean design, story pacing, and time-travelling twist.

NINJA TIMELINE



SHINOBI 1987 – Sega – arcade / Mega Drive

It wasn't the first ninja game, but Sega's *Shinobi* arcade game was a defining success. The series highpoint was perhaps the superlative *Shinobi III: Return of the Ninja Master*, released in 1993.

NINJA GAIDEN 1988 – Tecmo – arcade / NES

The game that many look back on as the quintessential eighties ninja game, it featured innovative cutscenes, tight 2D platforming action, and a furiously catchy soundtrack.



STRIDER 1989 – Capcom – arcade / various

Set in a dystopian future, *Strider*'s brassy hack-and-slash was defined by its sense of scale and achingly cool style – and we'll never forget that big robot gorilla.



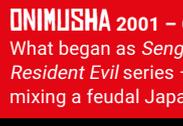
BLUE SHADOW 1990 – Natsume – NES

Known as *Shadow of the Ninja* in the US, *Blue Shadow* saw you play as two characters battling to assassinate a dictator in a dystopian future.



TENCHU: STEALTH ASSASSINS 1998 – Acquire – PSone

Tenchu took in 3D stealth and a traditional Japanese setting. The rights were later bought by FromSoftware – in fact, *Sekiro* was originally conceived as a *Tenchu* game.



ONIMUSHA 2001 – Capcom – PS2

What began as *Sengoku Biohazard* – a ninja version of the *Resident Evil* series – soon grew into its own horrifying beast, mixing a feudal Japan setting with magic and demons.



NINJA GAIDEN 2004 – Team Ninja – Xbox

Inspired by Tecmo's original titles, Team Ninja developed their 3D action game with a western audience in mind. High difficulty, fast gameplay, and plenty of gore led to critical acclaim.



METAL GEAR RISING: REVENGEANCE

2013 – PlatinumGames – PS3 / Xbox 360

A step away from *Metal Gear*'s stealth, *Revengeance* sees cyborg ninja Raiden – and Platinum – take centre stage.



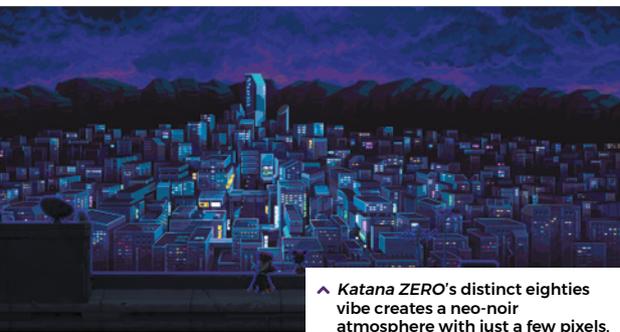
NIOH 2017 – Team Ninja – PS4

Another shinobi game from Team Ninja, this time inspired by the *Souls* series. The action mixes nimble attacks and magic abilities as you fight a string of imposing bosses.



SEKIRO: SHADOWS DIE TWICE 2019 – FromSoftware – PS4

From's latest is a magnificent reimagining of the *Souls* formula, with a Sengoku setting, satisfying swordplay, and an extreme (yet entirely fair) level of difficulty.



▲ *Katana ZERO*'s distinct eighties vibe creates a neo-noir atmosphere with just a few pixels.

Hunziker cites similar influences, and throws in the *Super Mario* and Konami's run-and-gun *Contra* series, to boot. "Those old games have such clear feedback on everything," Hunziker says. "The controls are simple: you push forward, you go forward a certain speed. You shoot, and the game plays a sound effect. Everything is communicated very clearly."

The Messenger and *Cyber Shadow* take ninjas in opposing directions. Where the former features an archetypal ninja design – black garb, flashing blades, and so forth – *Cyber Shadow* takes us into the future with a sci-fi, post-apocalyptic setting that furthers the eighties/retro feel.

It's an aesthetic that also follows in the footsteps of several older sci-fi ninja games, such as *Blue Shadow*, *The Cyber Shinobi*, and *Strider*, though Hunziker says the wealth of robot enemies – rather than human foes – is more closely influenced by eighties TV animation. "The story makes a twist on what the machines are, but you don't really kill animals or people in the game," he says. "I guess it's because, in old cartoons, you didn't see that [kind of violence]."

Justin Stander's inspirations, meanwhile, are more cinematic. For *Katana ZERO*, he chose an eighties neo-noir setting inspired by *Blade Runner* and other similarly neon-drenched movies. "I mainly took influences from films, especially Korean revenge thrillers such as *Oldboy* and *The Man from Nowhere*, as well →

Interface

Return of the ninja



ANIMATING NINJAS

Here's another advantage of having a ninja star in your game: with skill and patience, it's possible to create a character with fluid dynamic movements in just a few frames of retro-style animation. For Boulanger, choosing a ninja protagonist allowed for "a snappy character with strong poses" that averaged just four frames of animation per move in 8-bit sections, and eight frames of animation per move in the parts of the game with a smoother, 16-bit aesthetic. When creating the sprites for *Katana ZERO*, Hunziker aimed for ninja movement that was similarly fluid but punctuated by strong poses for actions like jumps and attacks.

as [American films like] *Drive* and *Sin City*," he says. "The eighties synth music and beautiful neon lights help to glamorise a setting built around murder and drugs. It's easy on the eye at first, but you can quickly look past the surface and realise that it's just grime and blood underneath."

BACK TO THE FUTURE

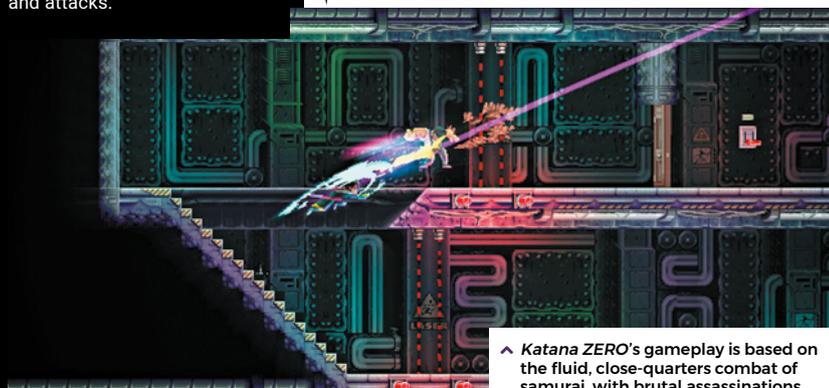
Making a 2D ninja game for the 21st century isn't as simple as replicating the look and mechanics of a much-loved classic, however; it's about combining "retro aesthetics with modern design," as Boulanger points out. "When you replay retro games, you don't miss the stiff controls, the repetitive music, and things like that. It's the simplicity you appreciate." Making a modern ninja game, then, requires some fresh thinking and new design ideas.

For *Cyber Shadow*, Hunziker took particular inspiration from Team Ninja's modern 3D *Ninja Gaiden* games – in particular, its hero Ryu Hayabusa's satisfyingly quick movements in combat. "It has this attack where you jump and slash through an enemy and appear on the other side," he enthuses. "That was super-cool to do, so I have a similar mechanic in my game. It starts off simple, and over the course of the game it becomes a more modern take on ninja gameplay, with skills that allow you to move instantly over large distances, or make combos, jump on enemies, and keep the combo going on throughout the level."

Not only would the speed and flow of these moves have been impossible to pull off on the console hardware of the eighties, but it also makes *Cyber Shadow* perfect for speedrunning – which was another consideration for Hunziker. For him, playing something like *Super Mario World* on the SNES at a relaxed pace – taking his time, collecting every item – was one kind of experience; challenging himself to complete a level in the shortest time possible turned it "into a totally new game."

Boulanger also had speedrunning in mind when he made *The Messenger*. "We're big speedrunning enthusiasts," he tells us. "Even though none of us can really run, we like to watch those events. So part of the idea was to provide a game that [speedrunners] would hopefully pick up and be interested in."

What's more, *The Messenger* has a twist that you wouldn't expect in a serious ninja game: a hint of comedy. In its homage to retro ninja games, it's also a satire of the genre's tropes. "We know there are all these clichés and cheesy aspects to epic quests of saving the world from



▲ *Katana ZERO's* gameplay is based on the fluid, close-quarters combat of samurai, with brutal assassinations.

demons, and the curses, and ‘Ooh, you’re the chosen one!’,” he says. “It’s still fun, but it’s kind of a guilty pleasure.”

The Messenger’s shopkeeper – a robed character who sells upgrades to the player – gave the team a chance to complement the game’s stoic tone with comedic references and tongue-in-cheek dialogue.

Boulanger says: “I think of the shopkeeper as us making a contract with the players: ‘Look, we know that sometimes these [games] are kind of silly, but they’re still fun. So now that we’ve acknowledged it, we can indulge in an epic quest.’”

SYNTHESISING NOSTALGIA

A key part of the nostalgic vibe of these games is the music, which feeds directly into the tension between past and present. It requires a balance between old-school compositional limitations and an ear for modern quality.

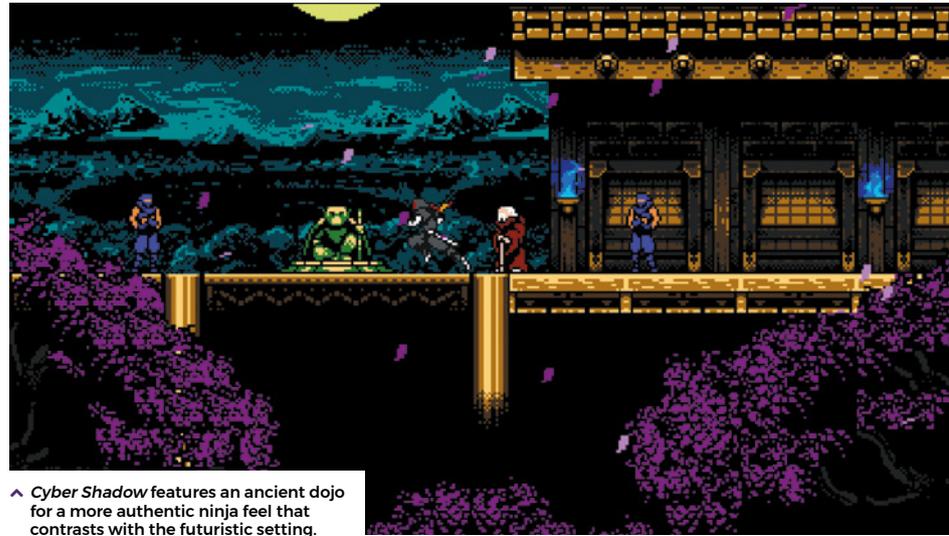
For *The Messenger*, Sabotage employed US chiptune composer Rainbowdragoneyes, who wrote the music in FamiTracker – a piece of sequencing software specifically designed for producing music on the NES. “The idea was to find that sweet spot between what we remember... [and what] we wish those games

“WE HAD SO MUCH FUN WITH NINJA CHARACTERS AS KIDS, AND WE WANT OTHERS TO EXPERIENCE THEM, TOO”

would be today,” Boulanger says. “For the audio, that meant just completely going ahead with the full limitations because, with music, you can’t really cheat there.”

Hunziker took a similar stance, with *Cyber Shadow’s* visuals and music replicating the look and feel of NES games at some points and departing from them at others. “It’s inspired by 8-bit stuff, but it’s slightly more advanced,” he says. “Similar to the graphics: there’s widescreen, there are big sprites, the amount of colours in the palette is slightly higher than on a real NES. The same with the music – it’s not limited by the channels, but it has instruments inspired by old games. Sometimes, it’s trying to use the limited sound channels, but not all the time.”

The *Katana ZERO* soundtrack feels particularly authentic to the eighties setting, but with a level of polish that simply wasn’t possible 30



▲ *Cyber Shadow* features an ancient dojo for a more authentic ninja feel that contrasts with the futuristic setting.

years or so ago. It was composed in part by Stander, but largely by musicians LudoWic and Bill Kiley, whose contrasting techniques blend old and new. For instance, LudoWic uses analogue synthesisers, whereas Kiley works entirely digitally. Stander explains further: “LudoWic makes simple and hypnotic songs based on looping motifs, since every stem needs to be created and recorded live for the analogue sound, whereas Bill can create extremely complex and melodic songs, which is much easier to do when it’s all on a computer.” What’s also more modern is *Katana ZERO’s* use of diegetic music, ensuring the soundtrack isn’t just a backdrop to gameplay, but a key part of its cinematic atmosphere.

A LINK TO THE PAST

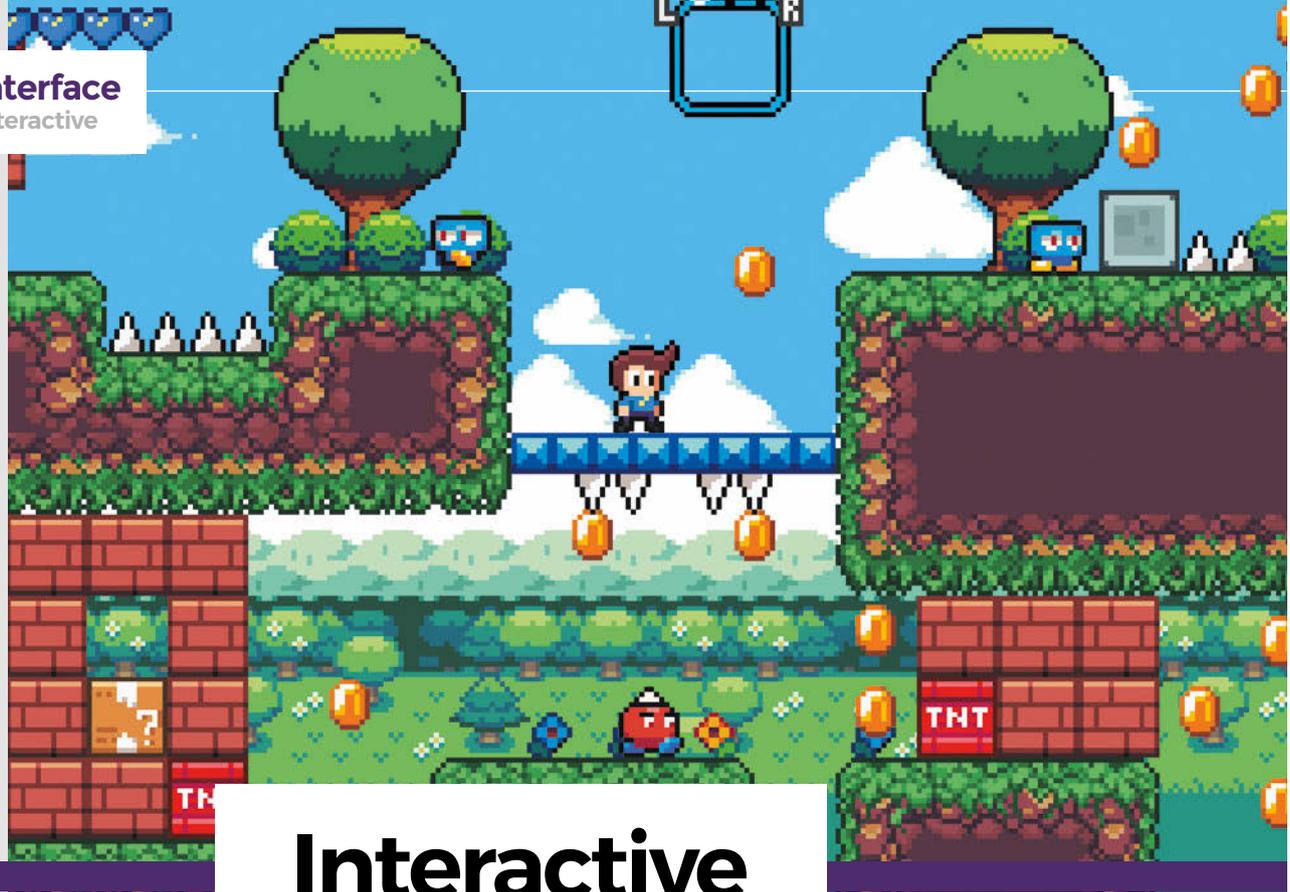
Ninjas have been prevalent through much of gaming’s history, but now we’ve come full circle – and that’s by no means a coincidence. Games are still a young medium, but we’ve now hit a point where game developers are directly influenced by the games they played growing up, and are keen to share those experiences with a new generation of players. “Remember when we just kicked back and enjoyed [a ninja game]?” asks Boulanger. “We had so much fun with those characters as kids, and we want others to experience them, too.”

Ninjas may be a product of history and old legends, and the early games in which they appeared are now decades old – but at the same time, their look and skills remain timeless. Let’s face it – speed, agility, and the ability to blend seamlessly into shadows will never not be cool. ☺



▲ The items and upgrades in *The Messenger* are based on research into real ninja equipment, though it’s all given a fantasy twist





Interactive

Glitchfall

We meet Greek developer Nikos Stavridis, whose platformer explores the light and dark side of nostalgia

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

Glitchfall certainly looks cosy at first glance: a 2D platformer made with a warm colour palette and charming sprite designs. It is, like lots of other games of its kind, a “love letter” to the titles Greek developer Nikos Stavridis played when he was growing up. It doesn't take much digging, though, to discover that there's something even more personal going on in *Glitchfall* than a homage to much-loved childhood games. Its protagonist, Johnny, is – in his creator's own words – “a 30-something, failed indie dev” who finds himself dragged into an old video game and asked to defend its pixel-art world from an invading threat known as Glitches.

“Johnny is the ‘bad ending’ of many real-life game dev stories,” Stavridis says. “Faced with his failure in game development, he comes to understand that his life may never be what he wants it to be. He wants to settle, get another job, and be a responsible adult, but he can't, because he hates not doing what he loves. You could even say he's still like a kid.”

Zapped into the world of the game, Johnny's mission will take him across eight zones of four levels each, acquiring new powers that allow

him to change the properties of the game, all while helping the world's friendly characters and repelling its dastardly enemies. It's like a combination of *The Matrix*, *Tron*, and some of Stavridis' favourite games, among them *Super Mario Land* and *Undertale*.

If there's a bitter-sweet edge to *Glitchfall's* backstory, then that's perhaps because it was born in the wake of a difficult period in Stavridis' own history. “In Greece, all males are bound by law to serve in the army once they reach 18 years of age,” he explains. “You have the right to postpone it for studies, but all my time had run out. I could no longer avoid it. It was 2016 and I was in

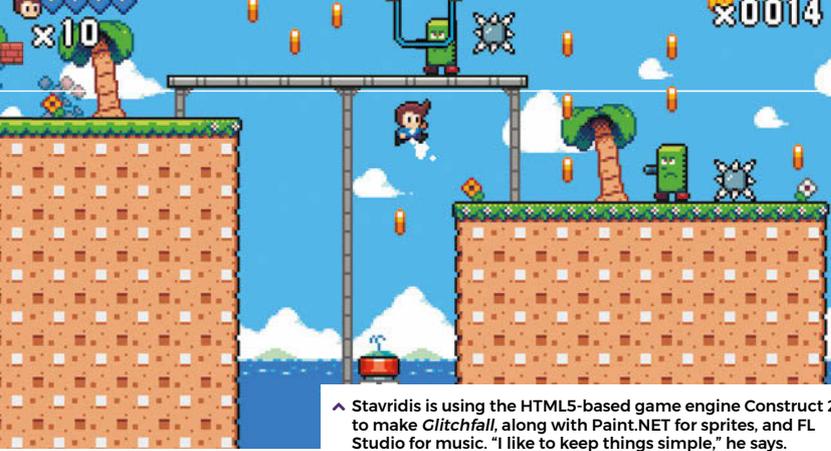
the barracks, unable to sleep, and listening to the music from *Undertale* on a \$20 phone I'd bought, since camera phones were forbidden in the base. I was 20kg overweight, full of anxiety, and in no way athletic, but I managed to get through basic training without breaking down.”

