ALL FORMATS
116 PAGES MONTHLY

Wireframe

LIFTING THE LID ON VIDEO GAMES

MARTHA IS DEAD

INSIDE THE THRILLER THAT AIMS TO BLUR GAMING AND REALITY

DISCO ELYSIUM

The inner workings of a modern classic

PLAY DETECTIVE

Film noir's lasting influence on video games

Issue 49 **£6** | wfmag.cc

G-MASTER™
#MONITORS4GAMERS
by iiyama

UNLEASH YOUR FULL GAMING POTENTIAL

AMD FreeSync Premium

Get the competitive edge you need to unleash your full gaming potential with the 24'' and 27'' G-Masters offering 0.8ms MPRT and 165Hz refresh rate. Armed with FreeSync Premium you can make split second decisions and forget about ghosting effects or smearing issues. The ability to adjust brightness and the dark shades with the Black Tuner delivers greater viewing performance in shadowed areas and the IPS panel technology guarantees superb image quality.

165 Hz | FAST IPS | 0.8ms MPRT | BLACK TUNER | HDMI DISPLAY PORT | USB HUB

Fixed stand versions:
24'' G2470HSU-B1 & 27'' G2770HSU-B1

Version with height adjustment:
24'' GB2470HSU-B1 & 27'' GB2770HSU-B1

Find your match at
gmaster.iiyama.com

Coping with Covid: crafting convivial online communities can help

Gaming had always been a solitary hobby of mine before we entered a global pandemic. Sure, I had dabbled in the solo queue of *Overwatch* a few years ago, but as an 18-year-old woman on voice chat, I'm sure you can imagine how that often went. But back in the UK's first lockdown in 2020, one of my favourite art criticism sites, The White Pube, put out its very first video game review. Gabrielle de la Puente had written the most beautiful essay on Santa Monica Studio's 2018 *God of War* and how gaming had been a saviour for her in lockdown. After reading, I quickly reached out via Twitter, suggested upfront that we should be friends (hey, life is short!), and we ended up talking about the game for nearly two hours over Zoom.

Following our conversation – and prompts from The White Pube's collective readership asking for a massive game of *Among Us* – Gabrielle created a Discord server; a space we lovingly call 'The Game Pube'. The server has since grown into a tight-knit and wholesome community, with channels for specific games, sharing art, opportunities, a book club, and more. Most importantly though, I have it to thank for making me finally feel comfortable in online gaming communities.

Queuing up for a competitive *Overwatch* match alone once terrified me, but now that I have a group of friends to play with, it's something I actually look forward to most nights. We can have a strategy, communicate well, and cheer each other on when someone gets Play of The Game. Outside of the games, though, these people have genuinely become some of my closest friends. Some I knew vaguely through Twitter or mutual acquaintances, now we chat about our work, our day, our families, and we're even planning a classic Zoom quiz soon so we can actually see each other.

MILLICENT THOMAS

Millicent is social & content lead at Into Games, the UK games industry careers service, and she works in PR for cool top-secret games on the side.

#49

If it wasn't for The White Pube and the community I have found on their Discord, I don't know how I would have coped this past year. Like so many of us, my whole life is now lived through a single screen. I'm doing two jobs on my computer, writing emails and organising projects, and I'm also trying to finish my degree remotely – somehow managing group assignments and industry briefs from one corner of my bedroom. But now, like the classic meme, I can switch from bad screen to good screen with just a single switch on my cheap Amazon HDMI splitter and join my friends for some rounds of *Dead by Daylight*. We can fix some generators and run for our lives from Michael Myers or Pyramid Head and try to forget that we're all living through some of the worst years of our lives.

We're all jumping between hobbies to find a distraction from the unprecedented historical event festering around us – whether it's banana bread, sourdough, knitting, podcasting, or *Animal Crossing: New Horizons*. But I'm sure it's not just me who can safely say their social battery is almost non-existent. I want to reach out to friends, sure, but I can't take another call that goes something like "How are you doing?", "Not bad, just taking each day as it comes, you know?", "Yeah, yeah, same here". We have literally nothing to say, we're all just doing our best. But to hop on a call to talk team composition as we try and move a payload or take an objective? It's so much easier.

So I guess this is a thank you letter of sorts, to The White Pube, *Overwatch*, *Dead by Daylight*, and the friends I made along the way. It will be over one day, and we'll come out the other end of all this – the silver lining is that we'll still have the communities that we've built to cope.

Contents

Attract mode

06. Martha is Dead
LKA gives us an early look at its disturbing period thriller

12. Hidden Deep
There'll be no accusations, just terrifying aliens under the sea

14. Slipways
The space strategy game that avoids the spectre of war

18. News
Another wry glance at the month's video game happenings

22. Letters
Your latest thoughts, feedback, and general ranting

24. Incoming
Winemaking, tactical cats in space, and farming with foxes

Interface

28. Game Noir
Exploring the cinematic genre's impact on video games

34. Lottie Bevan
Why don't more developers make detective adventures?

38. Side paths
How designers make straying from the beaten track fun

68. AFTERLIFE
A blackly comic Argentine RPG about the hereafter

70. Access Granted
Towards better representation for those on the autistic spectrum

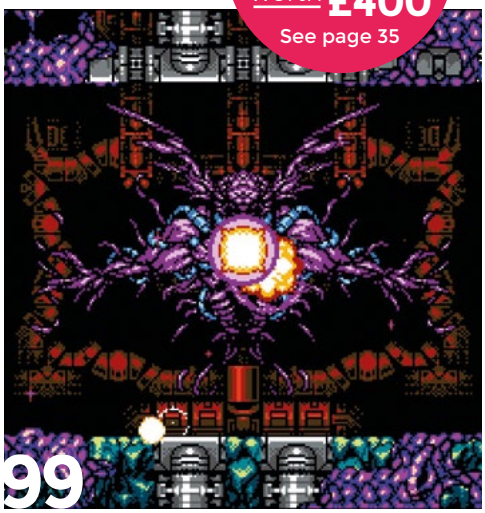
84. Sega Dreamcast
Saluting the late, great 128-bit console and its games

90. Steve McNeil
More thoughts from Britain's foremost gaming personality

50

WIN
An iiyama gaming monitor worth **£400**
See page 35

84



99

Toolbox

48. Video game storytelling
A few tips on keeping your creative writing spark alive

50. Retro Connect
Old consoles to modern TVs: the ultimate guide

56. Disco Elysium
An inside look at how its stunning city locations were crafted

66. Source Code
Make some crumbly platforms straight out of Manic Miner

Rated

92. Curse of the Dead Gods
Choices have consequences in a deadly roguelike

99. Cyber Shadow
Ninja Gaiden-esque action, with difficulty to match

100. The Medium
A psychological horror that's neither small nor large

104. Backwards compatible
DOOM ports, Game Gears, and other retro gubbins

WELCOME

Video games have been in thrall to cinema from pretty much the beginning. *Space Invaders* might have had a military theme had the arrival of *Star Wars* not prompted its creator to pivot to a sci-fi theme, for example. Even today, at a time where the video game industry has long since eclipsed cinema in financial terms, 20th-century movies still cast a long shadow: it's hard to imagine *Cyberpunk 2077* looking quite the same without *Blade Runner*. But this month, prompted by my interview with LKA's Luca Dalcò (see page 6), I've been wondering: should more developers look to theatre for inspiration?

As Dalcò notes, there are a number of parallels between games and theatre. Theatre directors can create a set and decide where to put the props and actors, but they can't control where the viewer looks, which is a lot like a video game. Similarly, theatre is dynamic where cinema is fixed: a theatrical performance can be different each time, much like a player trying something different in each playthrough.

In other words, there's perhaps as much inspirational value for developers in plays and musicals as the work of movie directors like Ridley Scott and James Cameron. But what do you think? Are games too in thrall to movies – particularly the same ones whose names pop up time and again? Is there a particular play or musical that would make a great video game? Let us know your thoughts at **wfmag.cc/hello**, and we might publish your reply in next month's issue.

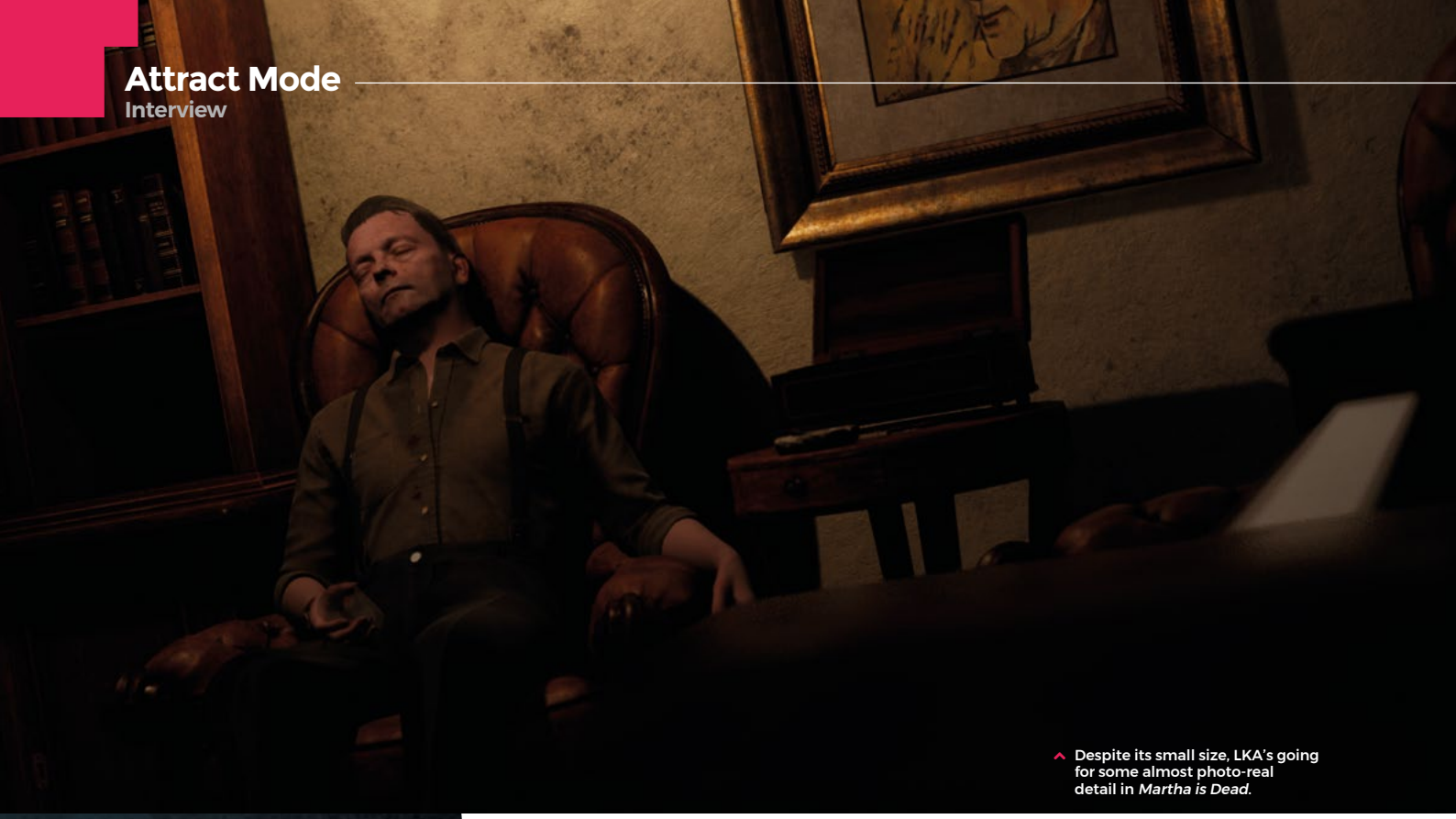
Ryan Lambie
Editor

A DEATH IN TUSCANY

LKA GAMES' LUCA DALCÒ TAKES US BEHIND THE SCENES ON HIS STUDIO'S HAUNTING PERIOD THRILLER, MARTHA IS DEAD

One minute you're out in the Tuscan sun, taking photographs of birds with your trusty box camera. The next, you're tumbling down a muddy track surrounded by woodland, the way ahead illuminated by your torch, as something spectral lurks in the trees. Such are the stark contrasts offered by *Martha is Dead*, the next game from Italian studio, LKA. You may recall its debut, 2016's *The Town of Light*: a quiet, unforgettably poignant, and interactive drama, for want of a better description, about a woman's experiences in the archaic mental healthcare system of the early 20th century. That game bore the limitations of a small and new indie team, but it was nevertheless an impeccably researched and moving experience.

LKA's attempting something even more ambitious with *Martha is Dead*. Like *The Town of Light*, it's set in Tuscany around the 1940s, but this time deals with the impact of war on a pair of young women. It also sees the studio venture into more overt thriller territory; you play Giulia, a woman attempting to come to terms with the violent death of her twin sister – the Martha of the title – and in the process, finding out exactly how and why her sibling came to such a grisly end. Where *The Town of Light* was more about soaking up and interacting with background details, *Martha is Dead* will give the player more to do as they journey towards the truth: the aforementioned camera is a key device in the game, used to record the world around you and also obtain vital pieces of evidence, and there are numerous other puzzles and locked areas to solve or uncover. There are also action sequences, of sorts, to be found here; in the hands-off demo shown to us in early March, we saw tense moments where Giuila has to leap over logs and other obstacles as she barrels down a benighted woodland path. ➔



Despite its small size, LKA's going for some almost photo-real detail in *Martha is Dead*.

TURN ON THE NIGHT

An early section of the game demo we were shown in early March provided a glimpse of the surprisingly expansive digital Tuscany that LKA is creating for *Martha is Dead*. Where one chapter took place in broad daylight, and introduced us to that detailed photo-taking system, the second chapter plunges us into darkness, and suddenly those lush Italian hills don't look quite so welcoming. As Giulia creeps forward, torch in hand, towards a foggy lake where her sister's body was found, she encounters all kinds of eeriness that we won't spoil here. "I love the night," Giulia says at one point, "but the night also scares me." We definitely agree with the latter part.

Martha is Dead is also a far more overtly gruesome game than LKA's first, and creative director Luca Dalcò readily agrees that there's content in here that some players will find disturbing. But far from a jump-scare horror, LKA's embarking on something deeper and more meaningful: it's a depiction, backed up by historical research, of the horrors ordinary women experienced in the midst of World War II. It's another challenging game from LKA, then, and with its almost photo-real depiction of central Italy circa 1944, an ambitious undertaking for such a small team. To find out more, we caught up with Dalcò who, via a translator, tells us all about *Martha is Dead*, and how a background in theatre has set him up to make this forthcoming interactive thriller...

What was the jumping-off point for *Martha*? How did it get started?

Luca: The idea partially came from the amount of research my team and I did for *The Town of Light*. This was the initial point that started the game, but *Martha is Dead* isn't connected to *The Town of Light* – it's not a sequel.

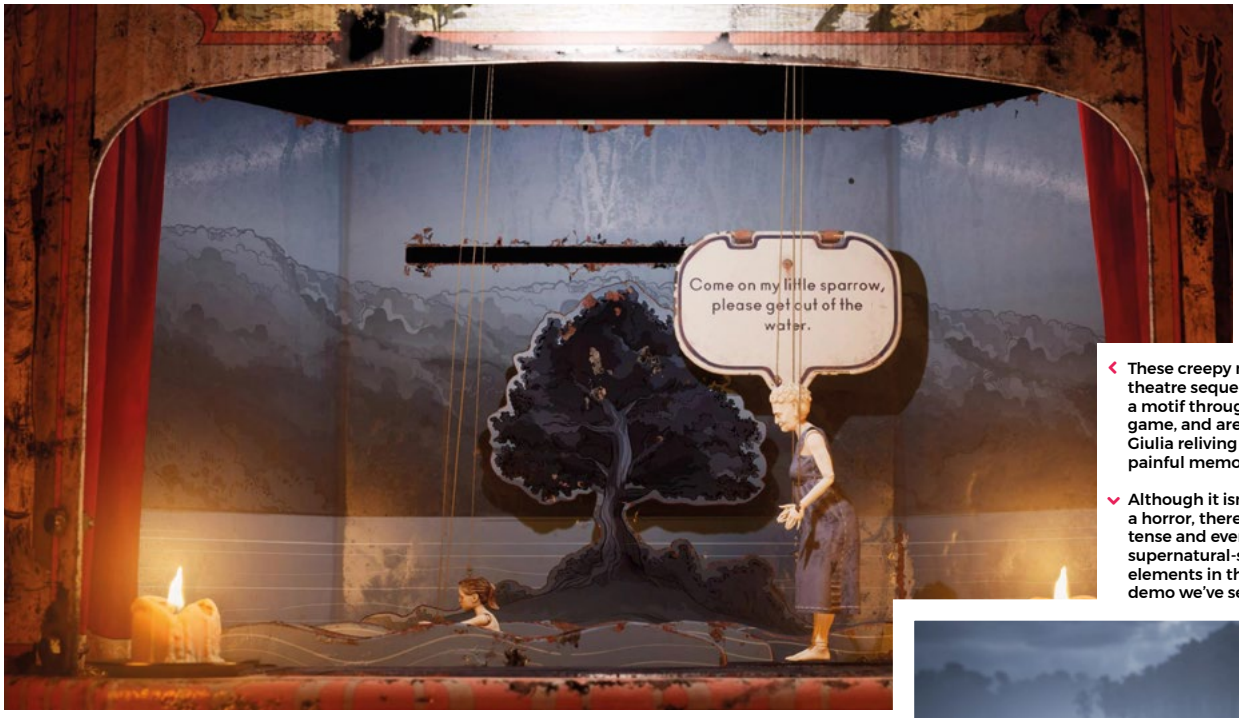
But there was a lot of research into historical data and the setting, so all this material kicked off the idea of *Martha is Dead*. There's a kind of parallel between *The Town of Light*, which looked into the history of the mental health system, and *Martha is Dead*, where the main topic is war – it's about the fragility of people in the face of war, just as in *The Town of Light* there's the fragility of the central character and her challenges with mental health.

There was a desire to continue a journey that was started with *The Town of Light*, but take it in a different direction. *Martha is Dead* is a psychological thriller, which is very different from *The Town of Light*, which was a bit different, being about the history of mental health.

Is there a political side to the game as well, given the turbulent time Italy was going through during World War II?

One of the things that appears on the social side of the game is the difficulty of being a young woman in the 1940s, [and] how you lived your life – that's what comes out as a message, essentially. In that moment in Tuscany, the war was just arriving there, and this provides a setting to show how women were treated, and how they lived their daily lives with the war going on.

What the studio decided to do is balance the point of view of the German and Allied troops. The game is seen through the eyes of two little girls. So, for a little girl, she probably doesn't have a real distinction between the Allies and the German troops – she probably doesn't know the difference. So to answer your question, there is a political background



These creepy marionette theatre sequences are a motif through the game, and are a means of Giulia reliving her often painful memories.

Although it isn't billed as a horror, there are some tense and even supernatural-seeming elements in the hands-off demo we've seen.

that is supported by fact, things that actually happened, but the story is really focused on the main character.

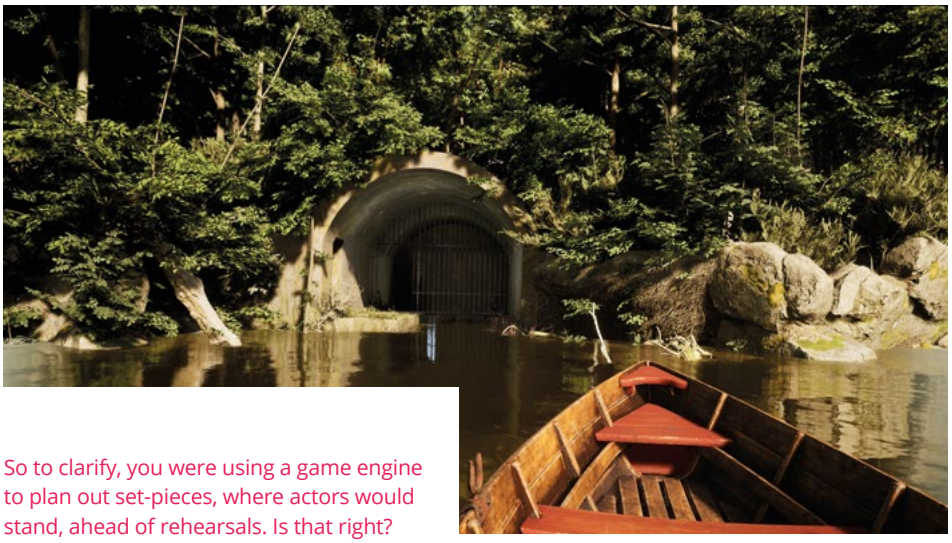
You describe the game as a thriller – but is it also a kind of murder mystery, would you say?
The trauma of losing the sister is what unleashes the will to solve this murder mystery. But beneath this unfolds a lot of different layers – further mysteries. So the main objective, yes, is a murder mystery, and it's trauma that unleashes the investigation, basically.

Compared to *The Town of Light*, this feels like a step further, visually: it looks incredibly detailed. What are the challenges of that as an indie developer?
The first step was moving platforms from Unity to Unreal Engine. That was a big step. The second challenge was balancing the indoor scenes with the outdoor environments, especially when you talk about lighting – it was quite challenging. Another step was balancing the gameplay – the gameplay in *Martha is Dead* is much more complex than *The Town of Light*, so there is a lot of work behind the balancing of [that].

Photography's clearly a key element of the game. So how does it feed into the experience as a whole? Are we essentially using the camera to gather evidence?
The camera is an important element, but it's just one element in the gameplay loop. There's also a lot of things you can do with the camera – it can be used outside of the main gameplay mechanics of finding clues and stuff. The player can actually use it as a real camera that's recreated with a lot of attention to detail. So there are all these elements that are important to the gameplay, but the camera is one of the most important ones. The idea is to steer away from these old concepts of the walking simulator, if you like – there's different stuff to do. I personally love walking simulators, but I also feel that the traditional walking simulators have said what they have to say, so one of the challenges is to deliver a strong narrative.

"THE FIRST STEP WAS MOVING FROM UNITY TO UNREAL ENGINE"

There's some quite gruesome imagery in the game. How grim does the game get, and what's the motivation behind those images? Is it to show the horror of war and the mistreatment of women? Is that the thinking behind it?
Firstly, yes, the game's going to have quite a significant amount of potentially disturbing imagery. But we don't use these moments to shock the player – that wasn't the intention. It's more to tell a story than to shock. There are no jump scares in the game – jump scares are a very easy tool if you want to make a horror game, and it's easy to implement if you want to make someone go, 'Ahh!' But it's something we deliberately haven't used. These strong visuals are used to describe the feelings that are inside the main character – the trauma that she feels during the game.



You came from a theatre background, so can you talk a bit about how you got into the video games industry. Are there things from theatre that you're bringing to *Martha*?

There are two main elements that came from the theatrical background. I was managing very complex situations and meeting deadlines. When there's a première in a theatre, there's a première – there's no way you can delay [it]. So those are two areas of expertise that I can bring to the table.

I also started using a game engine [Unity] to basically create scenography [the design of theatrical scenery – Ed] for the Ravenna Festival and the Washington [National] Opera. Those were massive theatres, so I started using a game engine to reduce the number of rehearsals and simulate these, because there's a cost aspect – the theatre was using a lot of investment money, so the game engine allowed me to be more efficient in terms of cost and time.

Having said that, I have always loved video games. I was also [previously] a university lecturer on an architecture course, and so talking with some of my students, this idea of making video games started flourishing. This is how I started developing games, and now here I am. It's a long time since the business started, but now four members of the team are former students of mine!

So to clarify, you were using a game engine to plan out set-pieces, where actors would stand, ahead of rehearsals. Is that right?

The scenography was based on the projection of really big images, so it was important to establish first how those big, backlit images worked in a theatre, but also where to position the singer and all the other human elements so that they're all working together on the stage. Instead of videoing the stage and then discussing [the results afterwards], using a game engine allowed us to see all the elements in real-time and move them straight away. Because they're on location, they already know how the whole thing's going to work.

Developers tend to be influenced by cinema. But do you think video games have more in common with theatre? You create a set, you put elements in the set, but you can't really control where the audience looks.

It's a good question. In fact, with movies, you have a movie and that's it – it's a finished product, and when it's done, it's done. With theatre, you can change things every time you go on stage, and this is similar to a player in a video game, who's trying to do things slightly different each time. One example is, when you go to watch a movie, you only have one point of view; it can change a bit if you're sitting too far to the left or too far to the right, but it basically is what it is. Theatre is different. In theatre, there's a big focus on the field of view, because in some positions you can see the face of the main character, for example, while in another position you can't.

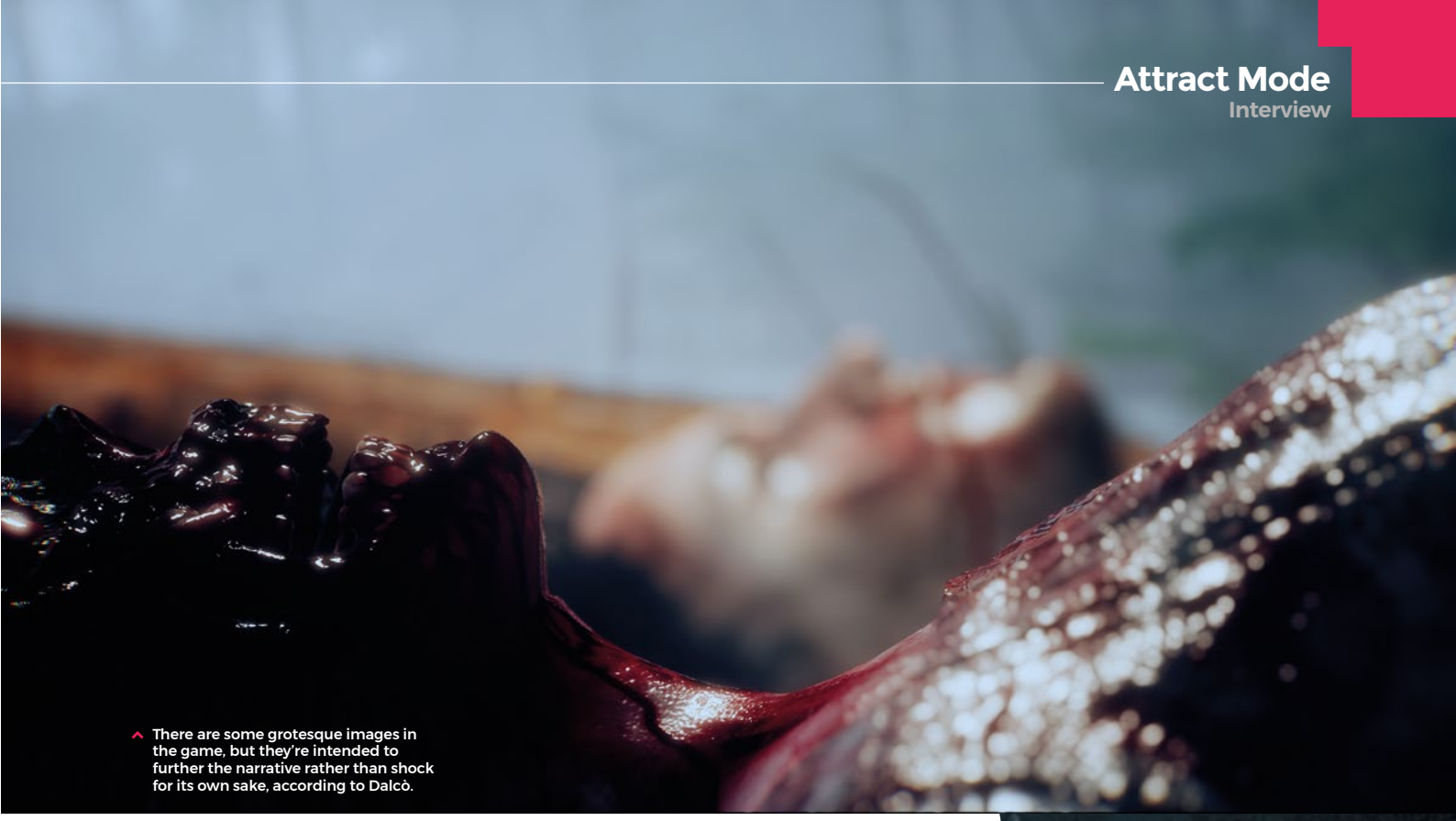
So whenever you see something in theatre, there's a lot of study about the positioning of every single element. In a more complex way, in a video game, you have to think about all the different points of view, and fields of view, the players have.

Going back to the technical side of making the game, has the team grown since *The Town of Light*, and what's been the biggest challenge of developing *Martha* so far?

The Town of Light was initially made by two people, which became nine by the very end, so still a very small team. Then we cut back to five, and now we have twelve people. The team's bigger, but also we now have more experience. When we started *The Town of Light*, we didn't know what to expect when creating a game – our team's now not just bigger, it's better.

What did you learn through the making of *The Town of Light* that you've brought over to *Martha is Dead*?

As well as solving the central mystery, much of the game is about Giulia processing the tragic death of her sister.



There are some grotesque images in the game, but they're intended to further the narrative rather than shock for its own sake, according to Dalcò.

One of the main things was, with *The Town of Light*, we had to manage a game environment that is as big as *Martha is Dead*, but the reason for this was because we didn't use the right approach. Moving onto *Martha*, we have the knowledge of how to better-manage a big game environment. Programming was also a big thing – *The Town of Light* started very small, but grew and grew and grew until it became so big. So it was kind of a disaster in terms of code and programming, because what we thought would be a small game became much bigger, so that created a bit of an issue. Only two weeks ago, we just started the Chinese and Japanese localisation for *The Town of Light*, so we had to go back and look at the code, and it was quite tragic to see how it was put together.

A developer once described games to me as 'empathy simulators'. Do you think that's true of your games, since they're rooted in human experiences and emotions?

I think this is a perfect description. [Evoking] empathy is one of the biggest goals of *Martha is Dead* as a game... *The Town of Light* had the same goal about empathy, because you end up knowing the main character in such a deep, intimate way, and you live the story through her.

Finally, is there a mood or sensation you want to leave players with once they've finished the game?

It's difficult to say without spoiling the story, but I hope this empathy I'm trying to build up with *Martha* will work well, so that the end of the game will be something quite difficult to absorb. I hope that there's a feeling of being a part of what actually happened in the war when you reach the end. One of the most beautiful comments that a player gave to me about *The Town of Light* was, "I played the game, I finished the game a few times, and I couldn't move on from what I'd experienced."

I hope that with *Martha is Dead*, there'll also be the same feeling of leaving something with the player after they've finished the game – again, it's an empathy thing. The story stays with you.

"THE TEAM'S BIGGER, BUT ALSO WE NOW HAVE MORE EXPERIENCE"

***Martha is Dead* is due for release later in 2021 on consoles and PC.**

PHOTO FINISH

More than any other recent game we can think of, *Martha is Dead* depicts the minutiae of pre-digital photography in quite mind-boggling detail. While taking pictures, you can control the focus, exposure, and aperture size. Down in the dark-room in your house's basement, you're asked to place your film under an enlarger, expose your photographic paper to light, and finally develop the photos in trays of chemicals. It's an example of the immersive attention to detail LKA are putting into the game as a whole. "Later in the game, you'll upgrade [the camera] with many different lenses," says Achim Heidelauf, the game's producer, as he demonstrates how to develop a finished print in the dark-room. "Photo-taking and photo development are a big part of the game, but they should be fun as well. It's as real as we can get, but it's still simplified so that it doesn't take too much time or become too complicated."

Hidden Deep

Developer Łukasz Kałuski takes us beneath the surface of his physics-based horror adventure

Info

GENRE
James Cameron-'em-up

FORMAT
PC / Mac / Linux / Switch / Xbox One

DEVELOPER
Cogwheel Software

PUBLISHER
Daedalic Entertainment

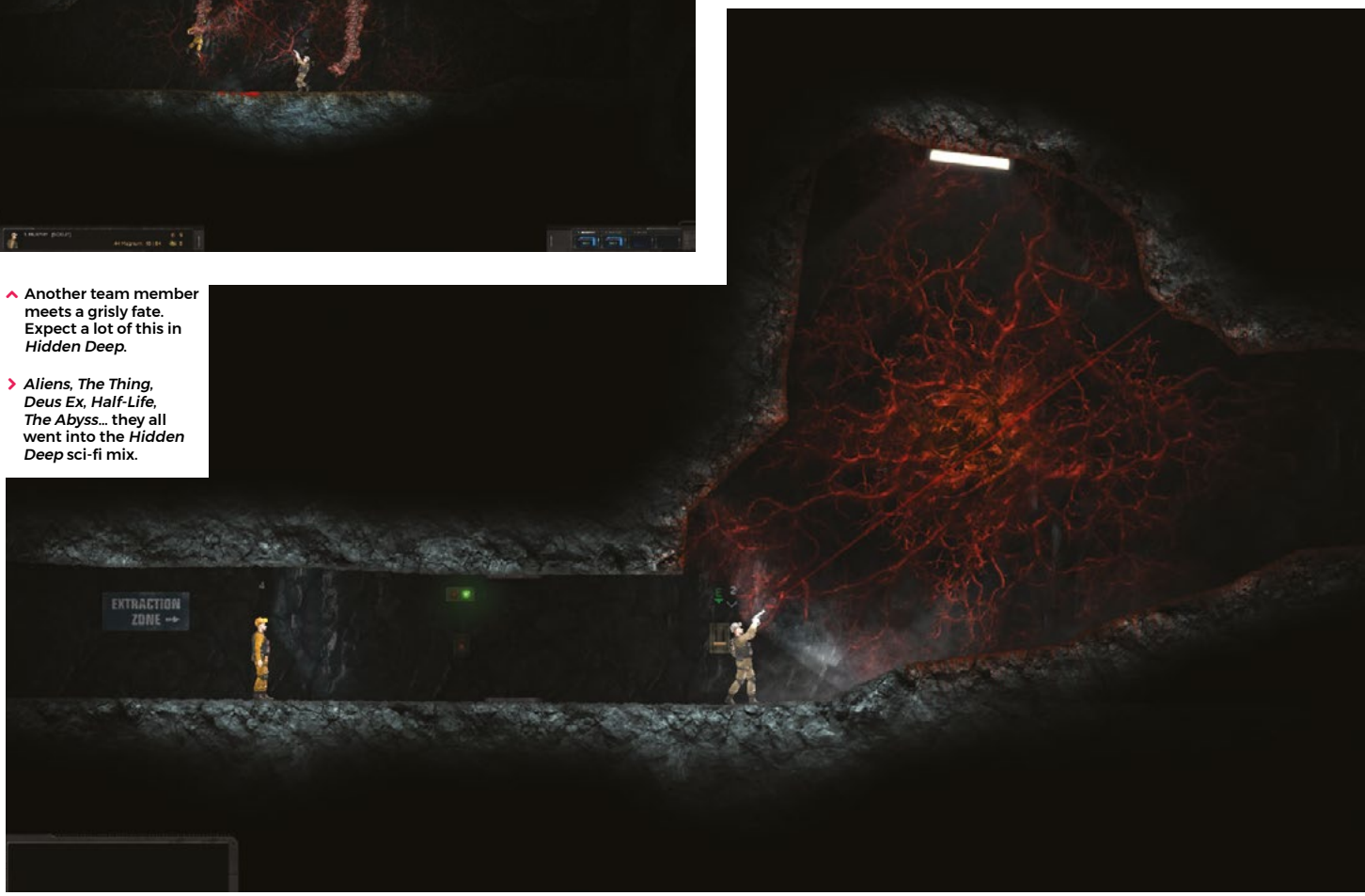
RELEASE
TBC 2021

Something dreadful stirs deep beneath the ocean floor. Heading up a search and rescue team, it's up to you to journey into a top-secret, under-sea research facility and find out just what's happened to its original occupants – and if you're as familiar with sci-fi movies like *The Thing*, *Aliens*, and *The Abyss* as solo developer Łukasz Kałuski is, then you'll know that hissing, aggressive creatures are part of the mystery.

What catches our eye about this survival-horror platformer is the physics simulation side of it: as you and your team journey into the subterranean lair, tunnels can collapse, floors might crumble and give way, or freak fires could leave you horribly injured. On the plus side, *Hidden Deep* gives you a wealth of tools to turn these physics to your advantage: a careful use of explosives in the right place will open up new passages; you can use your grappling hook to winch your way across chasms or up tight shafts (stop sniggering at the back); you can even use the abandoned diggers and cranes to bash through walls and other barriers.

Then, of course, there's the alien threat lurking in all these crumbly corridors. There are flying things that look like fleshy bats. There are maggot-like things that crawl along the ground. The game's threats are many and varied, and worst of all, they have the ability to take over human bodies without the player noticing. In video game terms, this means that one of your team members could be a deadly alien in disguise – you could even flip control to a member of the team, move them around, and not realise they're infected until it's too late. "Sometimes even the character you're actually playing will suddenly transform into the alien creature," Kałuski confirms. "It will be very cool in co-op mode, and I'm currently designing how it should work in single-player."

Hidden Deep began life around six years ago as a pure platformer – a sequel of sorts to a game



Another team member meets a grisly fate. Expect a lot of this in *Hidden Deep*.

Aliens, *The Thing*, *Deus Ex*, *Half-Life*, *The Abyss*... they all went into the *Hidden Deep* sci-fi mix.

called *Lost in Mine*, which Kałuski made for the Commodore Amiga in 1995. Based in Warsaw, Kałuski was a web developer by trade, but he was determined to return to game development as a side gig, which eventually led to him quitting his job to concentrate on *Hidden Deep* full-time. "At first, it was a just-for-fun project," he says. "I hadn't any clear idea [for the game] besides the miner exploring the mine – also, I didn't know how to code it. Back then, I was working as a web developer and spent only a tiny amount of time on my project. So my unnamed game was evolving very slowly. Three or four years later, I got to the point where it started looking interesting, and one day I decided to go full-time... I had some life savings, and most of that was spent on making this game. Then suddenly I made a deal with Daedalic, and they're supporting me now."

With publisher Daedalic Entertainment firmly in place, Kałuski has managed to make the most of the resources he has available: the 2D perspective means he can make quite a sprawling adventure game by himself, while still adding lots of details to build on the horror atmosphere. "The main advantage [of 2D] is that I can put much more content into the game – practically whatever I want to be there," he says. "On the other hand, 2D also adds more possibilities [for the player], like seeing what is around you instantly, playing with lighting, and so on. You can work more with the player's imagination, which is very powerful."

"Enemies can take over human bodies without the player noticing"

To add to the suspense, *Hidden Deep*'s levels will be procedurally generated, so you'll never know exactly what awaits you as you embark on each mission. Again, you'll have plenty of tools at your disposal – a floating scanner to help map the terrain, plus a trusty gun for close encounters – but this is still the kind of game where you should expect to die often, and under dreadful circumstances. Or, to paraphrase the old tagline from *Alien*: "In a cave under the ocean, no one can hear you scream..."

ANOTHER FLASHBACK

Although *Hidden Deep* goes for a very different vibe, Kaluski cites Amiga-era cinematic platformers *Another World* and *Flashback* as influences on his survival horror. "*Another World* was revolutionary (also for me personally)," he tells us. "I was super-immersed when I first played it in the early nineties. Everything was so well-made with that unique cinematic vibe. And that feeling of being lonely on some unknown planet – it made a huge impression on me. It was the first and probably the last game that made me cry at the end scene. And all of it was done by one young man... incredible. *Flashback* was also a very well-made game for its time. It has super-cool animations and an interesting sci-fi story, and impressed me a lot."

For(n)ever war

The fun face of colonisation: it's Slipways

Info

GENRE
3X

FORMAT
PC / Mac

DEVELOPER
Beetlewing

PUBLISHER
Beetlewing

RELEASE
Summer 2021

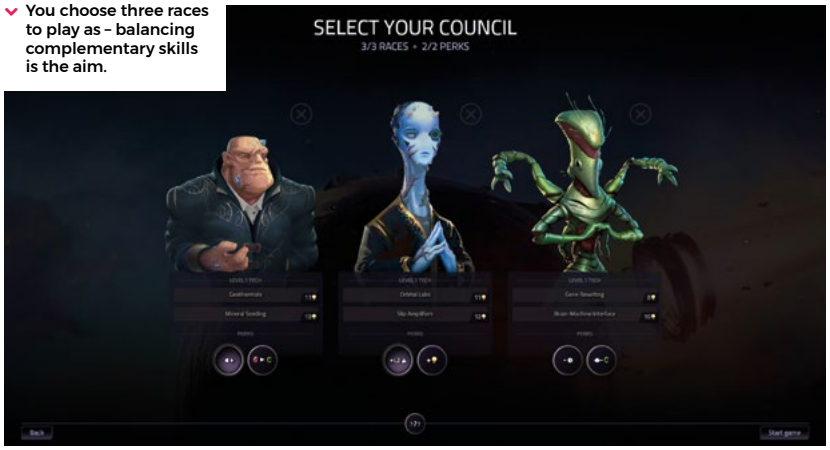
SOCIAL
@SlipwaysGame

Slipways is one of those rare games that manages to distil an experience down to its fundamentals while maintaining the full body of the experience you'd usually expect from the more bloated 4X (eXplore, eXpand, eXploit, eXterminate) genre stablemates. Where the *Galactic Civilizations* and *Endless Spaces* can take up tens of hours in a single playthrough, *Slipways* is content to ask for half an hour of your time. Where the others ask for endless, micro-level management to keep things running without your galactic empire collapsing in on itself, this little game from Polish dev Jakub Wasilewski (full-time, with help from musician Chris Donnelly and artist Johan Törnlund) limits the needs for each system to an at-a-glance shortlist. So, while the others feature intergalactic war as a cornerstone strategy, this demi-sequel to its Pico8 original absolutely does not. *Slipways*, it seems, is actually a 3X game – dumping the 'exterminate' aspect out the nearest airlock.

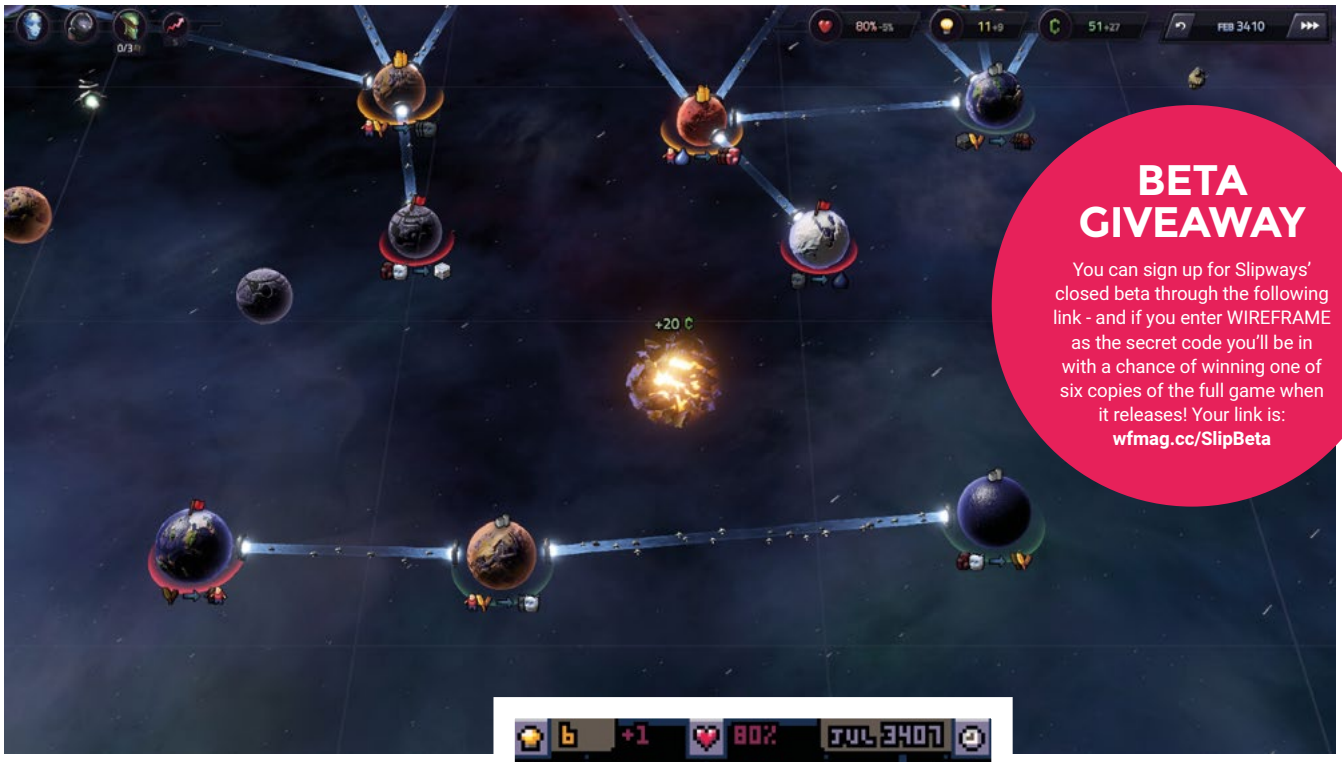
"Combat can be a giant albatross around the neck for big, economy-focused games," explains Wasilewski. "Many times, working through a big war after ten hours of gameplay is just watching a foregone conclusion unfold, with a lot of busywork and micromanagement required to see it through. At this point in the game, you're often just going through the motions. And it's even worse when the foregone conclusion is 'You lose, better luck next time'."

But the developer's reasons stretch further than just mechanical reasons, with more philosophical thinking entering the fray. "There is also a broader argument for leaving military out, and that's rejecting the idea that space expansion has to mirror our unfortunate history of war and conflict," says Wasilewski. "There's something sad about most games imagining the galaxy being forever torn by war, and it bothers me even more that it's usually war along species lines – as if it's somehow impossible for sentient beings of different species to work together."

It's not that *Slipways* began life as an interstellar anti-war campaigning tool, of course



You choose three races to play as – balancing complementary skills is the aim.



BETA GIVEAWAY

You can sign up for Slipways' closed beta through the following link - and if you enter WIREFRAME as the secret code you'll be in with a chance of winning one of six copies of the full game when it releases! Your link is: **wfmag.cc/SlipBeta**

Later technologies can fundamentally alter your style of play, like the ability to detonate uninhabited planets at will.

– it developed from a straightforward puzzle idea Wasilewski came up with; one that both sets the core challenge of the entire game in motion and gives it a name. You begin in uncharted space, pinging out probes to discover new planets you might settle on. Each planet has at least one item it needs, and at least one item it produces. Planets can be linked with the titular slipways – so A needs B, B needs C, C needs A, you connect them all up with two-way space-based highways in order to meet the needs of your growing civilisation. Simple, and easy, and *oh how it escalates* from there. No slipways can cross over, meaning there has to be a clear line of sight from one system to another. Distance factors in. Needs both change and increase. Happiness is a factor. Money needs to be managed. Research has to be carefully selected. Species-specific traits prioritised. It seems so basic at first, but *Slipways* soon reveals itself to be a puzzle of magnificent depth – and deep satisfaction comes from trying to wrap your head around it each new playthrough.

"Combat can be an albatross around the neck of big, economy-focused games"

The original version of *Slipways* is still up on Itch.io, and offers a fantastic glimpse into the fine qualities of the bigger game.

While that does sound like a lot, you can ease yourself into things – as well as using a robust, snappy, and delightfully non-mandatory tutorial system to get to grips with things. "The current video tutorial is something that materialised after I scrapped a different approach that very much felt like something 'to sit through'!" Wasilewski says. "It was detailed, boring, and much too long for a game intended to be light and quick to get into. In the end, I went to the same questions that steered the design of the game itself: What's the core idea I want to get across? How can I deliver this idea with a ➔

PROBING QUESTIONS

There's a palpable joy in pinging out probes in *Slipways*, each click and drag satisfyingly accompanied by the right kinds of sounds and visual feedback that makes an utterly banal action *satisfying*. As Wasilewski explains, this isn't at all by accident. "I think strategy games often overlook the user experience and the 'kinetic' part of it in particular," he says. "There is so much to be gained by making sure all the actions you can perform in the game are actually fun to do on a basic, visceral level, regardless of their strategic implications. *Hearthstone* was a big inspiration in that regard. Its interface design is similarly focused on making every interaction feel right, and it's a giant, often overlooked edge that it has on other digital card games."

Worlds become more successful the more their needs are met – and the more their needs are met, the more needs they develop.

LONELY UNIVERSE

For the most part, Wasilewski is working solo on *Slipways*. He admits to finding the process "both exhilarating and exhausting", with events like the Steam Game Festival – where *Slipways* was a standout – offering its own unique challenges that arrive with the public both able to play the game and to offer feedback on it. But if it was all bad, nobody would work like this. "I'm in full control of the creative process and being a single person paradoxically helps me work more quickly sometimes," Wasilewski says. "If something in the game's design needs to be changed, I don't have to discuss my ideas with the UX person, the 3D guy, and the engine programmer. They're all me, and they're already on board."

minimum of time investment and busywork? The purpose of the tutorial is to get you playing quickly and teach only what you need to have fun – details can be left for later."

This approach – focusing on the fun, pretty much – has been core to the development of *Slipways*, and it shows in just how snappy it is to get into things. But with complexity does come a need for balance, and that's something Wasilewski has worked just as hard to achieve. "It is a challenge, especially since so much of the game's technology is centred around rule-breaking," he says. "There are only a few 'You get +X% something' techs in the game. Most of them are more along the lines of 'You can now move planets at will, go see what that does to your plans'. I'm afraid there is no magic formula here. Balancing means letting many testers of various skill levels play a lot, then listening hard to their feedback to see the through lines. I'm sure I'll be working on balance right until the release, and probably beyond."

"So much of the game's technology is centred around rule-breaking"

It's been an iterative process from day one – the first version of *Slipways* was actually made for PICO-8, and is still available on itch.io to play for those who want a taste of the full-fat version (**wfmag.cc/Slipitch**). Going back to that early version, you're met with the foundational complexities that have carried over perfectly to the 'main' version of the game – it all shows just how solid an idea the entire concept is based around. "The game went through a lot of iterations, since that's the only way to do good game design," Wasilewski says. "But I was lucky to have found the right core components early on: the slipways, the selectable industries for colonies, and the probe scan for exploration. This core stayed mostly unchanged while the other systems in the game changed around it, in some cases going through multiple, very different versions."

And this, dear reader, is about as good as we got at *Slipways* in a couple of weeks' play. Back to the drawing board/ slipway plan.

In fact, Wasilewski sees the personal computer release of *Slipways* as a sequel of sorts to the pay-what-you-want PICO-8 game – he has certainly approached development in a similar fashion.

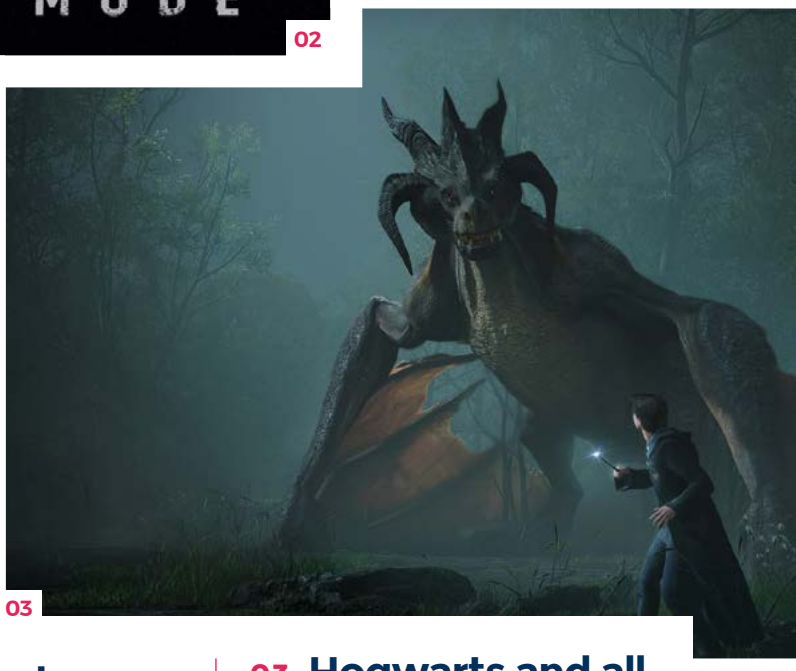
"The challenge with sequels," he explains, "is that you want to add things to make the game more varied and interesting, but avoid smothering the basics that made the original great." The need to grow and improve has inevitably led to "design cul-de-sacs", in the developer's words, with approaches like the main game being one long, multi-sector run, with persistent technology upgrades dropped after a fair bit of time had been put into it. "[It] was just not what the game wanted to be," Wasilewski admits. And on playing the game – and playing it more and more – it's clear he's on the right path. *Slipways* is utterly captivating in the best kind of way, and precisely the sort of thing there's a dedicated audience already out there for.

Slipways is avoiding Early Access, opting for a closed beta followed by a – planned – June release, with support via updates and fixes coming after. "As for my hopes [for the game]," Wasilewski says, "I keep them grounded to stay sane. My baseline is being able to support myself and work on another game without having to worry about going destitute. Anything beyond that is a bonus in my book."

Missions are another important facet; micro-challenges that can allow you to pick up a much-needed boost to cash flow or research points, say.

That was the **month that was**

02



03

01

01. Fifa Ultimate Scandal

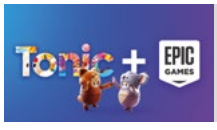
It's always good when you get a new 'gate', except when it's a social media hashtag in which case... well, #EAGate does have a certain ring to it, doesn't it? Accusations have spread that an apparent employee of the publisher has been selling *Fifa Ultimate Team* icon cards to players, bypassing the randomised card packs system of the game and netting themselves thousands of pounds in the process. These icon cards are rare to the point that you can spend thousands on packs of random cards trying to obtain them and not actually succeed, so paying a grand-plus to guarantee one is certainly going to tempt a certain type of player. EA noted it was aware of the allegations and was investigating.

02. Sumo makes a splash

Sumo Digital has officially launched an internal publishing wing to handle both games developed by the studio and titles from third-party devs. The new business is named Secret Mode, and in its early incarnation aims to help smaller projects make their way to consoles and computers around the world – titles that might otherwise have withered on the vine when looking for traditional publisher support. It's just the latest step in Sumo Group's growth, with the once-tiny team now acquiring other studios like The Chinese Room, and being heavily involved with top-tier releases like *Sackboy: A Big Adventure* on PS5.

03. Hogwarts and all

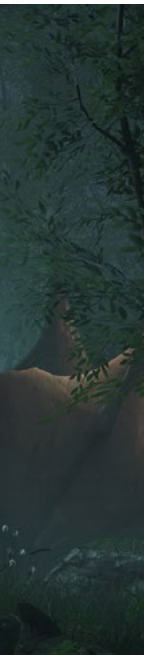
Being delayed to 2022 isn't the biggest news to come out of the *Hogwarts Legacy* camp these past few weeks, as a lead designer on the game left the project after his controversial YouTube channel was unearthed and shared publicly. Troy Leavitt made the decision to leave (or was made to make it) after it was revealed he had published a number of anti-social justice and anti-feminist videos; while not particularly popular, it was still there and – it's fair to assume – something WB Games wasn't happy with. Ah well. In better *Hogwarts*-y news, players creating their characters in the game won't be restricted by gender-specific traits, allowing for trans characters to be made. JK Rowling was unavailable for comment.

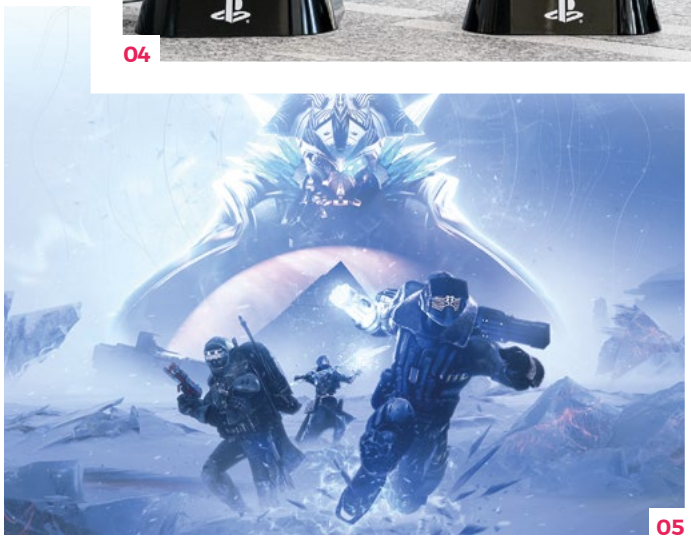


Epic Games buys *Fall Guys* dev Mediatonic; figures undisclosed

Open-source scripting language Ink reaches v1.0 – get it here: wfmag.cc/getinked

04





05

06

04. Japan Studio shrinks

Sony has scaled down its internal Japan Studio, with what remained of the dev team bundled in with *Astro's Playroom* creator, Team Asobi. The move comes, claims a report on VGC, after Japan Studio had seen a succession of not-quite-profitable-enough releases in the past few years. Staffers, both known and unknown, had been drip-dropping their way out of the team since 2020, so the rumours had been swirling for a while, but now it is indeed official: the 27-year-old studio behind the likes of *Ape Escape*, *Gravity Rush*, *The Last Guardian*, and so many more is a shell of its former self.

05. EUr destiny

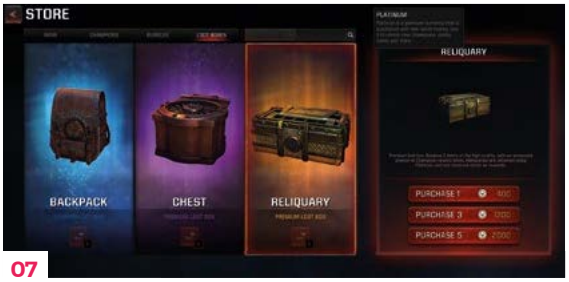
Bungie sees its own personal destiny in spreading out worldwide, with plans to open an Amsterdam-based office by 2022 revealed. The European office will serve as the heart of many publishing and marketing services, and arrived hand in hand with the news that the studio would be more than doubling the floor-space of its Washington-based HQ. This, of course, hammers home just how important – and big – *Destiny 2* is for Bungie as an ongoing concern, but also hints at the studio branching out into new properties as well as taking *Destiny* itself outside the realms of just gaming. Seems the split with Activision was *a good choice*, then.

06. Well-raised

#RaiseTheGame, the UK games industry's diversity pledge, released its first annual report outlining what progress has been made since its launch in the spring of 2020. The report covers case studies from companies signed up to the pledge such as EA, King, Xbox, and more, and says that studios have, for one, revamped recruitment practices to incentivise both more diverse candidates *and* interviewers. Elsewhere, the report highlights unconscious bias training undertaken, additional support for new workers, and the push for more diverse characters and representation within games themselves. It's all a very positive bunch of steps forward, though the path ahead remains a long one. Onwards!

EA completes Codemasters takeover after gazumping Take-Two

***Disintegration* dev V1 Interactive to shut its doors following game's poor performance**



07

09

08

07. Looting

Originally, it was thought Germany was to slap an 18-plus rating on any game featuring loot box mechanics, but this was soon downgraded – or clarified, really – to say games with 'cost traps' in them would instead feature a content warning. It's certainly a positive step to help regulate the unchecked spread of gambling mechanics in video games that are open for anyone to play, and hopefully can set us on the path to recovering from trying to make children literal gambling addicts. Maybe. Possibly. Meanwhile, a report from research company Juniper pegs loot box earnings at £14.3 *billion* by 2025, so expect plenty of lobbying and pushback to maintain the status quo from publishers keen on the mechanic.

08. CONSUME

First up: look at the image to go with this story. Isn't it wonderful? Ah, the world of free stock photography. Anyway, sales of video games in the UK in 2020 were 85% digital, hammering home two things: one, the rise of digital continues, and two, something happened in 2020 to stop people from going to shops while at the same time making them seek out home-based entertainment products more. £4.4 billion in total was spent on video games – 48% of all entertainment spending last year – with digital sales seeing a 19.7% rise over 2019, and even physical sales upping by 7.2%. These game things are probably sticking around for a while.

09. Wham-pyre

Vampire: The Masquerade – Bloodlines 2 has been delayed from 2021 to an unspecified point in the future, with developer Hardsuit Labs shown the door by publisher Paradox Interactive. In a statement released on social media, the publisher wrote: "In order to meet our goals for [the game], we've come to the conclusion that a change is needed and, as a result, more development time is required." Originally in production at Hardsuit since 2016, the game was delayed from its planned 2020 release and, now, from its 2021 launch – it's set to release in 2022 at the earliest. And don't count on it. It's a shame, but if it's the move Paradox needed to make, it could all work out in the end.

CCP Games CEO, Hilmar Veigar Pétursson, given massive sword for 20th anniversary

Super Nintendo World in Orlando, Florida, still on the cards – but delayed to 2025

11

10

10. Common sense

The right to repair is increasingly a big part of discussion when it comes to the appliances and tech we have in our homes, and iFixit released a video on the DualSense controller that highlighted just why this is the case. Basically, the controller is *technically* good for around 417 hours of play before it starts failing. That's not to say it'll disintegrate in your hands, but that certain components in the pad are only rated for x amount of clicks/twists/swishes of the thumb, so after that rough time frame, you may well start to see degradation. As such, it helps to know how to fix things yourself, so... here's the video: **wfmag.cc/fixit**.

11. Anthemic

Anthem won't receive its vaunted *Next* instalment, EA revealed, with the planned major update being unceremoniously thrown out and all work on actively upgrading the game – beyond necessary small updates/bug fixes – being halted. The pandemic was blamed, with a blog post from BioWare's Christian Dailey stating: "Working from home during the pandemic has had an impact on our productivity and not everything we had planned as a studio before Covid-19 can be accomplished without putting undue stress on our teams." In other EA news, the upcoming *Dragon Age 4* is said to have originally been akin to *Anthem*, except with a fantasy setting. Well, that's all changed after the failure of the *Iron Man* simulator, with BioWare's long-running series reverting instead to a single-player-only RPG. Some good comes out of this, then.

12

12. (You can still) Win!

There's still time to enter our fantastic competition held in conjunction with FUZE Technologies – at least, that is, if you're reading this before the closing date of 30 April 2021. A quick reminder: use FUZE4 Nintendo Switch to make a game – any game – submit it before the deadline, and be in with a chance of winning prizes from a pool worth over £3800. Sound good? It does, doesn't it? You can find out more details, including full terms and conditions, right here: **wfmag.cc/fuze-competition**.

Switch 'Pro' rumoured to launch later in 2021; comes with OLED screen, apparently

Live action *Twisted Metal* series greenlit; *Deadpool/Zombieland* scribes to pen

Post Apocalypse

Tiny Dreamcasts, component shortages, and yet more scalping: it's your letters

Issue #48

Want to write to Wireframe? Message us at **wfmag.cc/hello** or tweet us **@wireframemag**

Scalpers Part 2

Reading the letters in the latest issue of Wireframe, and I saw Ryan Lambie's reply to the letter about the amount of scalping going on with the current generation of games consoles. While I agree with him that the fact that we've been buying consoles and games online has made a big difference, I don't agree that console manufacturers have nothing to do with this all.

Ever since Sony released the PlayStation 3 and had the ignominy of not selling out on launch date (remember that?!), it's been heavily in the manufacturer's interests to make sure that stock sells out. They're playing us. The old economic basics of scarcity driving up demand.

It's why we won't see anti-scalping laws, nor anything other than lip-service as to how to resolve the issue. It'll all be forgotten about by the time the PlayStation 6 and Xbox Super Series XYZ comes out, and the whole cycle will start again.

Ian Stone

"We won't see anti-scalping laws, nor anything other than lip-service as to how to resolve the issue"

Ryan writes:

I can't help but feel that the idea of Sony and Microsoft artificially manufacturing scarcity of their consoles is a myth. News stories about stock shortages and PlayStation 5s selling for £1500 on eBay may get shared around, but they don't help a company's bottom line. Ultimately, Sony and Microsoft need those consoles in people's houses so they'll buy games, since that's where the real money is – the consoles themselves are sold at a loss, so they've no value sat in a scalper's garage, gathering dust. In reality, a combination of supply line issues created by the global pandemic – which has also affected the PC market, as we'll see in a later letter – and a rapid move from bricks-and-mortar outlets to online stores, are more likely culprits for the shortage we've seen of late. This seems, at least to me, a more likely explanation than a firm deliberately choking off supply of a product it desperately needs to be in consumers' hands and earning money.

Mini Dreams

Hi Wireframe – any more news on the Dreamcast Mini that was rumoured last Christmas? Much obliged. I need my *Power Stone* fix.
Leanne Jones

Ryan writes:
I didn't dislike the Game Gear Micro, but as a way of celebrating Sega's 60th anniversary, it was an odd choice: too small to play for more than a couple of minutes, and too niche to even begin to sum up Sega's illustrious history as a maker of classic games and hardware. A Dreamcast Mini, though? We haven't heard any news on this front yet, but we're hoping it does happen. Get M2 involved in the emulation, stick *Power Stone*, *Bangai-O*, *Crazy Taxi*, *Rez*, *Shenmue*, *Cannon Spike*, and *Sonic Adventure* on there, and we'll be happy. Also: try not to make it so small that it's borderline unplayable, please, Sega. (For more Dreamcast love, check out Ian's tribute to the 128-bit wonder on page 84.)

It's just not PC

There's been a lot of talk in recent months about the scarcity of a – yawn – certain games console. But what about us PC gamers? For a good deal of 2020 and carrying on into 2021, there's been an ongoing shortage in quality graphics cards, with the higher end models in ridiculously short supply. Now I read that these shortages may go on well into next year, with the likes of cryptocurrency miners helping to drive the prices up of those that do become available. Processors, too, are being squeezed. The PC has been the constant platform for gaming for over 30 years now, one that's survived assorted predictions of its decline. Now it turns out the biggest threat is that those who love PC gaming and want to invest in it, simply can't.

Is this the problem, I wonder, with a platform that doesn't have a central owner to it? Because something surely has to be done.
Steven Collins

Ryan writes:
There's a semiconductor shortage right now, which compounds the issue, but still, there's a simple solution to at least part of this: put a massive global tax on cryptocurrency mining. It's terrible for the environment anyway, and just another strange thing for people to speculate on – like tulips, Marvel comics, or action figures. Sorry. I'll put my soapbox away now.

Shortcuts

Imagine this nightmare scenario: your absolute favourite retro console of all time has a game stuck inside it. So stuck that you'll have to play that game forever. We asked our good readers on Twitter: which game would that be, and why? A few of our favourite responses:

***MaBoShi* (WiiWare): it's three games in one, has local multiplayer, innovative gameplay, arcade hi-score-chasing sensibilities, beams a portable version to your Nintendo DS, and – since the closure of the Wii Shop Channel in 2019 – is in danger of being forgotten forever. But not by me! @gingerbeadman**

Rhythm Tengoku isn't glued into my GBA Micro, but it may as well be. Superb stuff. So glad a friend was kind enough to send me a copy over from Japan back in the day. (Note: please, Wireframe, don't *actually* rock up and glue the cart into my GBA Micro. Thanks.) **@CraigGrannell**

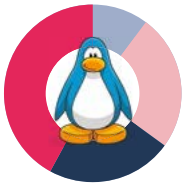
***Sonic & Knuckles*: a) I love Sonic. b) I can still insert the other *Sonic* games into *Sonic & Knuckles*. @VirtuaOllie64**

PlayStation 2 with *Gradius V*. The visuals, the soundtrack, the incredible coolness. Arcade perfection. **@KujiGhost**

***Operation Wolf* on the Master System. It would save me a fortune in spare change and I'd maybe even actually get to see the credits roll, unlike seven year-old me, who never did... I've never looked at a Light Phaser the same way since. @FuryAc3**

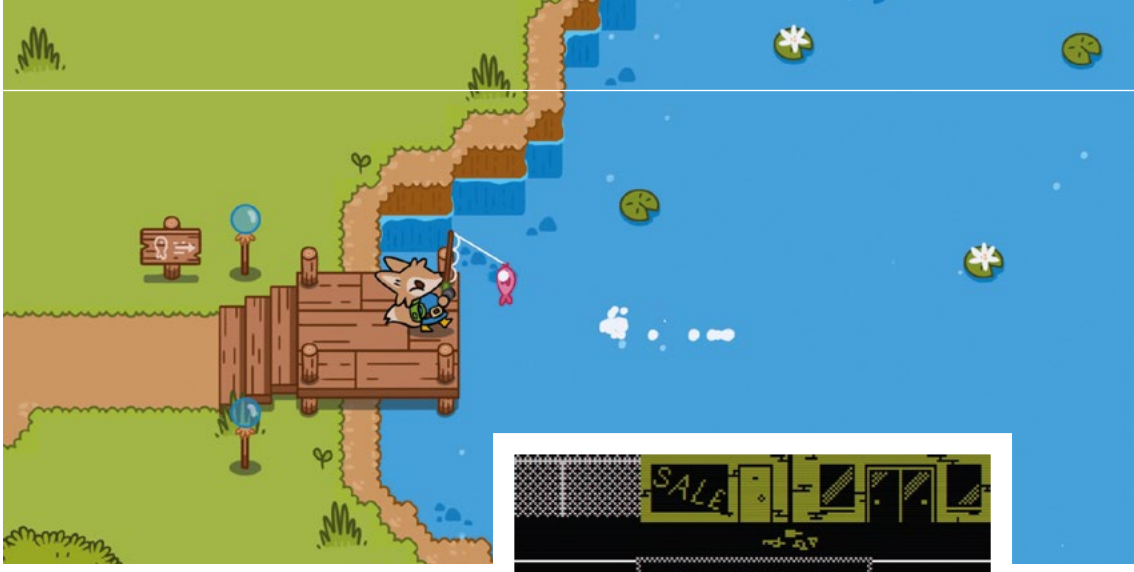
The burning question

BioWare recently announced the cancellation of *Anthem NEXT*, so we asked Twitter, which of these defunct online games would you bring back if you could? The power of the Force is as nothing compared to the allure of *Club Penguin*, it seems...



- **Club Penguin** – 41%
- **Star Wars Galaxies** – 22%
- **The Matrix Online** – 28%
- **City of Heroes** – 9%

Incoming

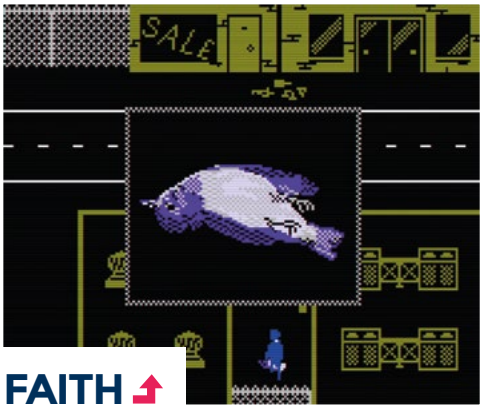


Lonesome Village

A quaint and cutesy farming/life sim starring a fox called Wes, *Lonesome Village* looks like another one of those lovely little games to just curl up and ignore the real world with. It's hard to shake the feeling, though, that the game hides something a bit darker under its surface. We might be way off here, but *we want to find out*.

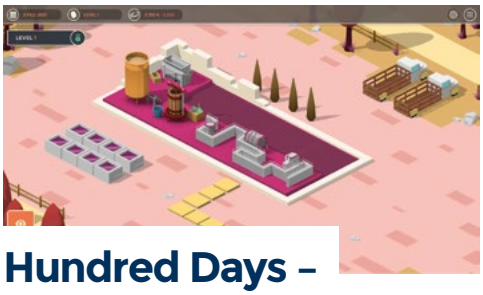
Instinction

Hashbane Interactive is bigging up its aim to have *Instinction* work as a spiritual successor of sorts to the *Dino Crisis* series, which has worked well enough to get us to pay attention to it. It's still very early days – the dev is posting animation tests and the like on its YouTube page, so there's a lot of work to go – but a first/third-person semi-open-world survival game with dinosaurs does sound, on paper, like it could be a lark.



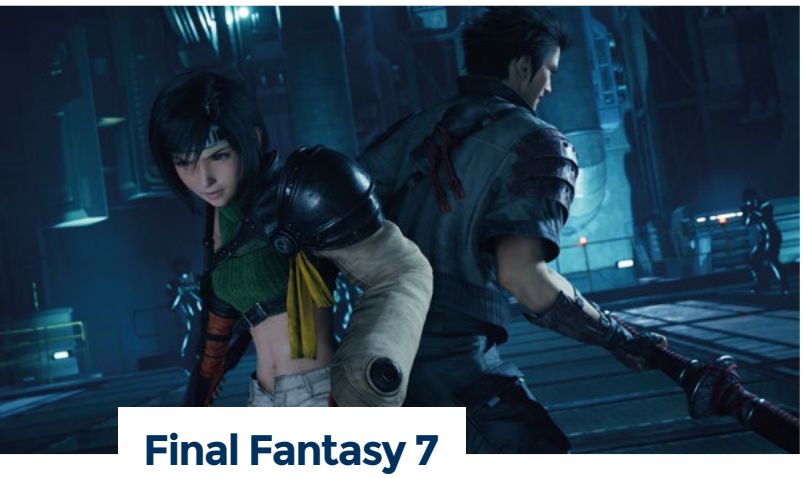
FAITH

One of our two New Blood-published titles on this month's pages, *FAITH* presents a 1980s-themed horror in the style both of 8-bit games of the era (when you're playing), and more 16-bit, *Another World*-y style visuals (in the cutscenes). It's an effective mix, both spartan in presentation but riddled with character at the same time – and definitely on the right side of creepy to carry the horror mantle. A demo's available; check it out here: **wfmag.cc/FAITH**.



Hundred Days – Winemaking Simulator

For once 'stop wine-ing' is the wrong thing to tell someone to do. No, you're wrong, that's an *excellent* pun and it should stay on these pages. So *Hundred Days – Winemaking Simulator*: it's what it says, really. That being a management simulation-style game in which you craft your vineyard's output from seed to supermarket shelf, producing the best vintages known to wherever it might be you're located. Straightforward, sim-based fun.

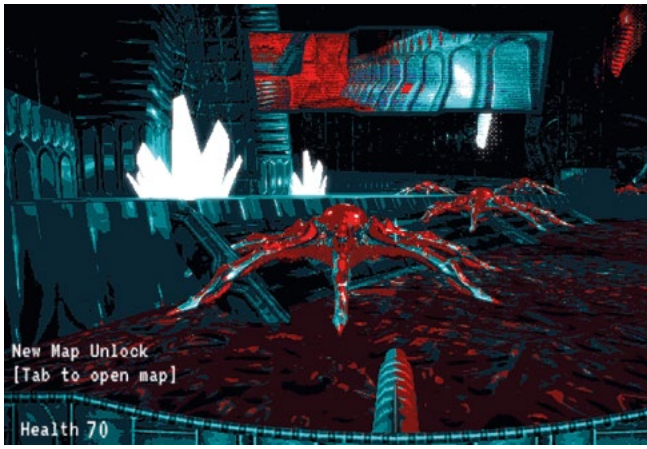


Final Fantasy 7 Remake Intergrade

It'll be a while before the second proper instalment arrives, so for this year, you'll have to do with a PS5 update/expansion to *Final Fantasy VII Remake*, subtitled *Intergrade*, because of course it is. It takes the original *Remake* and buffs everything up to a 4K sheen (or a slightly lesser sheen/60 frames per second if played in performance mode), taking advantage of the console's DualSense haptic feedback and the pacey loading afforded by the PS5's SSD. On top of those expected tweaks, though, arrives an extra episode featuring Yuffie Kisaragi in which players will control the young ninja as she infiltrates the Shinra Corporation on a quest to steal a valuable piece of materia in order to save her home village of Wutai. It's more a DVD extra than a whole new and exciting era in *FFVII Remake*, but it's still appreciated. Also appreciated is how owners of the digital version of *FFVII Remake* will be able to upgrade to *Intergrade* on PS5 for free – though the Yuffie chapter will cost extra for those going the free upgrade route.

Hellscreen

The nineties-themed shooters just don't stop – but *Hellscreen* brings a novel little twist to the formula to help it stand out. You play with a rear-view mirror on-screen and are able to fire both forwards and backwards, meaning you're engaged in multi-direction combat a lot of the time. It could be a daft gimmick, it could be revelatory, but whatever the case, it's certainly one that's caught our attention.



Bokeh Game Studio untitled horror game

Keiichiro Toyama, director of *Silent Hill*, *Siren*, and *Gravity Rush*, has revealed a *smidge* about his studio's upcoming horror game – it's untitled as of yet, and there's little to go on beyond vagaries and some concept art like the above that might not even be from the game in question. Still, when Toyama says he wants the player to feel "exhilarated" when they're encountering horror, and espouses the view that horror should "question our position, [and] make us challenge the fact we're living peacefully", you have to sit up and pay attention.