AMBITION

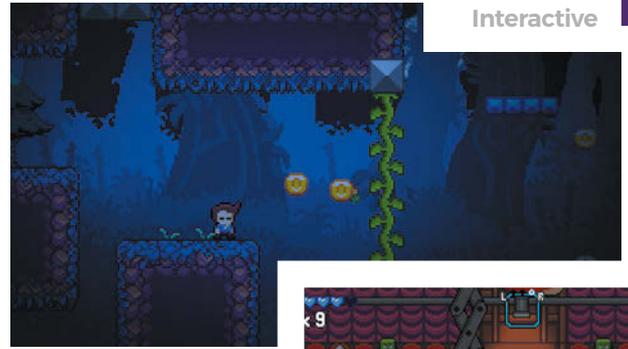
Three months into his service, however, Stavridis suffered “a huge panic attack”, and he was taken to hospital; with six months' service still to serve, Stavridis managed to get a placement at an

“Johnny is the ‘bad ending’ of many real-life game dev stories”

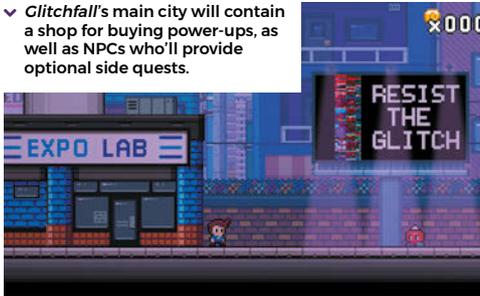




^ Stavridis is using the HTML5-based game engine Construct 2 to make *Glitchfall*, along with Paint.NET for sprites, and FL Studio for music. "I like to keep things simple," he says.



^ *Glitchfall's* main city will contain a shop for buying power-ups, as well as NPCs who'll provide optional side quests.



^ This is the first boss, Joka Poka, which took 300 lines of code and about three weeks to complete. Stavridis still has more bosses left to design.



^ The finished game will take place over eight worlds of four levels each.



office on another military base. Once all that was over, he began thinking again about an ambition he'd had since he was a youth: making games. The trouble was, his previous attempts at making an RPG had stalled, and by the time he'd finished his national service, he'd completely lost the thread of the game he'd started about a year earlier. "I went home, opened RPG Maker, and couldn't remember anything; not even my own code," he says.

FROM SCRATCH

Instead, Stavridis decided to start again from scratch with a completely different game, in a different genre, with a decidedly personal storyline. "Once again, I started a new project: a game about the good and bad side of nostalgia, the joy we get from games, and how they can change our lives. The hero would be me, and all of us indies on Twitter, on Reddit, and everywhere else who are developing and showing off the games we dreamt of as kids."

It's just over a year since Stavridis started *Glitchfall*, and it's clear from his Twitter feed (@CrossGameStudio) that his platformer's progressing nicely. Among *Glitchfall's* most eye-catching elements are its power-ups; initially

armed with little more than an Alex Kidd-like punch, Johnny can later acquire things like a Glitchmagnet, which can attract coins from all over the screen, a Glitchshield, which protects him from damage, and Glitchfire, which can both toast enemies with a jet of fire and add a bit of extra velocity to his dash ability. "At the moment, I've completed five offensive ones and five defensive abilities," Stavridis tells us. "I think it's a nice balance of variety and gameplay. Johnny begins the game with only jumping and punching as his abilities, but as the game progresses, he unlocks many more. There's even a bit of a Metroidvania design, where, after unlocking a new ability you can go to previous levels and find secrets."

There are also other secrets to find on the player's journey to the game's final boss, the Glitchking. "There are some points in the levels where the game is very unstable," says Stavridis. "If you manage to find those Glitched points, you will be transported to the mysterious Minus World, where the true Glitches are."

Stavridis still has more work to do on *Glitchfall*, including level designs, boss battles, and dialogue to polish, but he already has big plans for the game's future, including a port to the Nintendo Switch. "I can't wait for people to experience its story," Stavridis says. "As you can see, I've put in quite a lot of my own story in there. The imaginative kid scribbling a monster in his notebook, the enthusiastic teenager learning about variables, the anxious soldier drawing courage from a song and a dream. And it's all come to this. This game is me." 🗨

ASSIST MODE

Glitchfall may be a personal game for Stavridis, but he isn't working on it entirely on his own. Among his collaborators, there's Greek comic book artist Manos Lagouvardos handling artwork, while pixel artist Jeiman Sutrisman is providing most of the sprites. Music will be handled by Japanese composer Hiroki Yamamoto (making his video game debut), Jake 'Chaotrope' Cunningham, and Stavridis himself, and there are even plans for a theme song, written and performed by chiptune singer Professor Shyguy. "When I started the project, it was just me and Manos, but I eventually sought out some help and found these guys," Stavridis says. "I'm using my own savings to compensate them for their services, but maybe I'll be trying some crowdfunding soon."

Production plans: Bucket Time is born



LOTTIE BEVAN

Lottie's a producer and co-founder of award-winning narrative microstudio Weather Factory, best known for *Cultist Simulator*. She's one of the youngest female founders in the industry, a current BAFTA Breakthrough Brit, and founder of Coven Club, a women in games support network. She produces, markets, bizzes and arts, and previously worked on *Fallen London*, *Sunless Sea*, *Zubmariner*, and *Sunless Skies* as producer at Failbetter Games.

“This should allow us to spend time finding hidden fun, while also keeping to an upper budget”

My studio's current game, *Book of Hours*, lets you manage your own occult library. People seem to like the idea of organising cursed tomes and errant assistants, and curating a labelling system around a particular hexadecimal shade of pink. But you know what *isn't* fun to manage? Money. And you know what you need a lot of to make a game? You betcha.

We're a two-person team composed of a producer and a studio founder, so we take production realities particularly seriously. We chose to develop our first game, *Cultist Simulator*, on as tight a budget as we could. We set a quick release date, stuck to it, and completed the game in eleven months on a (relatively) paltry budget of £142,000.

This was great for cash flow but less good for quality. We couldn't polish much, and we launched the game in a fairly janky state. *Cultist* did well, but you can tell by glancing at our early reviews that it could have done with another six months in the oven. We chose budget over Metacritic score and made the safe, sensible choice for a teeny indie studio releasing an experimental game. But this cuts to the core of an indie conundrum: where do you draw the line between giving yourself the lowest possible break-even figure and developing the highest quality game you can?

A lot of tension comes from 'following the fun'. This is the principle where you playtest an early design to find which bit is most enjoyable, iterating on the areas which most resonate with early players. Sometimes this shows you that your original design was great and you should get on with development as planned. Sometimes it shows you that the best bit of your game is actually that weird loop over there in the corner you weren't expecting, and you have to iterate again and again to flesh it out. In those instances, you're led down a path of unknown length and expense in your quest to find that central compelling conceit.

And you really do need it – but you don't have infinite cash.

This is where Bucket Time comes in. I need to limit the amount of time we spend finding the fun to a length of time my studio can realistically afford. Simultaneously, I must also respect the creative reality of my designer needing time to workshop hidden design gems as and when he finds them. So we're going to budget *Book of Hours* as we would normally – modestly scoped, with a healthy contingency margin built in – and *then* we're going to add a 'bucket' of costed, pre-agreed work-months on top which my partner can dip into when he discovers something worth iterating on that we didn't foresee. This should allow us to spend time finding hidden fun while also keeping to an upper budget limit, as we have already budgeted an additional number of months that we can add to development as and when we need it. If any of you unbelievers are reading this thinking Bucket Time is the first thing that'll be cannibalised when the project overruns, all I can say is you clearly didn't co-found a studio with a producer.

Come back to me in 12–18 months and I'll tell you how Bucket Time went in practice! I'm hopeful it'll go some way towards squaring the circle between the fluidity of creative development and the reality of finite budgets. Production is one of the less sexy parts of game dev, but balancing reality with creative aspiration is your best chance of keeping your studio in the green. What's more important than that? 🗨

▼ Manage your own occult library in the upcoming *Book of Hours*.



Toolbox

The art, theory, and production of video games

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Why game programmers deserve more respect

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Handy tools for making and managing cities

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...and how you can apply it to game design

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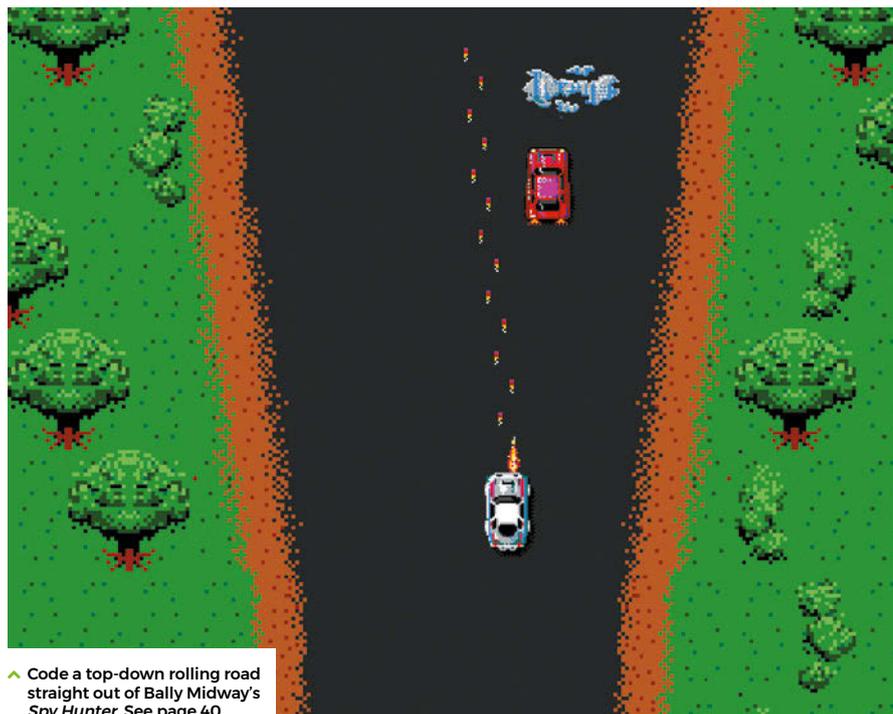
A guide to making your first text adventure

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Make your own Spy Hunter rolling road

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The Yorkshire Games Festival's line-up



▲ Code a top-down rolling road straight out of Bally Midway's *Spy Hunter*. See page 40.

▼ *John Wick Hex* dev Mike Bithell's among the speakers at this year's Yorkshire Games Festival. Find out more about the line-up on page 42.



The principles of game design

Programming games is tough and takes real skill, so why doesn't it get more respect outside the industry?



AUTHOR
HOWARD SCOTT WARSHAW

Howard is a video game pioneer who authored several of Atari's most famous and infamous titles. onceuponatari.com

Rodney Dangerfield was an American comic whose catchphrase was, "I get no respect." He was famous for jokes like, "My mother never breastfed me.

She told me she only liked me as a friend." Or, "I'm so ugly, my father carries around the picture of the kid who came with his wallet."

Rodney earned many awards over the course of his career, which is rather ironic, because this means he got tremendous respect for describing all the ways he got no respect. There are, however, other (less ironic) people who genuinely get no respect while making their living: video game developers. Who doesn't respect them? I'll explain.

I started my software career at Hewlett-Packard, decidedly outside of games. Over my

decades-long technical career, I worked both inside and outside the games industry. I've looked at code from both sides of the fence now, and I'd like to share some of my observations. When you work in entertainment, you're basically producing things that represent concepts and ideas to people. The audience doesn't see the work and sweat and craft that goes into the production; all they see is a representation of the concept.

HOW HARD CAN IT BE?

Many people believe they have good ideas too, and isn't that really all you need to make a game? This represents a line of thinking that makes creative endeavours seem easily within reach of the average person. Even the technically astute can fall victim to this mentality at times. I've encountered it often in my travels and travails around the software industry. What it boils down to is this: game programmers used to get very little respect.

Some of the more challenging moments of my career were spent dealing with how game programmers are perceived by the rest of the software world, which I promise you is nowhere near the summit of esteem mountain. Again, I've worked all over the software universe. In addition to video game development, I've worked on operating systems, industrial robotics, networking, video display, CAD systems, quality assurance, precision manufacturing, and even compilers. Through all these experiences, I've never found any job as broadly and deeply technically challenging as video game development. Game programmers need to

▼ Despite the size of the licensing deal - reportedly Atari paid \$20 million or more for the licence - Warshaw was given just five weeks to make *E.T.*





comprehend (and innovate in) a wide variety of functionalities, while simultaneously trying to clear out dense minefields of obscure and elusive bugs.

Yet many programmers unfamiliar with game development think it's just a lot of goofing around, spending more time playing games than making them. After all, it's just a game. How hard can it be to make? Meanwhile, those programmers see themselves as makers of 'serious' software. When you talk with them, their attitude reeks of, "It's cute that you've done some games, but what makes you think you have the chops to do real coding?" It's more than a little irritating.

This is one of the more perverse aspects of life as a game programmer, and there are more besides. Video game development is an odd basket, to be sure. I mean, think about it: take some strange people to start with, then give them the amorphous requirement of 'making something fun.' Put them in the position of having their work dismissed and discarded on the word of preteens, then rob them of the respect of their professional peers, and you get the video game industry. If that's not perverse, then I don't know what is.

So why do I love video game development? It's the most challenging and varied type of software I've seen, done by the most interesting characters I know.

As for my argument that it doesn't get the respect it deserves? Well, there's an aspect of that which appeals to me as well. It's fun to be the underdog. Of course, on the other hand, eating out of a bowl definitely has its downsides.

There's less stigma around the industry today than there was in, say, the eighties, but I know many developers who've moved on from games. For quite a while, there was a lot of attitude about people who worked in video game production. At some point during virtually every interview I had outside of gaming, the interviewer would say, "Oh, you made games?" Chortle.

ZERO TOLERANCE

Non-game programmers seemed to confuse making games with playing games. When I'd explain to them that a video game is a real-time control system with zero tolerance for

^ Oh, so you're programming a video game? Chortle.

lag, state of the art graphics functionality, artificial intelligence, a quick resolution 3D collision detection system, and real-time audio stitching with multi-channel streaming which is dynamically reactive to the environment, and that console games have to ship on time and be bug-free since there's no opportunity for

updates or bug-fix releases, well... they'd kind of glaze over a bit. But the attitude persisted, as did my irritation.

I think it showed up in my attitude at times too. When I

was working outside of games, I'd frequently interview programming candidates. Sometimes I simply couldn't resist the opportunity to glance up from the resume and say, "Oh, you've never made games?" Chortle.

But programmers aren't the only people who looked down on game development. The truth is, Atari management had surprisingly little respect for development. How else did one of the biggest license properties in history – *E.T.: The Extra-Terrestrial* – wind up with the shortest schedule? It takes a profound lack of awareness to think this is a good idea. It also takes the opposite-of-teamwork to not even bother asking about potential development timeframes. No one from management ever asked how long it might take to make a video game for *E.T.* – they just spent a lot of usable dev time negotiating the deal in secret, then came to us and said, "We need the game in five weeks. Thank you."

It's bad enough to get this from peers who just don't know any better. But to get this from the people responsible for running your company? People who really should know better? It's enough to make you think your name is Rodney. 🙄

“Game programmers used to get very little respect”



^ **Warshaw once described the hectic, five-week process of programming *E.T.* as like “climbing a mountain.”**

A game urbanist's toolkit

Konstantinos shares a wealth of tools to help you design, build, and manage your virtual cities



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 forthcoming *Virtual Cities* atlas, designs game cities, and consults on their creation. game-cities.com

ONLINE REFERENCES

The amount of free-to-use and reference material readily available online is staggering, but some of the first places I visit when working on a new game city are the British Library archives (wfmag.cc/wPP7Kq), the Wikimedia Commons collection (wfmag.cc/zHEJYW), the Library of Congress Map Collection (loc.gov/maps), Project Gutenberg (gutenberg.org), the excellent Google Scholar search engine (scholar.google.com), OpenStreetMap (openstreetmap.org), and Eurostat (wfmag.cc/KCHels). Wikipedia, Pinterest, and Google searches are also indispensable.

W

hat do you need to make your own video game settlement? A sense of what makes cities tick, a hint of their history, a selection of references, and a fertile imagination, are all important. Understanding urbanism, and its relationship with level and game design, are also crucial, but we won't be tackling the theory of game urbanism, nor the history of cities here.

Instead, I want to suggest a few handy tools to make your imaginary urban planning process easier, and help you better express your ideas. These tools may not fit every single taste and working style, but they've really helped me with my work.

TRADITIONAL TOOLS

Describing books as tools might sound a bit tasteless, but I always keep a selection of books and reference material nearby. Geography, city history, planning and design theory, engineering, science fiction and fantasy art, literature, RPGs, sociology, art and design, architecture, and even classic games are all subjects I can turn to for inspiration, fresh ideas, and clever solutions, as are maps, atlases, and tourist guides.

With much of my note-taking done using pens and pencils, and as I make quick sketches, diagrams, and drafts, having several notebooks on hand is an absolute must. You can also use loose pieces of paper, but these tend to get lost unless they're properly organised. I've found that highlighters and bookmarks are lifesavers, too. For more elaborate drawings and design drafts, as well as for maps, sketchbooks are required. I usually keep a separate, more informal one for early concepts and tests, and a larger one for deliverables.

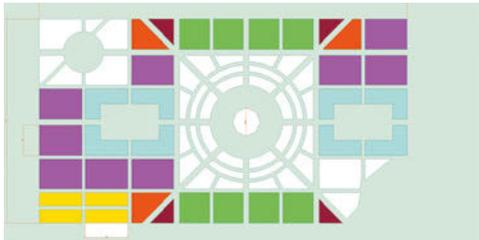
I use mostly H and 2H pencils for drafting sketches, and technical pens for inking. Rapidographs may be a bit expensive, but they do tend to come with the finest quality of ink, which I find useful when I use an eraser to clean up my designs.

A modest selection of technical drawing tools will allow you to create beautiful, clean designs and legible maps and diagrams. A ruler, a T-square (or a parallel bar if you have the space for one), tracing paper, a decent pair of compasses, a couple of drawing triangles – one of 30/60 degrees and one of 45/90 degrees – and a selection of quality erasers are all indispensable.

Cheap modelling clay is useful if you want to quickly model 3D structures, though I tend to stick to Lego bricks when roughly prototyping urban volumes and forms. Lego is, of course, better suited to making modernist and blocky constructions, and it won't work particularly well if you want to create sinuous designs, but it's still a quick means of exploring the space and scale of an idea.

✓ My current sketchbook, presented for your viewing pleasure, alongside a 0.1 Rapidograph pen and the mechanical pencil I've been using for the past 20 years.





^ A prototype level for a Renaissance-inspired city, designed using LibreCAD.

DIGITAL TOOLS

On my PC, I have the everyday essentials: word processors, spreadsheet software, and image editing tools – GIMP remains a firm personal favourite. You'll also find some fairly standard utilities, like the excellent editing tool Sublime Text, and also Scrivener. The latter is a writing app aimed mostly at researchers and novelists, though I find the way it lets you organise text, images, and references is perfect for tackling the many aspects of city design. Scrivener isn't, sadly, particularly good at sharing stuff over the internet, and hasn't been designed with teamwork in mind, and that's where applications like Google Docs and Slack come in handy.

Occasionally, and in data-heavy projects, a database is often required – especially if you aim to maintain and evolve your game's city over a long period of time, in, say, an MMO.

I usually go for the Apache's OpenOffice Base, even if I do tend to handle complex spatial data via a Geographic Information System (GIS), which is a widely-used planning tool that combines professional mapping software with solid database management tools.

These are powerful, complex, and commonly very expensive applications, but they're also incredibly useful and versatile. I've found the open-source (and free-to-use) QGIS (qgis.org) to be a good solution for most gaming projects.

Another engineering-focused tool that I regularly use – particularly when dimensions and exact measurements are required – is the freeware LibreCAD (librecad.org), a fully featured design package that's perfect for anything from land-use plans to architecture and even mechanical designs.

Packages like SketchUp or Blender can often be employed for 3D block-outs, though, admittedly, sometimes throwing a few blocks together in Unity or Unreal Engine is the best approach, since the added interactivity, lights, scripts, cameras, and physics bundled in a game engine can be useful for design.

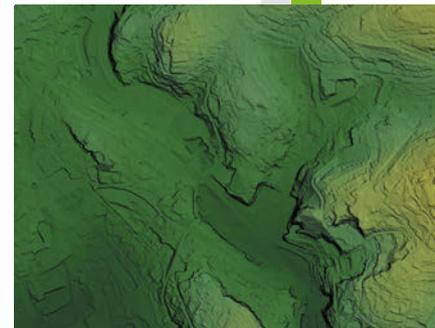


^ A procedural urban environment generated by TOWN – the Tiny procedural World geNerator. You can find it at delca.itch.io/town.

Google Maps is another good, free tool that can be used to research or copy real-life spatial configurations, though OpenStreetMap is even better, and free to use under an open license. There are also several engine-specific utilities for importing and modifying OpenStreetMap data, but I would advise you to be careful when using pre-existing, real-world road networks without carefully adapting them first. You will have to make certain that such road networks sensibly fit your city's structure, as well as your game and level design requirements.