Space Cats Tactics

A mix of *FTL*-style space combat, *XCOM*-style grid-based tactical combat, and cats: it's *Space Cats Tactics*. Given what the game entails, that is a pretty solid name. Largely the work of one dev – help has come in the shape of music, sound, and 3D modelling – *Space Cats Tactics* looks like it could be a far more serious title than its cat-focused preview imagery would have you believe. It's not set to release for a while, but there is a prologue available: **wfmag.cc/Cattery**.

Anvil

Anvil is what would happen to *Borderlands* if you excised the terrible sense of humour then pulled the player camera out of your skull and made it float above the battleground. That is to say, it's a top-down vault-raiding shooter, but with added roguelike elements. There's a story behind it and some fairly snazzy visuals, but the real meat will be how good and chunky the shooting feels – balanced and honed well enough and we could have a great timesink here.

Red Solstice 2: Survivors

Shooting things with friends, but a bit more thought involved: that was the basic idea behind the original *Red Solstice*, released some seven years ago. Now the sequel looks to build on the foundations of that first game, as any good follow-up should, bringing more action, mission types, and class variability to the game. The mix of strategy and real-time action is sure to be a big draw, and the fact *Red Solstice 2* is keeping things open for up to eight people to play together is a real boon – it's never more fun blasting Zerg-like hordes than when you're doing it with friends.

Sifu

The next thing to come from *Absolver* developer Sloclap, *Sifu* will launch later in 2021 on PS5, PS4, and PC (and it's fair to expect Xbox at some point later, as happened with *Absolver*). But what is it? *Sifu* sees players take control of a young martial artist on a quest for vengeance after his family was murdered – pretty standard kung-fu cinema fare – but the twist comes in the form of a magical pendant the player wears. It protects them from death, but each time they are knocked down to zero, they come back a few years older – so you lose out on time, but gain the experience of age with each (sort of) death. The action looks to be a virtual re-creation of *The Raid* crossed with the corridor scene from *Oldboy*, so... yeah, we're keeping a big ol' eye on this one.

Gloomwood

The second of our two New Blood titles to adorn Incoming's pages, *Gloomwood* is another from the indie publisher that harks back to the classic first-person titles of the nineties – in this case, huge inspiration is taken from the incredible *Thief* games from Looking Glass Studios. For those unfamiliar (or who need reminding), this means a lot of slinking around in the darkness of a steampunk-ish city, finding the best way to sneak in, through, or around undetected while heading for whatever your objective might be. Or, you know, cocking up and getting into a stand-up fight against decidedly creepy guards who roam the streets.

From a playthrough of *Gloomwood*'s demo, available for free right now, it's easy to see the game is on the right track. There's a fantastic balance achieved between necessary darkness and toughness, to create a tone and mood, alongside more modern conveniences to help players actually get to grips with things. There was no reason for *Thief*'s style of play to go out of fashion, so it's a genuine treat to see a new take on the formula coming out sometime soon. The demo can be found here: **wfmag.cc/Gloomed**.

OUT OF THE PAST

GAME DESIGN AND THE ALLURE OF FILM NOIR

Film noir has long attracted filmmakers with its visual style and hard-boiled roots. But what draws modern game designers to work within the narrow confines of a century-old genre?

WRITTEN BY
DAN COOPER

Backbone proudly wears its noir references. Note the movie poster that nods to director Nicolas Winding Refn's neo-noir *Drive*.

Hard-bitten heroes. Unending rain over dark, brooding streets. Sultry femme fatales. Long shadows and doleful jazz. These are just some of the staples of film noir. With its rigidly archetypal characters and shadowy aesthetics, it's perhaps the most recognisable of all film genres.

Rooted in a tradition that can trace its way back through the German expressionist movement, via American hard-boiled detective literature, back to the dawn of the moving image, there's something cinematically grand about film noir. The genre has a knack for telling cynical, even Shakespearean stories about the fault lines that divide society. There are parallels between Hamlet and jaded private investigator Philip Marlowe in *The Big Sleep*: both relate the doomed ambitions of a hero undone by the corruption that surrounds him.

Games developers, meanwhile, are often drawn towards film noir. Its narrative tropes and aesthetics are clear-cut and easy to recognise for creators and players alike, making it a useful foundation for all kinds of games, from *Under a Killing Moon* to *Max Payne* to *L.A. Noire*.

Familiar though the language of film noir is, the world surrounding it has changed radically since the genre's birth in the early 20th century. This is particularly true in the video game medium, which has grown increasingly diverse and progressive, making noir, with its sullen white male protagonists and duplicitous females – many of whom are forced to use their bodies in exchange for physical protection – a problematic genre. How, then, do you marry film noir's genre staples to modern storytelling sensibilities? Wireframe spoke to a range of developers to find out.

THE NOIR CONUNDRUM

For Aleksandra Korabelnikova, co-founder of Vancouver-based developer EggNut, a journey into noir storytelling meant finding something that she could relate to within the genre's assorted tropes and conventions. As narrative designer for the upcoming noir adventure *Backbone* (see Wireframe #48), she sought a touchstone with which to connect to the genre. "Art should be personal," she says. "It should be truthful and come from the inside. And so the experience that I wanted to draw on was growing up in the dystopian state of Russia. All of those experiences, systemic oppression, and how those systems interact with each other, and how you are taught by them to behave in a certain way, and how the individual struggles to break that cycle."

> "The experience I wanted to draw on was growing up in the dystopian state of Russia"

It's a theme that sits well with the bleak world-view of film noir, rooted as it is in the hard-boiled crime novels of Great Depression-era America. For Korabelnikova, the visual style of noir, with its high-contrast style of light →

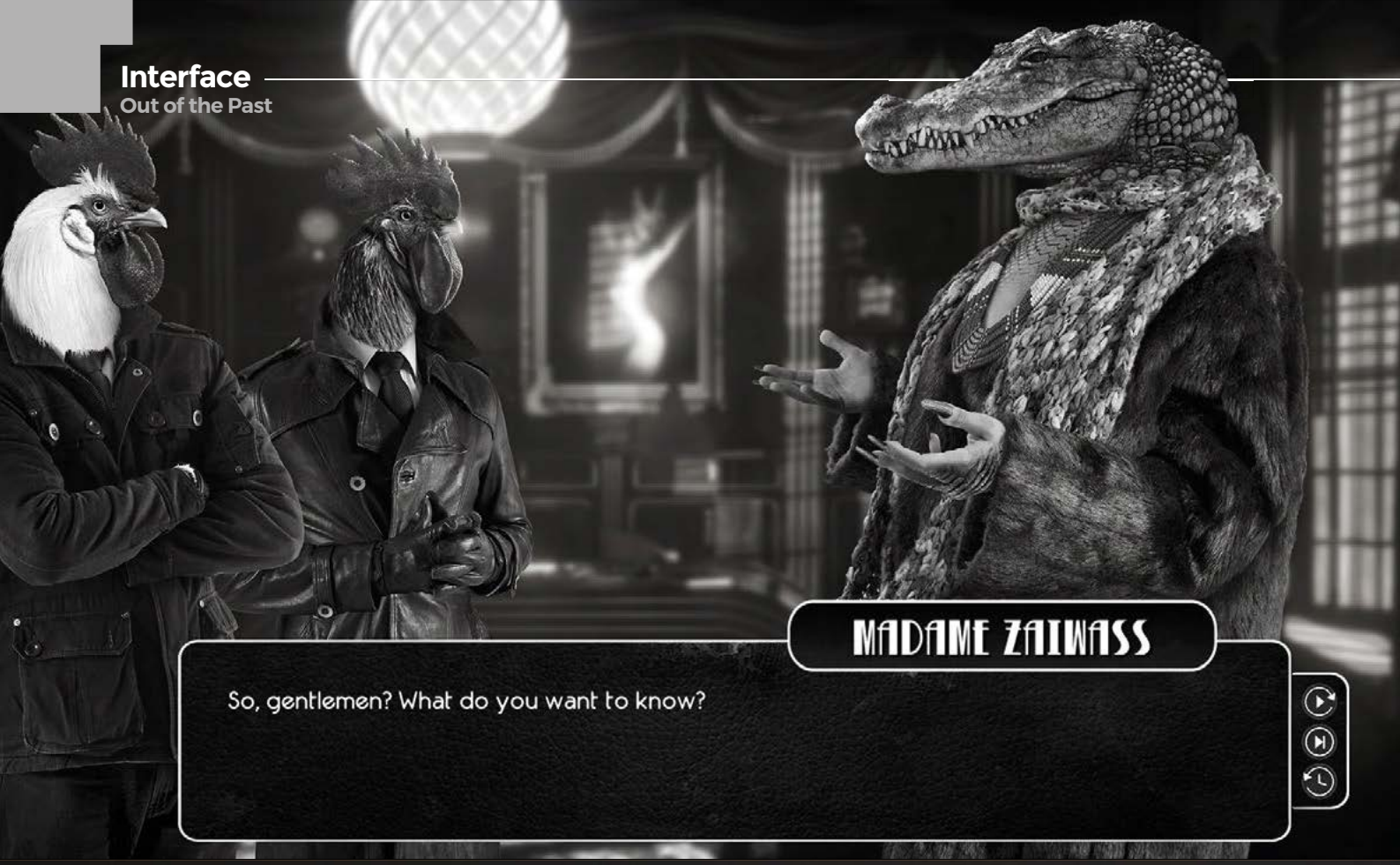
DEV NOIR

What's a noir game dev's engine of choice? Here's what they told us:

CHICKEN POLICE: "We used Unity. The main reason behind the decision was our previous experience with the engine. It suited our needs perfectly. We had some special shaders we created – for example, since the game's black and white, we packed four texture pages on one RGBA image. As for effects, shaders, and lighting, Unity coped with our needs quite well."

ACTION TIME: "We picked Unity because it has a lot of assets; instead of making systems from scratch, we can reuse and modify them to our needs. I don't know if Unity or Unreal is better, but we've stuck with Unity."

BACKBONE: "We think Unreal is really great. I think they're the best technological partner a game dev could have. If you plan to go on and make a bigger game next, then you should start with the best tool on the market."



Chicken Police's visual style pays tribute to classic noir aesthetics.

Action Time's high-contrast lighting is both scene-setting and a pivotal game mechanic.

and shadow, also translated perfectly to the struggles she's seeking to convey: "That's where the noir aesthetic came from as well. It plays to the societal contrast in Russia, of poor and rich – something we developed further through the contrast of retro pixel art and modern lighting."

Film noir's literary roots took hold in prohibition-era America, where ordinary citizens were criminalised for drinking alcohol or gambling. This systemic suppression of liberties is something that Korabelnikova drew on when crafting her noir tale. "In these situations, you can't really comprehend your own identity in the midst of it," she says. "Self-expression is so important, but it's not possible when the world is piling oppression on top of you."

Backbone's protagonist, Howard Lotor, is a classic noir staple: he's a solitary private eye. But this choice of protagonist wasn't necessarily as straightforward as you'd think. Instead, it was a decision that grew organically from a desire to serve the story and its mechanics. "Using a detective character didn't come from the old noir movies starring detectives; it developed from the game mechanic of talking to people," says Korabelnikova. "Dialogue is the main game mechanic in *Backbone*. A detective character fits because a good detective is empathetic and wants to understand people and really get under their skin. Through empathising with people, it changes him by talking to these people and understanding their lives better."

> "A good detective is empathetic and wants to understand people and really get under their skin"

THE MOTHER OF INVENTION

Inspector Waffles is another upcoming anthropomorphic noir adventure, created by solo developer Yann (see Wireframe issue 35 for more). He agrees that the detective character archetype is vital for any noir game. "The detective element is the most important in a point-and-click game," he says, "because you have to interview people to understand what's going on. I was inspired by games like *L.A. Noire*."

Both *Backbone* and *Inspector Waffles* are sumptuous games, their glorious pixel art further embellished by the high-contrast, melancholy lighting. That lighting style is a hallmark of film noir, although it was originally devised for practical rather than stylistic reasons; film studios in recession-hit, post-World War I Germany simply couldn't afford lots of bright studio lights, and thus, the minimally lit noir aesthetic was born. In the same spirit of practicality, the Indonesian development team behind *Action Time*, a top-down shooter in the

As well as employing classic noir lighting, *Backbone* leans into the lurid colours of neo-noirs like *Blade Runner* or *Blood Simple*.

style of *Hotline: Miami*, embraced a noir aesthetic, not initially for the mood evoked by the genre, but instead for the practical, affordable game mechanics afforded by the high-contrast lighting style. "The first thing we thought about was the gameplay and then the setting," says Kristian Utomo, CEO of Freemergency Studio. "We were developing this rewind gameplay mechanic, but were asking 'What will the theme be to go with it'? You're essentially a killing machine that can rewind time when you die, so it wouldn't be fair if you could see all of the enemies too. That's why we hide them within a fog of war."

Eventually, the team settled on using inky pools of shadow to conceal enemies. As the player dives into each room, they must react to the sudden emergence of enemies from the shadows, rewinding time if they fail to clear a room without perishing. "The [noir] theme is a by-product of the fog of war mechanic," adds Alvin Ardianto Gozali, game designer and programmer, "but we switched from [filling the room with] a greyscale fog of war to high-contrast black and white shadows, and ended up using that more because it fitted so well with the theme."

Hailing from an era of poverty and bleakness, the spirit of film noir has always been one of frugality. From classic noirs using fewer lights and eschewing colour in favour of cheaper black and white film stock, through to modern 'neo-noir' like 1982's futuristic *Blade Runner* repurposing old 1940s sets, the genre's films are rarely lavish affairs. Even on-screen violence was often implied, so as not to fall foul of the censors and necessitate further editing costs. But how does this translate to games? What is considered inexpensive in one medium doesn't necessarily translate to others, after all. For Bálint Bánk Varga of The Wild Gentlemen, Hungarian-based developers of *Chicken Police: Paint it RED!* (see Wireframe #20), each creative choice always came down to style, but this did sometimes mean that certain development costs could be skirted. Says Varga: "The greatness of noirs really lay in the fact that they had to be made cheaply, efficiently, and because of this, insanely creatively. In the case of games, the situation is a little different. In classic noirs, violence of any kind was only rarely shown due to the heavy censorship of the era. This issue ➔

Why animal detectives? Is it because they can 'sniff' out the truth? (Sorry.)

FILM NOIR

After all of this noir talk, maybe you're in the mood to watch a classic film from the genre. Luckily, our developers have a range of noirs, be they classic, neo, or otherwise, to recommend:

CHICKEN POLICE: "*The Big Sleep, Gilda, Double Indemnity, The Killing, The Asphalt Jungle, The Third Man*, neo-noirs like *Chinatown, The Long Goodbye, Farewell My Lovely, L.A. Confidential, Mulholland Falls.*"

INSPECTOR WAFFLES: "When I was younger, I really remember watching *Dick Tracy*, the movie, it was so yellow… perhaps that's why *Inspector Waffles* is yellow now. I really like *Who Framed Roger Rabbit* – you can see how it inspired *Inspector Waffles*. It has an animal as a main character, and the detective, Bob Hoskins' character, is a very depressed guy.

ACTION TIME: "We saw *Scarface* and thought the tommy gun was cool. How about we make a game about this? Voila, you got *Action Time*."

BACKBONE: "I think the most influential [stories] for me were ones featuring a gentle man in dire circumstances, such as [noir TV series] *The Night Of*."

Suspect board. Raincoat-donning detective. Light diffused through blinds. *Backbone* nails all of the details of noir.

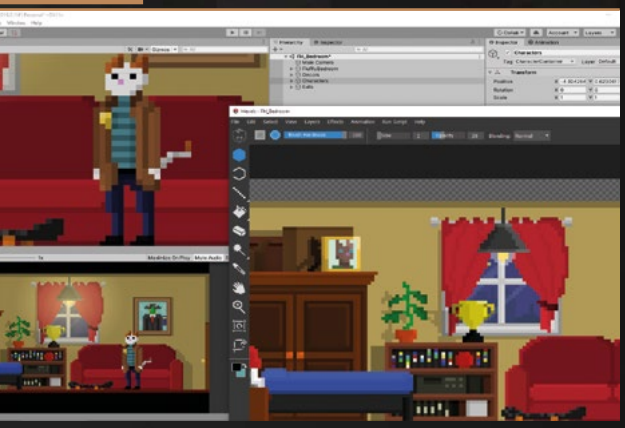
was solved with shades, silhouettes, and other cheap but symbolic solutions. We were similar in the sense that as a small, indie studio, we didn't have the money to produce CGI cutscenes, so we had to resort to similar tricks to get through the experience we wanted."

Chicken Police is a stylish-looking game, its heady combination of photo-realistic animals and heightened black and white contrasts making it feel like the *Sin City* of games; a world where the aesthetic elements of the film noir genre have been ramped up to eleven. Ironically, achieving the stripped-back film noir look proved to be a greater stretch on resources than simply making the game in colour, says Varga. "For the backgrounds, we had to make the scene in 3D with colours first, then put it to monochrome, and then fine-tune the shadows and lights to make the scene as impactful (and noir-ish) as possible. But, in terms of the time we put into this, yeah, it was maybe a little bit more complicated and expensive instead of doing this in colour or without the heavy usage of the contrast of light and shadows."

Unlike movies directors, game designers have to consider player agency – an element of the medium that can sometimes clash with a developer's desire to tell a story. You're all familiar with the dichotomy here: *GTA IV*'s retelling of the rags-to-riches noir *Scarface* was somewhat undermined by the tendency of the player to pop on hospital scrubs, steal an ambulance, and hurtle off on an unexpected tangent. Attempt to preserve the tone of a game by exerting too much control over the player, and you run the risk of arriving at the same dissatisfying endpoint via a different route. When Team Bondi was developing 2011's *L.A. Noire*, another open-world title published by Rockstar, its determination to prevent the player from spoiling the noir tone of the world left players with little to do within the game's exquisitely recreated 1947 LA, rendering the environments beautiful but ultimately sterile.

Perhaps this is why the rigidly structured nature of point-and-click adventures is so perfect for interpretations of film noir, with their tightly plotted narratives and the very mechanics of the genre regulating tighter player conformity and preserving that all-important pace and tone. For *Backbone*'s Korabelnikova, a largely linear story was a "deliberate choice", to give the game's narrative a clearly delineated "truth". The game's choice-driven dialogue system still allows for players to sculpt the personality of their detective, however – an approach that serves both player agency and

Chicken Police uses familiar noir archetypes, such as the femme fatale.



Unity remains the engine of choice for many developers in the point-and-click genre, though *Backbone* uses Unreal Engine.

narrative authorship. Says Korabelnikova: "The choices we made regarding player choice and branching dialogue came from a desire to be as honest as possible. In real life, your choices tend to matter on a small scale; how they affect the lives of the people around you, your relationships with those people, and your understanding of who you are as a person. So most of the choices in *Backbone* are for the players to express themselves and to better understand the main character, rather than change the world."

Varga agrees that in a truly noir game, mood has to take priority over player agency, but like Korabelnikova, he believes a balance can still be struck. "We want to be consistent with the tone and with the noir aesthetic as well, but also make a game with a heavy focus on the flow of the story. *Chicken Police* is built as a fairly linear narrative adventure, which was crucial to make the game as movie-like as possible. Yes, you have opportunities to go wherever you want, but overall, the story's main flow is straightforward. In a game like this, the dynamic between the gameplay and narrative is very fragile, but if you find the balance, you will have an excellent flow for the entire experience."

It's a point that Yann of Goloso Games firmly supports too, arguing that player freedom – in the form of side quests and the like – can often dilute the charged atmosphere of a game, as players are free to break from narratively tense moments and complete inconsequential tasks.

"Everything Waffles does, everything he has to solve in *Inspector Waffles*, has a clear interest in the main narrative, like watching a movie," he says. "I don't like [it] in point-and-click, or even triple-A games, where you have a very unimportant thing to do, this type of secondary quest. It should be like watching a movie... you should always want to know what happens next."

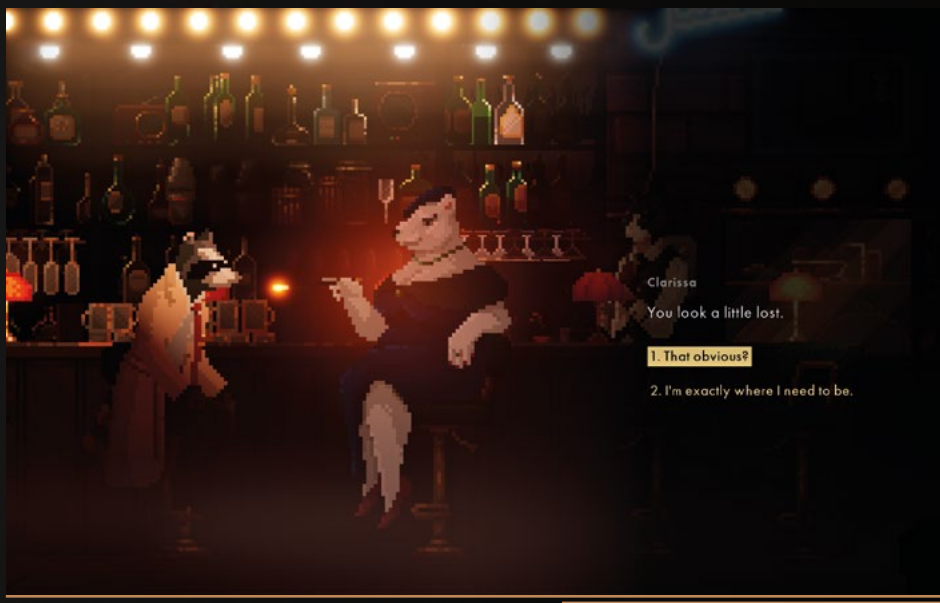
> "Police brutality and excesses? Racial oppression and abuse? These are timeless topics"

UNIVERSALLY NOIR

Ultimately, noir remains as attractive to developers now as it was for filmmakers almost a century ago.

Some may argue that its cultural specificity, being so inextricably linked to a certain time and place, has rendered it outmoded. For Varga and the developers of *Chicken Police* though, the themes that run through noir still resonate deeply within today's society. As he puts it: "I think not many things [have] changed regarding the core themes of film noir's classic age. Police brutality and excesses? Political corruption and decadence? Racial oppression and abuse? Megalomania, hatred, jealousy, greed, the list could go on... We think these are timeless topics. Also, we made our own world, so we had the opportunity to make a strange hybrid that mixes issues of several cultures and eras while keeping the core themes, atmosphere, and mood of the greatest noirs alive."

It's undoubtedly a valid point. If developers across the globe can use noir to express experiences as wide as *Backbone*'s take on Russian systemic oppression, through to the Hungarian social satire of *Chicken Police*, then maybe noir's creative possibilities are far less narrow than they first appear.



Noir isn't about saving the world; it's about saving yourself. *Backbone*'s dialogue options reflect that.

MAMMAL NOIR

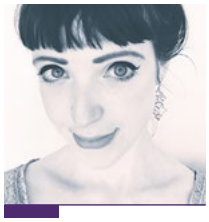
Of the four titles covered here, three replace humans with animals. Coincidence? In true detective style, we set out to find the truth:

INSPECTOR WAFFLES: "I like the idea that you can make a cat say something that a human wouldn't. I wanted to create my own universe."

CHICKEN POLICE: "Using animals was a world-building choice for us, and we want our characters as human as possible. The game plays a lot with the animal nature of our characters, but the important factors are always the errors and faults of human nature."

BACKBONE: "We were on a call, and raccoons attacked [EggNut Studio's co-founder] Nikita's backyard in Vancouver, so we decided to make a game about being a raccoon, set in Vancouver. We wanted an allegory to talk about the issues in today's society, but not appropriate the stories of real people who are struggling."

The Little Grey Cells



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 BAFTA Breakthrough Brit, and founder of Coven Club, a women in games support network. She produces, markets, bizzes, and arts, and previously produced *Fallen London*, *Zubmariner*, and *Sunless Skies* at Failbetter Games.

Did you know that Agatha Christie is the bestselling fiction writer ever? Nuts to Dickens, Tolkien, and J. K. Rowling. Murder's what the public want.

Detective fiction remains hugely popular, but it's never taken off in games. There are notable exceptions like *L.A. Noire*, and triple-A RPGs often include a quest where you determine whodunnit from a pool of NPCs. But generally, detective games are few and far between, even though the genre flourishes in books (*The Thursday Murder Club* is the fastest-selling adult crime debut in history), TV (find me a channel that doesn't screen multiple police procedurals and Scandi-noirs), and film (*Knives Out* saw universally positive reviews).

So why do games shun the murder mystery? Detective novels usually work on two planes. There's a plot propelled by a brilliant investigator who's always one step ahead. Then there's the reader, who competes with the investigator and tries to guess the murderer before the book reveals them. Games can't keep those planes separate. Players become the detective, propelling the game themselves and removing the competitive mental gymnastics you get from a book. Most players aren't Lord Peter Wimsey, so the game probably won't move along at the speed it would in a 'scripted' novel. And you don't have the same certainty that you have everything you need to solve the crime – there's always a possibility that you missed a clue or took the wrong dialogue option somewhere, or simply that your reasoning differs from the writer's.

This is why the best detective games aren't simulators or RPGs but simple puzzle games. They pare back their mechanics to a minimum, giving players the space for the whodunnit guessing game. *Return of the Obra Dinn*, for example, doesn't require the player to be Sherlock Holmes. It requires them to be an insurance claims investigator and walk slowly around. It's about as far as you get from discovering a sensational murder in a first-class carriage of the Orient Express. You look at things for a long time, and then you choose a name from a drop-down menu. But as Poirot himself says: "It is the brain, the little grey cells on which one must rely." And that's what makes *Obra Dinn* so brilliant: its primary mechanic is the player's mind.

Another detective game, *Her Story*, also relies on the little grey cells. It doles out dopamine every time you type something relevant into a search engine. You only know what to type in by deducing things from the previous round of videos you've watched. I applaud her excellent 1990s fashion sense, but the lady in the video is your competition, trying her best to thwart you. *Her Story* is all about connecting the dots yourself, but all you actually do is sit there watching video clips.

Detective fiction is enduringly popular, but it requires people to think and the book to let them. Games don't always trust their players. They're worried they might miss an item (give it a glow!), or a cutscene (make it unskippable!) or, worst of all, get bored (*Quick! Another minigame!*). Detectives need space for their little grey cells – and it takes a brave game to provide it.

Deduction on the poop deck in Lucas Pope's *Return of the Obra Dinn*.

"Detective fiction remains hugely popular, but it's never taken off in games"

WIN A 34" IIYAMA G-MASTER GAMING MONITOR

Here's a chance to get your hands on a 34-inch gaming monitor, courtesy of the lovely folks at iiyama. One lucky Wireframe reader will get a curved iiyama G-Master GB3466WQSU Red Eagle monitor, which has a 3440×1440 resolution and 144 Hz refresh rate, sent direct to their home.

Here are some more juicy tech specs:

- 34" VA panel
- 144 Hz refresh rate
- FreeSync Premium Pro
- 1ms response time (MPRT)
- 3440×1440 resolution
- 2 × HDMI (100 Hz) and 2 × DisplayPort (144 Hz) inputs
- Stereo 3 W speakers
- USB 3.0 hub

Immerse yourself in the game with the iiyama GB3466WQSU Red Eagle with FreeSync Premium Pro. The 1500R curved VA panel, with its 144 Hz refresh rate, 1ms MPRT and 3440×1440 resolution, guarantees superb image quality and a comfortable, realistic viewing experience.

The height-adjustable stand ensures total flexibility for your perfect screen position. Customise the screen settings using the predefined and custom gaming modes, along with the Black Tuner function to give you total control over the dark scenes and make sure details are always clearly visible.

Meanwhile, the VA panel guarantees an excellent contrast ratio, making all the nuances between light and dark colours clearly visible.

You can enter at **wfmag.cc/iiyama**

Competition closes on Monday, 3 May 2021. Prize is offered to participants worldwide aged 13 or over, except employees of the Raspberry Pi Foundation, the prize supplier, their families or friends. Winners will be notified by email no more than 30 days after the competition closes. By entering the competition, the winner consents to any publicity generated from the competition, in print and online. Participants agree to receive occasional newsletters from Wireframe magazine. We don't like spam: participants' details will remain strictly confidential and won't be shared with third parties. Prizes are non-negotiable and no cash alternative will be offered. Winners will be contacted by email to arrange delivery. Any winners who have not responded 60 days after the initial email is sent will have their prize revoked.

GAME
Little Nemo and the Nightmare Fiends

ARTIST
Pie For Breakfast/PXLPLZ

RELEASE
TBA 2022

WEBSITE
pfbstudios.com

Little Nemo and the Nightmare Fiends

Like *Cuphead* before it, *Little Nemo and the Nightmare Fiends* delves deep into the history of animation for its cartoon look: it's based on the work of pioneering artist Winsor McCay, whose early 20th-century animation had a profound impact on the medium that is still being felt a century later. This isn't the first game based on McCay's work, though: in 1990, Capcom released the NES platformer *Little Nemo: The Dream Master*, based on the McCay-inspired animated feature of the same name. It was that game, says *Nightmare Fiends* developer Chris Totten, that first attracted him to McCay's work. "I fell in love with the *Little Nemo* comics years ago when trying to learn more about the original Nintendo game," Totten tells us. "The *Little Nemo* comics went into the public domain years ago and I'd had some success making games out of other public domain works, so I got a design document together and put it in a 'potential projects' folder on my computer. That was several years ago."

Together with producer/tech lead Ben Cole and designer Adrian Sandoval, Totten aims to make a modern platformer in the style of McCay's comics and animation; inevitably, the team's making use of digital tools like Blender and drawing tablets, but they're keen to capture the delicate nuances of McCay's analogue techniques. "McCay's art style was indicative of Art Nouveau – especially the thick outer lines on background objects and characters – so we wanted to capture that in the sprites along with the colours of the old newspaper comics," Totten says. "Secondly is the temptation to *not* use some of the features of a digital art program that makes artists' lives easier… We wanted the game to have a classic hand-animated look, so we had to cut ourselves off from some of the convenience items in the software and do things the old-fashioned way."

At the time of writing, Totten's project is still crowdfunding on Kickstarter; if it's successful, *Little Nemo and the Nightmare Fiends* could introduce McCay's work to a whole new audience.

OFF THE BEATEN TRACK

CAVES, DETOURS, AND BONUS ROOMS

How do platform games incorporate hidden paths and rooms in their levels? We speak to some experts to find out

WRITTEN BY
DON EVERHART

Platformers have a linear heritage, but most resist leading players in straight lines. Recent games, from *SteamWorld Dig 2* to *Celeste*, *Shovel Knight* and its related *Treasure Trove* games, and even *Super Mario Maker 2*, show how designers embrace side challenges and puzzle rooms as part of the core design of their levels. Done right, such spaces offer a wealth of possibilities. They silently encourage players to experiment with new mechanics, and push them to attempt new challenges. They enable designers to push mechanics to their limits, to focus on detailed interactions, or to reward deeper exploration.

Side spaces and optional objectives make levels and games distinctive. This was the case early on in NES platformers like *Super Mario Bros.* or *Kirby's Adventure*, in which hidden side areas could uncover shortcuts, extra lives, or unlock minigames in the overworld.

As games have increasingly moved away from overworlds and to large, interconnected maps in the style of *Super Metroid* or *Castlevania: Symphony of the Night*, designers have had to reconsider what it means to branch off from the main path. Interconnection dominates contemporary platformers, and designers have reconsidered the relationships between side spaces and main paths as a result.

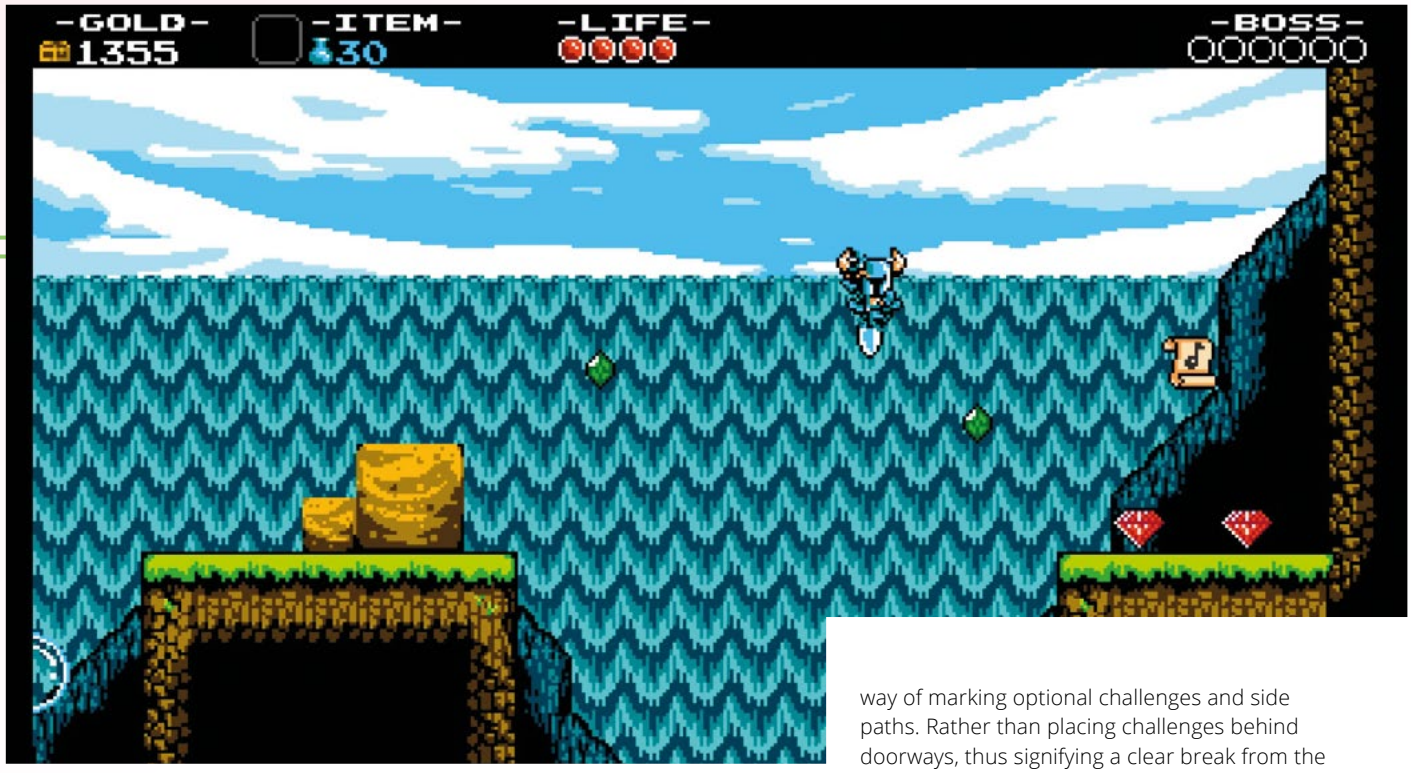
CAVES AND CONNECTIONS

In *SteamWorld Dig 2*, side spaces primarily manifest as caves, which are accessible through the interconnected main world. Sometimes they lead to upgrades or new areas, and sometimes they offer optional challenges and rewards. Speaking to the game's director Olle Håkansson and cave designer Markus Månsson, it's clear that caves were a major consideration for *SteamWorld Dig 2*, having spun out from design and playtesting considerations during the original game's early development. As Håkansson explains: "We played our own game, and realised [the sequel] needs some variation, some safe spaces where players could have detours, learn things, and so on."

"In the rest of the world, you die and lose some resources and are teleported back to the town," adds Månsson. "But introducing a new enemy or tool and having that rough penalty for failing... doesn't work."

And so caves were added, which provide a number of functions. Some caves are required for narrative progression or to discover new tools, and are therefore less 'optional' than others. For Månsson, caves are a means of teaching and then gradually complicating the game's design. Caves found earlier in the world's map have a fairly simple exploratory goal, as Månsson says, "to just make it around" in a loop, avoiding hazards and enemies. Then Månsson can introduce more exacting paths through hazards, to encourage experiments with different abilities, or to set the possibility for a moment of inspiration.

This played into the developers' overall design philosophy that embraces soft rather than hard locks towards progress. Håkansson and Månsson both enjoy having players find things that verge on bugs or glitches to exploit. While players who move through *SteamWorld Dig 2* for the first time may find their skills being →



In an early side room in *Shovel Knight: Shovel of Hope*, the player has to pogo precisely to reach a sheet music reward.

burnished by caves, those same players may later find creative ways to avoid them entirely. On the subject of soft and hard locks, Månsson points to some of the paths that require aerial traversal, and observes that while players could use jet packs in these sequences, they can also "manipulate keybindings to super-jump across". Håkansson adds that the aim is to give players "a sense of... freedom. You're breaking the game a bit; you're being a bit naughty".

The interconnected paths of *SteamWorld Dig 2* provide the larger canvas, with its caves adding smaller, more checkpointed bubbles in which players can experiment with new mechanics. Players can work through multiple layers of possibility in those spaces without worrying about a lengthy setback. From there, the developers can plan for how players might experiment and take those mechanics and push them to their limits. Layers on layers on layers.

FRACTAL DESIGN

While *SteamWorld Dig 2*'s caves stand slightly apart from the game's main path, sometimes with their own internal checkpoints and mechanics, *Celeste*'s designers had a different way of marking optional challenges and side paths. Rather than placing challenges behind doorways, thus signifying a clear break from the surrounding world, *Celeste* uses strawberries. These items signify a dare, a temptation, or a marker of a completed side path.

Designer Maddy Thorson consistently describes the approach to *Celeste*'s design as a "fractal story". Thorson and team considered the game's story, how it split into chapters, and then how those chapters split into individual sections and rooms. A major challenge in developing *Celeste* involved arranging, rearranging, cutting, and redesigning rooms in sequence. Describing this aspect of development, Thorson says: "The placement and design of rooms was primarily determined by [their] place in the larger story of the chapter – how Madeline feels and what kind of pacing helps to support that."

So, *Celeste* is led by its narrative, which is told largely through the sequence of rooms and the pacing of challenges rather than through dialogue and narration.

While that approach to design offers players consistency, strawberries exist within it as a kind of curveball. "The strawberries are categorically different from the other objects," Thorson explains. "In one sense they are similar to features like spikes or springs in that their spatial placement matters, and helps define the

"YOU'RE BREAKING THE GAME A BIT; YOU'RE BEING A BIT NAUGHTY"

SUPER FREEDOM

When it comes to player freedom, the seminal *Metroid* games remain a platform game touchstone. "I find it so satisfying playing through *Super Metroid*, which is probably my favourite game of all time, and just sneaking over and stealing the Wave Beam way before you're supposed to," says *SteamWorld Dig 2*'s Olle Håkansson. "It's just so rewarding to save those few minutes for some reason."

Celeste's strawberries often hover just beyond risky obstacles or over a bottomless pit. Or, in this case, both.

rules of the current level in interesting ways. But I primarily thought of them as a meta-object, because they represent permanent progression by simply incrementing a global counter of your total strawberries."

The only similar counter that *Celeste* displays for players refers to the number of deaths they've suffered within an area. Players encounter strawberries peppered through most of *Celeste*'s levels: some are found on the main path, placed as an enticement to attempt more tricky manoeuvres when travelling through a room. While being pursued in one of several level-ending chase sequences, such strawberries can further ratchet up the tension, especially in long rooms without checkpoints and with more freely moving adversaries. But strawberries have many flexible uses, and aren't necessarily tied to tension and challenge. They can serve as markers for exploration, as when Madeline finds herself overlooking a ruined city from a clifftop, with a strawberry hovering just below the cliff. Or they can function as lures into rooms that offer only one solution, making sure a player grasps an important mechanic or interaction.

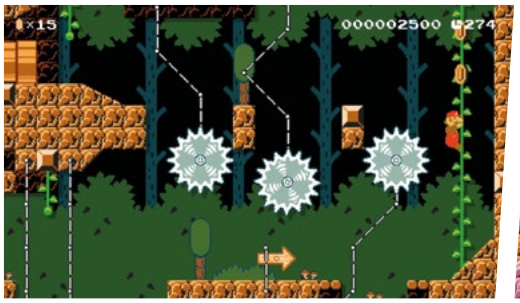
DESIGN PRINCIPLES

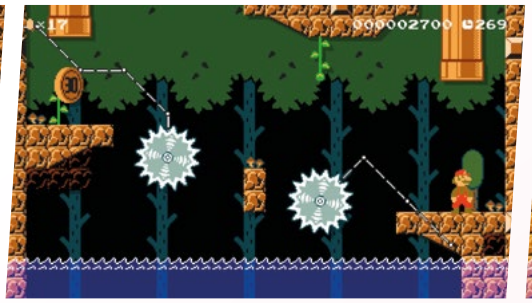
For Yacht Club Games, makers of *Shovel Knight* and the subsequent games in the *Treasure Trove* series, the design of optional areas and screens is nested within a cascade of other decisions.

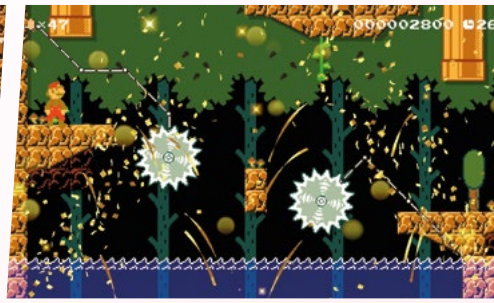
Within the development of each entry, from *Shovel of Hope* to *Plague of Shadows*, *Specter of Torment*, and *King of Cards*, decisions about how levels related to each other on the overworld could have an effect on the shape of optional challenges and their difficulty. As with the relationship between the larger worlds of the *SteamWorld Dig* games and their caves, the *Shovel Knight* games order challenges within each level with difficulty and checkpoints in mind.

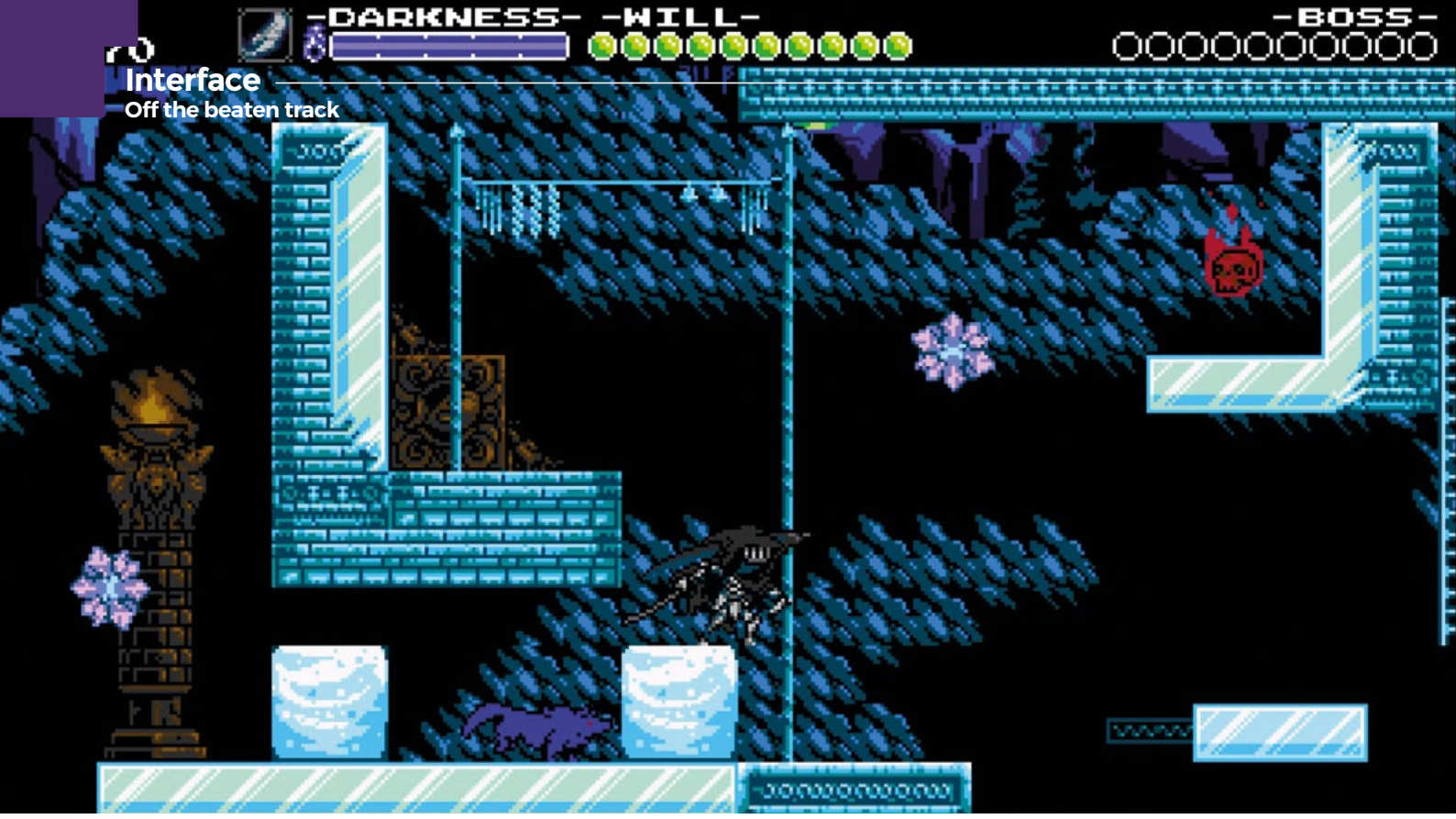
As a collective, the Yacht Club team explains: "In *Shovel Knight* level design, difficulty gradually ramps upwards with small breaks after any →

In Matilder's Hacksaw Havoc, players are pushed up and around saw-blades. Early in the course, players might notice a pipe on the left – this will warp them to a bonus room, complete with a 30-coin reward and celebratory confetti.









Optional rewards aren't only hidden behind destructible walls or in secret rooms. Some, like this skull in *Specter of Torment*, are in plain sight.

milestone. In other words, each room is harder than the last until you reach a checkpoint, each stretch of rooms between checkpoints is harder than the last until you reach a new level, and each level is harder than the last until you beat the game. So it's really just a matter of identifying its location in the level and its corresponding place on our difficulty spectrum. If it's right after a checkpoint, it shouldn't be too challenging, and if it's right before a checkpoint, it should feel pretty scary!"

This holistic perspective on room and level design offers a perspective that emphasises new combinations of environmental challenges, enemies, and player abilities. "Like any room along the main path, a secret room's design needs to be in service of the level as a whole," the team says. "Its gameplay contents and its difficulty should relate to its place in the larger level, but it should still offer some unique idea or challenge that doesn't feel derivative. A lot of the times, we see these rooms as an opportunity to test a different flavour of challenge – if the preceding rooms use a gameplay object or enemy in platforming-heavy setups, then the secret room might do something more puzzle-focused or combat-focused."

"A SECRET ROOM'S DESIGN NEEDS TO BE IN SERVICE TO THE LEVEL AS A WHOLE"

BONUS ROOMS

Of course, Thorson, Håkansson, Månsson, and the folks at Yacht Club are professional game designers, able to adjust the mechanics of their games and to sit with playtesters and team members to tune their levels, and make connections between side rooms and main paths. *Super Mario Maker 2*, meanwhile, makes a game out of putting the toolkit of Nintendo's classic series in its players' hands. While it's easy to make a course in *Super Mario Maker 2*, it's trickier to tune and embellish its themes without the collaboration that is often crucial to game development. Even so, skilled makers find reasons and ways to incorporate bonus rooms and branching paths.

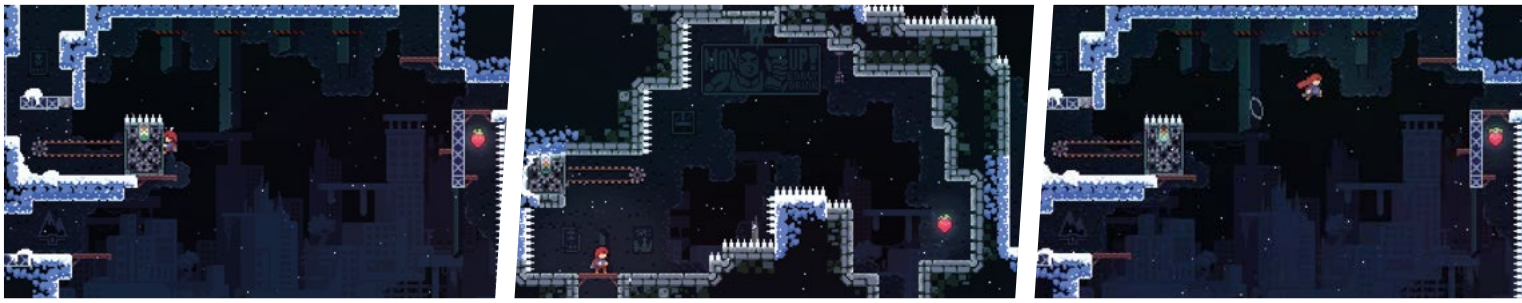
Super Mario Maker 2 strips the *Super Mario* series down to its two-dimensional incarnation, even while allowing for settings, objects, and mechanics that never appeared in early games in the series. In other words, it's a crossover event and development kit rolled together.

Given the character of the game, it's not surprising that Thorson, Håkansson, and Månsson have all created and shared levels for it. The larger *Super Mario Maker 2* community isn't, however, made up of professional developers, but players who enjoy working within Nintendo's sandbox. Following the example of platform designs new and old, they also have ways of thinking about bonus rooms.

CaptainMatilder, a course maker from Australia, concurs with some of Månsson and Håkansson's design philosophies. Both perceive

CROSS PLAY

The team at Yacht Club Games considered using a mechanic from *Celeste* for Specter Knight's campaign, *Specter of Torment*. Intrigued by how strawberries in *Celeste* were not collected until the player safely makes it back to a platform, they tested doing the same for Specter Knight's red skulls. However, they "didn't like the ambiguity it introduces by not explicitly showing when your red skull or strawberry will actually collect".



If Madeline sticks like glue to the trolley in the first panel, she will never clear that gap. But if she heads upwards, she will find a room that forces the issue to clear a menacing pile of spikes (middle). After that, it's quick work to apply the same technique (right).

a need to balance designer expression and player freedom. But where the *Dig 2* team are more excited about leaving in ways for players to break their designs and find new paths through the game, Matilder takes a different view. "I think there's always a conflict between a creator and the players when making a course," she says. "The more freedom the creator has, the more linear the experience for the players."

For Matilder, designing bonuses and secrets is about rewarding curiosity and multiple playthroughs than it is about encouraging flexible and potentially level-breaking play. "By adding bonus rooms or little side areas," Matilder continues, "you add little pieces of freedom and exploration to your mostly linear course. Sometimes by thinking outside the box or taking a risk.

"Also, I try to reward players in the end with a cool ending section where you revisit the course in a new way. Sort of like 'Hey, I know the course was kinda long and didn't have much stuff happen, *but wait 'til you see the ending!*'"

AN ENDING

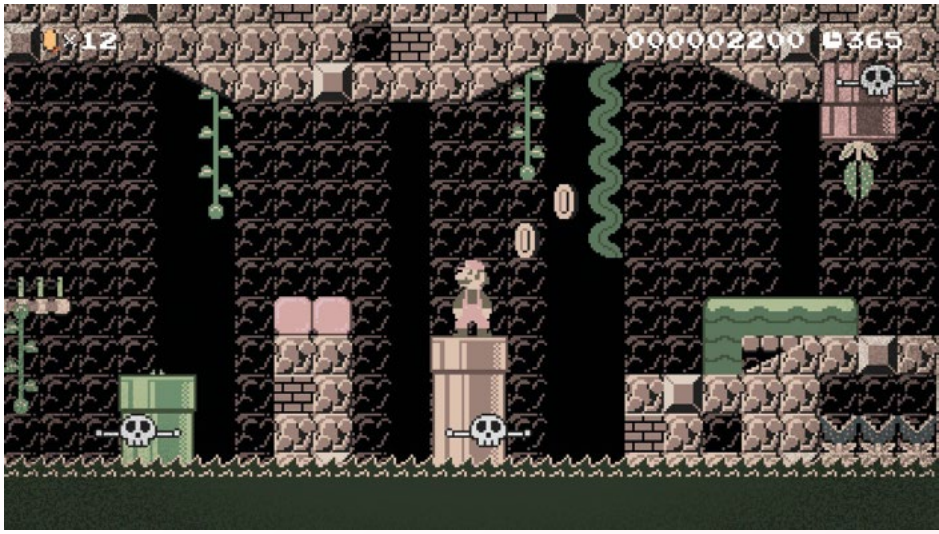
All the people we spoke to for this piece consider different side areas to be important for replayability. For professional designers, that might involve placing escalating challenges not only throughout the game but in epilogues for completionists. In *Celeste*, players can find cassette tape icons in game chapters that unlock a B-side series of levels based on that same chapter. Those levels, as well as the even more exacting C-sides, are more highly tuned for advanced techniques. *Dig 2* similarly incorporates a series of levels, somewhat inspired by hardcore platformer *Super Meat Boy*, for players who manage to complete every cave and find every collectable. *Shovel Knight* sprinkles its secrets throughout, tying them to each level's difficulty arc.

In *Super Mario Maker 2*, on the other hand, there's no way to hide additional courses behind hidden items or completion rates. Instead, makers like Matilder focus on single-course replayability, teasing bonus rooms that might seem unreachable the first time through a level, but achievable the next time through.

The flexibility of side spaces and objectives results in many differences in form, but there are some regular features to their use. They relate to design goals of challenge and exploration, encouraging players to go beyond the obvious. But they don't have to solely be about challenging a player; side spaces are often supportive, helping players to deftly navigate the game as a whole. They provide good opportunities for players and designers to stretch out and experiment.

Alternately, as with the strawberries in *Celeste*'s chase scenes or the warp pipes in Matilder's autoscroller courses, they can heighten tension. Side spaces allow 2D platformers to do much more than simply move a character from left to right; they show players that their curiosity will be rewarded with more to do, find, and explore. There's always another strawberry to chase, long jump to make, or saw-blade to dodge.

There are many pipes in CaptainMatilder's Vengeful Vegetables for *Super Mario Maker 2*, but which one leads to the bonus room?



Toolbox

The art, theory, and production of video games

46. Design Principles
Knives out, as Howard recalls his time at The 3DO Company

48. Narrative Design
Some valuable advice on finding the joy in game writing

50. Retro Connections
The in-depth guide to coupling old consoles with new TVs

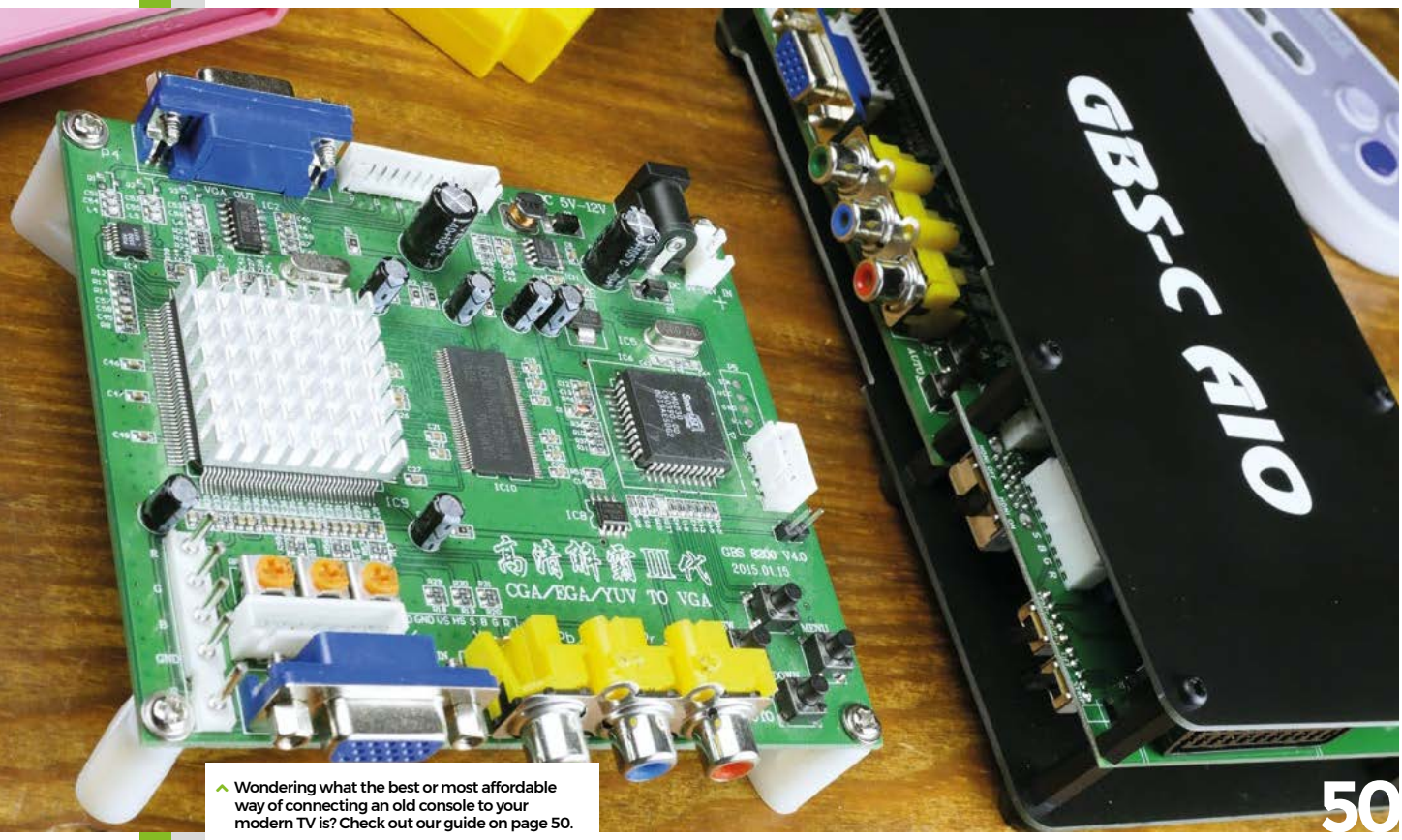
56. CityCraft
The minds behind Disco Elysium on their epic world-building

60. Lighting in Unity
An introductory guide to adding light and shade to your game

66. Source Code
Recreate the crumbly platforms of 1983's Manic Miner

46

What does a Swiss Army knife have to do with The 3DO Company? Howard explains on page 46.



Wondering what the best or most affordable way of connecting an old console to your modern TV is? Check out our guide on page 50.

50

Discover the city-building secrets behind the mighty *Disco Elysium* on page 56.

56

48

Learn from the creators of *Spec Ops: The Line* and put the passion back in your writing. See page 48.

Find out how to make crumbling platforms just like the ones in *Manic Miner* in this month's Source Code. See page 66.

66

The principles of game design

Meetings, design docs, tiny knives: Howard recalls his time at Trip Hawkins' ill-fated The 3DO Company

AUTHOR
HOWARD SCOTT WARSHAW

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

Here they are: Howard Scott Warshaw's incredible 3DO trousers (or pants).

When you stand in front of a mirror frequently, you don't notice gradual changes happening. It's only when you catch a glimpse after not looking for a while that the differences jump out at you. That's what 3DO was like for me. After a decade and a half away from the industry, coming back in was like getting back in front of the mirror for the first time in quite a while. It was immediately apparent to me how things were dramatically different, for better or worse.

One of the first things I noticed at 3DO was an increase in female programmers, though still not a lot. Two of my favourites were Quinn Dunki and Victoria Lease. As luck would have it, there came a project in which they wound up seated next to each other in one bull-pen. The first time I walked in there and saw them together I started laughing hysterically. They asked me what was so funny, and I said, "Nothing, your majesty."

"What do you mean, 'your majesty'?"

"Well... it only seems appropriate when addressing Quinn-Victoria."

Obviously, my sense of humour was one thing that had not changed, but my wardrobe had. At Atari, I was "the guy with the whip" (from doing *Raiders of the Lost Ark*). At 3DO, I was "the guy with the pants". I became part of the corporate culture... or at least part of the building map.

"HR? Sure, go up to the second floor, turn left at the top of the stairs, head down the hallway, and turn right at the guy with the pants..." I was a 3DO landmark. That wasn't what I set out to achieve, but in a way, it was exactly where I was headed. [Note for UK readers: for 'pants', read 'trousers' – just to avoid any startling mental images. Ed.]

There are things we take for granted now that didn't exist at Atari. Like Design Documents. The design doc for *Yars' Revenge* consisted of a few pages of graph paper with some graphics concepts drawn out, box by box. At Atari, the idea of a full-blown document describing every aspect of the game was as scarce as spreadsheets, which was very scarce indeed.

"Head down the hallway and turn right at the guy with the pants"

Another thing that shifted was how we spent our Friday afternoons. Don't get me wrong, Friday afternoons were always special. But the Atari legacy beer bash blowouts had been replaced by the 3DO All-Hands Meeting. A rather staid affair with company announcements, a bit of rah-rah thrown in, and a general updating on the state of current production led by 3DO CEO, Trip Hawkins. This was usually followed by informal clusters of casual conversation on a BYOB basis.

One thing that hadn't changed, however, was the presence of Tod Frye at a company meeting. I'm thinking of one All-Hands meeting in particular. It's the last company meeting before Christmas, which means 3DO will give some little

One of 3DO's early hits was *Army Men*, an RTS that ended up spawning an entire series of related titles.

gift to all the employees. This time it's miniature Swiss Army knives. They're tiny, with just a couple of blades, but they're personalised: each one has the employee's name printed on it.

So, the gifts are bestowed, and our CEO Trip Hawkins is talking about the gifts. He notes how special it is that we have our names on them. At this point, Tod yells out, "They have the names on them so when you find one in your back, you know where to return it." The crowd roars with laughter, largely from recognising the truth of it. This is pure Tod, pointing out both the humour and the brutality of developing video games.

And how about that 3DO party mystique? My first year, the party was held at an aeronautical museum, to signify how we were taking off. In subsequent years it was decided parties were frivolous wastes of time and money (read: we have no money and you need to be working), signifying the aeroplane was losing altitude. Instead of parties, we received only the holiday trinkets at the All-Hands, thus leading to Tod's classic contribution. Unfortunately, his observation was truer than it was funny. Shortly thereafter, the plane crashed.

3DO also significantly tweaked my inner concept of what game development means. At Atari, making a game was like piloting a small speedboat. You can't carry too much or go very far, but you can make sharp turns on impulse and land pretty much anywhere you want. Now, game development is more like a cruise ship. It delivers previously unimaginable entertainment experiences and carries a tremendous load of supplies (graphics), but it requires a huge crew and has tremendous inertia. Once it gets going, changing direction isn't much of an option.

The hardest adjustment for me was that modern game projects seemed to have the responsibility diluted. When you did a game at Atari, it was all yours! The success was all yours and the failure was all yours. In many ways it was less comfortable, but I really preferred it. That's not necessarily a big loss, because another thing that changed over time is I achieved a healthier perspective on work/life balance than I ever had at Atari. Not perfect, but better.

Again, joining 3DO was like getting back in front of the mirror, and in the interim, my reflections had become more productive. Of course, mirrors only reveal surface changes. There were obvious things as soon as I got there, and then there were deeper changes that became clear to me only after spending more time in the new world. We'll talk about some of those next time.

Mirror's Edge

When I look in the mirror and see a noteworthy change, it usually raises the question: Did I change, or is it the mirror? The world around us evolves at such a rapid pace, it takes a tremendous amount of effort to even stay where we are. Think of how much work is required to remain geographically fixed when you're on a flowing river. Have I changed or has the ever-changing world I'm in made me seem different by comparison? Perhaps the only thing of which I'm truly incapable is stasis.

EA founder and 3DO head honcho Trip Hawkins. Not pictured: collection of tiny Swiss Army knives.

The Panasonic 3DO console's existence was brief, but it made enough of a ripple to spawn its own magazine.

How to love video game writing

Telling stories begins as a passion, but the reality of doing it as a job can be daunting. Here's how to keep the spark...

AUTHOR
ANTONY DE FAULT

Antony is Wireframe's game writing and narrative design columnist. He's also creative director of Far Few Giants, and you can find his work on **default.games** or **@antony_de_fault** on Twitter.

Last year, I had the privilege of taking part in a series of masterclasses given by an incredibly experienced and wise director of animated films. There was one particular subject that blew my head clean off. It's not an understatement to say that it inverted my entire conception of writing as a profession. As soon as they explained it, everything I'd been struggling with, and everything I'd been half-successfully already doing, clicked gently, decisively into place, like a cartridge in a Game Boy.

Consider that we almost all begin creative pursuits for the same reason: following a passion. We love games, so we try to make them, or we love telling stories, so we tell them. If we didn't, we'd make more money doing something else. That creativity comes easily, because to put it simply, it's what we want to be doing. And since passion sells, and anyone who's passionate is inherently engaging, we get good feedback from others. We may even start to feel we have a talent, maybe good enough to get paid for it or go to uni to turn it into a career.

Spec Ops: The Line is a good example of a new team discovering what they could love about a franchise they almost certainly did not.

TROUBLE IN PARADISE

But once writing becomes their vocation, many writers oddly stop writing. It's no longer fun. Often, this is because either they don't like the story they're being asked to write (they don't like the assignment or creative direction etc), or because the pressure on the quality of the work ruins the enjoyment. Either way, the passion isn't there, the work's lacklustre, opportunities pass them by, and they no longer enjoy writing enough to pursue it as fervently as they thought they would. I've been here. Most of us have, I think. Those who continue often simply grit their teeth and persist regardless. Even though they're not enjoying it, they're determined to make writing into work. They come up with techniques to force themselves to write when they aren't feeling it, to overcome the blank page or the crappy assignment. They bash their head against it. But that's not what I'm suggesting here.

A writer's job isn't to write. The job is to fall in love.

Forget all that other stuff about overcoming the barriers to writing. Let's say you're on your dream project. If you truly love what you're working on, if you're elated just to be involved with this project, we all know that automatically, with no struggle

or discipline on your part, you'll bring your best work, waste less time procrastinating, and be a better team member. Like when you started out on your own stories just for fun, you'll get in the zone, loving every second of creation.

REFOCUS

Don't waste energy by forcing yourself to write when you don't want to. Use that energy to find a way to fall in love with the story you're telling, and the rest will come. Realise when you're not enamoured with a project, spend a short while solving that, then coast by on the good, hard work that spills out. But how to fall in love?

For every project, no matter how uninteresting we might feel it is, there exists a version that we could love and fight for. If assigned to write about gung-ho US soldiers, but you hate American imperialism, find a way to subvert it that's true to you. Write *Spec Ops: The Line*. If writing a tie-in for an expensive children's toy line, but you can't stand the brand's increasingly rigid and unimaginative products or their pandering to nostalgia-shackled adults, write *The LEGO Movie*. Of course, in real life you'd often just be told "No", but there's always a million ways to subvert a story into something you can love. Finding one that flies with everyone else is the hard part, but makes the work infinitely better for you and them.

"Playing without pressure will often help you find an approach you love"

TECHNIQUES

Sometimes, though, you won't have the ability to change or subvert the story you're telling. Either you're already too committed, or you simply aren't high enough up the chain. If you're struggling to find something to love about your project, and can't change the project itself, here are a few ways to discover what you can love about what's already there:

1. When you don't know what you love about the work, or what to do next, don't be afraid of saying "I don't know yet" to your team. That's a good place to be, not a bad one. Then try the below.
2. Allow yourself to do the job badly. Do a deliberately wrong version of your scene just for fun. Playing and exploring without pressure will often help you find an approach you love.
3. Refresh your process. Change the working method, go from digital to physical, use different software, work in a different environment. Process shapes the work, so if you don't love the current stuff, switch it up.
4. Refresh yourself in leisure, too. If you usually watch a movie to relax, watch opera. If you normally go for a walk, go cycling. Challenge yourself to like it. Different ideas will bubble up.
5. Keep a 'morgue' – for example, a random collection of every image that snatches your attention and makes you go "Ooh!". Or keep story ideas on your phone, or a list of scenes you liked. These should persist between projects, and when your passion runs dry, you can revisit these morgues, find something you love, and insert it into the story.

OUTCOMES

Since the masterclasses last year, I've refocused my (small) potential for difficult work into just this area: falling in love with the project. And the difference has been night and day. I'm procrastinating way less. I'm getting a lot more done, and my work ethic has been energising others. The people I'm involved with are responding to me differently, and looking to me more frequently to lead the charge on whatever we're making.

So if you find yourself stuck in a rut, unable to enjoy writing (or, really, any creative work), gritting your teeth, and forcing yourself to just put one word after the next, consider a refocus. One last time: the job is to fall in love.

When the emotions are genuine, subversion is rewarded with acclaim. Who expected *The LEGO Movie*'s villain to be... literally one of their main customer groups?

Create an ideograph!

Sketch a symbol, shape, logo, or other graphic item which summarises the whole project, then keep checking in with it and update it over time. Sometimes keeping an eye on the big picture can stop us from losing sight of what we really love about the project.
This works on a smaller level too: cultivate motifs, things that symbolise elements of the story in some way. Such as the buck in *Red Dead 2* representing wilderness, coming back to a motif you already have a relationship with can really help you to feel attached to a scene.

Playing retro consoles on modern TVs

Want to connect your vintage console to your modern TV? Here's the only guide you need...

AUTHOR
MARC DUDDLESON

Marc Duddleson is one half of YouTube channel My Life in Gaming. MLiG's speciality is breaking down the tech of classic gaming into terms they (and hopefully you!) can understand.

"Get a Raspberry Pi. Done." It's probably the most frequently recurring comment we get across all videos on the My Life in Gaming YouTube channel, which often revolve around playing classic games on original hardware. Not everyone has held onto their old consoles through the years, so I get it. Software emulation, whether through a PC, Raspberry Pi, or any other device, is easy on your wallet and solid enough to give most people the experience they're looking for.

But for me, the core of my gaming experience still tends to revolve around the joy I feel in using authentic cartridges and discs. But as you may have noticed, 2021 isn't 2001, and using pre-HDMI consoles isn't so easy these days. A standard CRT television is the most direct route to getting a solid experience with vintage consoles. But let's face it – not everyone is willing to work a CRT into their setup. Plenty of people are content with just plugging the cables that came with their old systems (usually composite) into their HD or 4K TV – and that's OK! But whether for the blurry looks or the input lag they feel, this simply isn't good enough for a lot of people.

Standard RCA cables with composite video. A direct HDTV connection is a poor experience.

DOWN THE RABBIT HOLE

"There has to be a better way," you say as you browse Amazon's assortment of analogue-to-HDMI converters, HDMI adapters like Wii2HDMI, or HDMI cables for specific consoles by a variety of brands. You might think these are just what you're looking for, but remember: your TV has its own internal video processor. Just like your TV, they're going to treat 240p like 480i. Not only is it unnecessary to deinterlace 240p, but doing so actively degrades the experience – motion-adaptive deinterlacing takes time, adding input lag. That Sega Saturn HDMI cable is going to deinterlace your gorgeous 240p sprite-based games so hard that they'll look like some sort of

Cheap converters: likely not much better than plugging directly into your TV.

SCART (left) and Component (right). RGB and YPbPr are good, but still need proper conversion.

art restoration disaster in motion. The dark secret of these products is that you're buying something you already own – a basic video processor designed for video, not video games, and the result will likely not be tangibly better than what your TV could do. The only reason to go this route is if you have no analogue inputs and could not possibly invest more than $30.

So what *is* the better way? The primary purpose of an external video processor is to send a properly handled signal to your TV that won't trigger its lag-inducing processes and turn your pixels into sludge – basically any progressive resolution other than 240p. Luckily, there are several devices in various price ranges that are designed to do exactly this.

We at My Life in Gaming got started in 2013 with a device called the XRGB-mini Framemeister by Japanese company Micomsoft (bonus points if you didn't parse that as 'Microsoft'). The Framemeister brought together RGB input and HDMI output with proper video game scaling techniques – not to mention fairly low lag – providing utterly transformative results. At the time, the Framemeister cost a little over $300 – yikes, right? It took a lot of courage to drop that cash. Totally worth it. But today? Don't do it.

Micomsoft warned in late 2016 that they would not be able to continue producing Framemeisters for all that much longer due to the Marvell Qdeo chip being discontinued. By now, a Framemeister will cost you way more than the $300-ish we spent in 2013, and a successor is yet to be unveiled. It's still a useful device if you already own one, but several exciting alternatives have cropped up over the past half-decade.

LAG-FREE LINE DOUBLING

At present, the leading products are the RetroTINK series, produced in California, and the Open Source Scan Converter (OSSC) from Finland. Let's start with the RetroTINK lineup, because the products are practical and easy to get into, no matter where you're starting from.

At $80, the RetroTINK-2X MINI is my go-to recommendation for someone who wants to use original consoles, recognises the drawbacks of cheaper solutions, and is willing to invest a minimum in raising their baseline experience. What you're getting: 240p and 480i line doubled (2X) into 480p over HDMI with no added lag beyond what's inherent in your display. The limitations: it only supports composite video and S-Video inputs. The device also comes with an S-Video cable that works with SNES, N64, and →

JARGON CHEAT SHEET

CRT: Fat analogue displays.

Input lag: Image delay that wouldn't occur on CRTs.

NTSC: Analogue video system used in North America/Japan. 60Hz.

PAL: Analogue video system. Common in Europe and elsewhere. 50Hz.

Interlaced: Video divided into alternating 'fields' (e.g. 480i).

Progressive: Each frame is a complete image (e.g. 480p, 1080p).

240p/288p: Nonstandard progressive signals used by most 20th-century console games.

Deinterlacing: Blends interlaced fields into a progressive image.

15kHz: 240p/480i (NTSC), 288p/576i (PAL) – the signals accepted by typical CRT TVs.

Composite: Messy analogue video.

RGB: Clean analogue video. Common in Europe.

YPbPr: Similar to RGB, but adopted much later. Common in North America. Aka 'Component'.

Line Doubler: Video processor performing a fast conversion of a lower-res signal to a higher-res signal. Also see: 'line tripling', 'line quadrupling', etc.

Upscaler: Video processor that may scale more freely within a frame buffer.

The Framemeister is still nice, but there are arguably better, less expensive alternatives today.

GameCube consoles (there are a ton of bad S-Video cables out there, so this is a huge plus). I especially recommend the RetroTINK-2X MINI if Nintendo 64 is one of your main priorities – seeing as S-Video is the best signal the console natively supports, you aren't paying for extra features you don't need. But even if you're using, say, an NES or PlayStation, with the RetroTINK-2X MINI, you can quickly get up and running with – at the very least – cleaner-looking composite and much less input lag than you'd have had by plugging those same cables directly into your HDTV. And hey, you can always upgrade that PSone to an S-Video cable later.

Next up is the RetroTINK-2X SCART ($95), which is for RGB signals only. When going SCART, the costs do add up since you really shouldn't cheap-out on RGB cables – as a rule of thumb, be wary of any that cost less than $25.

The current flagship RetroTINK product is the 2X Pro, which sells for $130. This one includes composite, S-Video, and component (YPbPr), but no RGB. Luckily, there are ways to use component with systems like SNES and Sega Genesis by converting their native RGB output into YPbPr with products like HD Retrovision component cables, or the RGB2COMP transcoder, also from RetroTINK developer Mike Chi. One caveat, however, is that the 2X Pro can't accept 480p via its component input. For those who really need to route 480p component video through to HDMI, there's also the RetroTINK-2X Pro-M or 'Multiformat' version, but it runs on different hardware that results in less crisp results for 240p games.

There's also a related series of products, RAD2X, which licenses Mike Chi's designs for console-specific cables. While I've never had a chance to test these for myself, they're well worth considering for those who are interested in only one or two old consoles – especially for those in the UK who'd like to minimise shipping costs by buying a domestic product.

"The OSSC has been the heart of my gaming setup for several years now"

Then there's Markus Hiienkari's Open Source Scan Converter. This is sold by **videogameperfection.com** for €110 (pretty much the same price as the RetroTINK-2X Pro). The OSSC has been the heart of my gaming setup for several years now, and is still one of the most important devices in the classic gaming scene. However, without the companion Koryuu device, the OSSC lacks composite and S-Video inputs, so it's more for us crazy sorts who are committed not only to using the best possible cables with

RetroTINK-2X MINI (left) and 2X Pro (right). The MINI pairs great with N64.