Procedural generation can provide a useful starting point when you start to create a city or game world. There are countless generators that will give you everything from continents and rich geographies, to islands and settlements of all sizes. The Procedural-Cities project (wfmag.cc/proc-cities) is one of the better ones. Then again, I must admit that I haven't yet found the time to try out the promising and powerful procedural creation tool, Houdini (sidefx.com).

Finally, I've already started experimenting with tools like Arcweave (arcweave.com) and articy:draft (articy.com), and they're both useful for tracking characters and plots across space – which you'll definitely need if you have story beats and characters spread around a sprawling city. 🗺️



^ QGIS – my GIS software of choice these days – also provides rich visualisation options.

“Handy tools to make your urban planning easier”

Unconventional Tools

Virtual cities can be weird beasts that often demand unorthodox approaches, and you shouldn't be afraid to improvise and come up with ad hoc solutions. I once used 12-sided dice thrown on a hex-grid map to distribute cultist temples, and I've even photographed miniature soldiers in correctly proportioned Lego environments to judge the atmospheric effect and scale of their surroundings. I've also asked coder friends to help make simple proprietary tools, and I once programmed a simple city-type-per-region generator in QuickBASIC, of all things.

The joy of automated testing

It can be used to assess difficulty levels and balance economies. Here's how automated testing can be applied to game design



AUTHOR
HELEN CARMICHAEL

Helen Carmichael is a former science editor and indie dev at UK-based Grey Alien Games, est. 2005 (also pictured: husband Jake Birkett). greyaliengames.com

How much gold can I give out on this level without breaking the game economy? Is this boss too tough? And will the player ever find that hidden game item? In the past five years at Grey Alien Games, we've developed several automated testing algorithms to answer these kinds of questions.

In recent years, our studio has developed a series of increasingly complex solitaire games for PC, with our own game engine coded in BlitzMax. As a small indie studio, playtesting has primarily involved giving early builds of the

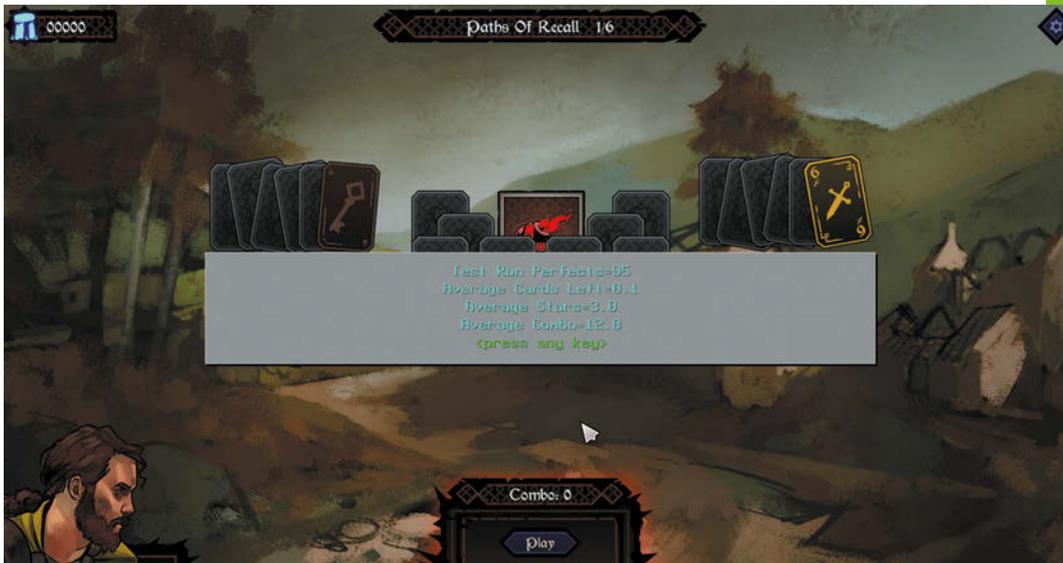
game to family, friends, and fans, and watching players at shows or harvesting log files of their play sessions. This has many advantages, such as seeing how individuals with different play styles approach the game, watching them grasp (or fail to understand) key concepts, and asking them to explain their reasoning as they play. As developers, we can change the pacing or when we introduce things. We can also spot bugs.

The disadvantages of this approach relate to fully testing the game systems themselves. As our games are solitaire-based, each level involves a pack of cards being 'dealt' onto the play field in a set layout, but with the cards in random order. This is overlaid with puzzle elements that lock down various cards, and items that incrementally boost the player's ability throughout the game. In our later games, the cards chosen by the player gradually power up weapons used in duels, and an AI enemy also plays solitaire. Just because the player got through a level successfully once is no guarantee that it would work the 30th or 1000th time those cards were dealt.

Furthermore, volunteer playtesters seldom play a game through to the end, and we wanted to be sure that our games were correctly balanced, with no bugs, right up to the final level. Automated testing gives us additional peace of mind that when we ship, we're shipping the best game we can.

```
##### TEST RUN 97 #####
##### TEST RUN 98 #####
##### TEST RUN 99 #####
##### TEST RUN 100 #####
##### TEST RUN x100 SUMMARY
Average Cards Left=0.1
Total Perfects=95
Average Total Stars=3.0
Story Item Found=100
Total Power Earned=21640 (av=216)
Biggest Combo=28 (av=12.8)
Combo Count=136 (av=1.4)
Average Total Multiplier=0.0 (x1.0)
Biggest Stock Card Draws=11 (av=3.9)
Total Cards Removed=3593 (av=35.9)
Total Stock Cards Used=1461 (av=14.6)
Average Cards Removed Per Stock Card=2.5
Highest Playable Card Count=8
Lowest Playable Card Count=4
Average Playable Card Count=6.2
Wildcards Found=114
Wildcards Left at End=1
Lucky Cards=0
-----
```

> **Figure 1:** When we perform test runs, Jake can set initial starting conditions. This example is a raw level, and the player has no special abilities or other modifiers.



◀ Running 100 tests of this *Ancient Enemy* puzzle level yields data about how difficult and/or fun it is. Using our built-in level editor, we can make any changes and retest rapidly.

THOUSANDS OF RESULTS

Jake Birkett – game developer, Grey Alien founder, and also my husband – first addressed these issues when making *Regency Solitaire*. “I wrote an algorithm to play the solitaire level in what I felt was the most optimised way,” he says. At the press of a button, the algorithm plays through a level in milliseconds. “I can run that a hundred or a thousand times and get a whole bunch of results out.”

The kind of data we were looking for was:

- How difficult is it?
- How much gold does the player earn?
- What’s the biggest combo they can get?

(A combo is a long chain of card matches in solitaire; larger combos generate greater rewards.)

Let’s take a look at the types of variables we test for our puzzle levels. If we run the test algorithm 100 times, then we get the output you can see in **Figure 1**.

RANKING LEVELS

‘Perfects’ shows how often the layout can be completely cleared. In this case, 95/100 could be cleared, so it’s a pretty easy layout. ‘Average cards left’ is another output that indicates the level of difficulty. I will typically design a large number of levels and put them through this puzzle test algorithm, then create a spreadsheet to rank them in terms of difficulty. We then generally use this ranking to assign levels in increasing difficulty as the game progresses.

“We wanted to be sure that our games were correctly balanced with no bugs”

It’s worth noting that towards the end of the game, players will have collected more items or skills. “Normally, everything you get in the game makes the levels easier,” says Jake. “So, if this level is ‘95% easy’ without anything, then it’s going to be very easy once you’ve got all these extra special abilities.” So, in addition to this basic level difficulty ranking, we can also assign starting conditions for any stage of the game, and retest individual levels to see how challenging they will actually be for a player who has all the in-game items.

In the level editor, we can make a level more difficult by adding deeper stacks of cards or multiple locks or keys, or adding suit locks and burying keys slightly further down. Every time we bury a key one card further down, the level gets harder to beat.

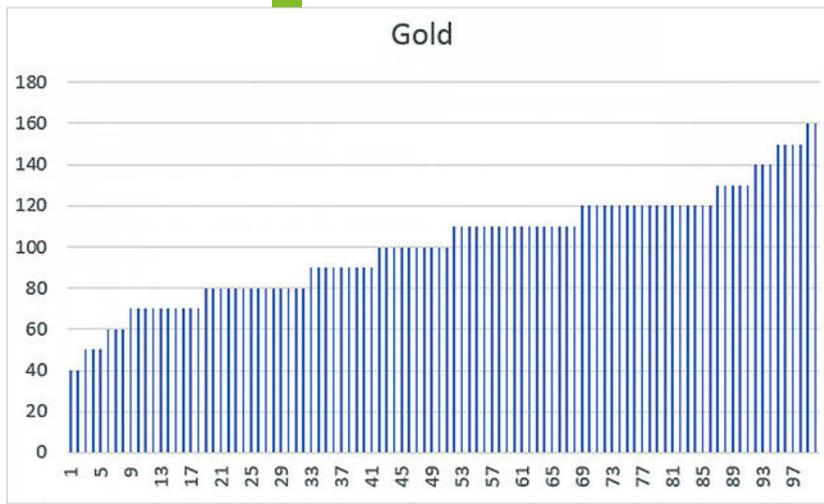
STAR PLAYERS

Players are awarded stars depending on how many cards are left on the tableau at the end of a level. In our latest game, *Ancient Enemy*, we display what the cut-off points are for getting zero, one, two, or three stars on screen for each level, and we set these individually for each duel level based on the difficulty discovered with our testing algorithm. Hence our readout for ‘average stars’.

‘Average combo’ is another useful value. If it’s very high, it probably means there are too many face-up cards at some point: there’s an optimum number of face-up cards for a solitaire game. ➔

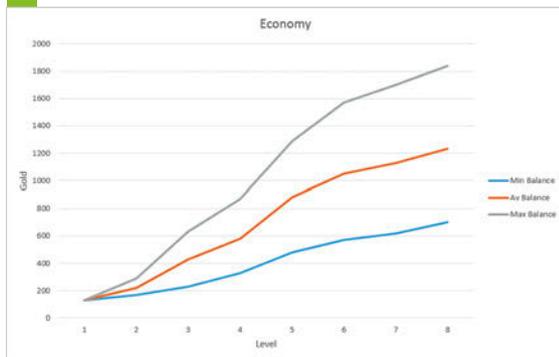
CODE CHECK

At a basic level, an automated testing algorithm is a code check. It can check that code is correct and spot bugs. At the next level, when you’re confident that the code is working, it can check whether each item performs as expected.



^ **Figure 2:** Once output to a spreadsheet, we can sort values to see the range of a level – in this case, gold.

> **Figure 3:** We can use our data to set in-game prices and balance its economy.



(Another example of this type of rule is in a match-three puzzler like *Bejeweled*, where three or four gem types are too easy to match, and six or seven gem types make it too hard. So, the optimum is five.)

While generating a high combo might be fun once in a while, we don't want every level to be like that. It destroys the novelty and throws out balancing, for example, by generating too much cash and skewing the game economy.

In the beginning, we want to teach players what a combo is and allow them to have levels where possible, but we also want to keep the number of average combos under control. Conversely, if it's too low, then it means that the level is too difficult. With insufficient face-up cards, the player will end up just flipping the stock looking for a new card, which isn't fun.

The 'playable card' values use a tracker that looks at the whole layout throughout a level to see how many playable face-up cards there are. This gives us a heads-up about levels with bottlenecks that mean they're too hard, or contain possible over-large combos. Whether or not story items are found is another piece of

useful information, especially as some of these need to be found easily on tutorial levels.

ALGORITHM TIPS AND LIMITATIONS

According to Jake, "the algorithm plays the cards in what I feel is the most optimised way to play a level – a feeling based on many years of making solitaire games and testing them. But I could still be wrong." Unlike a real player, the algorithm doesn't make mistakes – so it doesn't accidentally miss a card. But there are sometimes extra things an intelligent human player can do that the algorithm can't. "By looking at the cards," says Jake, "you may be able to plan ahead for a really cool combo by playing them in a particular order – the algorithm just sees what's available now and tries to make the best choice."

The automated tester sometimes helped us to spot issues in our code, allowing us to fix it. But sometimes there can be a bug in the test code. So, if your test code is not giving you the values or outputs you want, you may need to investigate whether the game or the test code itself is the cause.

Before running a test, it's a good idea to estimate the type of output you expect to see. If the output is not as expected, either there's a problem with the code or your assumptions are wrong – the item is less powerful, or there are other conditions affecting it.

"Your test case scenarios are really important as well – if they are wrong you won't get results that are helpful," Jake says. "For example, I've just been testing something that gives the player more damage when they get below a certain health, and it was really having a low effect. And I realised on these particular fights, the player's health never got that low, because the fights were too easy." He had to make a harder fight, so the player experienced lower health before the item kicked in.

BALANCING AN ECONOMY

Let's look at balancing the game economy by tracking the amount of gold a player will have accumulated across several levels. The test algorithm outputs a CSV file so that we can view the values from 100 runs of a single level (**Figure 2**). In a spreadsheet, we then select one of these – for example, gold – and then use the 'sort data' function to show the range.

MARGIN OF ERROR

The greater the number of tests, the smaller the margin of error. This is important when looking at the effect of a game item which is meant to have a % effect on something in your game. In some cases, the margin of error may be bigger than the % effect you're looking for, rendering the test results meaningless unless you conduct a large enough set of them. For more information: wfmag.cc/margin-error



◀ In *Ancient Enemy*, player health persists across levels and within chapters. So, using automated testing to track attrition over several fights and check the game is winnable is important.

To balance the economy, we can use the averages – min and max for every level – to work out the cumulative gold, and set in-game item prices accordingly (see **Figure 3**).

In **Figure 4**, you can see a similar dataset from 100 test runs on player health. In our solitaire-driven duel games, *Shadowhand* and *Ancient Enemy*, we use these to set enemy difficulty, health potion, item drops, etc.

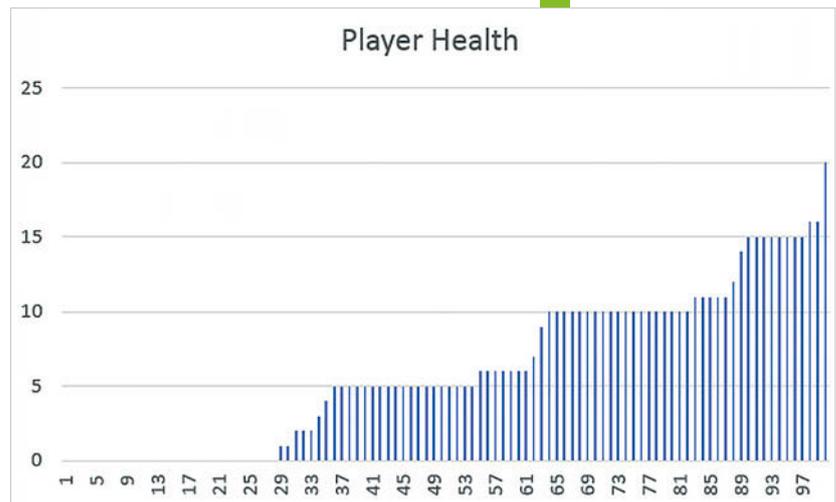
BEYOND PUZZLE LEVELS

After creating his first automated test for *Regency Solitaire*, Jake went on to make a new one for duels in subsequent games, *Shadowhand* and *Ancient Enemy*. In addition to outputting values for level design and game balancing, it also checks that if you run the battle many, many times, nothing crashes.

This test uses all the game systems: all the attacks, particle effects, sound effects, and graphics. It runs a bit slower with debug mode (optionally) on, but can be a useful decision-making tool.

We ask a slightly different set of questions: “How difficult is the fight, do I need to adjust the enemy health or the enemy intelligence, or use various other levers to adjust the balancing?”

So what’s new in the duel version? “I pitted the enemy AI against the player AI, and they play the actual game using the engine, and it tests every part of it, so it’s a lot slower to run than the algorithm that whizzes through the puzzles,” says Jake. “I have done things like switch off visual output and speed up every animation – it runs it fast, but it’s still calling the same code.”



▲ **Figure 4:** A dataset from 100 test runs on player health.

WHERE TO START

We’ve found that it’s best to make an automated testing system that uses our existing code and systems. Our experience is in level-based games – other types of games may need a different approach. At first, you can aim for a very simple result – has the player won or lost? – or some other variable like a score or gold. As long as you can run it once, then you can set it to run multiple times and output those values, it can be useful.

A final word of warning: it’s possible to get too involved in looking at edge cases and testing every aspect of your game. That may not help move your project forward! Even so, we hope this has sparked some ideas about approaches to testing your game. 🎮

Quest: a beginner's guide

Learn how to make your first text adventure with the free-to-download Quest engine



AUTHOR
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With Quest, you'll be able to make your own text adventures in the mould of *Zork* and *The Hobbit*.

Figure 1: For the purposes of this tutorial, choose 'Text adventure' when setting up a new game project.

Quest is an engine for making text adventures in the style of interactive fiction classics like *Zork* or 1982's *The Hobbit*. The input used in these games is usually referred to as a text parser, since it breaks down and interprets the actions players type in – 'Take the key' or 'Open the door', for example – and allows them to explore fictional worlds, interact with objects and characters, and solve puzzles by using a selection of verbs and commands for each interaction.

Quest also has a built-in game browser that allows you to search for text adventures and gamebooks to play based on their genre, recent uploads, and a handy top 20 list. Be aware though, you're often better downloading the games through the desktop app rather than playing them online, since you can run into some strange issues when playing them through a browser.

MAKING YOUR FIRST TEXT ADVENTURE

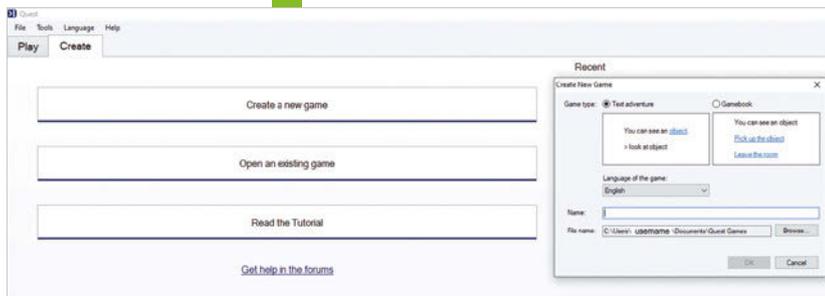
In order to show how Quest works, we're going to make a simple, single-location adventure, in which the player will pick up and use objects to escape from a burning airship. To get started, visit textadventures.co.uk, and download the free desktop version of the software. (You can make your game on the Quest website, but as noted, I recommend the desktop software since it drastically cuts down on the number of things that can go wrong.)

Once you've installed Quest and opened it, click on Create, then Create A New Game, and pick which type of game you want to make. For this tutorial, we're making a text adventure, so leave that selected for now and give your project a name (see **Figure 1**).

The first thing you'll notice is that there's a lot of options to take in. You can ignore much of this for now, and go to Tools > Simple Mode (**Figure 2**). Simple Mode is perfect for what we want at this stage, and as you progress, you'll be able to expand into more advanced scripting

The three main things you'll be working with as you make your text adventure are: Rooms, Objects, and Exits. Here's a brief explanation of each of these in turn:

Rooms are areas the player can visit, and can contain Objects and Exits. A Room can be anything from a dungeon cell to a forest clearing to, say, a particular patch of sky that the player is falling through.



Objects encompass everything the player can pick up, look at, talk to, and so on. Objects are items, characters, and buildings.

Exits are the directions the player is given to travel between rooms. A wooden shack may have an option to go outside, which takes the player to a new location, like a forest clearing. The player may then go in any other specified exit direction, or head back inside the shack.

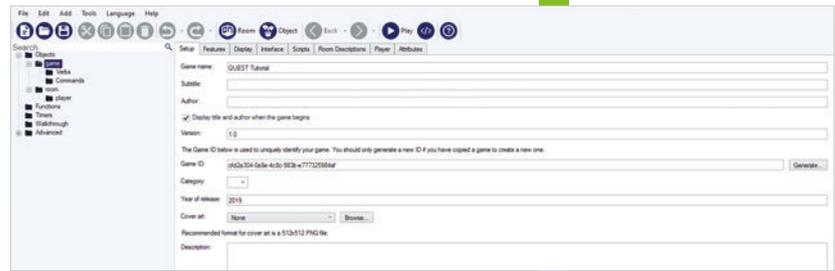
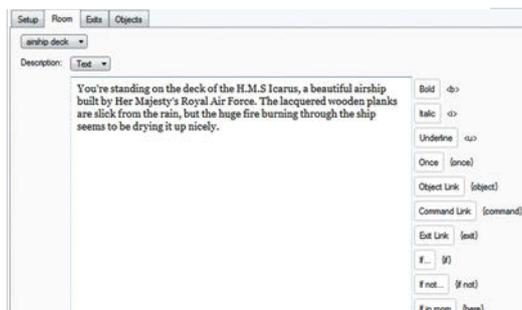
GETTING STARTED

Let's get started with our first room. Click on Room in the content bar and a dialog box will open up for editing. We want to give the room a descriptive name, so let's go with 'airship deck'. Now click on the Room tab, which is second from the left. The first option, 'Objects dropped here go to' does exactly what it implies: any objects you drop while in this room will go where you choose from this list. Leave the description as 'Text', because, for most rooms, we'll want to write our descriptions rather than run special scripts.

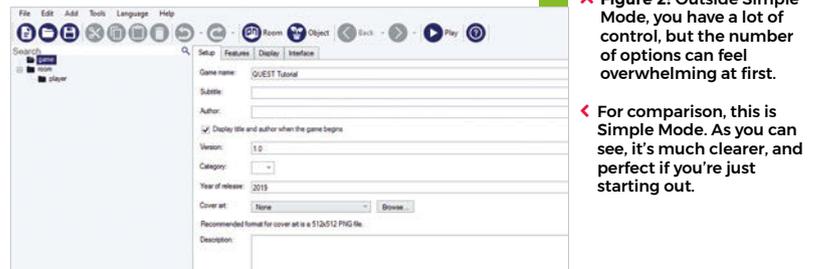
Some description to orient the player will be useful at this stage, since this will be the first text they'll see in the game. In the text box, you could write something like, "You're standing on the deck of the HMS Icarus, a beautiful airship built by Her Majesty's Royal Air Force. The lacquered wooden planks are slick from the rain, but the huge fire burning through the ship seems to be drying it up nicely." (see **Figure 3**).

Note: if you preview the game as it stands, you'll notice that it reads, "You are in an airship deck", which of course is grammatically incorrect. To fix this, you'll need to briefly turn off Simple Mode, go to the Room tab, and change the prefix from "You are in" to "You are on an."

▼ **Figure 3:** Descriptions allow you to add colour to your locations, whether they're dungeons or airships burning in mid-flight.



▲ **Figure 2:** Outside Simple Mode, you have a lot of control, but the number of options can feel overwhelming at first.

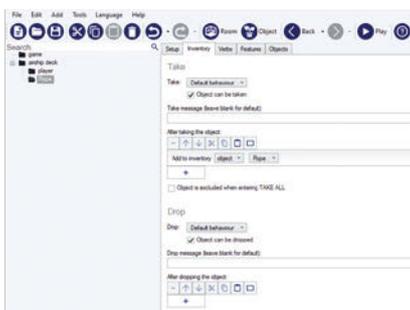


◀ For comparison, this is Simple Mode. As you can see, it's much clearer, and perfect if you're just starting out.

With our Room created, we can add objects for the player to interact with. Either click the Objects button (it's the icon that looks like a pot plant) or go to the Objects tab for a full list of objects present in the room. You can click the + sign to add more. As we want the player to escape this terrible fire, let's give them some objects they can put together to escape.

For our puzzle, we want the player to make a parachute out of a rope and a sail they find lying around. To make these objects, let's start by creating the rope (see **Figure 4**). In the setup for the rope object, you'll be given a few options – some of these are already ticked. There are a few to note – the first is the 'visible' option. If an object is visible, then it will appear in the room description, and the player can interact with it. 'Type' is another important one, as this determines whether our object is an inanimate object (which is the default) or a character. Lastly, we have the "Look at" ➡

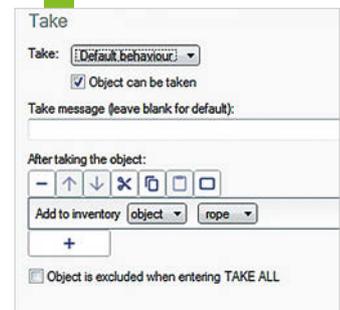
▼ **Figure 4:** Including custom messages for taking/dropping can make your game feel more interactive.



TIP

You can test your work in progress at any time by hitting the Play icon on the top right-hand side of the screen. It's a quick way of making sure your scripts and puzzles are functioning the way you need them to. Once you've finished testing, click Stop to return to the editor.

▼ **Figure 5:** Allowing objects to be added to the player's inventory means they can be used with other objects later in the game.



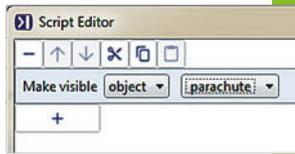


Figure 6: Adding a 'Make object visible' script to our rope.

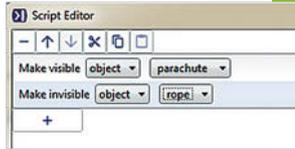


Figure 7: The 'Make object invisible' script will remove the rope from the game once the player creates their parachute.

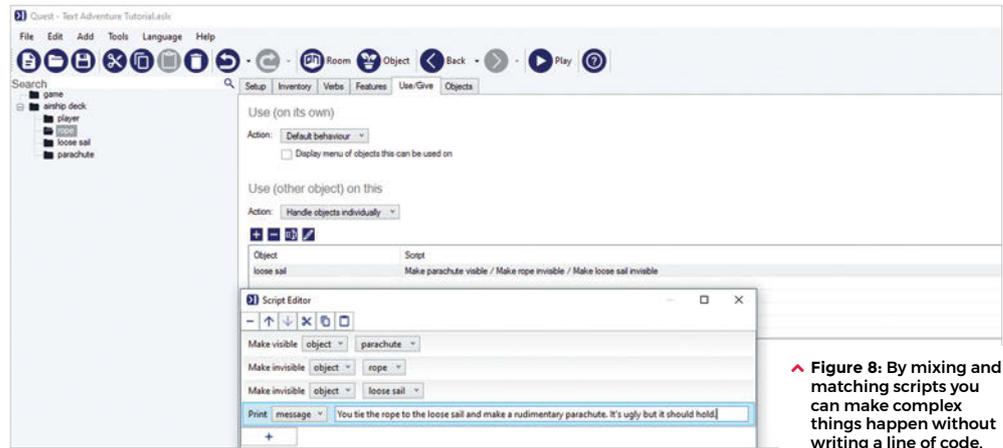
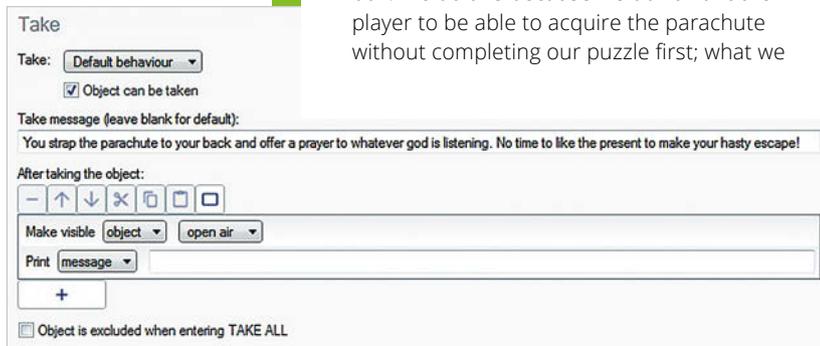


Figure 8: By mixing and matching scripts you can make complex things happen without writing a line of code.

NEXT STEPS

The Quest engine has a lot of well-written documentation that will take you through every part of the system and is an excellent way to advance from what we've covered here. You can find it at: wfmag.cc/quest-tut

Figure 9: The 'Take message' will give the player a hint as to what they need to do next.



object description' – as the name implies, this is the description the engine will present to the player when they use the 'Look at' or 'Examine' commands on the object. To give our rope a description, select Text from the options, and type in a quick description or clue for the player. Now, let's move onto the Inventory tab.

We want the player to be able to take the rope and combine it with another item, so tick the 'Object can be taken' box and add the script 'Add to inventory' as shown in **Figure 5**. To do this, click the + icon beneath 'After taking the object' and click the 'Add

“From here, you could expand it to include new puzzles to solve”

to inventory' script from the list of commands list that pops up. In the box next to object, you then need to select the current object's name (in this case, the rope) from the drop-down list.

Next, head over to the Features tab and tick the 'Use/Give' box. This allows the player to use the rope on another object, like the loose sail we're about to add.

Now create an object called 'loose sail' and one called 'parachute'. Follow the same setup as the rope object for the loose sail. For the parachute, however, untick the 'Object is visible' box. We do this because we don't want the player to be able to acquire the parachute without completing our puzzle first; what we

want the player to be able to do is use the rope on the loose sail (or vice versa) to create the parachute, which they can then use to escape. To do this, we need to add some scripts to both the rope and loose sail objects.

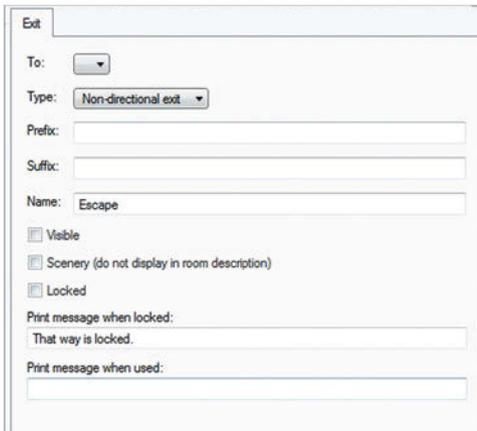
In the rope object options, click the Use/Give tab, and then head down to the area marked 'Use (other object) on this'. From the Action drop-down menu, select 'Handle objects individually', then in the dialog box that opens, type 'loose sail'. The Script Editor will then open. Click on the + icon to add a new script, and select the 'Make object

visible' script, which is about halfway down the list, then click 'Add'. You'll then be returned to the Script Editor; from the drop-down menu next to Make Visible object, select the parachute object. Your Script Editor should then look like our example in **Figure 6**.

Now click + again to add another script, choose 'Make object invisible' from the list, and select 'Add'. In the Script Editor, select the rope as the object for this script (see **Figure 7**). Repeat this process again to make a 'Make object invisible' script for the loose sail.

Finally, click + again and choose the 'Print a message', which is the first item on the list beneath Output. In this script, we'll tell the player what's happened as a result of using the rope on the loose sail; we've gone for the description, "You tie the rope to the loose sail and make a rudimentary parachute. It's ugly but it should hold."

Once you're finished, your Script Editor window should look like the example in **Figure 8**. You'll then need to repeat this process for the loose sail object, so that it has all the same scripts you can see in **Figure 8**.



▲ Figure 10: We've created a new exit, unticked the Visible box, and named it Escape.

At this point, we want an Exit to appear for the player – this will allow them to escape the burning airship and complete the game. In the Parachute object, give it a 'Look at' description and in the Inventory tab, tick the 'Object can be taken' box. You should also add a 'Take message' to let the player know what happens when they pick the parachute up (see Figure 9).

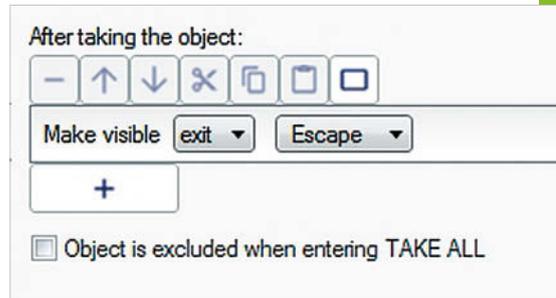
On the sidebar, create a new Room called 'Open air'. We then need to link this to our airship deck Room, so click this Room, then click on the Exits tab, and hit the + icon on the bottom to create a new Exit.

Once you've created the Exit, it will appear in the sidebar. Untick the Visible box for this Exit and give it a name that the Parachute script can reference – we've gone with 'Escape' (see Figure 10).

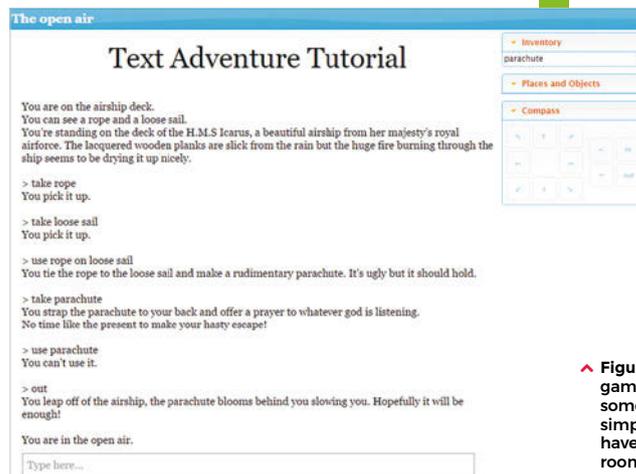
Once you've named the Exit, go back to the parachute object's Inventory tab, and add a script to the 'After taking the object' section. In the Script menu, click 'Make exit visible', then in the resulting dialog box, choose 'Open air' (see Figure 11).

Now go click on the Exit (that's Escape, remember) in the object list on the left, and in the box labelled 'Print message when used' at the bottom, type something akin to the following: 'You leap off the airship, and the parachute blooms behind you'. This will give the player some dramatic feedback when they use the 'go out' command to escape the airship (see Figure 12).

If you haven't already, you can now click the Play icon on the top right to sample the game. It's only a simple text adventure, of course, but from here, you could expand it to include new objects, characters, rooms, and puzzles to solve before the player can make their escape.



◀ Figure 11: We've chosen the 'Make exit visible' script, and selected the Escape exit we made earlier.

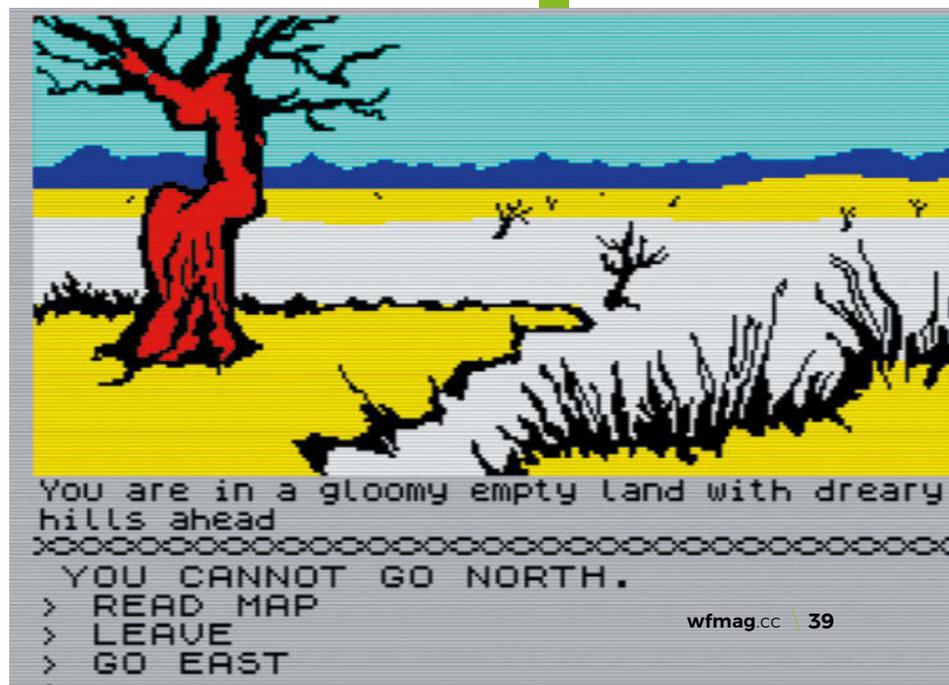


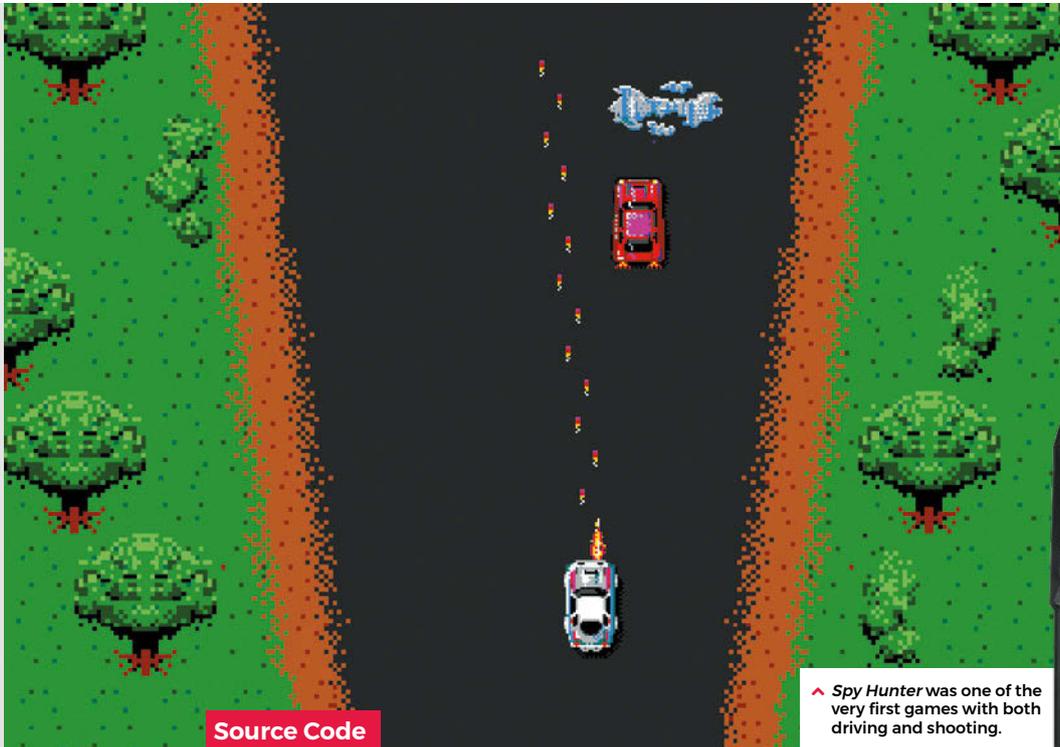
▲ Figure 12: Your finished game should look something like this. It's very simple, but you should now have the skills to add more rooms, objects, and puzzles.

PUBLISHING

To publish your game, simply click Tools and then Publish. This will create an executable (QUEST file) of your game. Once you're sure it works, head to wfmag.cc/quest-submit, create an account, and upload your game to have it viewable to the entire Quest community. Making text adventures really is that easy! ☺

▼ Fancy making your own fantasy text adventure like *The Hobbit*? Well, you can with Quest.





Source Code

^ *Spy Hunter* was one of the very first games with both driving and shooting.



Make a *Spy Hunter*-style scrolling road



AUTHOR
MAC BOWLEY

Mac shows you how to make the beginnings of a top-down driving game

The 1983 arcade classic *Spy Hunter* put players at the wheel of a fictitious Interceptor vehicle and challenged them to navigate a vertically scrolling road, destroying enemy vehicles.

Here, I'll show you how you can recreate the game's scrolling road to use in your own driving games. The road will be created using the `Rect` class from Pygame, with the road built from stacked rectangles that are each two pixels high.

First, I create two lists; one to hold the pieces of road currently being drawn on screen, and another to hold a queue of pieces that will be added as the road scrolls. To create the scrolling road effect, each of the current pieces of road will need to move down the screen, while a new piece is added to the end of the list at position `y = 0`.

Pygame can schedule functions, which can then be called at set intervals – meaning I can scroll my road at a set frame rate. The `scroll_road` function will achieve this. First, I

loop over each road piece, and move it down by two pixels. I then remove the first item in the queue list and append it to the end of the road. The Pygame clock is then set to call the function at intervals set by a `frame_rate` variable: mine is set to `1/60`, meaning 60 frames per second.

“The game can also be speeded up by decreasing the `frame_rate` variable”

My road can either turn left or right, a random choice made whenever the queue is populated. Whichever way the road turns, it has to start from the same spot as the last piece in my queue. I can grab the last item in a list using `-1` as an index and then store the `x` position; building from here will make sure my road is continuous. I use a buffer of 50 pixels to keep the road from moving off the edge of my screen – each time a turn is made, I check that the road doesn't go beyond this

point. I want the turn amount to be random, so I'm also setting a minimum turn of 200 pixels. If this amount takes my car closer than the buffer, I'll instead set the turn amount so that it takes it up to the buffer but no further. I do this for both directions, as well as setting a modifier to apply to my turn amount (`-1` to turn left and `1` to turn right), which will save me duplicating my code. I also want to randomly choose how many pieces will be involved in my turn. Each piece is a step in the scroll, so the more pieces, the longer my turn will take. This will make sure I have a good mix of sharp and elongated turns in my road, keeping the player engaged.