Don't let the homemade/utilitarian looks fool you – the OSSC is a real game-changer.

every system, but also having the consoles that don't natively support RGB – such as the NES – be modified for it. The OSSC supports RGB, YPbPr, and RGBHV (such as VGA from a Dreamcast). In addition to handling inputs from 240p on up to 1080i, it also supports much, much higher output resolutions than the existing RetroTINK products – going up to 1200p. You can take 480p over component from an original Xbox (be sure to not use bargain-priced cables on Xbox, trust me), line double that to 960p, and it looks absolutely gorgeous. The OSSC can take 240p beyond 2X, going to 3X (720p)... 4X (960p)... and even up to 5X (in both 1080p and 1200p flavours)! You like pixels? The OSSC will serve 'em up as crispy as you like. Just keep in mind that the higher the line multiplier, the more likely you are to run into compatibility issues with certain TVs or capture cards. But going by anecdotal evidence, this seems to be becoming less and less of an issue with newer TV models year after year.

Here's the point of contention, though: is this crisp look how the games 'should' be viewed? Back in the day, I would get out a pad of graph paper and coloured pencils, putting my nose up to my crummy RF-only CRT, and do my best to copy the sprites from my favourite SNES games onto the grid so that I could then recreate them in *Mario Paint*. If only I could wipe the metaphorical Vaseline off my screen, I knew I would see those beautiful pixels for what they really are! For others, they saw not pixels, but scanlines and deep texture embedded within the backgrounds. Many view composite video as an artist's tool itself, especially for how it blends colours on the Sega Genesis in particular. My belief is that any game artist from the early decades of gaming would be nothing but shocked and honoured by the notion that people still want to enjoy their work all these decades later – no matter how those pixels are displayed. It's a video game – you're in control. Look at them the way you want to. ➜

CABLE TABLE

Yellow RCA (composite)	Provides a dirty picture. Games were arguably designed with it in mind.
S-Video	Huge boost in clarity, but falls short of RGB. Uncommon in Europe. SCART: Could be RGB, but could also be composite in disguise. 480p and HD are possible, but support is spotty.
Component	Shorthand for YPbPr, broken out into separate RCA cables or 'components'. Results similar to RGB. 480p and HD are possible, but not on 15kHz TVs.
VGA/DE-15/HD-15	Fancy RGB. Usable with Dreamcast.
BNC	A secure connector for professional CRTs and video switchers. Can carry various analogue signals, broken out into one to five wires.
HDMI	Digital audio and video. For old game consoles, HDMI is only as good as the quality of the signal conversion.

HOW MUCH WILL I HAVE TO SPEND?

Just make it work! Get a basic analogue-to-HDMI box (**$30**) or an HDMI adapter/cable for a specific console (**$10–$30**).

I'll do it myself! Build a GBS Control (**$30+** for parts).

I just need one system! Try the RAD2X cable (**£48**).

Just lose the lag! Get a good picture with the RetroTINK-2X series (**$80–$130**).

Gimme a video upgrade! Buy an OSSC (**€110**). Some consoles need RGB mods, including NES (**$180+** for the kit and installation services). Good RGB cables cost **$25** minimum.

My favourite system is Saturn, PSone, or PS2! Handle 480i more smoothly with the GBS-C AIO (**$122**).

I want real HDMI output! PS1Digital costs **$160** for the kit and Voultar's installation service is **$125**.

I need the best for everything! Wait for RetroTINK-5X or OSSC Pro. RGB mod NES, N64, and PC Engine Duo. Slightly improve SNES and Genesis with RGB bypass mods. Buy coax-shielded SCART cables, component cables, and the best switchers. **Cost: it never ends, send help!**

OH GREAT. HERE COMES 480i

Something you should be aware of regarding nearly every lag-free solution – including the OSSC and RetroTINK devices – is that when playing interlaced games, they use what is known as 'bob' deinterlacing. While it's not as pleasing to look at as motion-adaptive deinterlacing, I feel that the result is somewhat similar to how 480i jitters on a CRT, and I don't mind it all that much. Most people, however, seem to *hate* bob deinterlacing. To be fair, bob is pretty bad for a lot of IPS displays, which tend to be more inclined to temporarily retain flickering patterns even after the image goes away. The RetroTINKs do have a smoothing option that softens the bob quite a bit (and if you don't like pixels, you can even use smoothing in 240p mode). Alternatively, you could just set these devices to pass digital 480i to your TV and let it handle the deinterlacing, which will probably look OK, but there will be more lag.

Luckily, there's a fairly new and promising solution for those who often play interlaced games (if you're a PlayStation 2 fan, for example). An open-source project called GBS Control by Rama is both a physical mod and a custom firmware for some widely available, $20-ish scaler units with VGA output called the GBS8200. A stock GBS8200 would have many of the same flaws as other generic upscalers, but it's long been an underdog upscaling favourite for original hardware fans on a tight budget. GBS Control turns the GBS8200 from a scrappy lightweight into the ultimate affordable video scaler for do-it-yourselfers. The end result is proper handling of 240p, motion-adaptive deinterlacing for 480i, and a variety of output options over VGA – all with quite low latency.

The craziest thing about the GBS Control? It's the only gaming-focused scaler we've tested to date that handles resolution switching instantly. There are a number of games for Sega Saturn, PlayStation, and Nintendo 64 that switch between 480i and 240p resolutions. On CRTs, this works seamlessly, but on the Framemeister, OSSC, and RetroTINKs? Not so much. A number of games (such as *Chrono Cross*, *Silent Hill*, and *Dino Crisis* on PSone) have 240p gameplay with 480i in-game menus. With the signal constantly dropping in and out, it can get your character killed while you wait. It's worth noting that your typical generic scaler from Amazon (or even your own TV) might also go between 240p and 480i without dropping the signal, but the difference is that those handle 240p poorly, while the GBS Control handles both 240p and 480i nicely *and* seamlessly.

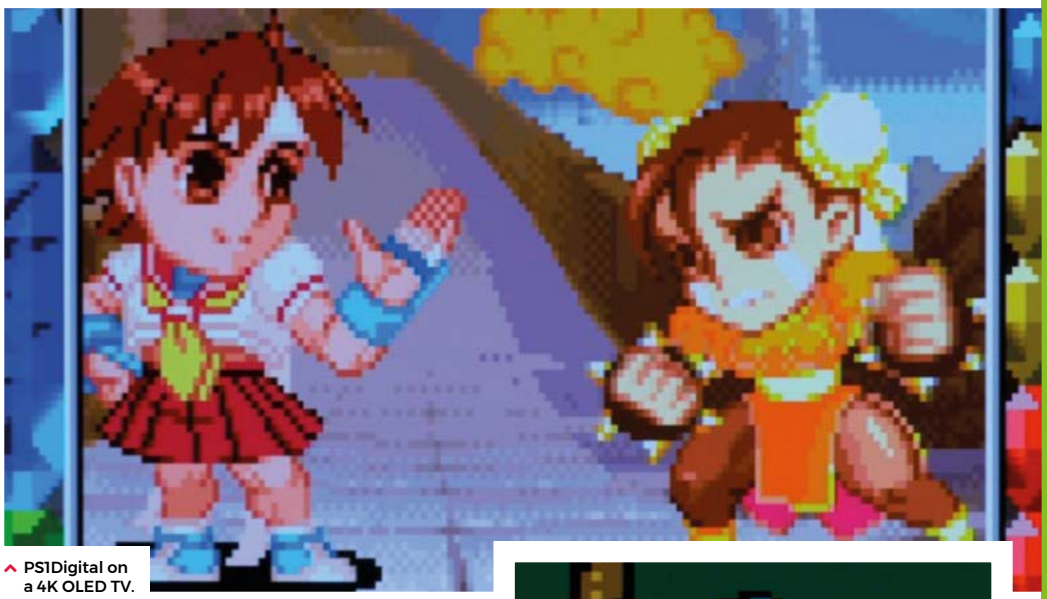
"Leading the charge on the HDMI modding front is the new Pixel FX"

For those interested in the functionality of the GBS Control, but not so much the idea of constructing it and flashing the firmware, a product called the GBS-C AIO (all-in-one) is presented as a ready-to-go version of GBS Control with some extra features, including a pretty solid analogue-to-HDMI converter.

So are we in the video processor endgame? Not yet. Markus Hiienkari is working on the OSSC Pro, and Mike Chi is nearly finished designing the RetroTINK-5X, both of which I can safely predict will totally change my life (in gaming, at least). Since they're still in development, we can't be sure of everything they will offer, but more complete sets of inputs and seamless resolution switching do appear to be on the table. However, they're also sure to be much more expensive than the OSSC v1.6 and the RetroTINK-2X series – likely

Many gaming-focused video processors offer scanline options for a more vintage look.

Left to right: CRT (composite), 4K TV (composite), RetroTINK MINI (composite), RetroTINK MINI (included S-Video).



PS1Digital on a 4K OLED TV.

twice as expensive, at least. As such, these should not be thought of as replacing those if the existing models already suit your needs and budget.

MOD MANIA

Does all of this just sound like too many wires and boxes for you? Well, what if you bypassed this whole analogue video situation and modified your favourite vintage consoles for HDMI?

I'm not talking about one-off projects where someone jammed a generic analogue-to-HDMI box inside a console. These mods are painstakingly developed products, packed with smart technology like FPGAs and WiFi chips (for firmware updates) integrated onto carefully designed PCBs for optimal installation. Leading the charge on the HDMI modding front is the newly minted Pixel FX, a company formed by veteran mod design duo Dan Kunz and Christof Harnischmacher, alongside Stephen Williams. Between the three of them, they have previously produced the GCDual and WiiDual (GameCube and Wii mods that use open-source firmware by Ingo Korb), DCDigital (Dreamcast), PS1Digital (original PlayStation), and the GBA Consolizer (Game Boy Advance), all of which add HDMI output to their respective original consoles, along with advanced features and scaling algorithms tuned to each console's peculiarities – without adding input lag. The team already has mods in the works for Nintendo 64, PlayStation 2, Xbox, and even Nintendo DS.

While Pixel FX is the most prolific HDMI mod maker, there are a few other designs out there, including the Hi-Def NES by Kevin Horton and the UltraHDMI for N64 by Marshall Hecht (one of my all-time favourite mods). All these mods pull digital information from an internal source before the video and audio are converted for the console's stock analogue output, so they truly provide digital graphics and sound.

Mega Man 5 on a real RGB-modded NES via the OSSC on a 4K OLED.

Two systems you might not want to hold your breath for: Sega Mega Drive and Sega Saturn. We've been told that the way these systems work, tapping into the digital video processing chain isn't terribly realistic, short of designing something like an FPGA VDP replacement – in which case, the system wouldn't exactly fit the definition of 'original hardware' anymore.

Many people in the classic gaming scene worry about their chosen device becoming 'obsolete' should an updated version come about later – and get angry about it when it does. But just as the SNES didn't suddenly become bad when newer consoles released, any of the well-designed cables, video processors, and mods that are good today will continue to be worth using well into the future. That's what classic gaming is all about: celebrating what we already have. Because a good game is worth experiencing no matter when – or how – you choose to play it.

The community pushes for 'no-cut mods' wherever possible. PS1Digital occupies the Serial I/O port.

Disco Elysium: designing the city of Revachol

A behind-the-scenes look at Revachol, the city at the heart of one of the most innovative RPGs ever

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

FINAL CUT

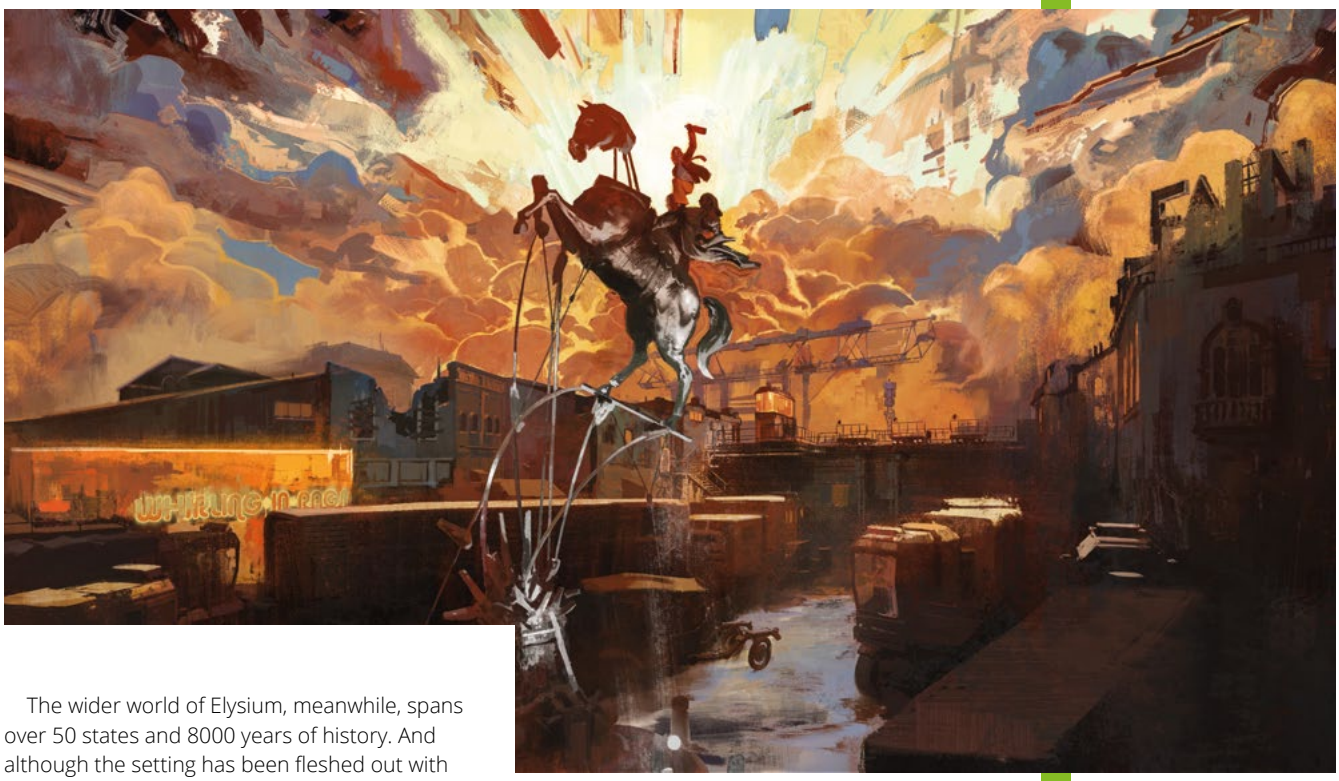
Disco Elysium has evolved since its launch, and its definitive *Final Cut* version was released for Windows, Mac, and PlayStation in March 2021. It features full voice-over, new characters and cutscenes, UI improvements, and 'political visions' quests. "All four quests – for moralism, communism, ultra-liberalism, and traditionalism – play out so differently from each other that it's worth chasing them all down; but you can only get one in a single playthrough," says Helen Hindpere. *The Final Cut* is free for existing owners of *Disco Elysium* on PC.

Disco Elysium is a unique narrative experience, and a rare game that tries to depict all the layers and textures of a real city. With *Disco Elysium: The Final Cut* out now, I caught up with lead writer Helen Hindpere and artist Kaspar Tamsalu to find out what went into designing the city of Revachol.

"There's a murder quest in the Bridge District of *Baldur's Gate [II]* that first showed us the potential of an urban detective RPG," says Hindpere of one of *Disco Elysium*'s early creative touchstones. From it, she adds, came the desire to further explore the idea of chasing a suspect through a living city: "Every street corner, every apartment block hides a new clue, a revelation. A character to talk to or an object to examine".

Hindpere says that city locations are what makes her want to crawl inside an RPG's world. "Cities are inherently existential, melancholic places," she says. "There's this sense of something bigger out there; the hustle and bustle of human life that has continued for thousands of years. And then the question: what am I doing here? Every citizen of Revachol is wrestling with that in one way or another. We truly tried to write every character as if they're the real protagonists. Examine their loneliness, their longing."

Regarding the choice of setting, the district of Martinaise is, according to Hindpere, not "representative of the rest of the city or the world", but rather, "works as a microcosm". This poverty-stricken, forgotten area in Revachol's far west wasn't the writers' favourite – "We were more fond of using other districts, like culturally diverse Jamrock," says Hindpere – but Martinaise is where an attempted revolution failed, and the area bears its scars. "You can still see artillery damage and bullet-holes in the walls," Hindpere continues. "There's this feeling of being stuck in the past... You have to dig quite a bit to find the soft core of its people, to get under their skin."



Harrier Du Bois rocking above the Jam in Martinaise.

The wider world of Elysium, meanwhile, spans over 50 states and 8000 years of history. And although the setting has been fleshed out with places such as the Scandinavian-inspired social democracy of Vaasa, the team still needed to keep the game's central location to a reasonable size – which is where Martinaise came in. Besides, giant open worlds often end up barren and repetitive, explains Hindpere. "Players are so used to hearing words like 'massive' that saying anything else about your game sounds underwhelming," she says. "How do you describe a world that's vertically built content-wise, the way city blocks usually are, with characters thrown closely together? One reviewer called *Disco Elysium* an 'intricate' open world – what a beautiful term for what we set out to achieve."

When it came to storytelling, Hindpere and her team realised that players become more engaged in lore when it's personal or helps solve a mystery. Tempting as it is to "throw parts of the world-building out there, without much curation or editing", hoping players will figure it out, developer ZA/UM tried to use more natural storytelling to open up the world. "When you first step out of the hostel, there's a crack in the pavement – it's important for you to understand why the earth is cracked," says Hindpere. "Maybe there's a sea-monster on the loose? If you follow the crack, you're led to a crater where you meet two old men playing pétanque. One of the fellows is wearing a uniform. You can ask them about the crater; you can ask them about the crack. The guy in the uniform tells you about artillery damage – it turns out there's been a war. Now, that type of storytelling isn't anything new, but our twist has been to add talking skills to the mix. This makes each such interaction deeply personal: it brings up memories, stirs up opinions. You're not passively taking in the lore; you're building up your character with his own internal understanding of the complexities of the world."

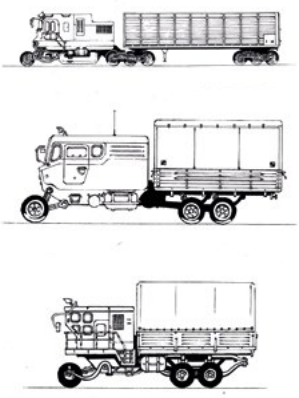
"Every street corner, every apartment block hides a new clue, a revelation"

MAKING THE GAME

Revachol was first conceived in 2001, and, Hindpere reveals, its name is a misspelling of French anarchist François Claudius Koenigstein's nom de guerre Ravachol, lifted from the lyrics of Estonian punk band Vennaskond's lyrics in the song *Welcome to America*: "Welcome to Saint Petersburg, Emile Henry and Ravachol!". There, next to Saint Petersburg, "Revachol sounded like the name of a city that could be the capital of another world. A place where (for some improbable, magical reason) Paris and Tallinn meet. A place with a very specific feeling that lingers on long after you've left."

Tamsalu points out that "when you play the game, you'll quickly realise that while everything looks [familiar] at first glance, Elysium is actually ➔

Long-hauler designs by artist Jüri Saks.



VOICES AND LANGUAGES

"Another Herculean task we've taken on our shoulders is voicing the one million words of dialogue," says Hindpere. "For that, we've gotten the entire studio involved – we have three VO directors leading the show and all other departments assisting them in any way possible. The outcome feels lush and colourful." Equally demanding were the many new translations the studio have added, though Hindpere adds that there's "this cool little feature for those interested in language learning: you can select the languages you're interested in and then switch between them at any time in the middle of a dialogue with a single key press".

Concept painting for the fishing village in Martinaise.

a world unlike any other". Even passing details like vehicles were given special consideration, Tamsalu adds. "Artist Jüri Saks sketched the unique designs for motor carriages and long-haul motor lorries – there are no [traditional] cars in Elysium," he says. There are entire art histories and technologies dating back millennia, as well as narrative, thematic, and gameplay needs that had to be depicted by environment artists. Designing the city and its surrounding areas was, Tamsalu explains, "anything but a straightforward process", as locations went through total redesigns due to rewrites, while others received innumerable tweaks "until they felt right".

"The technical side of video game art-making was uncharted territory"

"The architecture in Martinaise mirrors its turbulent history, and we wanted to use our references to bring it out," says Hindpere. "For urban planning, we looked into Caribbean colonial architecture, particularly in Cuba and Haiti. Paris was an inspiration for the pre-revolutionary revival project of Martinaise – the plazas and townhouses that have now fallen into disarray."

Then, she adds, "there's the utter libertarian chaos of 1990s Eastern Europe thrown into the mix", with its disregard for urban planning. "It's these unorganised shanty town aesthetics that define Martinaise" – a chaotic mix that looks hideous in real life, but great in isometric 3D. A place where the "ruins of a commercial complex become modern dungeons, and an old wooden church becomes an entire questline… it's a mix of two 70s: the 1870s and the 1970s".

To manage the characters populating this unique place, ZA/UM used an inclusion matrix to ensure the balance of kids, old people, men, and women was just right. Says Hindpere: "Revachol is a world capital with people from many different cultural backgrounds. We wanted to use these differences to show more of the world – there's a merchant from another archipelago to tell you about Revachol's colonialist past."

A DISCO SOUL

Hindpere points out that music is the soul of any place. Walk around London, and "it's mostly grime or UK garage you hear from the cars passing by.

A tiny old church on the coast of Martinaise. All the art presented here, unless otherwise specified, was created by Aleksander Rostov.

The complex, deeply evocative Revachol skyline.

In Athens, it's Greek folk music entertaining tourists in restaurants – and noughties indie rock coming from the balconies above". As for the soul of Martinaise, it's best captured in the melancholic soundscapes of British Sea Power. "Their music works wonders with literature," adds Hindpere. "It has the power to express something that manages to elude the narration itself – something ghastly, emotional, yet hopeful."

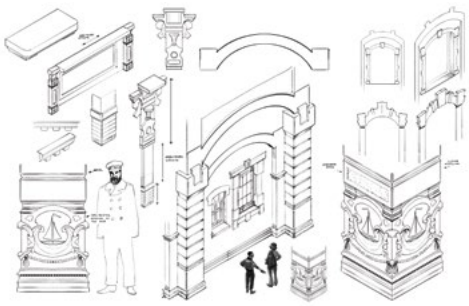
Regarding the game's painterly visuals, Tamsalu reveals that "ZA/UM's two principal concept artists come from a fine art background... For us [artists], the technical side of video game art-making was completely uncharted territory, and experimenting in these circumstances [was] endlessly inspirational and invigorating. While the majority of video game art riffs off other video game art, we took what we knew best and ran wild with it".

And then there's the detective genre itself, which helps audiences take in the granularity of Revachol. "It invites the player to go over every nook and cranny with the utmost care," Hindpere notes. "Every character, every object becomes part of a larger system."

It's not only the murder case you're investigating, either: you're learning more about the world itself, or even what killed your character's soul. It's an approach that stands in stark contrast to more loot-obsessed RPGs, Hindpere says. "One of my pet peeves in modern open-world games is how they handle loot and information", she adds. "You're not a role-player anymore, you're a vacuum cleaner. Guns, crafting parts, trash; every piece of paper, every stupid USB stick – as a player, you're compelled to pick them up."

Disco Elysium combines imaginative world-building and an emotion that ZA/UM describes as "Elytical". But what is this emotion? It's despair and hope walking hand in hand, Hindpere tells us. "It's the shadow of utter annihilation waiting in the wings – next to the unshakeable belief in the greatness of [human]kind," she explains.

"That's what we're trying to chase down every time we consider whether an event or a name or an object belongs to Elysium. It's not just characters that are emanating this feeling – it's the entire world."



Early on in development, the team considered building the city using prefab modules like these, but eventually dropped that idea.

REVACHOL REVOLUTION

In Revachol, as in our world and throughout the history of civilisation, revolution is still a hope, according to Hindpere. "But there is another hope hiding in the depths of Elysium: death and total annihilation. What makes this world sparkle ever so slightly like snow in the dark is the subtle presence of apocalypse, the lifting of the veil. I guess in that sense it is a thoroughly Christian world – it is either redemption or the end of the world. If all else fails, perhaps making peace with your own mortality is not such a bad thing after all."

Create lighting and atmospheric effects in Unity

Lighting and effects generate atmosphere and highlight points of interest to the player. Here's how to get started

AUTHOR
RYAN SHAH

An avid developer at The Multiplayer Guys with a strong passion for education, Ryan Shah moonlights as KITATUS – an education content creator for all things game development.

Lighting is one of the most powerful tools in a creator's toolkit. From illuminating important goals to adding spooky atmosphere – the importance of light and understanding light cannot be overstated.

To use the lighting tools within Unity, we must first know our limitations. There are two main types of lighting to consider: baked and dynamic. Baked lights are ones that are pre-calculated by Unity, whereas dynamic lights are calculated at runtime. The benefits here are that baked lights are essentially 'free' in terms of performance within your game, and also offer high-quality shadows for static objects. With dynamic lights, you gain the advantage of having shadows for moving objects, as well as total control of adding, removing, or altering lights at runtime.

The drawbacks of one type of lighting are complemented by the other. For example, a drawback of baked lighting is that your game requires more memory to read the lighting data. As dynamic lighting doesn't pre-compute this data and creates it on the fly, this is more lightweight in terms of memory requirements; the trade-off is that dynamic lights are more performance-intensive.

Figuring out what lighting to use in your project may seem like a daunting task at first, but the process becomes much easier when you start to break things down. A good example of this is sunlight. Does your scene have any outdoor elements, such as open spaces or windows to the outside world? If so, you're going to need a sun. Does the sun move (is there a change to time of day during playtime)? If so, we'll need to dynamically change the light properties at runtime, and thus rely on dynamic lighting. Even if the sun doesn't move, if you have moving objects in your scene that need to cast shadows, dynamic lights are still required.

You don't have to use just one type of light in your scene, however. It's possible to mix static and dynamic lights together to get the best of both worlds in terms of their functionality. Here, we'll use a number of different lights and lighting profiles to add atmosphere to our scene.

LIGHT IT UP

To get started, let's look at Environment Lighting. First, head into the Lighting menu by going to Window > Rendering > Lighting Settings (see **Figure 1**). Inside the Lighting menu, there are several features we can use to fully exploit Unity's lighting features to our advantage. The first one we're going to look at is the Environmental Lighting feature. This is useful for lighting that has no origin within the scene but still needs to exist. You may be thinking that this doesn't make sense – after all, if you're creating

This article first appeared in *Build Your Own First-Person Shooter in Unity*, available now. Find out more at **wfmag.cc/fps**

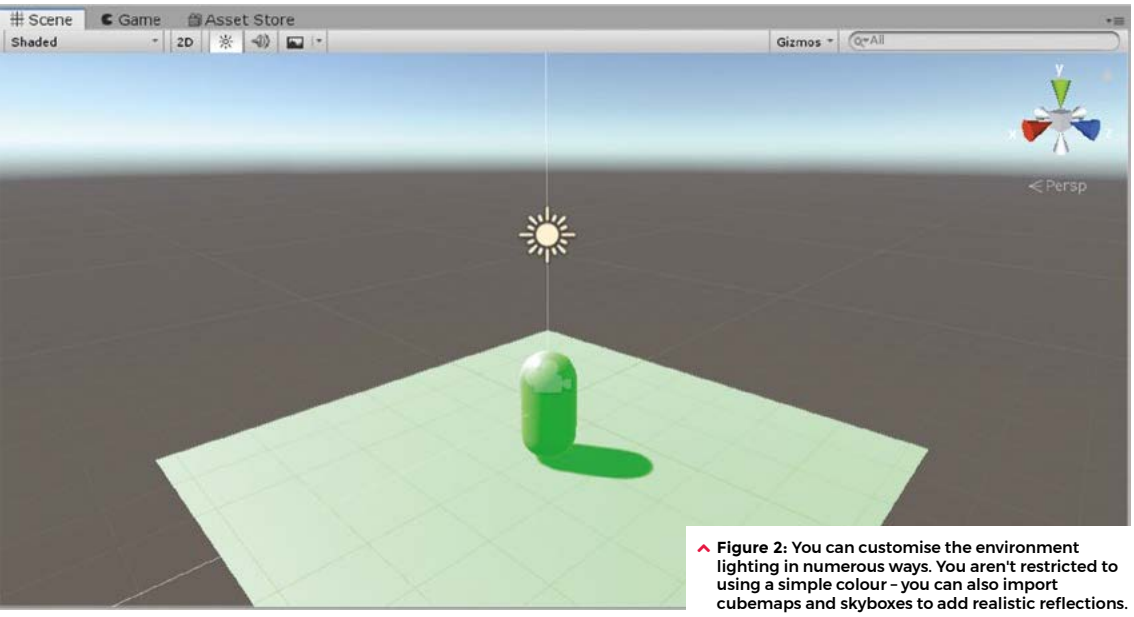


Figure 2: You can customise the environment lighting in numerous ways. You aren't restricted to using a simple colour – you can also import cubemaps and skyboxes to add realistic reflections.

a realistic game, you want your lights to come from natural locations. But there are important benefits to using environmental lighting, even in realistic scenes.

In most movies, lighting emanates from sources outside the scene captured by the camera. In many behind-the-scenes videos, you may notice additional lights and fixtures behind or around the camera. Environmental lighting is usually to either diffuse the existing lighting within the scene – to brighten up dark corners – or to highlight an object or character in the foreground.

We can do this in Unity with Environment Lighting. We have three main options in this section: Source (which defines where the light's coming from), Intensity Multiplier (how strong the light is), and Ambient Mode (if you have global illumination turned on for your scene, this would control how this light should be treated).

As you may have guessed, in the Source section, Skybox means the light will come from the sky. Gradient deals with our scene in three chunks: the sky, the distant horizon, and the ground. With the gradient, you can set specific colours for each of these three areas and Unity will blend these colours together based on location, to coat your scene in a naturally blended light. The colour option blankets the whole scene with a colour of your choosing, which is great for diffusing your scene.

As a cool example, let's coat our scene in a luminous green (see **Figure 2**). This will not only give us an effect akin to *The Matrix*, but will also brighten our shadows a little to make sure our scene isn't too dark. To do this, head back to Environment Lighting and change the source to Color; for Ambient Color, click the colour (to open up the property window) and add these values: R: 0, G: 185, B: 22 (alternatively, you can set the hexadecimal value to 00B916). If you take a look at your scene now, you'll notice everything is coated in a bright shade of green – even our dark shadows have a green tint to them.

"In most movies, lighting emanates from sources outside the scene captured by the camera"

There are still plenty of steps we can take to improve the atmosphere of our level. As our scene takes place outdoors, we're going to need some sunlight. In most cases, especially in modern games, sunlight is displayed using a Directional Light. In Unity, there are four key lighting types: Point, Spot, Directional, and Area. 'Point' lights are placed in the scene and emit light in a spherical fashion. 'Spot' lights act like real-life spotlights – they radiate a cone of light from the point of origin. 'Directional' lights have no clear point of origin, but act as if the light is omnipresent (like a sun) and blanket the whole scene with lighting based on the rotation of the directional light. Finally, 'Area' lights are a baked-only light that emit rays uniformly within a rectangle. ➔

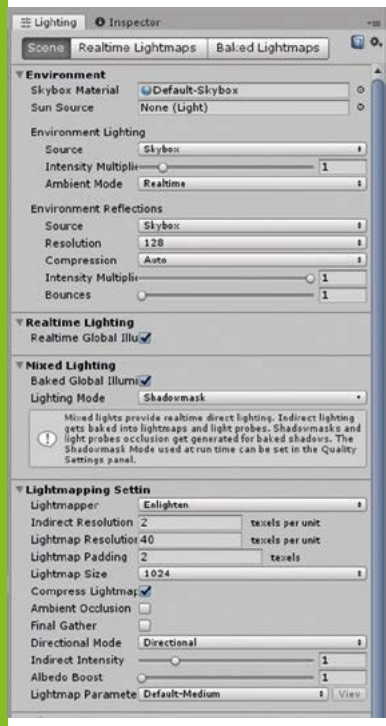
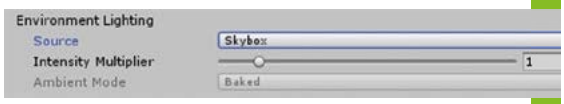


Figure 1: The Lighting Settings window allows us to make a number of changes to the lighting in our scene to help us achieve the effect we're looking for.



There are the three options for Environment Lighting, where you can change the source of the lighting, the intensity of the light, and how the light is treated.

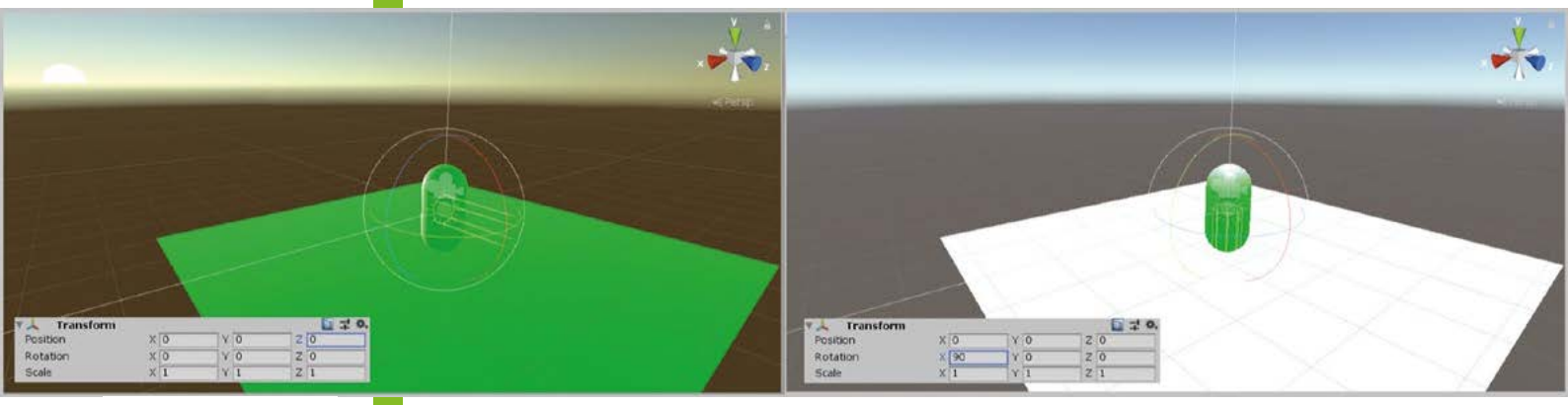


Figure 3: The rotation of a directional light will change the time of day of the default skybox in your scene.

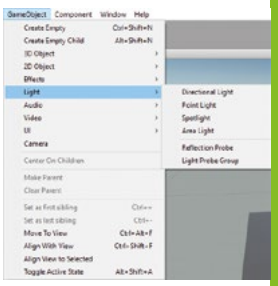
The best way to understand these different lighting types is to use them in practice, so let's get started by creating a sun. Take a look in your scene Hierarchy (usually on the left-hand side of the main editor view). If you see a Directional Light in there, delete it by selecting it and pressing the **DELETE** key on your keyboard. Now our scene is lit solely by the ambient lighting we set up earlier. To make a new directional light, right-click inside your Hierarchy; within the menu that pops up, select Lights > Directional Light.

"The best way to understand these different lighting types is to use them in practice"

Wherever directional lights are placed, they'll blanket the whole scene in light. What does matter with directional lights, however, is rotation. If you select the Directional Light and press **E** to edit rotation mode, grabbing the X-axis (the red spherical line) will let you spin the light. You should immediately notice that the time of day for the skybox changes when you do this. This is because this light is simulating your in-game sun. An X rotation of 0 is dawn, where the light bleeds over the horizon, an X rotation of 90 is midday, and an X rotation of 180 is dusk (see **Figure 3**). Unity does this because using a directional light as sunlight or moonlight is about as helpful as this type of light can be. Let's create a warm, dawn sunlight by setting our rotation (via the Inspector) to X: 0, Y: 0, Z: 0.

We now have a spring morning breaking out across our scene. As we've already covered, this light is a dynamic light (that doesn't use pre-baked lightmaps) because it has to calculate shadows for objects that move. You can see what lighting mode the light is set to by clicking the light and, within the Inspector, going to the Mode area, where you will see Realtime for our directional light.

Before we dive deeper into the lighting system, let's look at a couple of effects we can add to our scene to further flesh out the atmosphere.



The four lighting options can be accessed via right-clicking in the Project tab, or by using the drop-downs at the top of the Unity Editor.

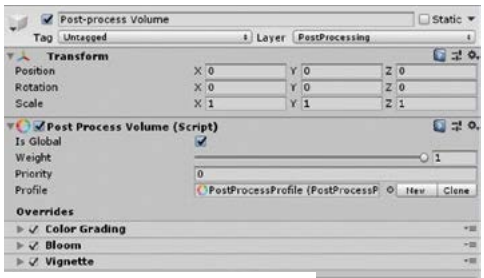
You can select the colour of your directional light, and the kinds of shadows it creates, in the Settings menu.

POST-PROCESS

To really add atmosphere to our scene, let's use the Post-Process feature. A post-process adds effects to the rendered image just before it's displayed to the end-user. It's useful adding atmosphere and style to your scenes. If you haven't brought in the post-process tool yet, you need to add it via the package manager. To do this, you can go to Window > Package Manager. Once it's loaded, select Post Processing on the left-hand side, and press the Install button on the top right of the window to install it into the project.

To start using the post-process, we need to do two things. First, we need to add a Post-Process Layer to our camera. This tells the engine, "Hey, this camera gets affected by the post-process settings we're going to make." In order to do this, select the camera within your scene, head over to the Inspector, and select Add Component.

Now select Rendering > Post-Process Layer. There are a few options in the Rendering submenu, so ensure you select the correct



The Post-Processing Volume allows you to define specific areas and select effects that apply to them.

option. To ensure this camera captures our post-process work, within the newly created Post-Process Layer section in our Camera, go to Layer and select Everything. This means that the camera will react to every post-process volume in the scene – as opposed to the default value of none, which means none of the post-process volumes can affect the camera.

The second step to deal with is the post-process volume itself. These are trigger boxes placed within your scene that can either affect the area covered inside them or the whole scene. We will look at how to set this up in just a moment. Before we do, we must first spawn a Post-Process Volume in our scene. To do this, head over to the Hierarchy and create a new component. Select 3D Object > Post-Process Volume to spawn the system we need.