To make things more exciting, the game can also be speeded up by decreasing the `frame_rate` variable. You could even gradually increase this over time, making the game feel more frantic the further you get.

Another improvement would be to make the turns more curvy, but make sure you're comfortable with algebra before you do this! 🤖



Download
the code
from GitHub:
[wfmag.cc/
wfmag31](https://wfmag.cc/wfmag31)

A rolling road in Python

Here's Mac's code snippet, which creates a winding road worthy of *Spy Hunter* in Python. To get it running on your system, you'll need to install Pygame Zero – you can find full instructions at wfmag.cc/pgzero

```
import random

WIDTH = 540
HEIGHT = 540

c_grass = (0, 153, 76)
c_road = (204, 136, 0)

road = [] # To be drawn on screen
queue = [] # To be added when scrolling

block_size = 2

player = Actor("car.png", (int(WIDTH/2 - 16), 390), anchor =
("left", "top"))
speed = 5

buffer = int(WIDTH/4)
for i in range(HEIGHT-block_size, -block_size, -block_size):
    block = Rect((buffer, i), (int(WIDTH/2), block_size))
    road.append(block)
for i in range(0, 200, block_size):
    block = Rect((buffer, 0), (int(WIDTH/2), block_size))
    queue.append(block)

def scroll_road():
    global road, queue
    for piece in road: # Move all the pieces down by 2
        piece.top += block_size
    road.append(queue.pop(0)) # Move piece from queue to road
    road.pop(0) # Remove the bottom road piece
    road[-1].top = 0 # An index of -1 is last item in a list
    if len(queue) < 5:
        update_path() # If queue is getting low, update path

frame_rate = 1/60 # Scroll the road at a set interval
clock.schedule_interval(scroll_road, frame_rate)

min_buffer = 50

def clamp_road(x):
    if x < min_buffer:
        x = min_buffer
    if x > int(WIDTH/2) - min_buffer:
        x = int(WIDTH/2) - min_buffer
    return x

min_turn = 200
turn_gap = 200

def update_path():
    global road, queue
```

```
choice = random.randint(0, 1) # Right or left turn
current_pos_x = queue[-1].left
if choice == 0:
    modifier = -1
    if current_pos_x - min_turn > min_buffer:
        turn = random.randint(min_turn, current_pos_x - 5)
    else:
        turn = current_pos_x - min_buffer
else:
    modifier = 1
    if int(WIDTH/2) - current_pos_x - min_buffer > min_
turn:
        turn = random.randint(min_turn, int(WIDTH/2) -
current_pos_x - min_buffer)
    else:
        turn = int(WIDTH/2) - current_pos_x - min_buffer
height = random.randint(200, 400)
for y in range(block_size, height, block_size):
    x = turn/height * y * modifier
    new_x = clamp_road(current_pos_x + x)
    block = Rect((new_x, 0), (int(WIDTH/2), block_size))
    queue.append(block)
current_pos_x = queue[-1].left
for i in range(0, turn_gap, block_size):
    block = Rect((current_pos_x, 0), (int(WIDTH/2), block_
size))
    queue.append(block)

def update():
    # Player movement
    global player
    player_momentum = 0
    if keyboard.left:
        player_momentum = -speed
    elif keyboard.right:
        player_momentum = speed
    else:
        player_momentum = 0
    new_pos = player.x + player_momentum
    collision = False
    for i in range(16):
        if new_pos > road[75+i].x and new_pos + player.width <
road[75+i].x + road[75+i].width:
            collision = True
    if collision == True:
        player.x = new_pos

def draw():
    screen.fill(c_grass)
    for piece in road:
        screen.draw.rect(piece, c_road)
    player.draw()
```

✓ Our code snippet provides a solid basis for your own top-down driving game. All you need now are weapons. And a few other cars.



GET INVOLVED

Do you have an online tutorial you'd like to share with readers? Have you created an online resource that other game developers might find useful? Maybe you have a local code club you're keen to promote? If you have something you'd like to see featured in the Directory, get in touch with us at wfmag.cc/hello

Directory

Yorkshire Games Festival 2020: line-up announced

Mike Bithell and King's Sabrina Carmona are among the names lined up for February's festival in Bradford

The fourth Yorkshire Games Festival returns from the 5-9 February at the National Science and Media Museum, Bradford, and will pitch a host of events, activities, and networking opportunities to both gamers and developers alike. As the event draws closer, the full line-up of speakers has been announced, so here are a few highlights to whet your appetite:

Sabrina Carmona: Demystifying mobile game development

A senior producer at King, Sabrina Carmona talks about the development of the studio's games, most famously the startlingly addictive *Candy Crush Saga*.

Mike Bithell: Making John Wick Hex

The *Thomas Was Alone* and *Volume* developer talks about the making of *John Wick Hex*, meeting Keanu Reeves, and what he learned during the writing and development of his action-strategy game.

Chloe Crookes: QA in the games industry

Proving there's more to quality assurance than just playing games, Team17's senior QA analyst Chloe Crookes will discuss her role and give advice on joining the games industry.

Zi Peters: How to be a level designer

Sumo Digital's Zi Peters provides an insight into the level design process in the studio's games, including *Snake Pass*, *Crackdown 3*, and *Hitman 2*, and offers a bit of careers advice to boot.

Rare: Building the world of *Sea of Thieves*

Studio head Craig Duncan and talent ambassador Veronica Heath talk about the making of Rare's swashbuckling multiplayer pirate game, *Sea of Thieves*.

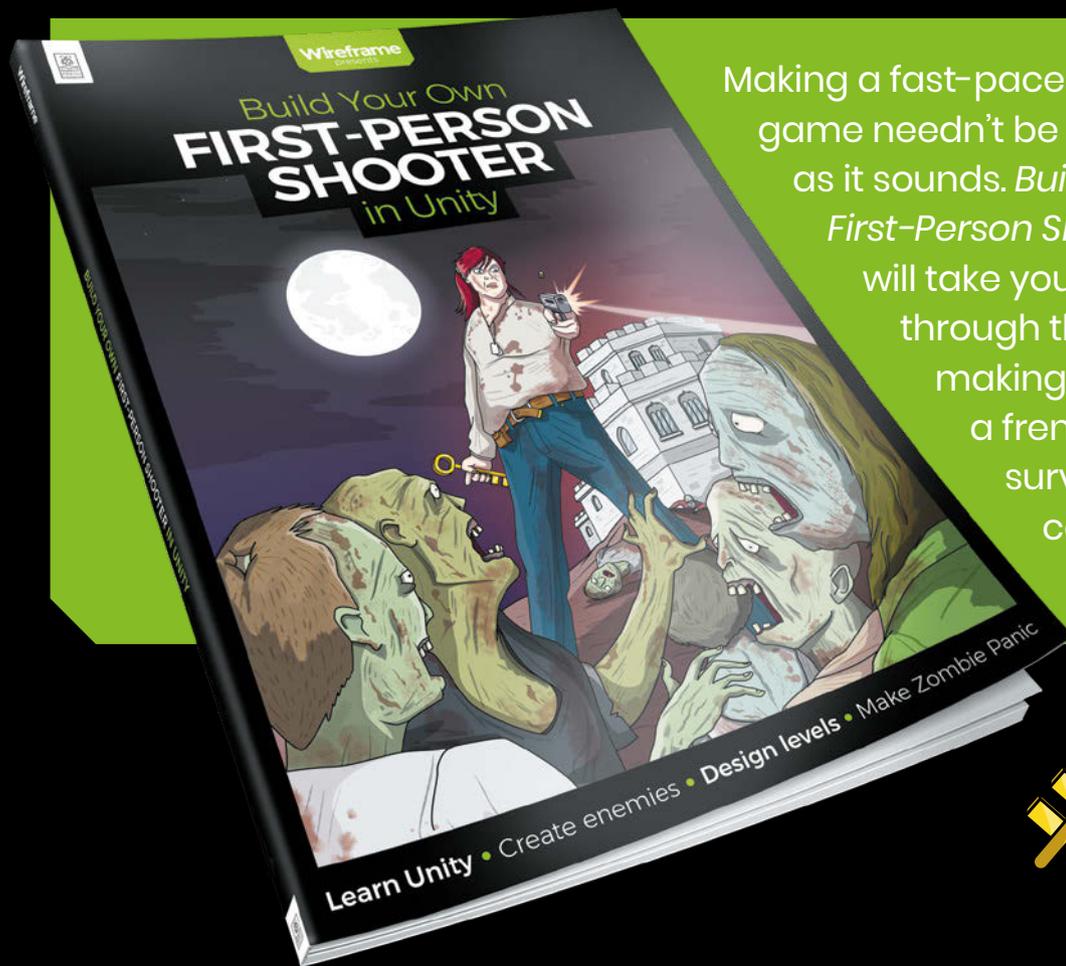
Other speakers at February's event include nDreams CEO Patrick O'Lunaigh, journalist Alysia Judge, Coatsink animation director Emma Hollingsworth, Crows Crows founder William Pugh, and Kieran Holmes-Darby, co-founder and of Excel Esports.

You can read more about the festival's speakers and events at the National Science and Media Museum's website (wfmag.cc/lineup). Tickets can be purchased from Yorkshire Games Festival's official site: wfmag.cc/YGF2020.



➤ Developer Mike Bithell talks about the making of his tactical Reeves-'em-up, *John Wick Hex*, at this February's Yorkshire Games Festival.

Build Your Own FIRST-PERSON SHOOTER in Unity



Making a fast-paced 3D action game needn't be as daunting as it sounds. *Build Your Own First-Person Shooter in Unity* will take you step-by-step through the process of making *Zombie Panic*: a frenetic battle for survival inside a castle heaving with the undead.



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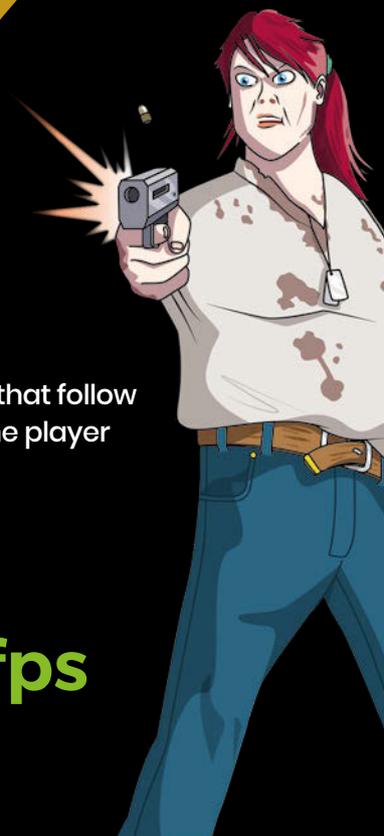
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NEW ADVENTURES IN GAME AUDIO

FROM PROCEDURAL GENERATION TO PIANO-CONTROLLED PLATFORMERS, TODAY'S DEVELOPERS ARE USING AUDIO IN EXCITING NEW WAYS

WRITTEN BY | MICHAEL CLARK



f all the elements that go into a video game, audio is perhaps the most open to interpretation, and can provide the foundations for innovative new ideas. We've seen

audio used innovatively in games as disparate as *Space Invaders*, where the ominous, increasingly rapid thud of those advancing aliens helped create an arcade classic, or the rhythm-based combat of *Crypt of the NecroDancer*, or a unique experience like Tetsuya Mizuguchi's musical rail shooter, *Rez*. With all this in mind, I've been talking to developers, composers, and sound designers who've explored the potential of audio in games from multiple perspectives, and built on the foundations of their contemporaries.

AUDIO-VISUAL EXPERIENCES

Inspired by the futuristic psychedelia of *Rez*, *Front Line Zero* is a rail shooter-rhythm action hybrid currently in development at London-based studio, Metatek. Looking like one of Daft Punk's live shows fused with the opening titles of *The Matrix*, *Front Line Zero* has you hacking through waves of enemies spawned by an all-powerful artificial intelligence. Crucially, the game's action is synced to a plethora of techno, jungle, synthwave, and experimental music.

Often, games are created by coming up with a player character, before adding a narrative and level designs they can interact with. In *Front Line Zero*, this formula was reversed, with the game starting out as a purely audio-visual project, with the interactivity subsequently added in layers.



▲ According to developer Metatek, *Front Line Zero's* audio-visual fusillade is inspired by "glitch art, fractals, Brutalism, and retro-futures."

According to developer Dan Carter, roughly half of the game's graphics were made through generative processes in the procedural content creation tool, Houdini, and then imported into Unreal. "We didn't want to over-rely on the real-time generation of levels, as that can result in environments that look repetitive," Carter says. "Our approach has been to create visually interesting environments first, and then use music to help make them – and our enemies – feel more immersive and threatening."

The game's use of procedural generation for both its visuals and sound is an example of how devs can slash time and budget with little compromise. This allows developers to focus on

**"THE GAME'S ACTION IS SYNCED TO
A PLETHORA OF TECHNO, JUNGLE, SYNTHWAVE,
AND EXPERIMENTAL MUSIC"**

the deeper aspects of design and engineering while using a dedicated set of tools to handle repetitive tasks. Better still, many of these tools are provided for free by other developers and shared with the community.

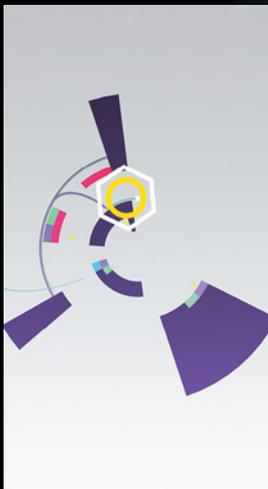
"Unreal Engine's plug-in ecosystem is developing really well," Carter says. "We were able to use a free Procedural MIDI plug-in to rapidly speed up the development of our beat-sync functions. Enemies and the player character in *Front Line Zero* use a trippy 'four-dimensional' animation style that would be difficult to create using morph target animation due to restrictions on changing vertex counts. We used Alembic caches to get around these limitations – a modern CG file format that is commonly used in the film industry."

Front Line Zero's music isn't just a sonic backdrop, then, but a pivotal part of its design.

SOUNDS THAT MIMIC YOU

Developer Philip 'Spectrum48' Sinclair has taken a similar approach with the sonically unique puzzle platformer, *OCO*. Designed to stand out in a saturated market for smartphone games, *OCO* combines one-touch gameplay with a fresh approach to musical intricacy.

In *OCO*, you tap to make your white dot jump around a circular level and collect yellow squares. Each set of levels introduces a new kind of platform; blue platforms are trampolines, purple ones let you hover, ➔



▲ In *OCO*, each platform works like a groove on a record.

▼ A thoughtful, bold use of sound does a great job of adding a sense of scale and depth to *Röki*'s flat-shaded world.

green ones speed you up, and so on. Because there's only one input, your character reverses direction when it hits a wall. But while *OCO*'s a simple game to get to grips with, its true depth lies in its soundtrack, which is created by the level layout and the player's actions.

Every asset in *OCO* has a musical instrument attached to it, from the platforms to the collectable items. Grey platforms determine a two-bar musical loop, while other assets add elements to the music as you interact with them. When you play *OCO*, it feels as if you're writing the music yourself. The game's variety of sounds have all been carefully thought out by audio engineer Joe Simmons of Lab Grown Music. "The emphasis was on developing a robust and

detailed set of rules," Simmons says, adding that these had to allow for "enough variation while creating listenable outcomes for long periods of time. With the rulebook fleshed out, the information was translated into code in Unity. I could then mix and master the different elements using Unity's audio channel mixer and native plug-ins to glue the elements together on the fly."

There's certainly a risk of making the music feel overbearing when accompanying such a minimal look and feel. When it came to genre choices, Sinclair had a clear vision, but Simmons took this gameplay style on board for *OCO*'s sound. "It was important to ramp down the intensity for *OCO* to complement the fluid, diminutive graphics and gameplay. That's also where the minimal glitch percussion comes in as a replacement for more traditional drum sets, inspired by artists like Ryoji Ikeda".

In essence, *OCO* is both a game and a tool for generating rhythm and melody in real-time;

players can even create and share their own levels with their friends.

HEART OF THE STORY

Created by Polygon Treehouse (and our cover star in *Wireframe #28*), *Röki* is less abstract than the games explored so far, but audio has been an equally important part of its development. With a rich story inspired by Scandinavian folk tales, the team decided that a careful use of audio was crucial for the characters to feel human and authentic. To this end, sound designer Ali Tocher was tasked with finding a solution to give the many characters of *Röki*'s world a way to express themselves – without resorting to the expense of recording voice

actors for each one.

"There's a lot of dialogue, from many characters, in this game," Tocher tells us. "And with an emotion-

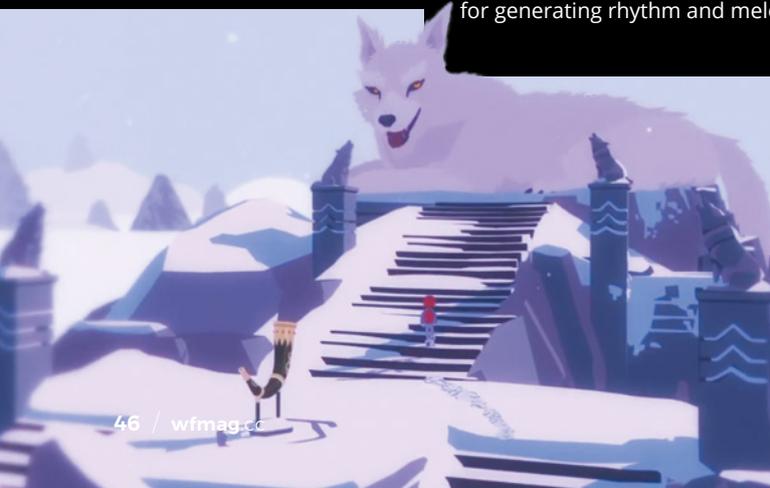
driven narrative, we wanted sound for the dialogue lines that are printed on-screen. We did some tests of different sounds for the words being 'printed out' visually, and some other UI sounds, but these lacked the emotion we wanted. So what we ended up choosing was an emote system, where the character will make a very small, short sound – 'uh' or 'eh', for example – but each conveying a separate emotion. We had something like 80 different emotions recorded by actors for the main characters. Then I used a morphing plug-in to use these same samples to cover the rest of the NPCs. The narrative is the core; the player has to have a reason to go through these puzzles, and that is what the emotion system is driving."

In a game with so many ambient sound effects, from those dialogue sounds to the subtle flapping of a crow's wings, it was vital to avoid any glaring repetition, Tocher explains. "There's

"WE HAD SOMETHING LIKE 80 DIFFERENT EMOTIONS RECORDED BY ACTORS FOR THE MAIN CHARACTERS"



▼ A look behind the scenes at *Röki*'s audio production: this is what a third of one character's emote session looks like.



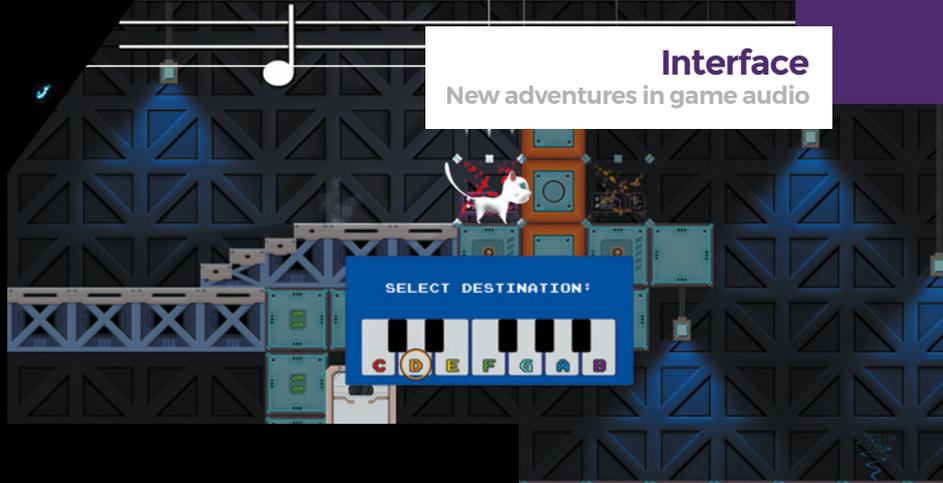


▲ Taking its cue from Tetsuya Mizuguchi's *Rez: Front Line Zero* is a rhythm-action game with mesmerising vector visuals.

a minimum of five variations for each emotion, per character," he says. "That's a lot of audio files. There's a neutral emote, which was a tricky one to direct for the actors, to get what I had in mind. The biggest thing to avoid is noticeable variants happening in short succession. If you hear an identical sound too often, that's gonna be noticed. Neutral, and some of the other emotions are more common and thus more likely to be repeated in a conversation, so we have more variations for those."

Creating a feeling of coherence within the soundtrack was important too. Tocher used a middleware plug-in for Unity called FMOD Studio to give him a larger toolset for working with the audio in-game. "My number one thing is to respect the way in which the game is being played," he says. "There's a lot of levels, you can walk in one and go back out again. I wanted to avoid having noticeable transitions between levels, so that the player would not get fatigued by hearing the same song stop and start again as you go back and forth. However, in FMOD, you're able to apply logic to how you handle these transitions. If the player's transitioning to a new level that's in the same area or biome as they've just left, we keep the same song playing but introduce a new lead melody to the underlying score. We have multiple melodic variations for each area. If you change area on a level transition, we'll stop the song. In this case, we do a slow cross-fade of the two songs, and sometimes trigger an ambient stinger to mask this change. Hopefully, the result is a relatively seamless and unobtrusive way to play music to the player in this kind of game."

It's essentially an illusion made with audio: when the sound perfectly accompanies what's on screen, it acts as one with the world, without being intrusive. It is much easier to point out when it doesn't feel right, or leaves its boundaries. "It's like cleaning," says Tocher. "No one notices when something's clean, but they notice when something's messy. Sometimes [expansive sound design] is called for; you have a dramatic moment, and the audio has a role



▲ *Midi the Cat*: a cute platformer and piano teacher all in one.

to play in standing out. But in almost all other cases, it should just be a supportive layer. It's poor form for me to make an expansive thing, then realise we need space for the music. It's a collaboration."

OLD GENRE, NEW TRICKS

First uploaded to itch.io in 2018, *Midi the Cat* is a very different kind of rhythm-action game: it's a platformer you control with a MIDI keyboard. You play notes in time with the beat to move, jump, and climb, and the better your timing, the faster the game becomes. It's a fun genre mash-up, but like *OCO*, it has more on its mind than simply diverting players for a few minutes or so; it's also intended as a unique and approachable way of learning how to play the piano.

"The intention is to make games that are a fun secondary use for the [MIDI keyboard] device, to help bring people back to music or introduce new people to music," says developer Duncan Stead. "As a musician and a developer, I was disappointed with the same old *Guitar Hero* style of music games, and wanted to find a way to involve music more deeply in the gameplay, besides making a glorified quick-time event. [Ubisoft's music game] *Rocksmith* is an example of a developer trying harder to use standard musical instruments and different types of gameplay, through various minigames, but I think there's a lot yet to explore."

At the time of writing, *Midi the Cat* is still at the prototype stage, but it's already showing a lot of promise. Let's face it, spare time is at a premium in the hectic modern world, so a game that can provide an enjoyable challenge – and teach players a new instrument at the same time – can only be a good thing.

TAMING THE BEAST

From creating an uncanny atmosphere and sense of place in a fantasy adventure, to underpinning an abstract experience entirely like anything else, sound can be used in all kinds of surprising and captivating ways. Far from a secondary concern, audio can drive games to new creative heights – and, on occasions, it can even unlock the musical potential of players themselves. 🎵

▼ More than just a game, *OCO* can be enjoyed as an app that turns your smartphone into a musical instrument.



Developer Profile

The quiet brilliance of M2

For almost 30 years, the Japanese developer has been bringing classic games back into the present

It can sometimes take a while for a developer to get the recognition they deserve, and the past couple of years have seen Japanese studio M2 finally get their turn in the spotlight. For almost 30 years, the Tokyo-based team has quietly built up a reputation for its ability to get old games running almost perfectly on modern hardware; whether it's ports of arcade classics to the Sega Mega Drive in the early nineties, or conversions of obscure shooters for current-gen consoles, M2's work is marked out by its rock-solid quality and sheer attention to detail – talents that were brought to wider attention when YouTube channel My Life In Gaming made and uploaded an entire hour-long documentary about M2 in May 2019.

That same year, M2 also collaborated with Sega on the Mega Drive Mini – a shrunk-down retro console that, unlike

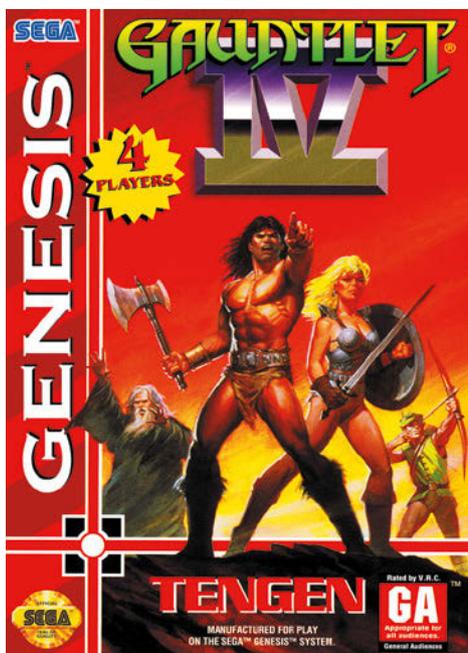
M2

the inferior AtGames devices before it, emulated a selection of the original system's games with pleasing fidelity.

This was no mean feat, given that M2 had to work within the confines of the Mega Drive Mini's already-established hardware. "The biggest challenge was the hardware restrictions inherent to the board we based the Mega Drive Mini on," Naoki Horii, M2's CEO, tells us. "We always have to struggle against limitations imposed by hardware specifications like input latency – though that's not particular to the Mega Drive Mini."

M2's work on the Mega Drive Mini was fitting, given the studio's long-standing relationship with Sega and its hardware. Back in 1991, when M2 was still a tiny startup operating out of a rented flat in Abiko, a city in Chiba Prefecture, it was working on a port of Atari's arcade hit, *Gauntlet*, for the Japan-only Sharp X68000 computer. Quickly realising

▼ *Gauntlet IV* marked the beginning of M2's long history of working with Sega hardware and software.



▲ Thanks to M2, the Mega Drive Mini's ports of eighties and nineties games like *Strider* and *Altered Beast* were almost pixel-perfect.

that the X68000 didn't exactly have a huge install base, M2 decided to port their work-in-progress over to the Mega Drive instead – a comparatively simple process, given that Sega's console used the same processor as Sharp's computer. That game eventually became *Gauntlet IV*, released by Tengen in 1993:

“We always have to struggle against hardware limitations”

as well as a port of the original arcade version of *Gauntlet*, it also came with an additional quest mode, which turned the dungeon-crawling slash-and-grab of the coin-op into an impressive action RPG.

What was all the more remarkable about M2's debut work is that its founders were young and largely self-taught; *Gauntlet IV* programmer

Tetsuya Abe, who officially joined M2 in 1996, was still in high school in 1991, and learned how to code from reading textbooks. Certainly, M2's dedication to its work earned the respect of Sega, who hired the developer to port Treasure's manic run-and-gun classic, *Gunstar Heroes*, from the Mega Drive to the Game Gear. Anyone who's ever played *Gunstar Heroes* will probably recall the number of enemy sprites and bullets it generously sprayed around the screen – making it an unlikely candidate for the Game Gear, with its humble Z80 hardware.

"Indeed, there were many tricks," Horii recalls of the challenging task of cramming *Gunstar Heroes* onto the Game Gear back in 1995. "On top of whatever performance optimisation we could employ on its Z80 CPU, we did everything that came to mind, ➔

State of Preservation

Aside from feeding our collective nostalgia, M2's dedication to porting every minutia of old games to new systems is also a form of preservation – a subject that's close to the heart of studio boss Naoki Horii. "I'm personally involved in a [non-profit organisation] that acts toward the preservation of video games," he tells us. "My role there is to preserve, in as good a state as possible, packaging boxes, manuals, magazine issues, and so on."

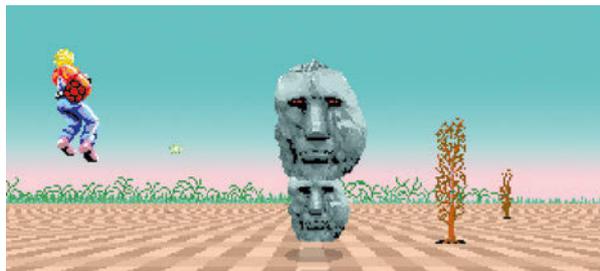
Horii's also conscious of preservation at M2 itself, given that its own work forms a vital part of video game history – even if archiving everything perfectly isn't always possible at a busy studio. "We try to preserve every development environment we have made use of, so that we can go back to any one of them when the necessity arises. But as decades pass by, everything surrounding those environments comes and goes – for example, the operating systems they're based on. So I'm not perfectly confident that we're successful in this department. Also, we've experienced storage device failure, and that's another threat we have to face."

Interface

Developer Profile / The quiet brilliance of M2



▲ M2's technical prowess meant that a fast, sprite-scaling game like *Galaxy Force II* could run at a smooth 60fps on the PlayStation 2.



▲ "We choose to work on what we're confident we have the skill and knowledge to handle properly," Horii says of M2's history of porting retro action games, such as *Space Harrier*.

from devising ways to make its screen display increased numbers of sprites and colours, to implementing parallax scrolling by constantly redrawing the background art."

SEGA AGES

M2's inspiration for all this technical trickery, Horii reveals, came from a far-flung source: the work of the early nineties Amiga demo scene in Europe. "At the time, everyone in the team was fascinated by Amiga Megademos," Horii says. "While we were no match for the wizards in that scene, they inspired us to make up with our skill for what Game Gear lacked in terms of hardware capabilities."

Gauntlet IV and *Gunstar Heroes* set the tone for M2's work in the years since, both in its prowess when it comes to porting games from one system to the next, and the evident passion the studio has for classic games.

If you want a prime example of M2's enthusiasm, let's fast-forward to the PlayStation 2 era, and the Sega Ages 2500 series. Originally envisioned by Sega as a string of somewhat creaky 3D remakes of old arcade games, made and sold at a budget price, the series didn't really find its stride until M2 got involved in 2005, and began porting almost

"We were determined to retain the original 60fps frame rate, no matter what"

perfect versions of such classics as *Space Harrier* and *Phantasy Star*.

Once again, M2 found itself performing all kinds of technical conjuring tricks to get those arcade games working on the PS2's hardware; on *Space Harrier*, for example, the PSone sub-processor was used to run the sound and music while the main CPU handled the rail-shooting action.

As Horii recalls, the port of another Sega pseudo-3D game, *Galaxy Force II*, posed even greater headaches. "It would have been much easier if we took the route of reducing the frame rate to 30fps, but we were determined to retain the original 60fps frame rate, no matter what," he tells us. "We made use of every bit of resource available to the complex hardware system, and that, together with various code optimisation techniques, enabled us to achieve the 60fps goal, but the whole endeavour cost us two or three years [in] time."

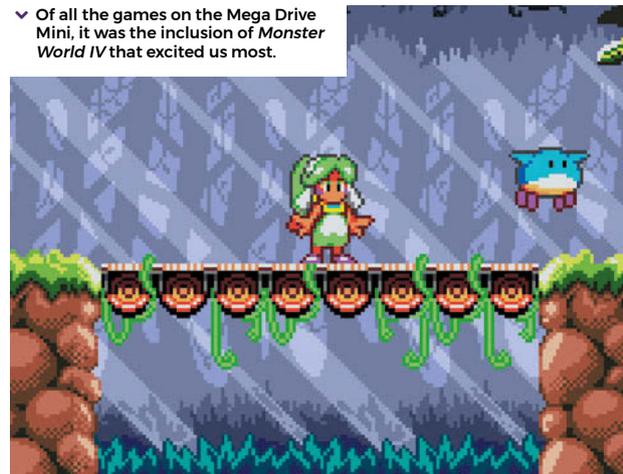
The Sega Ages 2500 series' pinnacle was arguably the *Fantasy Zone Complete Collection*. As well as collecting the entire series of *Fantasy Zone* games together on one disc, it also contained something unique: an arcade version of *Fantasy*

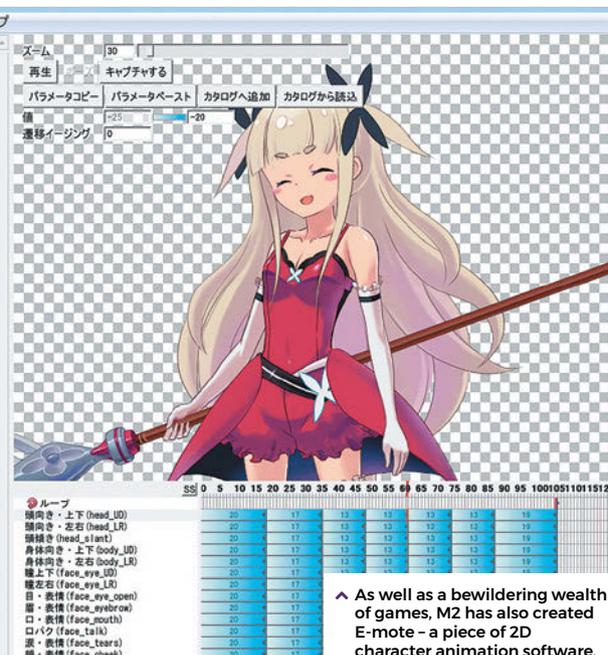


▼ More recently, M2's *Shot Triggers* series has successfully ported such Cave shooters as *Dangun Feveron* and *Battle Garegga* to modern consoles.



▼ Of all the games on the Mega Drive Mini, it was the inclusion of *Monster World IV* that excited us most.





Zone II, originally made exclusively for the Master System. Horii had long been a fan of the series, and had always wondered what the game might have looked like had it been made as an arcade game rather than for Sega's 8-bit console. Determined to find out, he began creating an arcade-quality port on original System-16 hardware – a laborious and costly enterprise, and one Horii paid for himself. The cost? According to Horii, talking to My Life In Gaming, “about the price of a new car.”

FREEWHEELING

Since the release of the *Fantasy Zone Complete Collection* in 2008, M2's reputation as the masters of emulation and porting has only grown – and so too has the company. The team has swelled from a handful of developers to a workforce of around 50, but M2 still retains the relaxed feel of a small indie studio. “The number of staff now is ten times as large as when we started,” Horii tells us. “Obviously, the atmosphere has changed considerably too, but compared to other companies, we still very much retain the freewheeling spirit of a micro-scale studio. We have to thank our partners' magnanimity for that, though.”

As well as the Sega Mega Drive Mini and its ongoing *Shot Triggers* series



^ M2 did some sterling conversion work for Capcom in 2013, with the *Capcom Arcade Cabinet* collecting together 17 of its old arcade games.

– which brings hardcore shoot-'em-ups like *Dangun Feron* and *Battle Garegga* to modern hardware – M2 is also hard at work on an entirely new game. Announced in late 2019, *Aleste Branch* will continue the series of 2D shooting games that originated at the sadly defunct developer Compile in the 1980s, and to retain the continuity, M2 are hoping to entice original series programmer Takayuki Hirono onto the project.

“I'm a great fan of the *Aleste* games,” Horii says. “I tend to feel it was some sort of fate at work that brought into our hands the series' IP. One of our staff came up with the *Aleste Branch* project on the 30th anniversary; coincidentally, at around the same time, a composer we were close to told me he wanted M2 to make a new *Aleste* game so that he could write music for it. So we set up a hanami [a traditional Japanese spring festival] gathering, talked over a drink, and said, ‘OK, let's do it!’”

Once again, it's the studio's passion for games that shines through in its meticulous work: technical wizards though they are, M2 are also true video game otakus. “It's quite often that in the middle of working hours, someone shows off a prototype of a game they're working on, or a newly released title they're just passionate about,” says Horii. “When that game's really magnetic, everyone stops, and a crowd is formed to take a look. Sometimes I feel kind of like saying, ‘Guys, do we really have time for...?’, but at the same time, I believe it's this enthusiasm that has given us a good track record up to now, so I let it pass.”

^ The Wii's *ReBirth* games – including *Contra ReBirth*, pictured here – were new games with retro pixel graphics.



Konami ReBirth

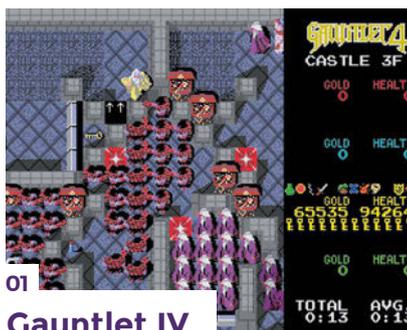
Available from the Wii Shop Channel, M2's *ReBirth* games were some of the best exclusives available from Nintendo's digital storefront. They took three of Konami's much-loved retro properties – *Gradius*, *Contra*, and *Castlevania* – and forged new experiences that resembled the eighties and nineties originals. For the most part, M2 were left alone to make these games, according to Horii, though he recalls that, for *Castlevania: The Adventure ReBirth*, “one of the requests was to make the stairs in Dracula's castle less steep, because steep stairs don't quite look luxurious.” It is, he adds, “an enlightenment that has left an impression in my mind.”

The *ReBirth* games sadly vanished when the Wii Shop closed in 2018; so might they become available again in the future? “Unfortunately, we're in no place to reveal either way,” Horii says. “But I'm looking forward to the day they'll be available again, because I want to play them. So one thing I can assure you is, if we're ever presented with the opportunity to take part in bringing that about, we'll seize that chance without hesitation and work on it with full force!”

Porting perfection

10 of M2's finest works

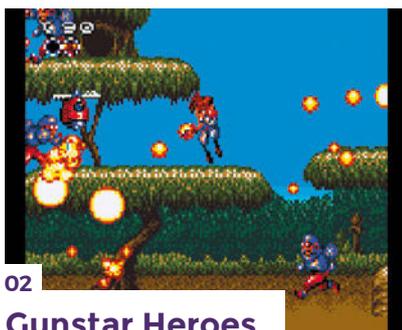
Never heard of M2? You still may have played one of these



01 Gauntlet IV

Sega Mega Drive – 1993

M2's debut, and a glimpse of its dedication to the conversion cause; where most developers would treat the job of porting a six-year-old arcade game as something to dash off in a few days, M2 spent two years on the project, resulting in a superb take on the coin-op, an all-new action RPG mode, and a diverting battle mode for up to four players.



02 Gunstar Heroes

Sega Game Gear – 1995

A handheld version of Treasure's famously wild run-and-gunner shouldn't have worked, but M2 used every bit of its ingenuity to ensure that it did. Some sprite flicker aside, the speed, copious explosions, and, most importantly, the cartoonish character of the original were all present and correct. The finest action title on the Game Gear? Quite possibly.



03 Sega Rally Championship

Sega Saturn – 1995

M2's porting genius isn't just restricted to sprite-based games, as this conversion of Sega's hit coin-op proves. As it turned out, the arcade's Model 2 hardware was so different from the Saturn's that the game had to be rebuilt from the ground up. The result's slightly less smooth than the original, but it's still a cracking racer.

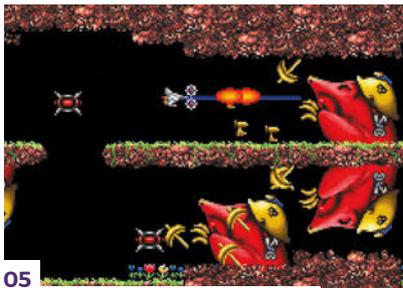
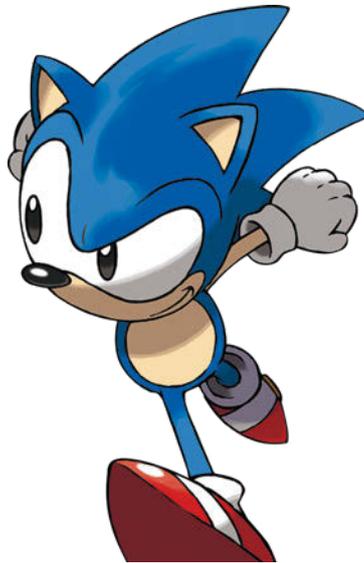


04 Mushihimesama Futari

Xbox 360 – 2006

M2's affection for 2D shooters is self-evident, and it added a wealth of extra modes and graphical options to Cave's bug-filled blaster. Best of all, M2 put a ton of work into ensuring that input lag – the bane of traditional action games like these – was kept to the absolute minimum, resulting in an absolutely essential Xbox 360 shooter.