We now have a working post-process system in our scene, but there are still a couple of things we need to do before we can tune the settings. Click the Post-Process Volume and, over in the Inspector, tick the Is Global checkbox so it's true. This tells Unity that instead of turning the post-process on if the camera is inside this trigger volume, it should apply it to the whole scene. If you're wondering when would be the right time to have Is Global set to false, if you had multiple post-process effects in your scene, if Is Global was set to true then they would conflict and cause unintended results. Basically, if you have more than one post-process, turn Is Global off and scale the trigger volumes accordingly to cover the area you want said post-process to appear in. If you only have a single post-process that you want to cover the whole scene, set Is Global to true.

There are a few other settings both within the Post-Process Volume and the Post-Process Layer we've created. Many of them are designed to be tweaked by hand to get the exact specific aesthetic you're trying to achieve. For the purposes of what we're doing here, we're simply going to focus on the last piece of the puzzle: the Post-Process Profile. This is where the magic happens – this is the asset we can use to adjust the post-process settings we want to implement in our scene. To create a Post-Process Profile, either head to the content browser and create it there, or you can press the handy New button next to the Profile heading in the Post-Process Volume. Go ahead and create one now.

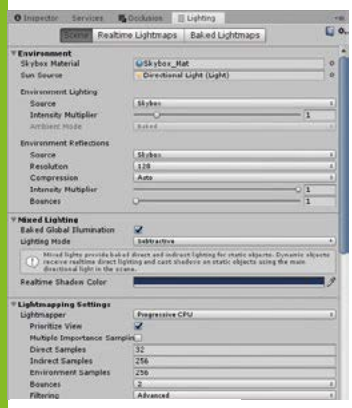
From here, open the newly created profile by either double-clicking the asset or double-clicking the now filled-in variable in the Post-Process Profile. Within the Inspector, we can now add and alter effects for our post-process profile. Getting a post-process to look exactly how you want will be a subjective experiment, turning on and tweaking effects as you see fit to get the exact atmosphere that you're looking for.

Below is a list of the effects you can implement with this post-process profile system:

Ambient Occlusion: Darkens calculated ambient shadows between objects and surfaces.

Auto Exposure: Mimics the human eye's reaction to light. It simulates those few seconds where, if you're in a dark room and then head outside on a sunny day, your eyes take a few seconds to adjust.

Bloom: Makes the light around a bright object leak out a little, creating the illusion of a really bright light source – a common artefact with real-life cameras. You can also add dirt masks to emulate a dusty lens. ➔

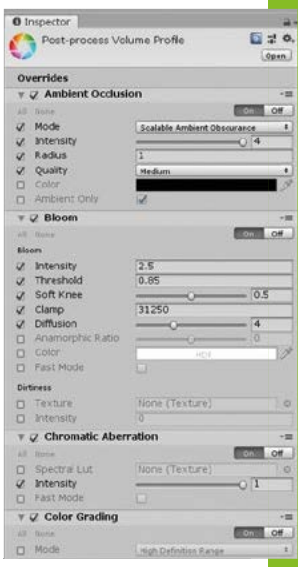


The Lighting tab has a plethora of options to choose from.

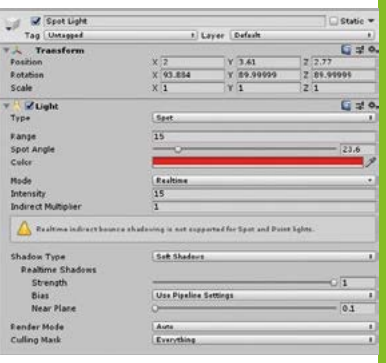
DOUBLE INSTALL?

If you're having trouble activating post-processing features – if you find options are missing, for example – you might have a 'double install'. This is where you have two instances of **PostProcessing** in your project. The Package Manager is the intended way of using the system, so take a look in your content browser and delete any folders marked **PostProcessing** (that isn't a **Packages** subfolder).

The Package Manager is filled with utilities and packages you can use to improve the look and feel of your project.



With Post-Process Volume Profiles, keep performance in mind, as some of the effects can bring a large performance cost.



Spot light settings give you plenty of control over things like angle, range, colour, and intensity.

Chromatic Aberration: Emulates the multicoloured halo effect sometimes seen on real camera lenses.

Color Grading: Uses a look-up table to adjust the palette and tone of colours in a scene.

Depth of Field: Replicates the focal point of a camera lens. You can change what objects are blurred out and what's in focus, just like a real camera lens.

Grain: A film grain effect that can be used to mask jagged lines or to provide a classic cinematic feel.

Lens Distortion: Changes the shape of the virtual camera lens to provide a distorted effect, commonly seen in skateboarding videos of the nineties.

Motion Blur: Enhances the look of a fast-moving object. A popular technique in modern video games.

Screen Space Reflections: Alters the appearance of objects that appear in reflective materials, such as a puddle or a mirror. This effect saves having to render geometry twice by using the depth buffer to calculate how the reflection should look.

Vignette: Darkens the edges of the image to emulate a real camera. This effect is used a lot in horror games because it adds to the spooky atmosphere.

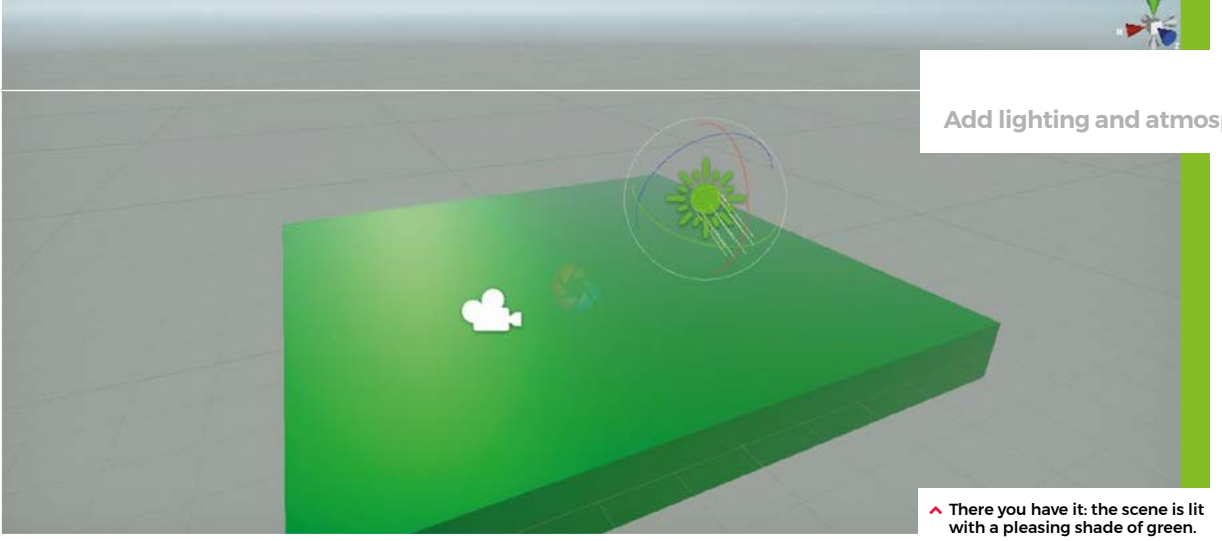
I have included an example below of a post-process file you can use, but feel free to tweak the settings within this profile until you come up with a visual style and aesthetic that suits your project:

- **Ambient Occlusion:**
  - **Mode:** Scalable Ambient Obscurance
  - **Intensity:** 4
  - **Radius:** 1
  - **Quality:** Medium
- **Bloom:**
  - **Intensity:** 2.5
  - **Threshold:** 0.85
  - **Soft Knee:** 0.5
  - **Clamp:** 31250
  - **Diffusion:** 4
- **Chromatic Aberration:**
  - **Intensity:** 1
- **Color Grading:**
  - **Mode:** ACES
  - **Temperature:** 9
  - **Saturation:** 1.2
  - **Contrast:** 1
  - **Channel Mixer:**
    - **Red:** 40
    - **Green:** 110
- **Depth of Field:**
  - **Focus Distance:** 15
  - **Aperture:** 3
  - **Focal Length:** 70
- **Grain:**
  - **Colored:** False
  - **Intensity:** 0.15
- **Motion Blur:**
  - **Shutter Angle:** 310
  - **Sample Count:** 20
- **Vignette:**
  - **Intensity:** 0.425
  - **Smoothness:** 0.2

One important thing to note with post-process effects is that they're not all created equal in terms of performance. Some effects come with a large performance cost, and it's down to you to decide if the effects are worth the performance trade-off, or if you want to disable (or in some cases enable) specific effects on specific devices.

Before we go back to talking about lights, let's look at one last effect we can use to add atmosphere and further stylise our project. Head back into the Lighting window. If you've closed it, you can find it again in Window > Rendering > Lighting Settings. If you scroll through the list, you'll find Fog. Fog has been a staple of video games for many years as an easy way to build atmosphere, as well as hide any imperfections in your game's world. Select the checkbox next to Fog to turn the feature on and play with the settings until you find a look that suits you. For my project, my settings are:

- **Fog:**
  - **Fog:** True
  - **Color:** (Hexadecimal) D2C1C1
  - **Mode:** Linear
    - **Start:** 0
    - **End:** 150



There you have it: the scene is lit with a pleasing shade of green.

There are many different tweaks and changes you make in both the Post-Process settings and the Lighting settings, so I highly recommend going through and making tweaks to values until you find a style you are happy with.

Now that we've covered post-processing, let's add a few more lights to gain a deeper understanding of the options available to us.

IN THE SPOTLIGHT

There are two important light types we touched on earlier, but are worth exploring in more detail: point lights and spot lights.

Let's start by making a spot light. You can do this by right-clicking in the Hierarchy and selecting Light > Spotlight. Earlier, we looked at how we can emulate a real-world spotlight; here, we'll use a spot light to create a torch.

Find the camera in your Hierarchy and drag the spot light on top of the camera. You'll notice that your spot light now becomes a child of this camera. We changed the parent of our spot light, but it has stayed in the same location it was in before the merge. To fix this, select the camera and head into the Inspector. Set the location and rotation to: X: 0, Y: 0, and Z: 0. This will move the spot light to the camera, creating the illusion that the torch is being held by the player character.

Below, I've provided settings to create a realistic-looking flashlight. Again, feel free to tweak these values as you see fit.

- **Light:**
  - **Range:** 10 – How far into the distance does the light affect.
  - **Spot Angle:** 45 – This is how big the cone of the light should be.
  - **Mode:** Realtime – As this is supposed to act as a flashlight, we will need real-time shadows due to the many moving objects within our scene.
  - **Intensity:** 10 – Intensity deals with how bright the light source is.
  - **Indirect Multiplier:** 5 – Deals with how much light bleed you get from this light.

The last light I wanted to touch on is the point light. These are ideal for areas in your scene that require a realistic-looking light bulb, or an area of your scene that requires a particular light or hue that you're not getting from your direction light, such as an exaggerated glow from a neon sign.

You can create a point light in almost the same way as we've created the other lights within the scene. Within your Hierarchy, right-click and select Lighting > Point Light. For our example, we'll pretend there's a street light at the corner of our scene that has an evil, red tint. I've placed my point light at the position: X: 0.5, Y: 2.5, Z: -5.

Earlier, we saw how point lights emit light evenly from the centre of a sphere, so rotation isn't necessary in most cases. Here are the settings I'm using for my red light (if you'd like to emulate them, or create your own style; make sure the point light is selected and head into the Light section of the Inspector):

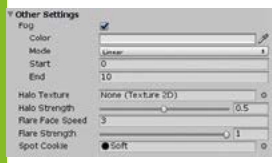
- **Light:**
  - **Range:** 15
  - **Color:** (Hexadecimal) FF0000
  - **Mode:** Baked – This light isn't used to shadow dynamic items within this scene; it is simply used to further colourise our in-game world so we can go for the more performant Baked option.
  - **Intensity:** 15

As we have a number of lights in our scene – and process effects that also affect the visuals – it might be hard to see this light while playing your game. To combat this, you'll have to tweak your various lights and post-process settings until you get the style you're looking for – it's a case of balancing your project's systems until they look right.

We've just taken our first steps into the lighting and effect systems within Unity, but this is just the tip of the iceberg. If you're interested in taking these systems a step further, I strongly suggest looking into global illumination and how to alter lights via code – for example, you could create a spooky, flickering light in a lonely hallway.

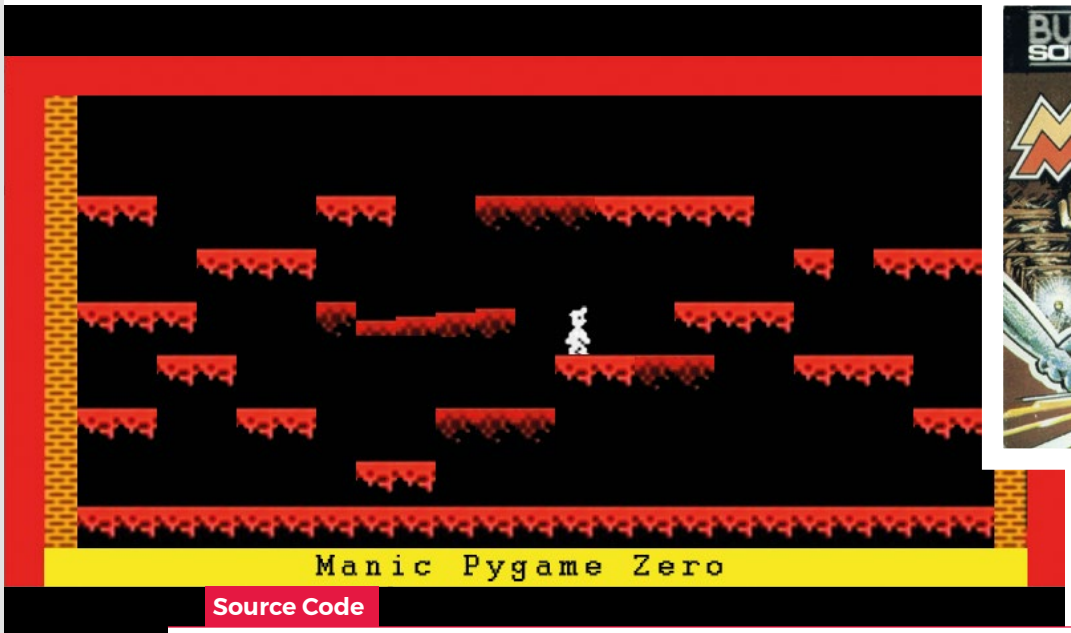
PREVIEWING

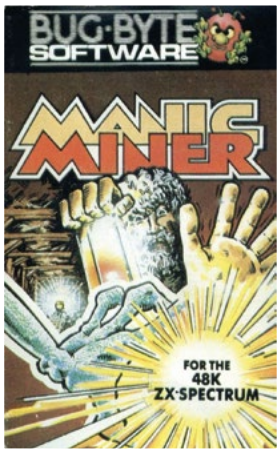
You can instantly see the results of your post-processing effects by heading over to the Game viewport. The Scene viewport doesn't include post-process effects, due to performance and usability risks.



The Lighting Settings window contains many helpful settings to further tweak the visual style of your scene, from fog settings to global illumination.

When viewed in the game, our point lights give off a sickly orange glow, and generate the kinds of shadows you'd expect from a sinister castle.





Manic Miner's cover art was wonderfully lo-fi.

Our homage to the classic *Manic Miner*.

Source Code

Remake Manic Miner's collapsing platforms

Traverse a crumbly cavern in our homage to a Spectrum classic

AUTHOR
MARK VANSTONE

One of the most iconic games on the Sinclair ZX Spectrum featured a little man called Miner Willy, who spent his days walking and jumping from platform to platform collecting the items needed to unlock the door on each screen. *Manic Miner*'s underground world featured caverns, processing plants, killer telephones, and even a forest featuring little critters that looked suspiciously like Ewoks.

Written by programmer Matthew Smith and released by Bug-Byte in 1983, the game became one of the most successful titles on the Spectrum. Smith was only 16 when he wrote *Manic Miner* and even constructed his own hardware to speed up the development process, assembling the code on a TRS-80 and then downloading it to the Spectrum with his own hand-built interface. The success of *Manic Miner* was then closely followed by *Jet Set Willy*, featuring the same character, and although they were originally written for the Spectrum, the games very soon made it onto just about every home computer of the time.

Both *Manic Miner* and *Jet Set Willy* featured unstable platforms which crumbled in Willy's wake, and it's these we're going to try to recreate this month.

In this Pygame Zero example, we need three frames of animation for each of the two directions of movement. As we press the arrow keys we can move the Actor left and right, and in this case, we'll decide which frame to display based on a `count` variable, which is incremented each time our `update()` function runs. We can create platforms from a two-dimensional data list representing positions on the screen with 0 meaning a blank space, 1 being a solid platform, and 2 a collapsible platform. To set these up, we run through the list and make Actor objects for each platform segment.

For our `draw()` function, we can blit a background graphic, then Miner Willy, and then our platform blocks. During our `update()` function, apart from checking key presses, we also need to do some gravity calculations. This will mean that if Willy isn't standing on a platform or jumping, he'll start to fall towards the bottom of the screen. Instead of checking to see if Willy has collided with the whole platform, we only check to see if his feet are in contact with the top. This means he can jump up through the platforms but will then land on the top and stop. We set a variable to indicate that Willy's standing on the ground so that when the **SPACE** bar is pressed, we know if he can jump or not. While we're checking if Willy's on a platform, we also check to see if it's a collapsible one, and if so, we start a timer so that the platform moves downwards and eventually disappears. Once it's gone, Willy will fall through. The reason we have a delayed timer rather than just starting the platform heading straight down is so that Willy can run across many tiles before they collapse, but his way back will quickly disappear. The disappearing platforms are achieved by changing the image of the platform block as it moves downward.

As we've seen, there were several other elements to each *Manic Miner* screen, such as roaming bears that definitely weren't from *Star Wars*, and those dastardly killer telephones. We'll leave you to add those...

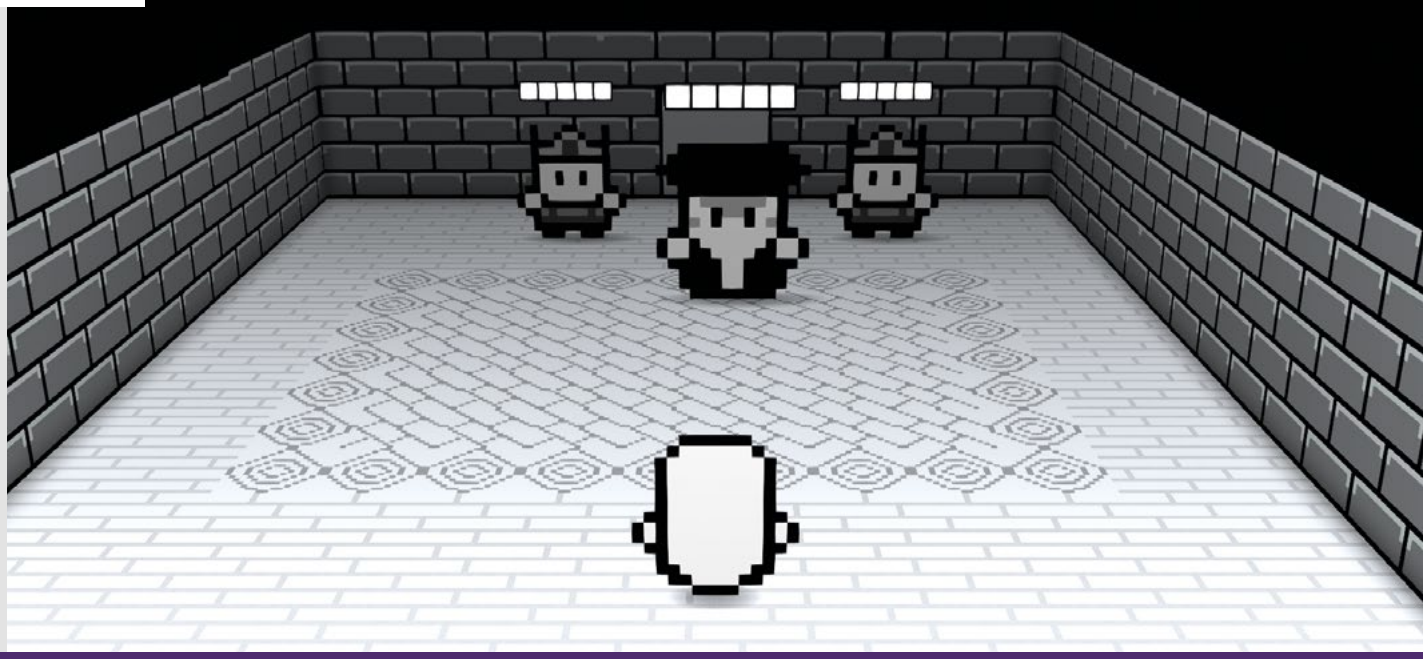
Crumbly platforms in Python

Here's Mark's code for a *Manic Miner* screen, complete with collapsing platforms. To get it working on your system, you'll need to install Pygame Zero – full instructions are available at **wfmag.cc/pgzero**.

Download the code from GitHub: **wfmag.cc/wfmag49**

```
# Manic Miner

HEIGHT = 400
willy = Actor('willyr0',(400,300))
willy.direction = "r"
willy.jump = 0
willy.onground = False
count = 0
platforms = [[1,1,0,0,0,0,1,1,0,0,2,2,2,1,1,1,1,0,0,0,0,0,0],
             [0,0,0,1,1,1,0,0,0,0,0,0,0,0,0,0,0,0,1,0,1,1,1],
             [1,1,1,0,0,0,2,2,2,2,2,0,0,0,0,1,1,1,0,0,0,0,0],
             [0,0,1,1,0,0,0,0,0,0,0,0,1,1,2,2,0,0,1,1,1,0,0],
             [1,1,0,0,1,1,0,0,0,2,2,2,0,0,0,0,0,0,0,0,0,1,1],
             [0,0,0,0,0,0,0,1,1,0,0,0,0,0,0,0,0,0,0,0,0,0,0]]
platformActors = []
for r in range(len(platforms)):
    for c in range(len(platforms[r])):
        if(platforms[r][c] != 0 ): platformActors.
append(Actor('platform'+str(platforms[r][c])+"1",(70+(c*30),1
20+(r*40))))
        platformActors[len(platformActors)-1].status = 0

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

def update():
    global count
    willy.image = "willy"+ willy.direction + "0"
    if keyboard.left:
        moveWilly(-1,0)
        willy.direction = "l"
        willy.image = "willyl"+ str(int(count/8)%3)
        pass
    if keyboard.right:
        moveWilly(1,0)
        willy.direction = "r"
        willy.image = "willyr"+ str(int(count/8)%3)
        pass
    checkGravity()
    count += 1

def on_key_down(key):
    if key.name == "SPACE":
        if willy.onground == True:
            willy.jump = 40

def drawPlatforms():
    for p in range(len(platformActors)):
        if platformActors[p].status != -1:
            platformActors[p].draw()

def moveWilly(x,y):
    if willy.x+x < 730 and willy.x+x > 70:
        willy.x += x

def checkGravity():
    if willy.jump > 0:
        willy.y -=2
        willy.jump -=1
    if willy.y < 320:
        willy.onground = False
        for p in range(len(platformActors)):
            frame = int(platformActors[p].image[-1])+1
            if platformActors[p].status > 0 :
                platformActors[p].status -= 1
                if platformActors[p].status == 0 :
                    platformActors[p].y += 1
                    if frame > 8 :
                        platformActors[p].status = -1
                    else:
                        platformActors[p].image =
"platform2"+str(frame)
                        platformActors[p].status = 30
            if((willy.x > platformActors[p].x-20 and willy.x <
platformActors[p].x+20) and willy.y+20 == platformActors[p].y-
14+(frame-1) and platformActors[p].status != -1):
                willy.onground = True
                if platformActors[p].image[8] == "2":
                    if platformActors[p].status == 0 :
platformActors[p].status = 30
        if willy.onground == False:
            willy.y += 1
    else:
        willy.onground = True
```

Miner Willy makes his way to the exit, avoiding those vicious eighties telephones.



Interactive / AFTERLIFE

The hereafter is a bureaucratic, neurotic comedy in a unique RPG from Buenos Aires

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

The first thing about *AFTERLIFE* that caught our attention is its witty dialogue. The game takes place in a monochrome town full of neurotic spirits whose bleakly cynical, sometimes disarmingly surreal outbursts kept us hooked throughout the demo's brief running time. "My house is empty because material stuff can't buy you happiness," one character says of his depressingly sparse living room, before adding, "Just kidding. I'm poor."

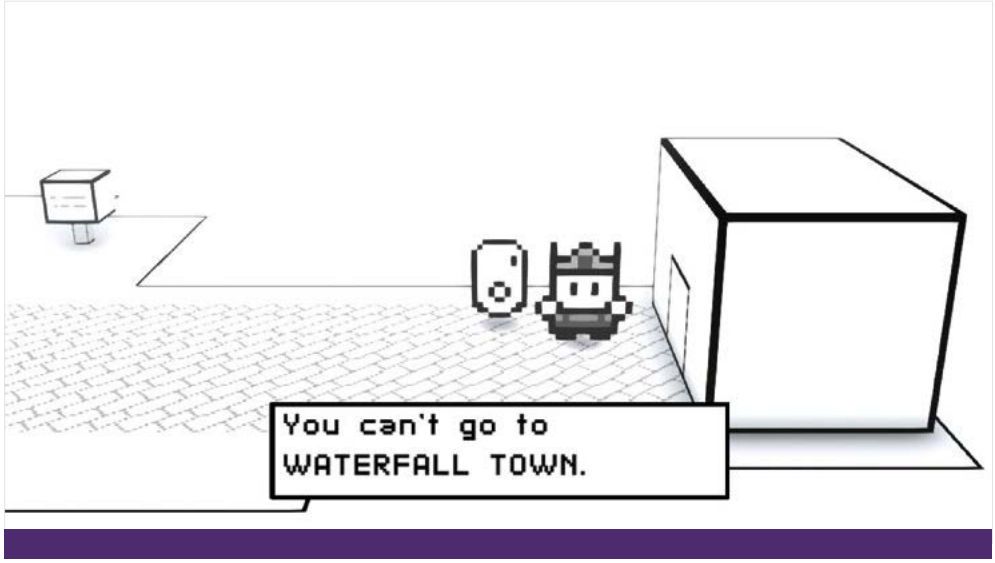
Outside, there's a guy in a top hat who cheerfully introduces himself as the mayor of Alpha Town, before guiltily admitting he just enjoys going around pretending as much. Such is the strange world our protagonist wakes up in: little more than a white lozenge with wide, inquisitive eyes, this lost soul aims to escape the afterlife and return to his or her former (unspecified) existence. But to do that, the soul will have to navigate a boxy world of fantasists, aggressive guards, locked doors, and ultimately face a mysterious antagonist named Dr Krull. *AFTERLIFE* is an RPG, but one stripped down to its raw essentials: battles take the form of short, fast-paced shoot-outs, where you avoid your opponent's projectiles and chip away at their energy by blasting them with your own. It's an unexpected, snappy change of pace from the turn-based battles we were initially expecting.

"I didn't want to use turn-based combat because I feel it can get very repetitive after a while, and sometimes you need to battle *every* enemy just to get some XP and increase your stats, or else you won't be able to defeat a certain enemy," explains Fuz, the solo developer behind *AFTERLIFE*. "Other times, you become too powerful and some battles don't feel like a challenge at all. I preferred to use a shooting approach because, in each battle, you have to study your enemies and their movements or patterns in order to know when to attack and when it's better to avoid them."

Based in Buenos Aires, Fuz (not his real name) began work on *AFTERLIFE* when he

^ In place of turn-based battles are these surprisingly fun shoot-out sequences.

> Despite his minimal design, *AFTERLIFE*'s nameless protagonist has a lot of character – partly thanks to those big eyes.



The early Game Boy *Pokémon* spurred Fuz's desire to make his own RPG: "I admire how they managed to create that whole world with just four colours."

realised there wasn't another RPG with a similar premise. "I decided that if no one else was making the game I wanted to play, I should do it myself," he says. With his weekdays taken up with his job as a programmer at a local game studio, Fuz has spent his weekends gradually working his game up from its rough initial concept; originally, he envisioned the game as a more serious meditation on life, death, and the afterlife – before all that surreal, cynical humour kicked in. "When I started creating this game, I wanted it to be more serious, and explore the death topic from different perspectives and talk about regrets, loss, and grief," Fuz says. "But then I found out that people really enjoyed some jokes I shared on social media, so I decided to give them more space. I think you can talk about serious stuff and send a powerful message while still having fun."

AFTERLIFE's visuals also evolved over time, from a top-down perspective akin to an early *Pokémon* game to the 3D viewpoint it has today. "At first, it was just 2D because I wanted it to look exactly like a Game Boy game," says Fuz. "Then I discovered a tool (called Sprytile) that allows you to paint your 3D models with 2D tiles. I made some quick prototypes, and it felt great! 3D environments allow me to better-use fog, lights, and darkness to create more atmospheric places while 2D characters maintain that Game Boy, nostalgic feeling that I like."

As for the script, Fuz says the game's dry one-liners and situations are often drawn from things he sees in the real world. "I force myself to write new jokes at least once a week – they come up quickly. I try to observe daily situations and use them as triggers for new ideas or jokes. However, the best ones appear when I just throw some characters on the scene and start improvising on what they could be talking about."

AFTERLIFE's playable demo – downloadable at **afterlifegame.itch.io** – is just the right length to give you a taste of the curious, captivating netherworld Fuz is busy creating. No sooner had we gotten into the rhythm of finding all the hidden medikits, defeating enemies in rapid-fire shoot-outs, and retrieving a key locked in a murky tower, when an ominous character swooped in and brought the whole thing to a close. Thankfully, Fuz has big ambitions for the full game: if he can find a publisher willing to back *AFTERLIFE*, he hopes to bring it to every console he can. So what does Fuz expect players to feel when they've finished playing the full version of *AFTERLIFE*? True to form, his response is a drily amusing one. "For those who actually bought the game, I hope it makes them feel like it's worth fighting for what you believe is right and that you can achieve your goals, no matter how many obstacles you find along the way," he says. "For those who download the game illegally, I hope it makes you feel like you should buy the game."

"I think you can talk about serious stuff and send a powerful message while still having fun"

SOCIAL NETWORKING

Head to *AFTERLIFE*'s Twitter – **twitter.com/onetappsgames** – and you'll find a wealth of scenes and quirky exchanges that aren't in the demo. For Fuz, social media's been a useful way of both promoting the game and its premise and gauging public reaction to his work-in-progress. "They [Twitter and Instagram] are both great – the community is very supportive," he says. "Every like, repost, or comment means a lot when you're developing a game on your own. It really gives you the motivation to continue working hard even when your to-do list seems endless. It also allows me to analyse which things are more valued for potential players and where I should put my focus on."

Access Granted

WRITTEN BY
LAURA FRANCIS

How video games are improving the lives of people on the autism spectrum

A ten-minute demo of *Disconnected* was showcased at EGX 2019 and at the London Games Festival in 2020.

Of all the tools and techniques that can help people on the autism spectrum, video games often take a back seat. Yet games are a perfect way for autistic people to engage with others and build connections – and an increasing number of games, both in the triple-A and indie realm, are acknowledging and including people on the spectrum.

Recent years have also seen an increased focus on helping autistic people find careers in the games industry. UK charity Autistica, for example, is leading the charge when it comes to helping studios recognise the importance of inclusion and accessibility for people on the autism spectrum. It's still a new area of advocacy, but as we found out after speaking to those making these games, and to those hiring for industry roles, it's a narrative that's shifting, slowly but surely, in a more positive direction.

Overwatch is an example of a mainstream game known for its roster of diverse characters.

DEFINING AUTISM

Autism is a neurological condition that can affect a person's ability to socially interact, make eye contact, or read facial expressions. Other signs of autism can include sensory issues and repetitive behaviour. Autism can affect people in a multitude of ways, then, and people on the autism spectrum can also be affected by mental health issues, including loneliness and anxiety.

Video games can, however, play a significant role in the lives of autistic people. While the media sometimes paints gaming as a lonely and isolating pastime, there's some evidence to suggest that people on the spectrum can find solace and a sense of community in gaming, whether it's via streaming, online forums and groups, or on social media. "In my experience, games aren't just games to someone with ASD (Autism spectrum disorder)," says Gemma Johnson-Brown, COO of Dovetail Games. "They're an integral part of their lives, their connection to the outside world, their release, and their fun."

"In my experience, games aren't just games to someone with ASD"

Dr Sachin Shah, who is part of a collective of mental health professionals called Gaming the Mind, concurs. "It makes sense that games could be appealing [to people on the autism spectrum]," says Shah. "[Video games offer] a world with solid rules and predictable, controllable events, in which social interaction, whether with NPCs or online with other players, is easier to navigate with less emphasis on non-verbal communication... Compared to a neurotypical person, autistic people will have some degree of difficulty with social communication and social interaction, which can make it hard to get by in society."

"I think playing games can help people who are on the autism spectrum learn about the world and how to socialise with others in a safer environment," says Xu He, founder of Grand Neuron Studios. On the autism spectrum herself, Xu He is a 2018 BAFTA scholar who's currently developing *Disconnected*, a "narrative documentary" which tells the story of an autistic girl. Rejecting common autistic stereotypes, as often depicted in movies like *Rain Man*, *Disconnected* illustrates that autism just means having a slightly different brain.

Xu He interviewed four autistic people for the voiceover, which gives →

DEEP IMPACT

Savan Gandecha is a British content creator on the autism spectrum. For him, the positive benefits of video games can't be understated. "The impact gaming has had on my life has been profound," he says, "because it's helped with my creativity and is a form of escapism into different worlds... Accessibility is so important because it helps autistic people to play video games and not be isolated from the rest of the gaming community. It's also important that game developers implement accessibility as a top priority, and work with those with conditions and disabilities to make their games inclusive and enjoyable for all."

the game context; as they progress through the game, players hear real autistic people tell their stories. Accessibility has also been a huge priority when it came to working on this game, particularly when it comes to visuals. "To make *Disconnected* accessible, I used a very pure art style, made the game mechanics easy to understand, and there's very little text in the game," Xu He says. "For example, a simple or desaturated background can help autistic players focus on the characters in the foreground easier."

"With representation, there's the aspirational kind, like Symmetra from *Overwatch*"

REPRESENT

Overwatch is a rare example of a triple-A title that features an autistic character: the Indian architect, Symmetra. In response to a fan question, the game's director, Jeff Kaplan, confirmed that Symmetra is indeed on the autism spectrum – something that Shah welcomes. "With autism representation, there's the aspirational kind, like Symmetra from *Overwatch*, which shows an autistic person as a powerful hero," Shah says. "Symmetra is a role model, [which is] important for autistic people, and also to reduce stigma towards autistic people."

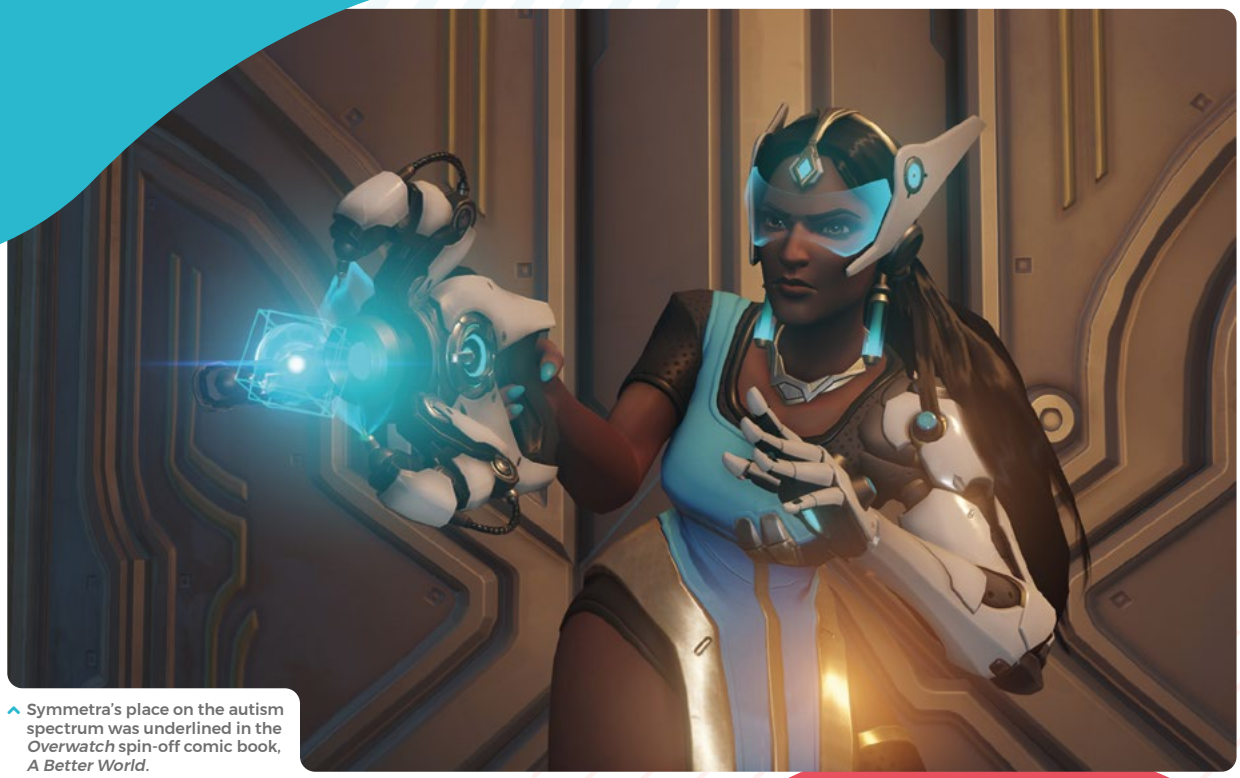
To the Moon, a 2011 adventure by Canadian studio Freebird Games, also features a character on the autism spectrum. River isn't presented as a hero, but rather an ordinary person who experiences similar struggles that autistic people can face in the real world. "[The game] shows that the communication difficulty is on both sides of the equation: River's neurotypical partner needs to learn to understand her, not just the other way around," says Shah. "She's still someone with needs and desires, and has worth as a person. She's someone for autistic people to relate to, and for neurotypical people to empathise with and care about."

Citing *Hellblade* as an example, Shah suggests that game designers are becoming more open to exploring different "neurodiverse experiences" in their work. "The success of *Hellblade* shows there's interest in exploring different states of mind," he says. "Ideally, such games shouldn't just encourage pity from players – they should address the social and political challenges autistic people face, and

QUICK START

When it comes to helping those on the autism spectrum get into games, more could be done when it comes to accessibility, says Dr Shah. "Game instructions should be clear and unambiguous, without the use of metaphors, sarcasm, or idioms that could be misunderstood. Controls should remain consistent. Clear tutorials at the beginning of the game can help prepare the player for sudden changes in modes that might occur. There should be consistency in how the game is engaged with; for example, if the player can interact only with certain objects, it should be clear which objects these are, perhaps with highlighting."

Grand Neuron Studios is now seeking funding to develop *Disconnected* into a full game.



Symmetra's place on the autism spectrum was underlined in the *Overwatch* spin-off comic book, *A Better World*.

inspire the need for societal change... Studios need to realise that there need not be a 'reason' for a character to be autistic; autism doesn't need to fill a plot requirement. Some people are just autistic, so some game characters should be, too. As with all forms of diversity, this shift will be easier with more diverse creative teams."

JOINING THE INDUSTRY

Although we're beginning to see greater representation and accessibility within video games themselves, the wider industry has been slower to catch up when it comes to job opportunities for those on the spectrum. "Only a third of autistic people are in any kind of paid work, though most unemployed autistic people would like to be in work," Shah points out. "Autistic people may be attracted to the games industry for the same reasons as anyone, stemming from an interest in games, art, or programming. They may have traits more suited for the industry, such as attention to detail, need for routine, or having specific related interests."

Shah also argues that studios should take positive action to recruit more autistic people and increase representation among employees – indeed, the 2010 Equality Act (or the Northern Ireland Disability Discrimination Act) make such action a legal requirement. "Employers shouldn't discriminate against autistic people, as autism is considered a disability," he says. "Employers must make reasonable adjustments so that autistic people are not substantially disadvantaged at work... This could include steps such as ensuring all qualifying autistic candidates are given an interview. Experience and educational requirements can also be a barrier to recruitment, and studios could consider developing roles, such as apprenticeships, to encourage autistic candidates who are able to do the work but lack formal qualifications. Greater representation brings greater awareness of →

OPENING DOORS

To make the games industry more welcoming for autistic workers, "there are some things a studio should do," says Dr Shah, "like ensuring that there's no culture of crunch, which can result in burnout. Autistic people may be more vulnerable to the effects of high stress and overwork, and there's also the risk that if certain autistic employees are highly focused on completing their tasks, this could be exploited in a crunch environment. Worker's rights should be protected in order to ensure it is a welcoming industry for everyone, including autistic people."

Dr Sachin Shah says that autistic people should be involved in playtesting in order to receive relevant feedback on a game and its accessibility.

Dovetail Games is the UK developer of such sims as *Train Simulator*, *Euro Fishing*, *Train Sim World*, and *Fishing Sim World*.

CHANGE AT UBISOFT

Work is being done to make the games industry a better one for those on the autism spectrum – including at Ubisoft Montreal, according to the firm's accessibility project manager, David Tisserand. "We have several initiatives to support making more accessible universes and services for all players," Tisserand tells us. "The future of gaming will be an accessible user experience from end to end. From the first time a player hears about a new game – for example, a trailer – up to the last time they are in touch with our company – the customer support website – and everything in between, we're making progress to remove barriers for all players."

inclusivity adjustments that need to be made, and better collective security for workers to request these changes."

"More needs to be done to challenge negative attitudes about disability," Gemma Johnson-Brown concurs. "The full possibility and power of games is yet to be realised because the industry isn't diverse enough across the spectrum, including neurodiversity. Dovetail Games are working with a local organisation called Bemix that works with people on the spectrum and supports them in the workplace. We view them as long interviews; our first supported internship has resulted in the individual being offered a permanent position, and we have a number of employees on the spectrum. I have found time, acceptance, understanding, and minimal adjustments have opened up a tonne of value and [more] fresh perspectives than we have ever experienced."

"The games industry is currently not the most inclusive environment"

Says Jake Mackey, "As a medium, gaming can be a way for autistic people to socialise, connect, and interact in a more controlled environment."

A NEW INITIATIVE

Specialising in autism research, Autistica launched Autistica Play in March 2019. It's an initiative that sees the charity liaise with various professionals across the gaming industry in order to promote more inclusivity and neurodiversity. "By raising awareness, understanding, and involving more neurodiversity in the games industry, we can increase representation and inclusivity," explains Jake Mackey, Autistica's gaming partnerships manager. "We also know that 79% of autistic adults have had a mental health problem, with over 50% of autistic adults experiencing anxiety and/or depression in their lifetime. Combine this with the fast-paced nature of the games industry, with work cultures like crunch or potential sensory overloading environments like expos and events, and it becomes clear that the games industry is currently not the most inclusive environment for the neurodivergent."

Helen Carmichael, a long-time games industry professional and an Autistica Play ambassador, also believes that industry conventions and

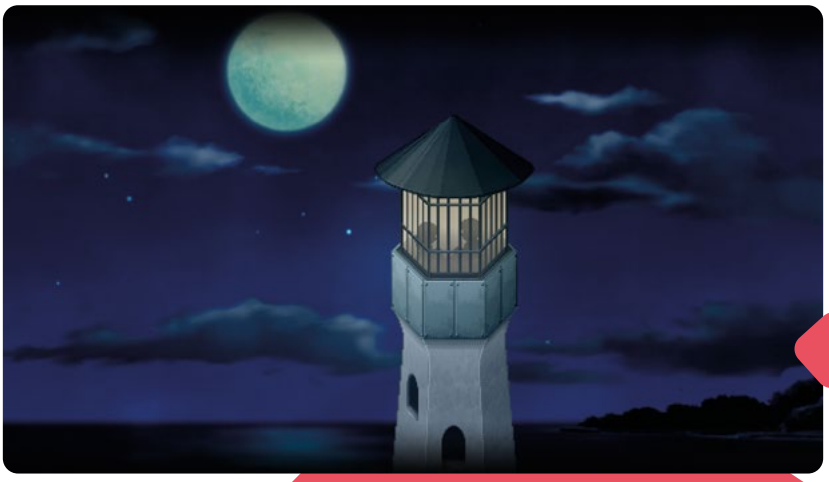
Ubisoft's David Tisserand says that the most accessible games for people on the autism spectrum are the ones that allow them to customise their experience.

events could do more in terms of support for people on the autism spectrum, such as designated quiet areas. "Many people would welcome more quiet or less sensory challenging areas at industry events," she says, "and more social or networking opportunities that are not parties in noisy bars."

MAKING PROGRESS

Overall, it seems as though the gaming industry is continuing to take steps towards promoting more diversity, inclusivity, and accessibility for those on the autism spectrum. Companies like Dovetail Games are working closely with local organisations to help autistic people into employment. A growing number of studios are avoiding overused autism stereotypes and caricatures in their games. Social media and streaming mean it's easier for autistic people to see there are others like them who share a love of gaming.

Inevitably, however, there's still more work to be done in the games industry to make it more inclusive to all types of people. Hopefully, employers across the gaming sector will recognise the benefits of recruiting someone on the autism spectrum, and appreciate the fresh ideas their unique minds can bring.



A moment of calm in the charming 2011 adventure, *To the Moon*.

GAMES OF THE FUTURE

Future Games of London is a Ubisoft-owned studio that focuses on mobile and tablet gaming. Its technical director, Peter Hodges, is an industry veteran of over 20 years, and argues that, when it comes to inclusivity, much has improved in that time. "We're taking more feedback from our players and listen more to the diverse range of views we have as game developers," he says. "Commonly, autistic people are lumped into one or two stereotypes, and this is something we should strive to avoid if we are to be more inclusive, not just in games, but as a society as a whole… Within our working day, we should be mindful that not all people will work at their best when asked to provide rapid-fire answers, and that the creative buzz in the workplace can be both inspiring and overwhelming at times. I'd suggest we ensure that we look at the way in which we engage with each other; providing enough time to digest information and give opinions to each other."

Subscribe today

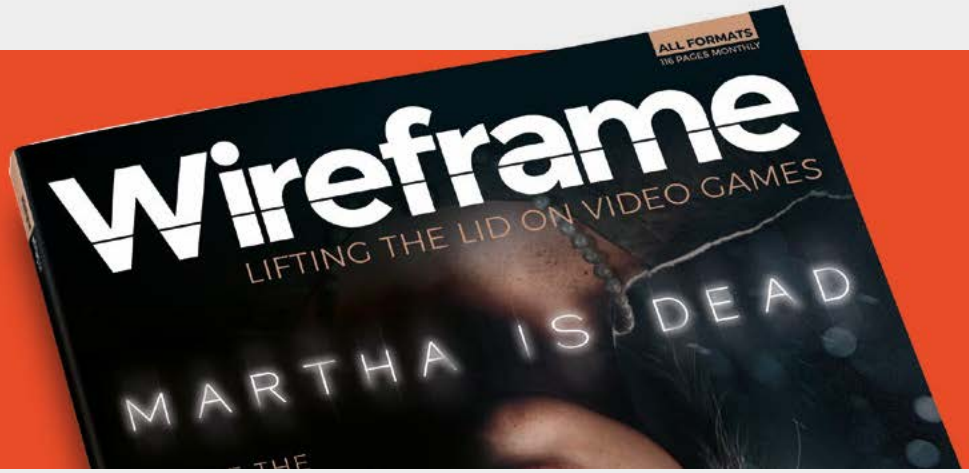
Wireframe | The MagPi | HackSpace TECHNOLOGY IN YOUR HANDS | CUSTOM PC

3 ISSUES FOR £10

+

FREE BOOK

wfmag.cc/**freebook**



Subscriber benefits

- **Free delivery**
  Get it fast and for free
- **Exclusive offers**
  Take advantage of our offers and discounts
- **Great savings**
  Save money on the cover price compared to stores

Special offer:

3 issues for £10 plus a FREE book worth £10

- **Low initial cost**
- **Choose from one of five fantastic books**
- **Free delivery**

3 for £10 offer only available in UK

Subscribe for 12 months

wfmag.cc/subscribe

£55 (UK) **£90** (USA)

£80 (EU) **£90** (RoW)

Offers and prices are subject to change at any time

Digital subscriptions from

£1.99

Available on the App Store

GET IT ON Google Play

Visit **wfmag.cc/subscribe** or call **01293 312192** to order

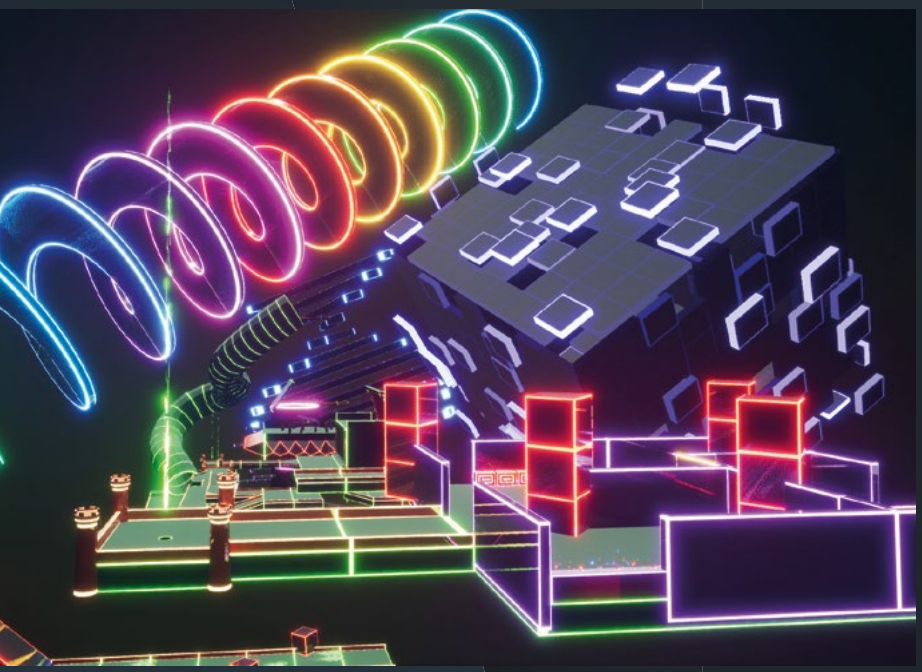
Subscription queries: **wireframe@subscriptionhelpline.co.uk**

SEACORP TECHNOLOGIES

THE LITTLE STUDIO WITH BIG AMBITIONS

Founder Richard Seabrook tells us about the challenges of setting up an indie studio – and why releasing a game is like launching a rocket...

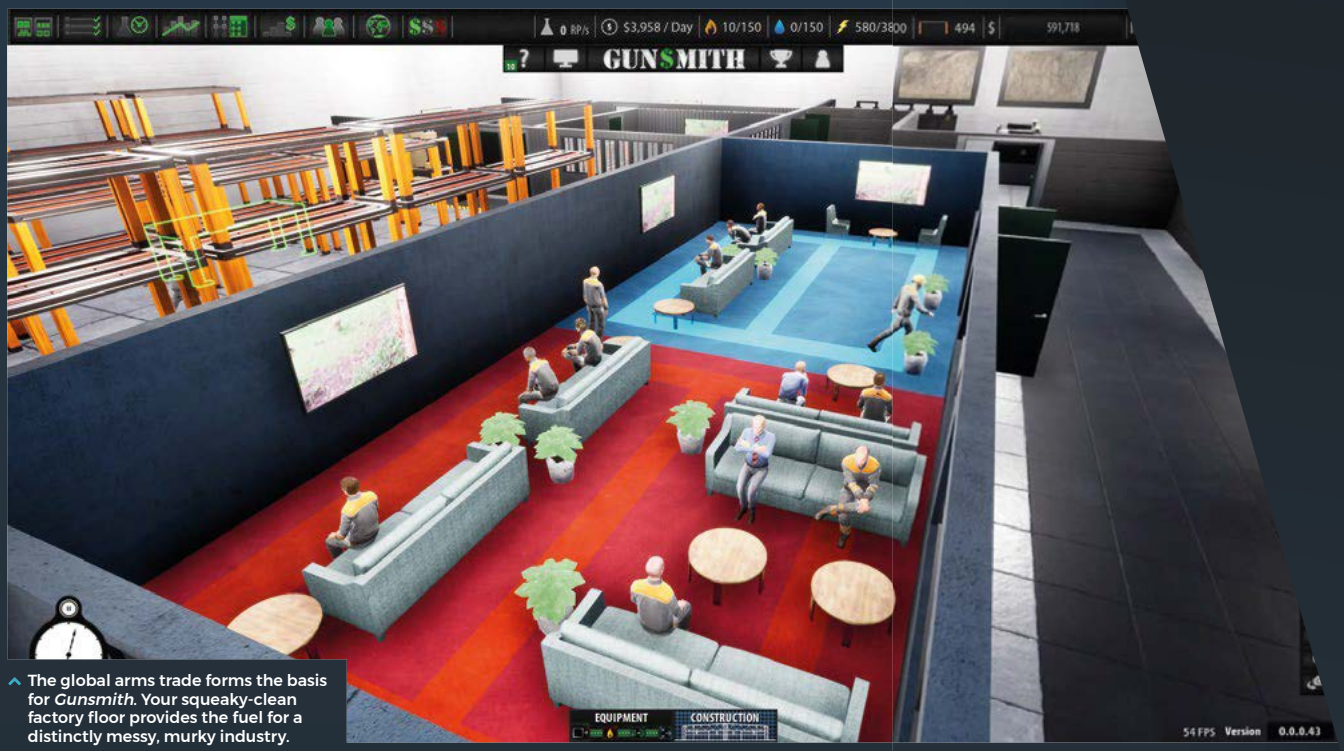
WRITTEN BY **RYAN LAMBIE**



Part driving game, part multiplayer *Marble Madness*, part manic party game: it's *Kinetic Edge*.

There's the fantasy version of running a studio that goes something like this: your close-knit team comes up with a unique game concept, puts it up on Steam, and thanks to the enthusiastic response of streamers on Twitch or YouTube, it quickly goes viral. Your game goes on to sell millions, providing enough profits for you to buy a sleek German car and never have to worry about paying the bills ever again.

For all but those lucky few, the reality of founding an indie studio is rather different. It's more likely that success will come gradually, as your body of work builds and players begin to latch on to the quality of your games. This, at any rate, is the experience of Richard Seabrook, founder of Bournemouth-based studio Seacorp Technologies, or SCT. "I think the first thing people need to realise is that once you remove the 'anomalies' – and by this I mean the games that release and make millions of dollars out of nowhere – it's really hard to make a game and make a profit these days," Seabrook tells us. "It's a multifaceted project that needs to have many things going right at the same time in order to succeed."



The global arms trade forms the basis for *Gunsmith*. Your squeaky-clean factory floor provides the fuel for a distinctly messy, murky industry.

Seacorp's big calling card right now is *Gunsmith*, a management sim akin to *Factorio* or *Astroneer*, but set in the arms industry. You build your factory, start manufacturing weapons, and then deal with the morally murky bit: do you even attempt to filter your customers, and try to only sell weapons to 'reputable' sources, or throw your humanity out the window entirely and supply guns to any bloodthirsty warlord who'll stump up the cash? It's a bold, thought-provoking concept for a game. But then again, the studio behind it has had some big ideas on its mind from the very beginning.

PUSH START

Seabrook founded SCT in 2015, and its first release was also Seabrook's first commercial game: 2016's *Prospekt*, a standalone shooter set in the *Half-Life 2* universe and built with Valve's own Source engine. *Gunsmith* launched into Steam Early Access two years later, while today, the studio's still compact but growing, with seven full- or part-time staff working across various disciplines.

According to Seabrook, who studied Game Design and Business at Portsmouth University before founding SCT, actually setting up a studio is the easy bit. Launching a game? Now that's where the real challenge lies. "In some ways, it's easier to run a studio because your startup costs can be incredibly small," he says. "But launching a game is exactly like launching a rocket – if one single thing isn't correct on that launch, more than likely the entire thing will either fail to launch entirely and just sit there on the platform, or explode into a huge fireball wiping out all your hard work. In order for your product to succeed, it needs the perfect launch – one where you reach orbit and come back down to earth with no major issues, and that's the biggest challenge of all."

> "In order for your product to succeed, it needs the perfect launch – and that's the biggest challenge"

Prospekt was a strong start for SCT, given that it was essentially a fan-made project: with over a dozen levels and a campaign that lasted for around five hours, it was comparable in length and scope to *Half-Life 2: Episode One*. But, says Seabrook, "unless a game achieves 'legendary' status, it fades away. I get the occasional, 'Oh yeah, I remember that game' from people, but it's no *GoldenEye*."

Gunsmith, meanwhile, would be a much bigger undertaking: a detailed management sim with a bewildering variety of complex interlocking systems. For Seabrook, it's by far the most challenging game he has attempted so far. ➔

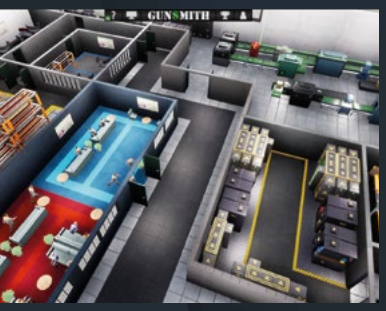
NO CODE REQUIRED

If you fear that your lack of programming skills rules you out of a career in the games industry, then Seabrook has some words of encouragement for you. "I am a terrible, terrible programmer," he admits. "I understand the logic behind it all, I can describe how things work in programming terms, and I can also script basic things and rig things up to work in levels, but if you asked me to make something from scratch, I wouldn't have a clue. As much as I tried to learn C++ or C# etc, it just wasn't for me. I'm much more of a visual designer. When it comes to my specialisation, I would have to say, in part, it's probably 3D work and design, but most of all, getting an idea from a sheet of paper to a working game is probably my main talent, as it takes a lot of things to come together at once to make that happen."

Seacorp's debut title: the standalone *Half-Life 2* fangame, *Prospekt*, released in 2016.

CAREER PROSPEKTS

Like a generation of other fledgling developers, Seabrook found that tinkering with Valve's Source engine provided a valuable grounding in game design. "I think Valve realised long ago that there's no point having these amazing tools if they're only being used internally," he tells us. "Its mantra is if people have the power to join in and create, everyone benefits. I think being able to make a mod is kind of like learning to ride a bike with stabilisers – you can learn the ropes and, if you make something good, you can use it to help you further your goals."



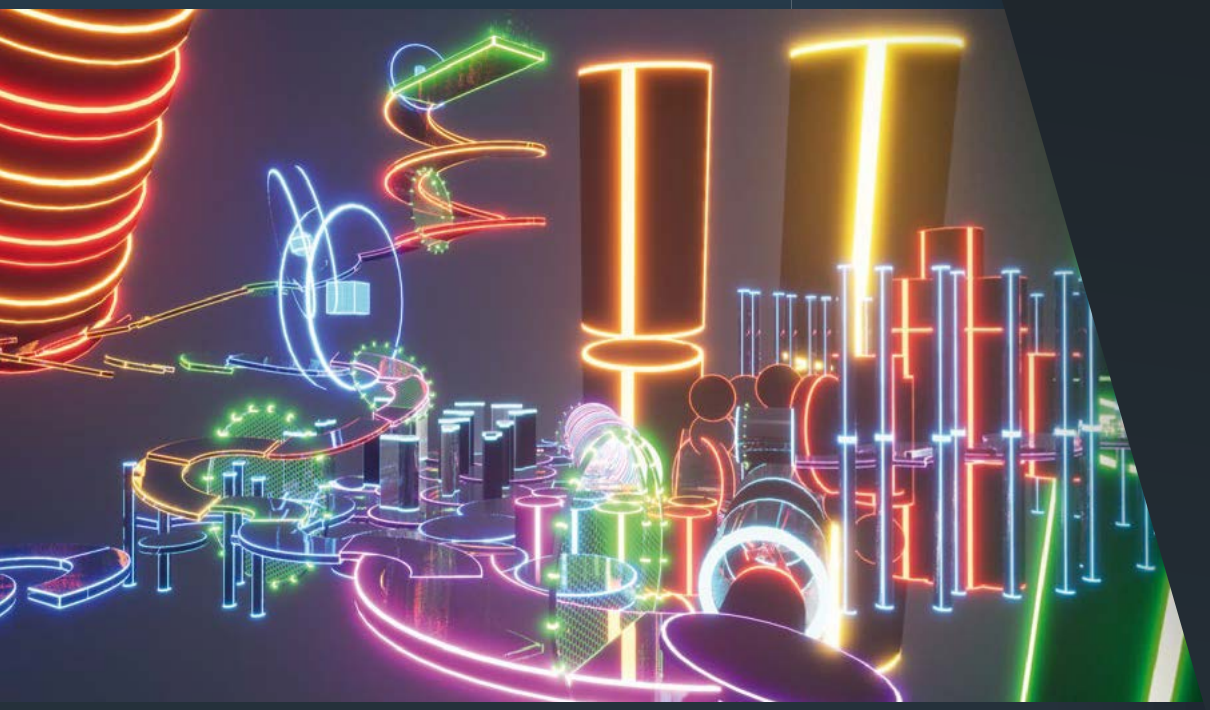
"For sure, I bit off more than I could chew as a business," he says. "I wanted to make a Paradox [Interactive] level game with an indie level amount of staff, and that's the best way I could summarise it... Sometimes, your ambition can just shoot you in the foot."

Embarking on *Gunsmith* has, however, paid off so far. Launching on Steam Early Access has allowed the studio to bring in profits from the game as it grows, and also garner valuable feedback from its growing audience. For most developers, continuing to build and refine a project like *Gunsmith* would be enough to be getting on with; instead, SCT decided to start development on another game: *Kinetic Edge*. Admittedly, this fast-paced action game – which Seabrook describes as "crazy golf meets *TRON*" – is more contained than the sprawling *Gunsmith*, which was part of the concept's appeal. "Honestly, I sat around the table and decided I wanted to make a fun game we could make in a relatively small amount of time, the main goals being fun with your friends, cheap, and quick to play," Seabrook tells us. Still, he adds, having a seven-strong team work on two games simultaneously was a challenge, albeit a necessary one. "At first it was hard. Usually, one project at a time is the goal, but we realised if we wanted to grow the company and continue to be in a good financial position, there's simply no way we can reasonably rely on one game to take us all the way. Again, if your game launches and makes millions, you're set, but that's not the case for us. I decided the best approach to stabilise the business for the future was to diversify sooner rather than later."

Seacorp Technologies' base of operations in Bournemouth.

TOP GUNS

There was another, less risky option on the table before work on *Kinetic Edge* began: take the basic framework for *Gunsmith* and retool it with a different theme. "We know *Gunsmith* is very successful, and that it has a lot of potential," Seabrook explains. "We have had meetings where the concept of using the same framework but restyling it to cover a new area has been openly discussed, which is something we may do in the future, but for now, I don't want to end up as a cookie-cutter studio, bashing out the same game over and over. I'm sure we'll use all of the *Gunsmith* architecture for another game sooner or later, but it has to be the right one. I'm not



Kinetic Edge's clean design made it a more contained project than the sprawling, complex *Gunsmith*.

saying there's anything wrong with that approach, either, as there's a tonne of games that take the business angle. And put it this way – I wish I had their bank balance."

Besides, *Gunsmith* itself is still growing as SCT prepares it for full release. There are plans to explore the political and moral implications of its premise further still, with the player able to pursue multiple paths through the game depending on how amoral they're willing to be. He cites gangster movie *Scarface*, and director Andrew Niccol's weapons trade drama *Lord of War* as examples of the routes players will be able to take as virtual arms dealers. "I intend to expand even more on that angle soon," Seabrook says. "We want to basically go down multiple routes of either *Scarface* level criminality, or *Lord of War* level business, each with its own benefits and drawbacks."

There are also plans to bring *Kinetic Edge* to Switch – pending Nintendo's approval – and while there's still "a tonne of work left" to be done on *Gunsmith* before it leaves Early Access, there are expansions planned, and even another, as-yet-unannounced title waiting in the wings ("I'm not quite ready to show that one yet," Seabrook tells us. "Maybe in a few weeks.")

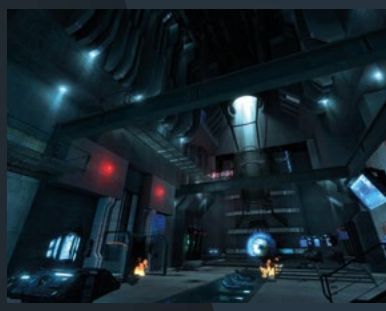
True to form, Seabrook has big ambitions for SCT itself; it may still be a small studio by most standards, but he hopes to continue to grow it "into one of the biggest studios and beyond". This will, he concedes, "be a massive task".

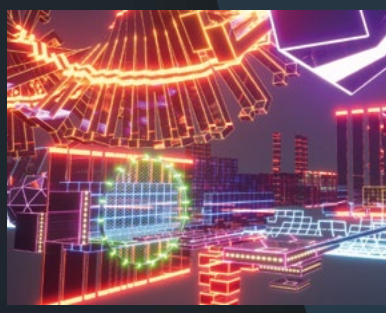
"Quoting Elon Musk, [it] 'likely has a very high rate of failure'," he says, "but that doesn't matter to me. I'd like us to be making games on the level of *Frostpunk* as a minimum. I've built the company up over the course of nearly seven years now, and I've reinvested nearly every penny into getting a great team together."

From there, Seabrook plans to branch out further into the publishing realm. "The five-year plan of SCT is to have multiple high-quality titles launching on Steam and other platforms depending on who approaches us and what's best for the business. From there I want to establish us as a large company that helps publish other indie games without obscene contractual obligations. This all, of course, depends on the successes of our future launches and whether we can get the investment required to get there. It's about making great games, or they'll never sell anyway."

> "I don't want to end up as a cookie-cutter studio, bashing out the same game over and over"

Going back to his rocket analogy from earlier, Seabrook has some advice for any other budding studio owner or game developer: prepare for launch, and prepare carefully. "Plan what you want to achieve far in advance, break your project down into component parts, make sure you have enough customers seeing your product before it launches, and start that process early. If people don't know about the game or it's not functional for, say, 90 percent of customers, then don't launch. It's that simple."





Online Diary

GITTIN' GUD

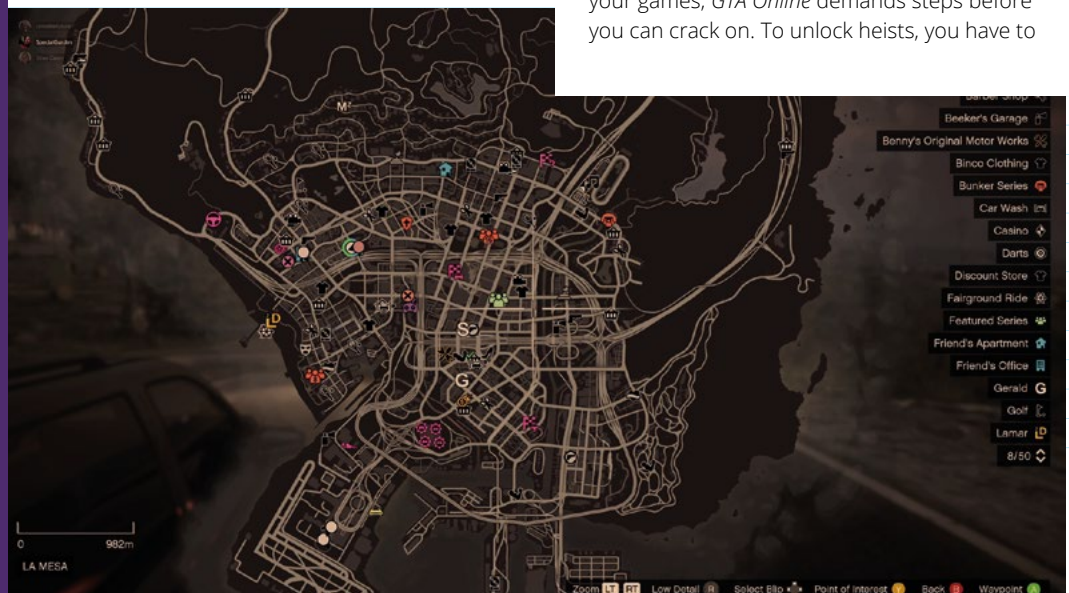
A three-hour-plus session and not a heist in sight: struggling again with GTA Online

WRITTEN BY IAN 'NO HEAT' DRANSFIELD

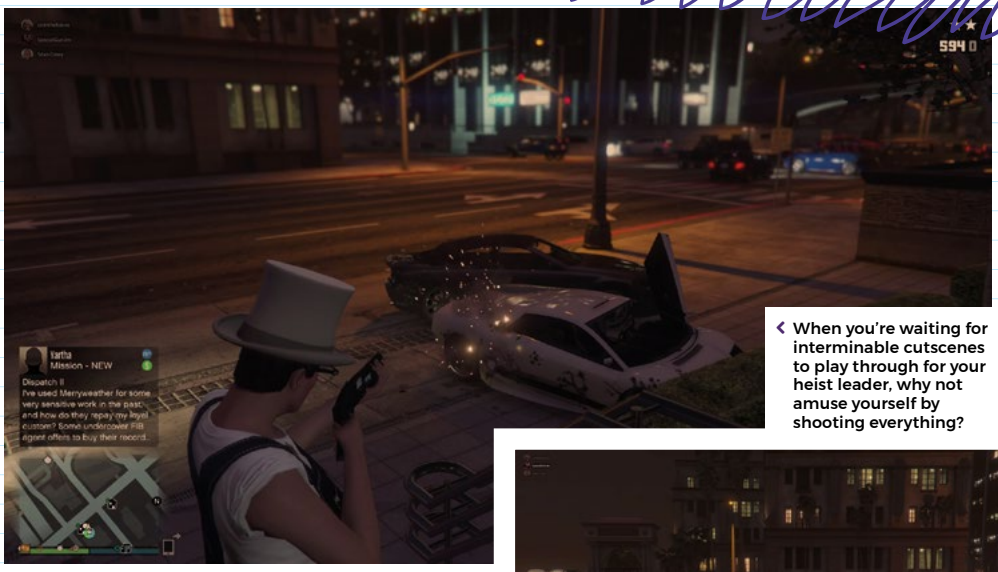
GTA Online is a broken hellscape of cheaters and endless content drops that only the most dedicated of players will make head or tail of. It is an uncontrollable mass; a blob the scientists who made it long since lost control of, marauding its way across the virtual landscape absorbing as much as it destroys, leaving either echoes of violence or goo-smeared converts in its wake. It is big, clumsy, and surprisingly dumb. But it also has heists, and heists are some of the absolute best things in any online game – so it is Wireframe-o the Great donned her top hat and went striding back into the world of *GTA Online*. And this time she brought friends.

Over three hours into the session, we were finally able to start a proper heist. It had been a series of ups and downs – mainly downs – and while some fun *had* been had, this was the entire point of the Sisyphean task we had unwittingly engaged in. It was time. The heist was here. Three known quantities plus one random hanger-on would first head out to steal an aeroplane as the first part of a handful of stages in putting together a Heat-worthy crime. Three hours and 17 minutes into our session, on the road for our first proper heist, and *GTA Online* crashed for two of the team. I gave up.

You see, *GTA Online* is a broken hellscape of cheaters and endless content drops that only the most dedicated of players will make head or tail of – and on top of that, it's also the least friendly online game for a bunch of chancers to jump into and play about in it. Whereas other games rely on wild concepts like 'using a menu' to sort out your games, *GTA Online* demands steps before you can crack on. To unlock heists, you have to



> The whole world (of *GTA*) in your hands, except, actually, it's in the hands of the hackers and cheaters.



When you're waiting for interminable cutscenes to play through for your heist leader, why not amuse yourself by shooting everything?

be level 12 or higher. You need to own a high-end in-game apartment, costing at least 200,000 in-game dollars (£3.19 real money, if you want to skip earning it). Then you need to *get* to your apartment to kick the whole thing off.

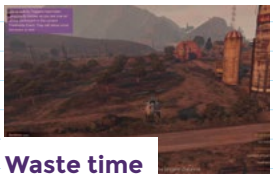
As *GTA Online*'s lobby – of a sort – is the main open world, this means running the gauntlet from wherever you are to said apartment. And as *GTA Online*'s lobby is lousy with cheaters, this means risking engaging with random idiots who feel the need to ruin everything for everyone else just because they think they're in tune with the Joker or some such silliness. More than once, we were unable to make it to the mission start areas thanks to hacking sorts exploding us, or putting massive bounties on us, or otherwise *getting in the way*. Do you know what would fix this? A menu system. They exist for jumping into jobs and heists with other people, but our particular experience this day was marred by the stop-start nature of things, the endless array of cheaters and – to get back to what was mentioned earlier – crashes.

"*GTA Online*'s lobby is lousy with cheaters who ruin everything"

That's something I didn't expect from *GTA Online*: flat-out crashing. No warning, no instability, no error message after the fact. On five separate occasions in the three-and-a-bit hours of play, it just up and crashed to desktop, forcing a restart and sitting through the excruciatingly long loading screen (which may be fixed by the time you read this, thanks to a regular member of the public telling Rockstar how to sort it). The slog of setting things up I could handle. The challenge of getting through the game world without being the victim of hacking *gits*, I could navigate. But it all being topped off with inexplicable, complete crashes that utterly ruin any fun you might have eked out? Like I said: I gave up.

In limited groups, where there's little to no chance of interaction with cheaters, and you've a focused mission at hand – that's what makes *GTA Online* shine. For all we – well, *I* - wanted *Grand Theft Auto* to make the leap into the multiplayer world back in the PS2 era, it turns out the wildness of the open-world... world doesn't work very well. Also, just to reiterate: cheaters. But playing a heist distils things to that purer form, and makes for an experience that is – especially with a known group of chums – up there with the absolute best. It doesn't matter if you get it right, it doesn't matter if you come out as the best performer, if you even get to the mission area without understeering around a corner and hitting an explosive gas tank – it's fun. It's thrilling, and over the top, and difficult to parse in all the right ways – but it's *fun*. But to get to that enjoyment, first the bloody game has to work. Ah well, back to the drawing board.

The toppest of top Theft tips

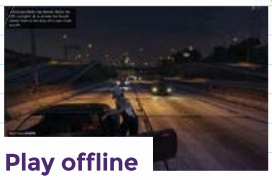


Waste time

In the initial setup, there can be a lot of waiting around, so jump in to the daft little side missions around and just waste time losing to children at internet games. Fun!

Cop games

It's very tempting to shoot everything while on your way to a mission, but be warned: a wanted level usually precludes you from starting a job. So keep a lid on it.



Play offline

It'll always be a recommendation with *GTA Online*: play it offline instead. If you just want to mess about with no structure, just play *GTAV*. For jobs and heists, go to *Online*.

In the early DC days we were having an ORCA of a time! Ah no, got that one wrong.

System Profile

Sega Dreamcast

Time to wake up

Everybody had heard of the Sega Dreamcast by late 1999. Plenty of the committed gamer types knew full well what Sega's follow-up to the Saturn had been pumping out in the Far East following its 1998 Japanese launch, of course. You might even have had a friend who imported one, so you could be vaguely wowed but not quite blown away by *Virtua Fighter 3tb*. But just before we entered a new millennium, around the same time *Millennium* was on telly and *Willennium* was in the charts, the Dreamcast was ubiquitous.

It's worth pointing this out because these days Sega's final console is seen as a tragic failure; a machine too good for this world cruelly taken from us thanks to a combination of Sony not playing nice and people not paying enough attention. But Sega spent in excess of $100 million (£72m in today's money) marketing the Dreamcast – its new 128-bit console would arrive in the States on the *fantastic* launch date of 9 September 1999 – 9/9/99. It would bring the arcade home for real this time. It would have four controller ports as standard, because games were made to be played

The Dreamcast continued down the Saturn's path of pumping out some stellar 2D fighting games throughout its short life, like here with *Capcom vs. SNK: Millennium Fight 2000*.

Hidekazu Yukawa, one-time senior managing director of Sega, featured surprisingly heavily in the console's early Japanese marketing – even appearing in a promotional *Shenmue* demo, and his own game.

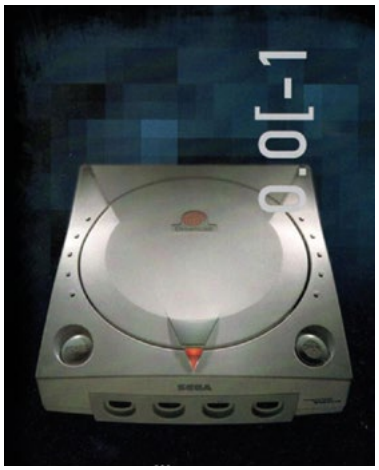
with friends. It would include a built-in modem, in case your friends weren't in the same house, or town, or country. And while doing all this, it would be *cool*.