05

Parodius Portable

PSP – 2007

Gathering together Konami's parody shooters on one UMD, this collection was a must-own, thanks in no small part to M2's enhanced remake of the first *Parodius* game on the MSX. The original's jerky character scrolling was rendered silky smooth, its sprites were tastefully updated, and its warbly 8-bit music given some welcome PSP oomph.

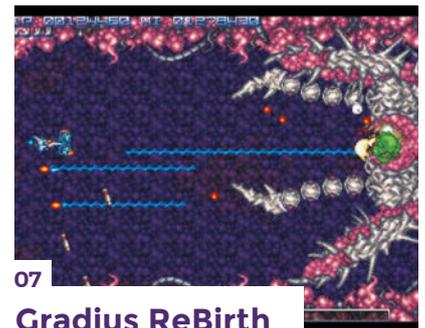


06

Fantasy Zone DX II: The Tears of Opa-Opa

PlayStation 2 / Nintendo 3DS – 2008

Sega didn't bother making a *Fantasy Zone* sequel for arcades itself, so years later, Naoki Horii decided to make it himself – using real System-16 arcade hardware. The result is an absolutely charming deluxe edition of the side-scrolling shooter. The stereoscopy on the 3DS version is also a sight to behold.



07

Gradius ReBirth

Wii – 2008

All of M2's revivals for Konami (*Contra* and *Castlevania* were the other two) are well worth your attention, but given how neglected the series is these days, we thought we'd opt for this one. A remix of the classic 2D, sprite-based entries from the eighties and nineties, *Gradius ReBirth* is as tough as hell – and a worthy swansong for the franchise.



08

3D OutRun

Nintendo 3DS – 2014

We had to include at least one of M2's 25-or-so 3DS ports, and their handling of Sega's *OutRun* is perhaps our favourite. Not only is it faithful to the arcade, but it also includes a wealth of extras and, best of all, makes captivating use of the handheld's stereoscopic capabilities. Hurling down a sun-drenched, pixel highway looks gorgeous in 3D.



09

Dangun Feveron

PlayStation 4 / Xbox One – 2017

Part of M2's *Shot Triggers* label, *Dangun Feveron* bought Cave's bullet hell shooter from arcade obscurity to current-gen consoles. As Horii jokes, "the decision to make that port was entirely dictated by our CEO's personal taste, with little regard to business prospects. Well, actually, I am the CEO, so there's little we could do about it..."



10

Mega Drive Interface

Mega Drive Mini – 2019

M2's interface for the Mega Drive Mini is one of our favourite things about Sega's nostalgia machine. It emulates the feel of owning a collection of boxed cartridges on a shelf, right down to being able to flip the games around to view the artwork on the spines. You can even see the Japanese box art by switching regions. A wonderful touch.

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Phoenix Point

This view from above looks remarkably familiar

Info

GENRE
Turn-based strategy

FORMAT
PC (tested)

DEVELOPER
Snapshot Games

PUBLISHER
Snapshot Games

PRICE
£35.99

RELEASE
Out now

REVIEWED BY
Aaron Potter

HIGHLIGHT

Your relationship with *Phoenix Point's* NPC factions sees the game venture into visual novel territory, where you choose from a selection of dialogue responses that will either make or break your current level of co-operation. You're never able to keep one sweet without irking the other two, so be prepared to make enemies.

▼ You'll receive a report on how your units are progressing following every mission, making you aware of who's ready to be upgraded and who needs medical attention.

MISSION COMPLETE

SOLDIERS AND PROGRESS	XPs	STATUS	EXPERIENCE POINTS EARNED
2 [Unit Name]	+76	LEVEL UP	75
2 [Unit Name]	+65	LEVEL UP	100
1 [Unit Name]	+44	PROGRESS	75
3 [Unit Name]	+39	LEVEL UP	
2 [Unit Name]	+13	UNMANAGED	
2 [Unit Name]	+13	PROGRESS	
TOTAL			250
			WELL POINTS POOL: 2

GO BACK TO GEOSCAPE

Improving on perfection is... tricky. But that hasn't stopped designer Julian Gollop who, with *Phoenix Point*, returns to the genre he helped place on the map with strategy classic *UFO: Enemy Unknown*, (or *XCOM*, depending on where you live). Casting you as commander of an elite force tasked with holding back an alien menace threatening Earth – and fighting déjà vu – *Phoenix Point* is totally serviceable as a spiritual successor to the turn-based 1994 original. In an age when Firaxis Games' excellent *XCOM* series reboot already modernised the concept with aplomb, however, *Phoenix Point's* minor tweaks to the established formula never quite see it reach the status of worthy contender.

Much like *XCOM*, when you're not thoughtfully manoeuvring troops in the heat of turn-based battle, you'll be examining a view of your progress on a holographic map known in-universe as the Geoscape. This is where you'll scavenge for resources, recruit soldiers, send out aircraft to scout out further regions of the map, but most notably build relationships with rival factions. You do all this in the hope of

preventing the spread of the Pandoravirus from slowly turning humans into aquatic aliens.

Managing these actions is extremely menu-heavy, as expected, but even in its first few hours, *Phoenix Point* does well to let you forge your own path to victory rather than mollycoddle you. Strategy games of this type live or die by their ability to bring weight and consequences to your decisions. On this front, *Phoenix Point* succeeds. The game absolutely nails an overarching sense of risk/reward both in and out of battle because of this, since you never truly know what ramifications your moves in the Geoscape may eventually carry. Securing a good partnership with the factions of New Jericho, Synedrion, or the Disciples of Anu can prove fruitful to your future success, and diplomacy is one of the better concepts *Phoenix Point* introduces. Want to raid a faction's base for a quick injection of food and tech resources? You'll be the better for it now, sure, but could live to regret burning that bridge eventually.

▼ Seeing your units shooting enemies from behind is about as cinematic as *Phoenix Point* ever gets.





Orange grid placements dictate the furthest range your units are able to move, while blue grids indicate where they can go and still attack.

Of course, the other piece of this strategic puzzle is the tactical battling, which for the most part plays out just as any XCOM aficionado would expect, bar a few tweaks. You're given four troop classes – Assault, Sniper, Heavy, and Berserker – all with their own distinct stat perks and exclusive abilities that improve as you level them up. You can deploy up to eight troops when jumping into a new mission, and I'd be lying if I said that I didn't feel heartbroken whenever one of them fell in battle.

Gluttons for punishment can rest easy knowing that *Phoenix Point's* enemy AI can be quite cunning at times, even on normal difficulty, and losing treasured soldiers happened to me far more often than I initially expected.

The main way *Phoenix Point* attempts to separate itself from Firaxis Games' strategy series is through its free-aiming mechanic, where rather than rely solely on awkward lines of sight and percentage chances, players can target enemies directly via an over-the-shoulder view.

Picture the scene: You're hunkered down, wondering which direction to move your units in order to best defend scattered cargo shipments, when suddenly an enemy turns a corner and slips into the view of one of your snipers.

Then, when it's your time to move, you can either go for the head for a quick kill but risk missing the smaller target area, or maybe you'll opt to blast their rifle clean out of their hands – it does less damage, but is easier to hit and leaves them defenceless for their next turn.

That a mechanic so simple can feel so new is a testament to *Phoenix Point's* willingness to shake up certain turn-based staples.

It's a shame, though, that a lot of the twists feel incremental at best, and not all that game-changing. You have the choice to blast off specific limbs, sure, but that's not much of a marquee feature.

This sense of missed potential only sets in more heavily when *Phoenix Point's* limited roster



Phoenix Point offers a wide suite of soldier customisation, which makes losing them painful. The amount of actions available to you in the Geoscape feels overwhelming at first, but soon becomes clear after a bit of tinkering.

of objective types gradually make themselves known, especially in side missions, where securing an item or defending resources appears thrilling at first – but less so after ten hours. There's only so much heavy lifting the procedural map generation can do on this front.

There's absolutely nothing wrong with the brand of turn-based strategic combat *Phoenix Point* provides; it's just hard not to be a little let down when you think what it could have been. The ways in which it tries to set itself apart from the XCOM-shaped elephant in the room (diplomatic relationships and free-aiming, most notably) are admirable, but none are interesting enough to warrant this being dubbed a significant reinvention.

Combined with some repetitive objectives, incessant Geoscape micromanagement needed to keep your bases operational, and a by-the-numbers narrative, you have a fun but flawed take on the genre. 🗯



“Phoenix Point’s enemy AI can be cunning at times”

How your shots will affect enemies is made extremely clear when entering free-aim targeting.



VERDICT

Phoenix Point is an enjoyable if somewhat unnecessary spin on the XCOM school of turn-based strategy, and too slavish to push the genre forward.

66%

HIGHLIGHT

Fancy a game of *Flappy Pig*? Yes, those mobile minigames parody actual games, from *Crossy Road* to *Bubble Burst* and more. They're brief, but they offer an amusing diversion from the main game. The always-on banking system is a little game-breaking (especially if you leave it running for a few days), but multi-tasking with your quest brings rewards.

Review

SuperEpic: The Entertainment War

Animal Farm: The Video Game

▲ The bosses are predictable, both in their pig themes and attack patterns, but their chatter is full of humour.

Info

GENRE
Metroidvania
FORMAT
Switch (tested)
/ PS4 / Xbox
/ PC

DEVELOPER
Undercoders

PUBLISHER
Numskull
Games

PRICE
£14.99

RELEASE
Out now

REVIEWED BY
Ed Nightingale

VERDICT

Pull out your piggy bank and play this now, you swine.

74%

If George Orwell had created a video game, it might have looked something like this. Evil fascist pigs? Check. Totalitarianism? Check. A raccoon riding a llama? Check and check.

Undercoders' Metroidvania is set in a dystopian future in which a video game company has brainwashed the masses using free-to-play mobile games, mind-controlling algorithms, and microtransactions. As part of a small group of animal rebels, you must infiltrate the company office and defeat their CEO. Yes, it's a pretty blunt satire of the current state of the video game industry, but it provides a wealth of opportunity for irreverent, self-referential humour that pokes fun at both the industry itself and its best-loved games. "What is an animal?" it asks: "A miserable little pile of microtransactions!"

Underneath it all is a surprisingly robust adventure. Each of its eight zones takes us through the complex of the villainous RegnantCorp – offices, rec lounges, server rooms – and while the level design gets repetitive, there are enough secrets in its nooks and crannies to fully explore. It is, above all, a homage to the *Castlevania* series, complete with upgradeable weapons (golf clubs, vacuum cleaners, tennis rackets), an expanding ability set (double jumps, dashes, flight), and a banging soundtrack that'll be stuck in your head for weeks.

Combat is also enjoyable, if ultimately a little button mashy. With your various weapons you

can slash, uppercut, and smack down with three different buttons; together, it's possible to string hits and jumps into long enemy juggling combos that fill up your rage meter, allowing for a further set of special moves. Enemies fall into set types, but bashing away at worker pigs, swinging apes, loan sharks and more has satisfying oomph.

SuperEpic's meta ideas are its strongest. Scattered throughout the world are QR codes that need to be scanned with your smartphone. In turn, they unlock short minigames – the very same free-to-play games produced by the malevolent pigs – that, once completed, provide a number code that can be used back in the game world to unlock doors and uncover secrets. It's a clever way to break through the fourth wall and add a little depth to the narrative – are you playing these games simply for the code, or are they actually quite fun too?

There's also a banking system whereby you can generate cash on your phone, which leads to the game's biggest downfall: with so much cash at hand, you'll quickly level up your weapons and become far too overpowered. Respawning enemies soon become a chore to defeat as you rush through to the next area (particularly those in frustrating placements), while bosses rarely pose a challenge.

Still, with its cute pixel art and vibrant aesthetic, bizarre world, and chuckleworthy humour, *SuperEpic* leans heavily on its influences but is a fun adventure with some clever ideas up its sleeve. Or maybe I've been brainwashed into saying that. 🐷

“A blunt satire of the video game industry”

HIGHLIGHT

The game's 'Romance' stage perfectly exemplifies how *Arise* builds feeling. Beginning with low-key platform-hopping between huge water lilies, the spinning leaves and flowers start to dance in formation, the quiet piano backing is joined by stirring violins, and you are whisked along through twinkling air streams as the whole scene blossoms into a stunning moonlit waltz.

Review

Arise: A Simple Story

A tale as old as time travel

A *rise* tells a simple story. It's about a simple man and simple life events that evoke simple themes of love and loss. It's simply communicated, without words, and hits simple emotional notes. But behind the simplicity is a work of subtle and intricate craft. An immaculate marriage of visuals, music, environment design, and interactivity deliver these simple ideas with remarkable power.

The game begins with your death. As your stone-age Santa-alike is set alight atop his funeral pyre, the scene switches to a snowy limbo. From here, the old man revisits the greatest joys and pains of his life and the relationship that shaped it. Each of the ten stages is a distinct dreamscape that represents both an event and an emotion, relaying the ups and downs of existence.

In play, this means light puzzle-platforming, formed around your ability to control time. Each level takes place within a time-lapse, with the world phasing around you through a fixed period in a matter of seconds. You spool back and forth through this segment at will, positioning scenery and conditions to suit your needs. In the first level, you shift between winter and spring, thawing

and refreezing a lake to create bridges from wooden rafts. Next, you're in a giant garden one sunny afternoon, tilting the heads of sunflowers or hitching rides on snails to make your way.

The time manipulation expertly symbolises the game's focus on reliving the past. It's also highly versatile, and every level finds a way to keep it fresh. But what truly impresses in *Arise* is how all its parts blend together to portray and evoke the different emotions. Levels build into arduous struggles or effortless flows depending on the mood. Light and shadow, heat and cold, and bursts of orchestral music combine to lift you up or prompt gritty determination. And every setting is an efficient metaphor, from the innocent fun of playing in that garden to the following stage where an earthquake rips through a valley, tearing you apart from your home.

It's so harmonious that its only real fault feels uncharacteristic. With time-shifting mapped to the right stick, you're robbed of camera control, and the dynamic angles can make it difficult to judge spaces between platforms or tell what's in play and what isn't. Plus your old geezer isn't the most sprightly gent, so every long jump requires effort, and any significant fall proves fatal. Even though checkpoints are gratifyingly frequent, you'll need a little patience to persevere.

But what ultimately prevails is how skilfully this story swings you from sorrow to joy and back. Though you know how it must end, as with life, it's the highs and lows, the bonds and experiences that make it worthwhile. *Arise* explores this idea with gentle warmth, creates lasting memories of its own, and turns the simple into magic. 🍷

▲ The constantly transforming lighting effects greatly elevate an otherwise simple art style.

Info

GENRE
Narrative platformer

FORMAT
PS4 (tested) / XBO
/ PC

DEVELOPER
Piccolo Studio

PUBLISHER
Techland

PRICE
£15.99

RELEASE
Out now

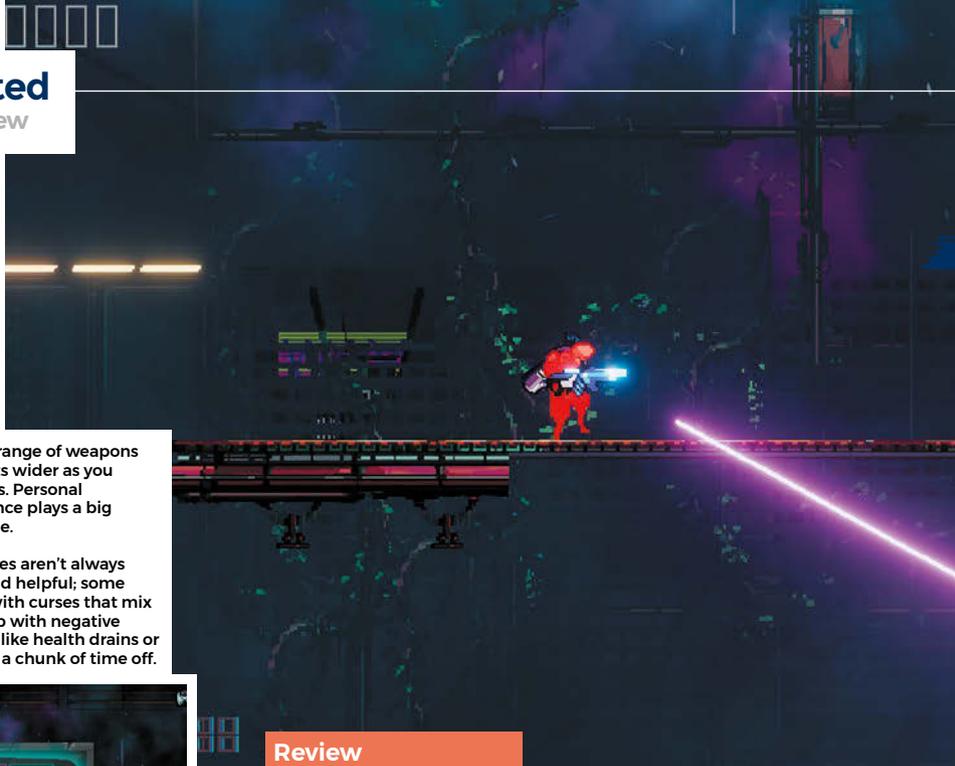
REVIEWED BY
Jon Bailes

VERDICT

A moving story of anguish and devotion, told in a way that only games can.

82%





- > A wide range of weapons only gets wider as you progress. Personal preference plays a big part here.
- > Upgrades aren't always pure and helpful; some come with curses that mix the help with negative effects, like health drains or cutting a chunk of time off.

HIGHLIGHT

The first time you actually do something impressive – not only that, but you do it *on purpose* – is revelatory. You will then spend the next 15 playthroughs trying and failing to recreate your one second of mastery as you blinked through heavy fire and restored half your health before ending the boss's reign of terror with a swing of your bullet-dry weapon. But that one time it came off? Beautiful.

Review

Black Future '88

aka Cyberfunk and the Heart Exploders

Info

GENRE
Retry-'em-up
FORMAT
Switch (tested) / PC
DEVELOPER
SuperScarySnakes
PUBLISHER
Good Shepherd Entertainment
PRICE
£17.99
RELEASE DATE
Out now

REVIEWED BY
Ian Dransfield

VERDICT

It's limited, but the more you play, the more you want to play. That's a good trait to have.

74%

Almost everything in the living tower is trying to kill you, but you need to get to the top. There are weapons and upgrades you can grab on the way, as well as a few techniques to master that can mitigate the onslaught you'll face, but it's still incredibly challenging. There are boss battles to mix it up a bit too – and to pump that already massive difficulty a bit more. Oh, and some of those upgrades I mentioned are actually cursed and will hurt or hinder you a bit as well as offering a little boost, so there's a lot of trade-offs along the way. Oh, and your heart's going to explode in 18 minutes and one second.

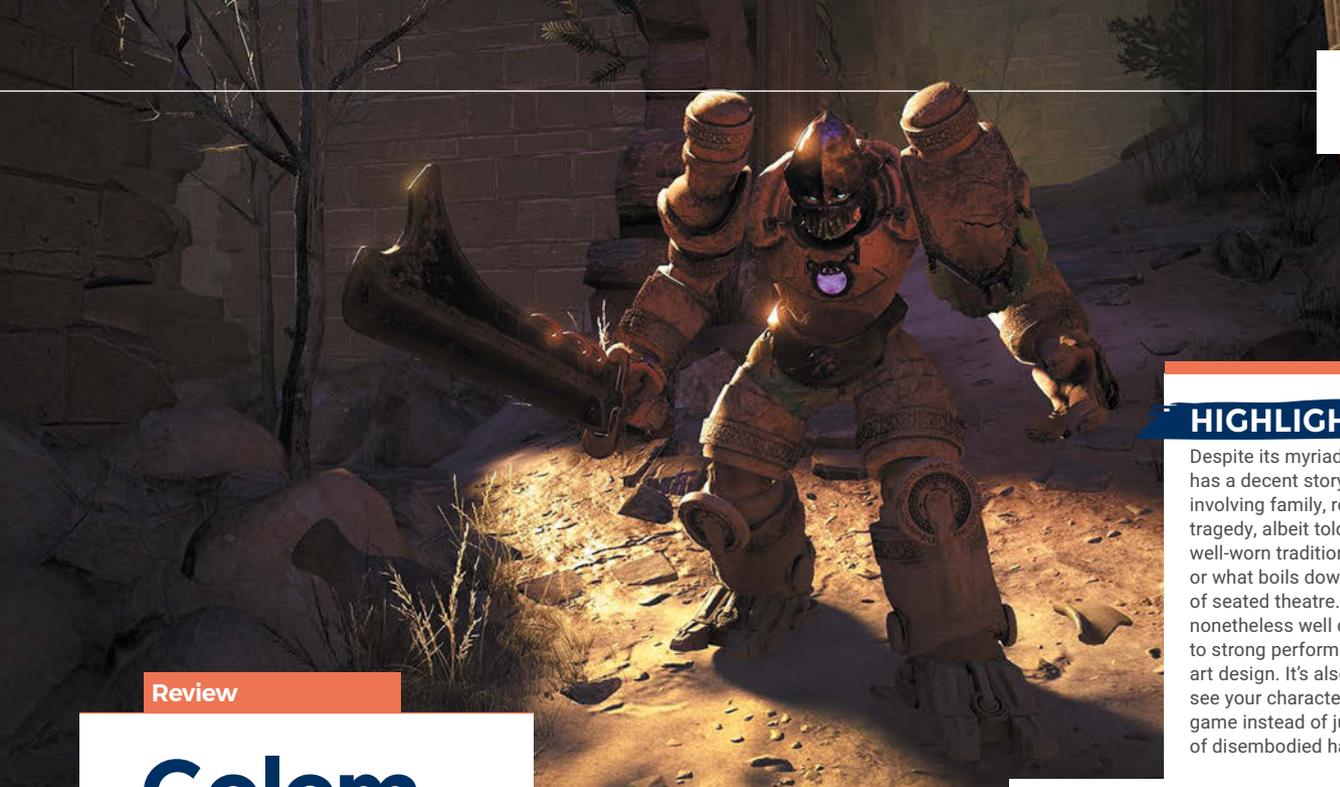
That's about all there is to *Black Future '88*, really. A simple – though not simplistic – setup, a straightforward – on the surface – goal, and the potential to improve – and be harmed – along the way. From that starting point, what you get is an explosion of neon cyberpunk mayhem and a strong introduction to the game, in which you will die. And die. And die again. Yep, *Black Future '88* is a roguelike shooter-platformer, and it makes sure you know it.

Those first few deaths will be key: if you find after seven, eight, nine restarts in quick succession that it's just not clicking – that you're not picking anything up and it's more frustrating than anything else – then I get it. You'll probably just want to bow out at that point. This isn't a challenge thrown at your feet, this isn't a cry of gut gut. Some people just won't click with *Black Future '88*, and I think that's worth highlighting.

But some of us – myself included – will feel the pieces snap into place, bit by bit, over that initial dozen or so trials by fire (and explosion).

And this is very much an experience built on feel and overcoming hardships, because by crikey it doesn't explain much to you outside of the loading screens and a codex you *really should read*. But soon enough you're rocketing around arenas, reflecting hits back at the waves of enemies in the room, and becoming increasingly less confused about the clusterfuck of action filling up every screen. You're installing upgrades to gain health by blinking through incoming fire, realising the gun that switches your place with whatever you fire at can be used tactically, and learning those boss battle patterns. The 18-minute groove – often much less, thanks to the whole dying thing – sets a tempo, and your rhythmic aptitude improves in every run. *Black Future '88* can be, at times, intoxicating.

There are technical hitches – slowdown when there's a lot going on, which can be ruinous to a run – and once you've put in a few hours, there really isn't much else you're going to learn or see, things instead becoming a case of pure self-improvement. But the latter factor understood, and the former being one that only crops up every now and then, I have no hesitation in recommending *Black Future '88* to those looking to challenge themselves, to be dazzled by sumptuous visuals, and to be nodding along to a lovely electro-synth soundtrack. It's very good. It's not *quite* great. 🗿



Review

Golem

HIGHLIGHT

Despite its myriad issues, *Golem* has a decent story to discover, involving family, romance, and tragedy, albeit told through the well-worn traditions of audio logs or what boils down to sequences of seated theatre. They're nonetheless well done, thanks to strong performances and art design. It's also refreshing to see your character's body in a VR game instead of just another pair of disembodied hands.

▲ Combat in *Golem* isn't without its positives, but it's more often let down by the Move controller's lack of precision.

Stuck between a rock and a hard place

Given *Golem's* USP is the ability to take control of the titular stone giants and get involved in some epic melee action, it's a surprise that you don't unlock these toys straight away – at least, not a toy you were expecting. The first inanimate object you take control of is a straw doll that can't fend for itself. It's genuinely horrifying when you're shrunk down to the doll's diminutive size and find yourself swarmed by bugs the size of cars – it's uncomfortable enough to have players with entomophobia ripping their headset off.

Why Highwire Games thought it was a good idea to have you suffer this ordeal before you can become a golem is anyone's guess. Unfortunately, it's only the first of many other puzzling game design decisions. The one that soon rears its ugly head is the baffling Incline Control System that requires you to lean forward while holding the Move controller's trigger to walk. Taking you out of the default seated position is bad enough, but it also makes *Golem* the first VR title since PSVR's launch to make me feel physically sick. If you keep your free hand on a DualShock controller, the left stick can be used for movement, which just about makes things bearable. Oddly, this isn't signposted as an option in-game, and there's no way to play with just the DualShock.

Other surprise mechanics further drag down the experience, such as a rogue-lite structure

that means losing any equipped gear and starting back at a fixed point when you die. You're also forced to abandon your golem each time you want to equip new gear, including masks used for unlocking certain doors. Admittedly, there are *Dark Souls*-like shortcuts, but they don't do enough to alleviate your golem's sluggish pace, which no amount of neck-craning will speed up.

Combat should have been the saving grace here, as there's a good sense of rhythm and skill in deflecting enemy melee hits from the correct angle, then striking their glowing weak points. It's sound in principle, even if you're taken out of the

immersion when you realise that mega-weighty weapons can be waved around like a stick, or that even a light prod will register as a devastating strike. There are other glitches on display in this area too: there are occasions where you'll have held out your

weapon to block and still get hit, while at other times you'll find the duel frustratingly leaves you too far out of reach to strike your opponent. When it comes to precision, *Sekiro* this is not.

That *Golem* feels like such an uncomfortable chore to play is a crushing disappointment given the studio's pedigree as ex-Bungie devs, though at least composer Marty O'Donnell's wonderfully atmospheric score escapes untarnished. One of the earliest PSVR games in development, *Golem* has been superseded by better uses of the tech, which only makes Highwire Games' debut look more like a broken relic in comparison. 🗿

“Golem is the first VR title since PSVR's launch to make me feel physically sick”

Info

GENRE
First-person action / adventure

FORMAT
PSVR (tested)

DEVELOPER
Highwire Games

PUBLISHER
Perp Games

PRICE
£29.99

RELEASE
Out now

REVIEWED BY
Alan Wen

VERDICT

The most disappointing and uncomfortable VR experience for Sony's headset to date.

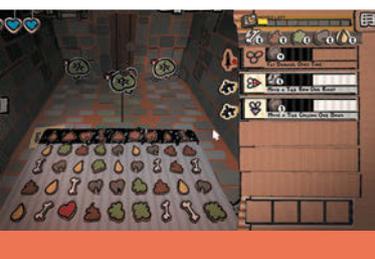
40%

Rated
Review

HIGHLIGHT

Bum-bo's world, and everything in it, is made of cardboard. This gives the game a unique look, which, when paired with its excellent at-times-carnavalesque, at-times-metal soundtrack makes for a fantastic presentation. Even if what's being presented is poo.

▼ In order to perform an attack, you need to pair at least four tiles on the puzzle.



Review

▲ Bum-bo's enemies attack along three columns, and each has multiple rows. Managing a crowded room is the most difficult and rewarding challenge of the game.

The Legend of Bum-bo

Slay inspired

Info

GENRE

Deck-building
roguelike

FORMAT

PC (tested)

DEVELOPER

Edmund McMillen,
James Interactive,
Ridiculous

PUBLISHER

Edmund McMillen

PRICE

£11.39

RELEASE

Out now

REVIEWED BY

Andrew King

VERDICT

Stomach the gross-out humour, and you'll find a cleverly crafted next step for the deck builder.

83%

The *Legend of Bum-bo* is where the past and future meet and tell each other pee-pee poo-poo jokes.

On the one hand, *The Legend of Bum-bo* will be familiar to anyone who's ever played *The Binding of Isaac* (to which this is a prequel starring one of that game's coin-loving items/characters) or been on the inside of a middle school boys' locker room. Edmund McMillen's latest game tasks you with lining up poop, boogers, droplets of pee, and other bodily bits and bobs to make combos in typical puzzle game fashion. The *Super Meat Boy* developer's trademark toilet humour either works for you or it doesn't, and it's front and centre here. Luckily, if you're the latter, the future saves the day.

Bum-bo is a brilliant evolution of the deck-building roguelike. One of the past year's burgeoning sub-genres, these games combine card-based combat with the loot, permadeath, and randomised encounters that roguelikes are known for. *Slay the Spire*, the most popular example, represents this new kind of game at its purest (and simplest): you move from room to room, fight enemies with cards, collect new cards, repeat.

Bum-bo, though, highlights just how flexible this kind of game can be. The structure is generally the same: you'll explore four dungeons, each culminating in a boss battle. You'll gather new abilities and buffs as you go. After defeating a boss, you'll have the opportunity to spend coins to increase stats, refill health, or reroll an element

of your loadout. But *Bum-bo* changes the basic mechanic, subbing in match-three puzzle-solving in place of the typical card-battler interface.

Unlike *Slay the Spire* or *Griftlands* (another early genre entry that uses cards to gamify conversation) your options aren't presented as a hand of cards for you to draw from. Instead, each new ability becomes a tab along the board. As you make matches – four bones and you can attack an enemy, four boogers and you can slow them down – your skills will charge up. Lining up a quartet of turds will, in the short term, help you throw up a barrier that your enemies will need to attack before they can come for you. In the long term, though, these moves also help you save up for a more powerful attack.

This all works wonderfully together. Giving combos a material reward imbues the match-three gameplay with long-term strategy. The steady drip of new cards and multiple playable characters also ensures that each run never feels exactly like the last.

In 2018, *Yoku's Island Express* excited me with its mash-up of Metroidvania structure and pinball flipper action. Unfortunately for the future of pinball shooters, pinball RPGs, and pinball dating sims, that's not an easy formula to replicate. You can't just add pinball to any game. *The Legend of Bum-bo*, though, makes the case for the deck-building roguelike's potential as a fertile genre, perfectly open for a vast array of combinations. This particular experiment might come with a little too much manure, though. 🐷



Suffocating in the corporate embrace

The Outer Worlds shows Obsidian still has it

mean, it's not like Obsidian ever really lost it, to be fair. There have been some missteps and the odd allegation of things not being quite as wondrous as you would hope they'd be at a studio that's pumped out some all-time greats, but generally speaking Obsidian is as reliable as ever. Case in point: *The Outer Worlds*. It's one I've been making my way through, admittedly slowly, in the stolen moments I get here and there through the week, trying to get myself that *Fallout: New Vegas* hit I so desperately crave.

It's not *New Vegas 2*. That's something I still see bandied around about the game – that it's *just like* that time Obsidian showed Bethesda how to make a good *Fallout* game – but it's not. *The Outer Worlds* shares some of the DNA: first-person, RPG, in-depth conversations, well written, retro-future sci-fi aesthetic, and so on. It quite clearly *lifts* from *New Vegas* (and *Fallout* in general), but it is not *New Vegas* in itself.

It's important, I'm finding, to make that clear – and to remind myself of that fact – because otherwise, I could see myself running out of patience with *The Outer Worlds* and, as always, resorting to OG *New Vegas*. But this is a game that needs you to understand it to get the most out of it: it's small, relatively speaking; a more crafted experience that limits its scope carefully. Towns are hubs to be explored, with

citizens to interact with – and by crikey is it worth interacting with some of them, thanks to the fabulous writing on show here. Outside of towns, it's less open world, more series of broad corridor shooting galleries which you trundle through on your way to the next main encounter.

The Outer Worlds isn't something I've found myself getting lost in like I have done in those

“I don't just wander aimlessly for hours, because I can't”

big open titles – I don't just wander aimlessly for hours at a time, because I *can't*. Once I came to accept that fact, the whole thing started snapping into place. With less opportunity to dawdle, I would spend more time inside populated hubs. Spending more time in there inevitably pushed me into talking with more NPCs. Talking with more NPCs opened my eyes to the fact that, unlike so many other RPGs, these were people worth talking to. It's not a constrained experience: it's a directed one.

Not in the way a *Call of Duty* single-player campaign (do they still exist?) is directed, of course. You're still free to choose, free to approach things differently, even free to explore the limited wilderness, should you so choose. But the focus here is on interaction, on sussing out what it is that makes people tick, figuring out what they want and giving it to them (or intentionally withholding it), on losing yourself in this fantastic satire of capitalism's endgame. 🤖

Wireframe Recommends



Fallout: New Vegas

PC, MULTI
Bethesda gets *Fallout* wrong. Obsidian got it right. *New Vegas* should be the template for modern *Fallouts*, and it's still superb. Shame about the bugs and how that tarnished its early days, mind.



KOTOR II: The Sith Lords

PC, XBOX
The original is a classic, the sequel an overlooked gem. Building on what the first *Star Wars* tie-in presented was never going to be easy, but Obsidian managed it. Shame about the bugs and that chunk of missing story, mind.



Alpha Protocol

PC, PS3, X360
One of the most cruelly underrated games ever made, *Alpha Protocol* was home to some of the finest spy fiction ever seen in games. Shame about the bugs and that overpowered pistol, mind.

Backwards compatible

WRITTEN BY IAN 'DYNAMO' DRANSFIELD



Keeping control

In last issue's opening scrawl on the state of modern retro, I intentionally avoided any chat about today's array of controllers for your old machines, in part because of space concerns, but also so it could be saved for its own mini-section here. See, you go back to your old machines and are met by something you forgot about from your younger years: wires. *Short wires.* Surely there must be a way around this?

Hark! It's the sound of a million-and-one hobbyist and professional projects all answering with a deafening 'Yes, there is'. I won't go into the more shanty town solutions out there (though I have some love for the exposed PCB Bluetooth hack-job I use on the Amiga), instead focusing on a few of the bigger

names in new old pads. I have – to name just a few – Hyperkin's Admiral N64 controller, a completely wireless device that works with the original console; flashcart manufacturer Krikzz made the obscenely good Joyzz for Mega Drive; and there's Retro-Bit's Saturn controller, which also comes with a USB dongle should you want to Saturnise the games you play on PC. There's 8BitDo's plethora of bits and pieces, working across an array of devices, as well as their bespoke PCB replacements which allow you to gut your old pad and put some new, wireless bits inside. As the proud owner of an original Super Famicom pad



retrofitted to operate wirelessly, safe to say they're a great bit of work.

But the best, for us, is a piece made with care, attention, and a hell of a lot of skill: the Dreamconn+. This Bluetooth Dreamcast controller is made using an original pad, and includes rechargeable battery, a dongle, full compatibility with VMUs, rumble packs and so on, and a *built-in* VMU, as well as a few

other features. It is absolutely excellent, if not exactly cheap. With a bit of searching – and a bit of financial outlay – you can banish the wires of the past while still enjoying your original consoles. Living in the future is great.



Beauty

If the dates are to be believed, it won't be long until we can get our hands on a finished version of *Eye of the Beholder* made specifically for the Commodore 64. This project, being tackled by a team of enthusiasts headed up by one Andreas Larsson, has been in the works for a few years now, but a video posted at the end of 2019 showed the game is more or less done. And you know what? It looks

fantastic, nailing the atmosphere of the 16-bit original while boiling it down as little as possible to keep it within the C64's 8-bit constraints. Fewer colours there might be, but block-based movement and 90-degree turning is all present and accounted for, so we're looking forward to thwacking some goblins once more, on a computer we never thought we'd be able to do that on.





Virtual Virtua

The PICO-8 virtual console is a wonderful thing, and we're constantly amazed by the projects people put together inside its many constraints – from the original form of *Celeste* through to a version of *Star Fox* that runs better than the SNES original. Now we have a new one to add to the 'runs better than the original' pile: *Virtua Racing*.

It runs smoother than the Mega Drive version on which it's based, and though missing some elements at the time of writing, it's still a magnificent achievement from developer freds72. As well as playing the game, you can keep up to date on the dev's ongoing progress with *Virtua Racing Demake* right over here: wfmag.cc/VRP8

FIGHT, FIGHT, FIGHT

Bitmap Soft, publishers of new and old games for retro machines, has announced a different kind of fighting game tournament, alongside retro format developer Puddle Soft. The competition ('tournament') involves entrants creating a brand new fighting game – a one-on-one game, a scrolling brawler, and so on – specifically for 8-bit computers like the Speccy, C64, Amstrad CPC, and so on. Basically, if it's for an old computer and it involves people repeatedly hitting each other, it can enter.



Stamping ground

Royal Mail releases a lot of themed stamps, but it's the most recent one that has retro hearts all aflutter. Featuring a who's who of British gaming greats, this new collection means you're able to send a handwritten complaint to whoever it is you like complaining to the most *with a Sensible Soccer stamp*. Brilliant.

Also represented in the collection are *Elite*, *Worms*, *Wipeout*, *Tomb Raider*, *Dizzy*, *Lemmings*, *Micro Machines*, and *Populous*. Sadly no stamp with Peter Molyneux's face on it, but what can you do. A variety of sets are available now through Royal Mail's website, with prices ranging from £4 to £45.

DEV COMP 2020 BEAT'EM UP COMPETITION

Programming language, graphical style, all of that good stuff is up to the developers to decide on – though the game has to be playable on the hardware it's intended to be used on, and has to be compatible with physical media. After the 1 July closing date, winners will be decided by public vote, while the main prize announced is – at the time of writing – up to three copies of the winner's game published on physical media. Check out more details over here, and please just make *IK+ 2*: wfmag.cc/FIGHT



Dragon Buster

The double jump originated here, as Ian Dransfield explains

NAMCO / 1984 / ARCADE, MULTI

Being married to a physicist has its benefits: you're never confused as to what, exactly, Planck's constant is; you always know where you stand when it comes to ohms; and you're led to believe that, actually, gravity isn't some kind of gas or other such potential cushion to be bounced off and away from. Turns out double jumps aren't physically possible. Who knew? Certainly not us gamers, who have been seeing the fantastic feature used throughout platformers since its first appearance in 1984's *Dragon Buster*. Namco's jump-'em-up featured RPG elements, sure, but it was the hero's ability to jump – and then jump again – that really set the wheels in motion for something special.

From *Dragon Buster*, the double jump proliferated, showing up in the likes of *Sonic 3* (via the electric shield), *Banjo-Kazooie*, *Viewtiful Joe*, and plenty more platformers big and small, good and not-so-good, over the years. But why? Simple: control. A double jump introduces that element of skill, the ability to manoeuvre further, the chance to get yourself out of – or into – trouble. It proves itself time and time again, regardless of the game it's in (as long as it's done well), to be the sort of killer feature that can entirely change the way you play a game – think about how revelatory it was when you realised you could jump while riding Yoshi in *Super Mario World*, and then jump

again off the dino's back. Mind-blowing stuff, more so than any claims to have thousands of square miles of open world to explore or all the ray tracing you can carry.

None of the double-jumping shenanigans have been limited to platformers, though, and increasingly we're seeing the feature pop up in all manner of other genres. *Devil May Cry* introduced the Air Hike, plenty of cyberpunk-y titles have seen double (or sometimes just bigger) jumps introduced as part of your transhuman's cybernetic enhancements, while

Super Smash Bros. introduced almost every character as having a double jump to try and give people over the age of 16 a fighting chance to last longer than twelve seconds in a match.

When it's just plopped in there, the double jump is a bland feature

– almost a lazy one. Introduced merely as a thing you can do, and presenting the player with nothing more than... well, another thing you can do. When the double jump is considered and factored into the design, however, it becomes the true killer feature we all know and love it as. And when it's actually explained with some in-universe *thing* – Raz's psychic bubble in *Psychonauts*, say, or those robo-legs I just mentioned, maybe, it becomes even more special. Because then your physics-toting wife concedes that yes, actually, double jumps – of a fashion – *could* exist in the real world. There's still hope. 🙏

“It was the hero's ability to jump – and jump again – that really set the wheels in motion for something special”

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