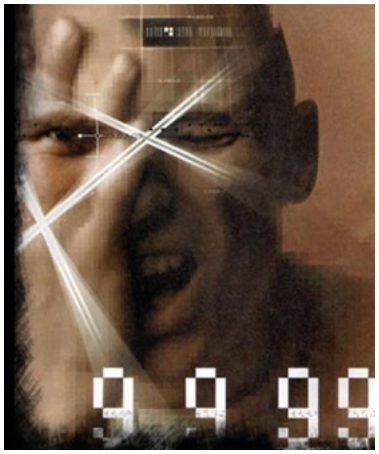
The console launched in the west and sold hundreds of thousands of units, repeating the early success seen over in Japan and kicking off the post-PSone generation... but it was a false start. While in Europe, Sega managed to shift half a million units in the two months following release, it took another whole year to up that figure to a million. People were jazzed at first – the marketing push was working, the sponsorship of Premier League bigguns Arsenal FC being a particular highlight in the UK (and other major football teams across Europe got in on the action too). But the people weren't quite ready; they were still happy with their PlayStations (and, more in the States, their N64s) – and soon enough, Sony stepped up the hype for the PlayStation 2. Why would people care about the console that was out now when they could get excited about the upcoming supercomputer Iraqi WMD-powering obelisk of fury that was the PS2? And, well, it just sort of petered off after that.

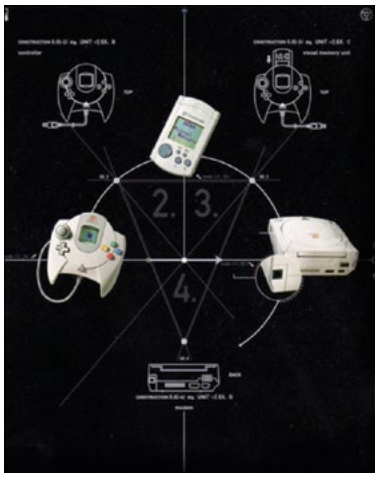
"Sega spent in excess of $100 million marketing Dreamcast"

It shouldn't have. The Dreamcast was brilliant. It didn't just have the might of Sega and its superb catalogue of titles backing it – this machine made up for the mistakes of the Saturn by involving every major third party. There was a knife in the side when EA and Squaresoft refused to play ball, but Sega's own sports games and a flurry of RPGs made up for that gap in the most part – no *FIFA* must have hurt, though. But largely, the Dreamcast was home to a varied catalogue of high-quality releases, proving to be a console ➔

Jet Set Radio: the coolest game of 2000, and... well, yep, still the coolest game out there.







Initial marketing for the US launch relied heavily on the beautiful 9.9.99 release date. In the UK, we got it on 14.10.99, which is far less exciting to look at.

Some Dreamcast efforts, like *Blue Stinger*, were bold but ultimately not great.

where developers could bring the arcade to the home and improve on it, as with *Soulcalibur*; where they could make true next-gen masterpiece RPGs, like *Skies of Arcadia*; where Sonic could go on an actual adventure, like in *Sonic Adventure*. There was variety, scope, a genuinely visible step up in quality from the PSone releases of the day sitting next to the DC ports.

The inclusion of four controller ports wasn't a first, but it was still a novelty. Console modems existed before 1998, but being included as standard made the Dreamcast the first major console capable of online play out of the box. Even being able to hook things up to a monitor (or some TVs) via a VGA cable was a point of note: an early step toward the now-standard 'make sure you connect to your display in the best way you can' approach. The Dreamcast was ahead of its time not just because fans of it say so, but because it genuinely, demonstrably *was ahead of its time*. The PS2 didn't even feature a modem as standard until the 2004 launch of the slim console.

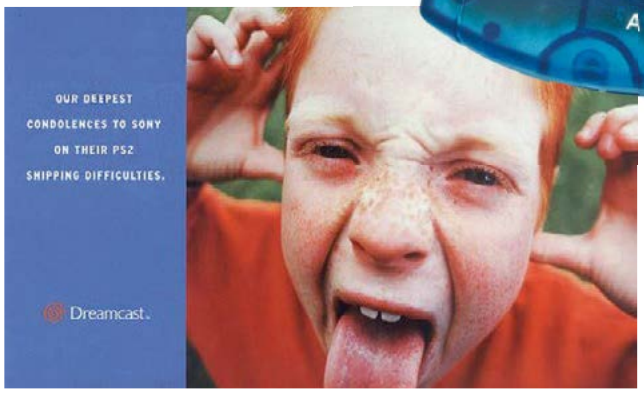
"Sega just gave up. It wasn't quite reaching the mass market appeal Japan wanted"

Part of the reason the Dreamcast resonates so much with people even to this day is simply because it was the loser in a stand-up fight. There's a deep affection that arrives hand in hand with support for the aggrieved party. But the bigger part of the story, so often lost when going over the machine's history, is that the Dreamcast resonates so much with those who played it because it was a standout console. It had its issues like any other (early GD-ROM drive problems, for example), and there were gaps in the catalogue (again, *FIFA*), but the overriding feeling anyone got on sitting down and playing any number of Dreamcast games for any amount of time was one of happiness, contentment, and that they'd had *fun*.

The Dreamcast failed, but not necessarily because it was a *failure*. At the time, it might have felt that way, but contemporary retellings have framed

Before Sony's follow-up console arrived, the Dreamcast had free rein on pumping out ports of PSone games that ran and looked significantly better than the 32-bit opposition.

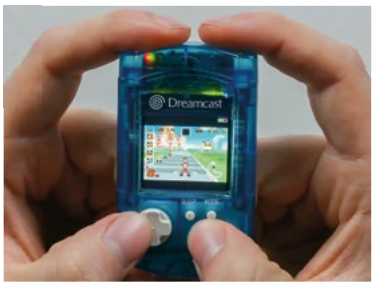
it as something far more surprising: Sega just gave up. Sony had pulled ahead, Sega wasn't quite reaching the mass market appeal the Japanese office wanted, and, frankly, it just didn't want the fight. Discussion had been on the table for a while concerning a transition to acting as a third-party publisher, and while initially angrily laughed off, it soon became the company's plan. *Sonic* arrived on Sony formats, Microsoft formats – even *Nintendo* formats – and the legacy of a truly legendary hardware manufacturers' final console was abandoned by those who created it. It was instead a dedicated core of cheerleaders left to forever recite the mantra: "It was, like, really good, you know?" Because the Dreamcast *was*, like, really good, you know?



Aggressive marketing just wasn't Sega's forte – this was about as snippy as it got. And honestly, that bit Sega on the backside in the long run.

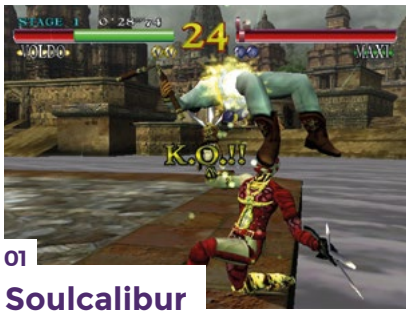
Don't stop believin'

Sega gave up on the Dreamcast long before the people did – and there are plenty of ongoing efforts to keep the dream(cast) alive. All the way back in issue 7, we took a look at the vibrant homebrew scene on Sega's ill-fated console, with the likes of *Sturmwind* and the recently released *Xenocider* grabbing the attention there. But it's not just games – Retro Fighters released an updated version of the awkward Dreamcast controller in 2020, and it's an absolute beaut. Elsewhere, Black Dog's DCDigital mod brings the console into the HDMI era, and if you're keen on… well, ruining its intended function, you can even mod a VMU to run as a micro-emulator. And there's so much more besides. We just can't let it go.



10 coin-op greats brought home on Dreamcast

'Arcade-perfect' was never truer than with this selection of flawless ports



01

Soulcalibur

1999

You might call it a decent launch title if you're in the mood for gross understatement: *Soulcalibur* immediately set out the stall for the Dreamcast by being not just an arcade-perfect port, but *better* than the arcade version. To this day, it's still a stunner of a fighting game, home to hidden depths (and hidden lizardmen), and is well worth its status as a legend.

02

Power Stone

1999

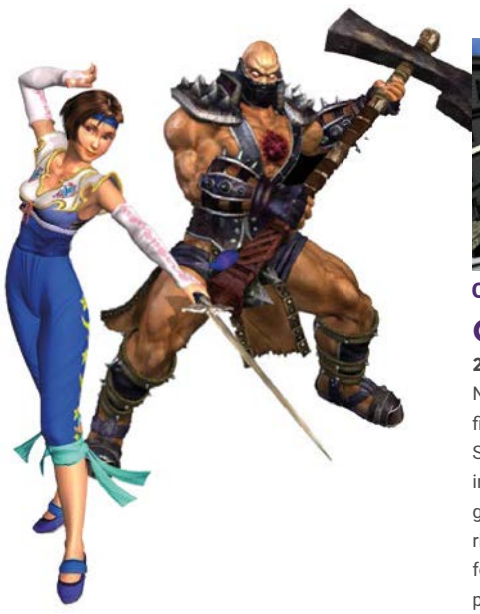
Capcom's one-on-one arena-based 3D battler arrived on Dreamcast and promptly became a mainstay for a massive percentage of the console's owners. Its mix of simple-but-deep combos, open spaces to dash about, and environmental attacks made the home version a winner. The sequel focused more on four-player chaos, but was another fab arcade port.

03

Marvel vs. Capcom 2

2000

While the world patiently awaited arcade-perfect versions of *Street Fighter*, Capcom took a slight detour – took us on a ride, you might say – to one of the best tag-based fighting games ever made. It was never the technical fighter's favourite, being big and dumb and ludicrously over the top, but *Marvel vs. Capcom 2* is an absolute top-tier arcade port on Dreamcast.



04

Crazy Taxi

2000

Nothing has ever felt as vibrant and alive as that first time you played *Crazy Taxi* on Dreamcast. Sure, you didn't have the full-size cab to sit in at home, but you did have The Offspring going "YA YA YA YA YA!" in your ears and a ridiculous, smooth-running cab-'em-up to enjoy for as many hours as you wanted, no extra 50p pieces necessary.

05

Gunbird 2

2000

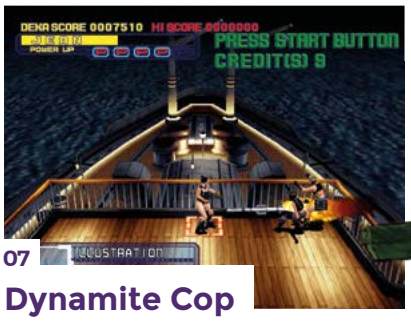
Psikyo's shooter sequel brought its mix of hectic blasting and lovely 2D art to the home console exclusively on Dreamcast, where it joined many other dodge-and-weavers vying for the affections of home-based players. And… it was good! Sub in the more obvious choice of *Ikaruga* here if you prefer, or even *Giga Wing 2* if you like to have scoring systems that hit the trillions.

06

Virtua Tennis 2

2001

Is it the most realistic tennis game ever made? Of course not. Did *Top Spin* better the *Virtua Tennis* series? Arguably. Does it matter when this is one of the finest arcade sports titles ever made, and one all the better for its perfect-port leap to the Dreamcast? Not in the slightest. There are few finer multiplayer sports games out there, even to this day.



07

Dynamite Cop

1999

The sequel to *Die Hard Arcade* that dropped the licence and went unnoticed by many as a result; *Dynamite Cop* was a wonderful continuation of the madcap antics of the first game. It's big, bold, unapologetically silly, and very much an arcade game in the purest form. That it came to Dreamcast as such a flawless port was just the icing on the delicious 3D violence.

08

Virtua Fighter 3tb

1998

It wasn't quite a masterpiece, but *Virtua Fighter 3tb* did help set out the Dreamcast's stall as home of the arcade-perfect ports. The original game missed its release on Sega's Saturn, but this updated version of the 3D fighter – with added team battles – landed in the early days of Dreamcast. It might have been surpassed elsewhere, but it's still worth a mention.

09

Cannon Spike

2000

Capcom loaned a bunch of its characters from *Street Fighter*, *Mega Man*, and more to Psikyo for this 3D shooter – and it worked out pretty darn well. *Cannon Spike* is an overlooked great of the arcade-at-home Dreamcast scene and the sort of unique little wonder that really encapsulates the *feel* of the turn of the century.

10

Super Street Fighter II X For Matching Service

2000

Other *Street Fighter* games might have been expected, but there were issues in all of them. The Dreamcast port of *Street Fighter II*, meanwhile, was the absolute best there had ever been to that point – arcade-perfect-plus, and the ideal way to play one of the best fighting games ever made. If you could get a copy from Japan, at least.

Game Friends

STEVE MCNEIL
Steve likes friends that play games.

Unless you're one of those people who hates people and was glad to see the back of them, the last year will have taken a real emotional toll on you, as it has on me. When lockdown began in March 2020, we were all doing our best to navigate the 'new normal', and there was undoubtedly an initial level of excitement and novelty in Zoom calls – whether for work, online quizzes, or whatever else it is we used to do on Zoom.

Of course, we all eventually got fatigued from staring at an endless parade of alternate-reality *The Brady Bunch* title sequences. (A special shout out to the many parents who had to endure 'home-schooling' on Zoom too, something that I'm sure caused more actual pain than an army of sadistic dentists could ever hope to.)

As a result, I tended to do less and less online as time passed, but this ultimately meant I spent significantly less time with friends, something I hadn't appreciated was so central to my emotional well-being until it all but vanished. But this isn't a sob story. No 'woe is me' to be found here. Rather, I come with an offer, a suggestion, which I hope will serve some of you well, as it has me.

Recently, I've begun playing games online with friends more regularly again, but with a different focus. Rather than arranging a 'proper' gaming session with friends, or alternatively just a chat to have a catch-up, I've begun to blend the two by spending time with friends gaming, while catching up. What I mean by this is, rather than picking games that lead to the conversation being dominated by tactical chat about squad gameplay or whatever, I'm focusing instead on things like *Rory McIlroy PGA Tour* with my old comedy partner Sam Pamphilon, or *Minecraft* with GINX Esports TV stalwart, Chris Slight; the sorts of games that are so familiar they don't really require a significant portion of your attention.

I appreciate there's every chance some of you are reading this and thinking "Yes, Steve, that is how I have been using online games for social time with friends for years", but to me, and several other people I've mentioned it to, it's been something of a revelation, so I wanted to pass it on, in the hope that it's of help to some of you reading this. As the months have passed, anxieties and fatigue have led to many of us reaching out less to people as we have 'no news' because 'nothing happens anymore'. But, with my guard down and the slight distraction of a game that doesn't require complete focus, I'm finding hours have passed with a good friend and a good game in a similar way to how I used to go for 'a quick pint' after work, and then discover it's already last orders, I've had a lovely evening, and I'm heading to bed feeling the glow of connection, uplifted.

And drunk. Some things never change.

"Recently, I've been playing games online with friends more regularly again"

> A nice, relaxing time chatting with friends – oh, and there's some *Minecraft* too, if you want.

Backend Contents

Reviews, retro games, and lots more besides

92. **Curse of the Dead Gods** PC, PS4, XBO, Switch
94. **NUTS** PC, Switch, iOS
95. **Disjunction** PC, PS4, XBO, Switch, Mac
96. **Oceanhorn: Chronos Dungeon** iOS
97. **Werewolf: The Apocalypse – Earthblood** PC, PS5, XB X/S, PS4, XBO
98. **Gods Will Fall** PC, PS4, XBO, XB X/S, Switch
99. **Cyber Shadow** PC, Mac, Linux, PS5, PS4, XBO, Switch
100. **The Medium** PC, XB X/S
101. **Eternal Hope** PC, Mac, XBO
102. **Blue Fire** PC, Switch, PS4, XBO

OUR SCORES

1–9
Trash. Unplayable; a broken mess.

10–19
A truly bad game, though not necessarily utterly broken.

20–29
Still awful, but at a push could be fun for two minutes.

30–39
Might have a redeeming feature, but otherwise very poor.

40–49
Adds in more redeeming features, but still not worth your time.

50–59
Average. Decent at best. 'Just about OK'.

60–69
Held back by glitches, bugs, or a lack of originality, but can be good fun.

70–79
A very good game, but one lacking spit and polish or uniqueness.

80–89
Brilliant. Fabulous fun. Everyone should at least try it.

90–99
Cutting edge, original, unique, and/or pushes the medium forward.

100
Never say never, eh?

Page 102: Lifting from other greats isn't the worst idea, as *Blue Fire* shows.

PLUS

104. **Backwards compatible**
Unexpected releases make their way to the present (from the past)

108. **Now playing**
Getting stuck in mud in cars, then smashing things up. Also in cars

Page 110: It's not just mud. We're getting stuck in the snow too with this month's games.

Review

Curse of the Dead Gods

Let sleeping gods lie

Info

GENRE
Action roguelike

FORMAT
PS4 (tested) / PC
Switch / Xbox One

DEVELOPER
Passtech Games

PUBLISHER
Focus Home Interactive

PRICE
£17.99

RELEASE
Out now

REVIEWED BY
Jon Bailes

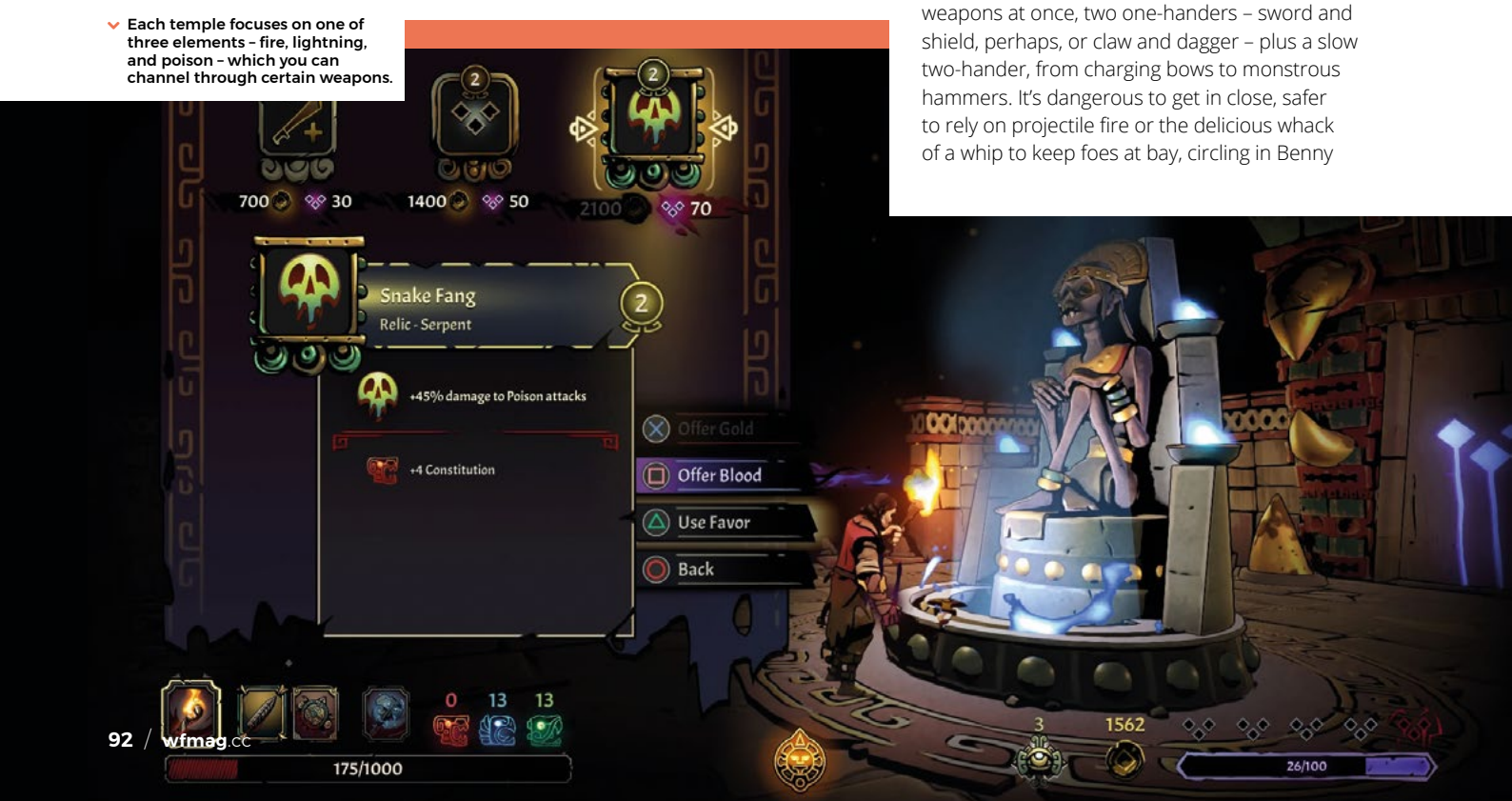
As soon as you start *Curse of the Dead Gods*, you can almost hear the click of roguelike systems slotting into place. Weapon synergies, passive perks, currencies to spend between runs. Click, click, click. Interlocking like a jigsaw puzzle, complementing their neighbours. It's all so perfectly rehearsed you might long for a jagged edge, something that sticks out as boldly innovative. But settle into its cycle of micro-decisions and expressive combat, and its steady method reveals an elaborate beauty.

The influences on *Curse* are clear – a checklist of today's most cherished roguelike touchstones – but developer Passtech manages them more deftly than most. The perspective and action can't but recall *Hades*, with the giveaway glint of incoming assaults and colourful circles to herald explosions. Weapon combinations rub off from *Dead Cells*. The route selection through each of three Aztec temples nods to *Slay the Spire*.

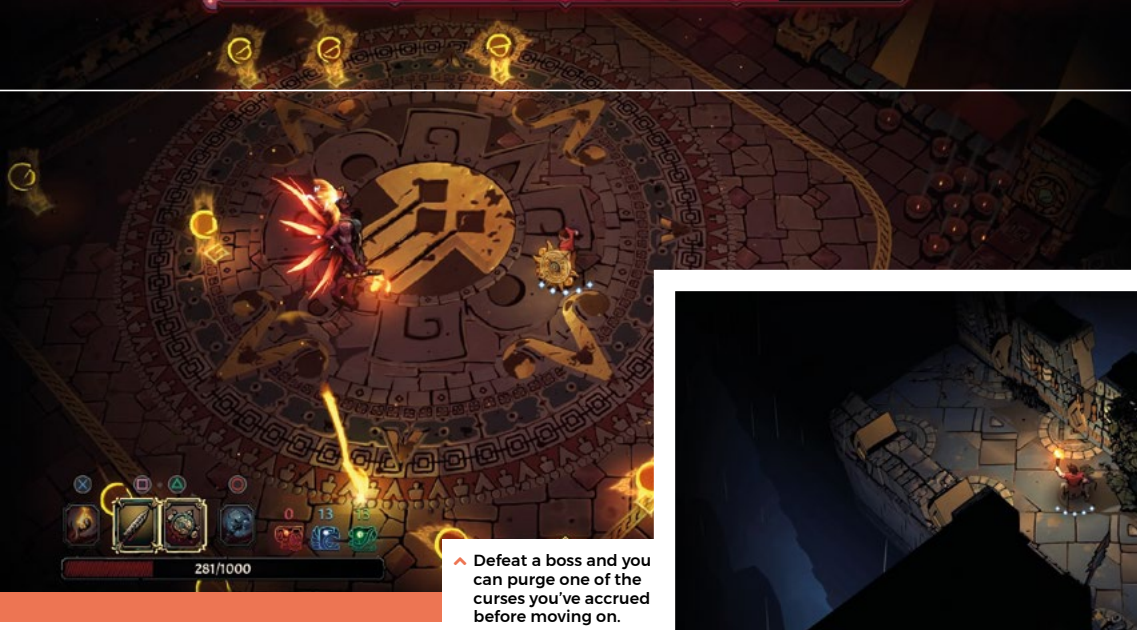
There's also a note of good old *Dark Souls*. For as much as the arena battles channel *Hades*, your gruff, heavy-booted charge has none of the preening agility of Zagreus. This is a game about age, not eternal renewal, about mortal limitations and the rusty denizens of long-sealed tombs. It's fitting that your movements are weighty, and constrained by pips of stamina displayed beneath your feet.

It's exciting too, goading you to drive to the wire, to toy with your final pip like a game of chicken. As a harpy prepares to swoop, can you squeeze in a finishing blow, do you dodge and recharge, or try and parry for a bonus refill then counter? At the back of your mind is the 'greed kill' timer, badgering you to make quick, faultless takedowns for larger cash prizes. So you segue into a tick-tock rhythm of last-second cancels and hit-and-run combos. Or push too far, and are left lumbering pipless as a barrage of enemy attacks converge.

There's more to juggle besides, and it's a lot when you're bedding in. You can hold three weapons at once, two one-handers – sword and shield, perhaps, or claw and dagger – plus a slow two-hander, from charging bows to monstrous hammers. It's dangerous to get in close, safer to rely on projectile fire or the delicious whack of a whip to keep foes at bay, circling in Benny



Each temple focuses on one of three elements – fire, lightning, and poison – which you can channel through certain weapons.



Defeat a boss and you can purge one of the curses you've accrued before moving on.

There's a hint of *Darkest Dungeon* in the visuals, albeit too literally at times – it's hard to see what's going on.

Hill trains, while holding dodge roll potential in reserve. Even then, long-range attacks and aerial bombardments are a concern, while booby traps are as likely to catch out the inattentive gladiator as lure opponents to a quick demise. And there's the light, blooming from your torch only when weapons are sheathed, relighting braziers that monsters snuff out. It's not merely a matter of visibility – getting stabbed in the dark is far more damaging.

Yet *Curse* doesn't pile its ideas on so much as arrange them in conveyor belts of pointed dilemmas. It's an acolyte of the mantra that every roguelike choice should have consequences, from fight-or-flight instincts to an explorer's deliberations. Dungeons are denser than in *Hades*, with arenas split by winding passageways, forks, and nestled treasures. Between battles, you gambol like Indiana Jones over spiked floor traps or scoop up coins amongst poison-spewing statues. Exit a section and you plot a restricted path based on promised rewards – more gold, or altars selling stat boosts or weapons? Every cash stopover is a missed opportunity to upgrade, but upgrades cost money.

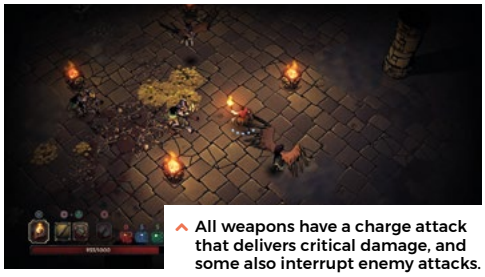
"The perspective and action can't help but recall *Hades*"

Except, altars don't only take gold, they also accept payment in blood. And that links back to the titular curse. You're afflicted with dark magic, signified by a 'corruption' meter that fills each time you exit a room or offer blood, that sporadically brands you with a random hex. Maybe you can't light certain braziers anymore, or defeated enemies spawn smaller enemies, or – the horror – you lose a stamina pip. In truth, it's rarely all that devilish. Most curses are minor thorns or trade-offs, which only occasionally stack significantly. Not the jagged edge they might have been, pushing you to switch styles on the fly.

Because streamlining takes precedence in *Curse*, the team of parts, not star players. And while it lacks genuine flair, fine-tuning the mesh of each run is thickly engrossing. For every yin a yang, right up to sacrificing equipment drops to those unseen gods for minor health refills and corruption salves. Your relationship with the powers that be is in constant, unspoken flux, exploiting their boons to help kill their servants. All the little give and takes make every decision that bit more succulent.

The one bump of note is a challenge curve that holds shallow too long then steepens abruptly. To start, you can only attempt a one-act run in each temple, emerging victorious if you defeat a boss. You then unlock a second act, a third, and a gruelling fourth, extending future forays. But by the time you're seriously planning to bring down third act bosses, the content of early stages matters less than the rewards they bestow. It's a problem many roguelikes share, but still, working your way through basic traps and foes does become routine.

Otherwise, the teeth in the cogs tessellate near-faultlessly. Yes, that's in part because they follow established blueprints, but they're executed here with uncommon proficiency and detail. If *Curse*'s intricacies may feel uninviting at first, once they become second nature... click.



All weapons have a charge attack that delivers critical damage, and some also interrupt enemy attacks.

HIGHLIGHT

Lore is sparse, but subtly worked into the systems of exploration. A sense of crumbling decay contextualises cracked walls harbouring piles of gold, and collapsing bridges that gate off retreat. Ancient worship has left entry halls littered with material offerings, gold, and common relics, while the depths bare their teeth with signs of depraved human sacrifice.

VERDICT

***Curse of the Dead Gods* blends familiar roguelike elements with rare refinement and density.**

77%

Handling your old-school equipment feels wonderfully tactile, but playing *NUTS* with a controller is finicky.

Despite the stark lines and the striking colour scheme, the forest feels dense and real.

HIGHLIGHT

The biggest highlight in *NUTS* isn't a nocturnal animal – sound designer and composer Almut Schwacke provides many of the best elements in the game. She not only wrote the soundtrack, including her own performance of the ending theme, but she also voices your boss. Most importantly, the sound engineer and multi-instrumentalist is an accomplished Foley artist, which explains the life-like atmosphere in *NUTS*' virtual forest.

Review

NUTS

Shooting squirrels, the humane way

I'm in a forest, drawn with stark lines against a soft yellow background. The trees are different shades of blue, the camera I carry stands out in bright orange. The view is a colour-blocking marvel, but I don't have the calmness of mind to properly appreciate the tableau. I've just stumbled down an underpass and now can't remember if I've been here before or not. I'm on the hunt for a squirrel, and I've just lost its trail.

The experience at the heart of *NUTS* is quickly explained – you're a grad student who takes a job in squirrel surveillance for a research project. That's literally the whole task – watching squirrels from a caravan out in the woods. At first, you're simply confirming the rodents' existence: you place a camera at a particular spot, then go back to the trailer to press the recording button on your equipment. If a squirrel appears on your recorded footage, you press pause, print the picture, and fax it to your boss, a researcher called Dr. Nina Scholz, who then gives you a call. It's all pretty low-tech and easy enough to do: you're a student, after all. Each task takes you to a new location within the forest, where the parameters of your job change slightly. The subject you're tracking might change, or you're asked to catch a squirrel at a particular time. There are six assignments in total, and while the effort to offer variety is palpable, *NUTS* is really just this: you set your camera down, you witness a squirrel run in and out of frame, then jog into the woods to put your cameras further along what hopefully was the critter's path, and rinse and repeat until you find a squirrel's nest or its stash.

> **"Rinse and repeat until you find a squirrel's nest or its stash"**

Exactly two types of people are reading this review right now – those to whom this sounds relaxing and satisfying, and those who are thinking, "No, thank you". Maybe you enjoy bird-watching, or taking a lot of care to frame and rearrange your photos. In that case, *NUTS* is for you. But everyone turned off by the main in-game loop won't find much else here, as the mystery at the heart of *NUTS* remains a mystery to the very end. The setup is promising – from a shadowy corporation to a squirrel population exhibiting some very un-squirrel-like behaviour, there's a lot that could've happened – but *NUTS* ends without telling me what, or if anything, ever did happen. Instead, I have to spend large swathes of my playtime in silence, left alone in a forest, in a game where everything feels like work.

Info

GENRE
Adventure

FORMAT
Switch (tested) / PC / Apple Arcade

DEVELOPER
Joon, Pol, Muutsch, Char & Torfi

PUBLISHER
Noodlecake

PRICE
£15.49

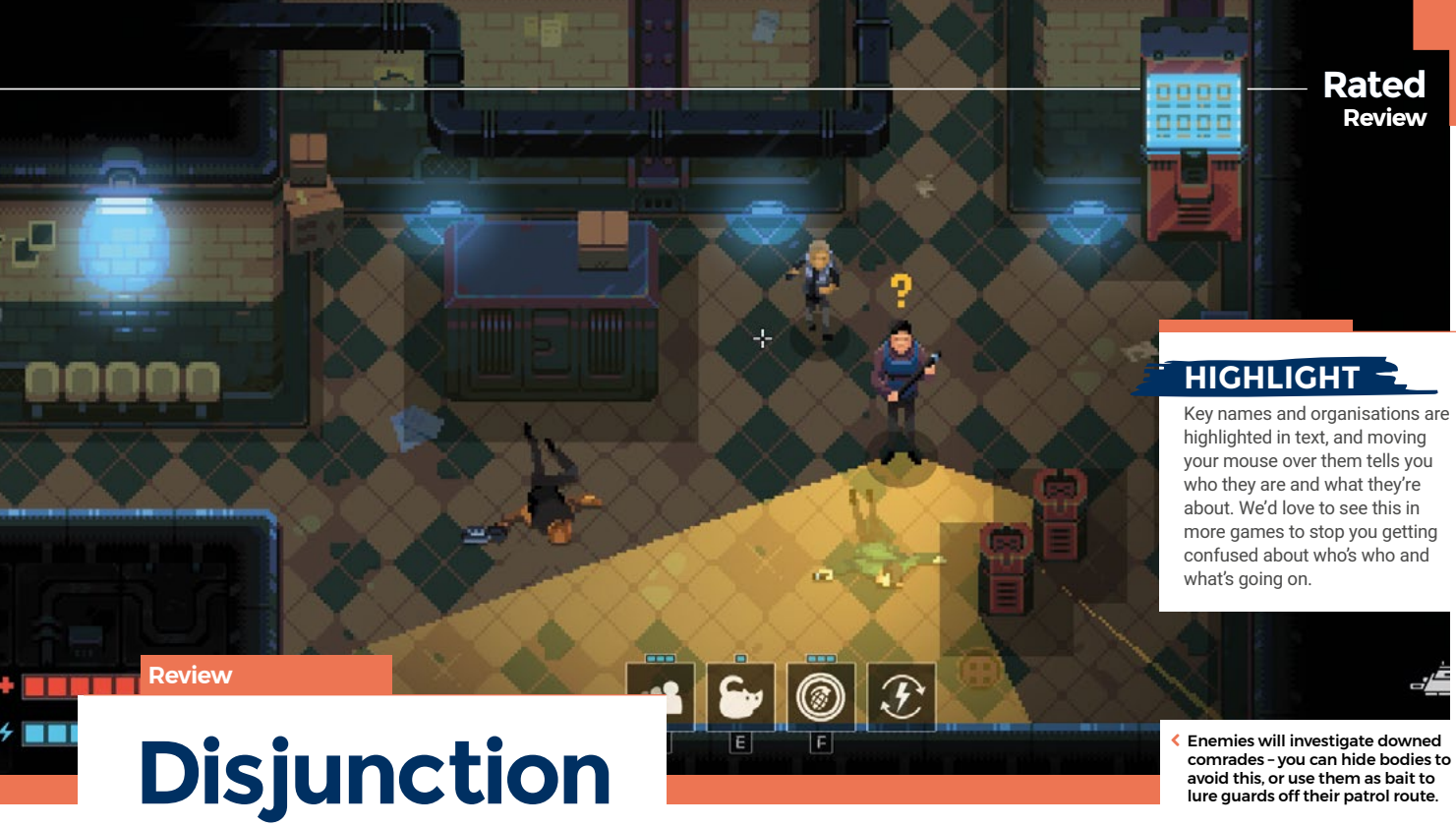
RELEASE
Out now

REVIEWED BY
Malindy Hetfeld

VERDICT

***NUTS* is an artistic accomplishment, but the conceptually intriguing idea doesn't make for engaging gameplay.**

60%



Enemies will investigate downed comrades – you can hide bodies to avoid this, or use them as bait to lure guards off their patrol route.

HIGHLIGHT

Key names and organisations are highlighted in text, and moving your mouse over them tells you who they are and what they're about. We'd love to see this in more games to stop you getting confused about who's who and what's going on.

Review

Disjunction

Cyberpunk stealth offers a sneaky take on Hotline Miami

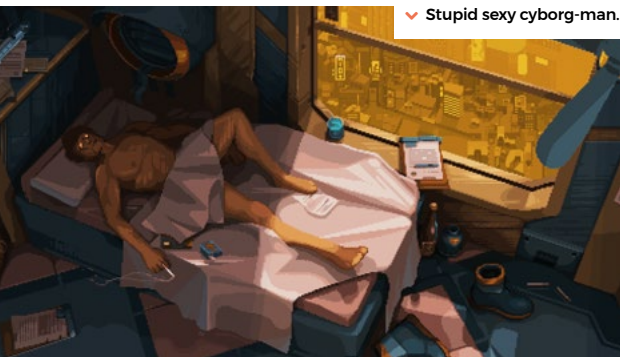
If there's one thing I want from my stealth games, it's that the terms of engagement are clear. If you're ever unsure about when enemies can spot you and when they can't, or how they are going to respond to particular actions, then stealth is always going to be an exercise in frustration. *Disjunction* understands this. Each enemy has clear vision cones while you're sneaking, meaning you can always see when you're safe and when you're not, and can plan your actions accordingly. The game counterbalances its provision of an empowering bounty of visual information with intricately overlapping patrol patterns and a vulnerability to enemy attacks that ensures its levels work as a series of challenging and satisfying action-puzzle rooms. At its best, it feels like a slower-paced take on *Hotline Miami*, combining a satisfying loop of planning and execution with moments of thrilling seat-of-the-pants improvisation.

Disjunction sees you playing as three characters – a private detective, an ex-merc turned underground boxer, and a hacker – unravelling an archetypal cyberpunk conspiracy. In trying to hit all the notes typically associated with the genre, its story ends up being a bit by the numbers, with a 'revelation' that you'll spot coming a mile off. There's nothing here that's going to stop you enjoying what's good about the game though, and the cyberpunk setting at least provides an excuse to equip each character with a series of special abilities that add a layer of finesse to the basic formula of sneaking around and bashing enemies unconscious with melee attacks.

Vision-obscuring smoke bombs, an enemy-stunning dash attack, and a holographic cat that draws the attention of patrolling guards are just a few of the abilities on offer to help you sneak through criminal hideouts and corporate labs. For the most part, they're effective and fun to use, balanced with a cool-down timer and energy cost that ensures they can't be spammed.

You can enhance your character's skills at the end of each level via experience points and upgrade kits, the game making a well-judged decision to let you reallocate them each time, freeing you to experiment with different tweaks to your playstyle. Theoretically, you're given yet more choice via the gun each character carries. The game half-heartedly tells you you can choose to blast your way through and ignore stealth, but it's so obviously designed with stealth as its primary focus that you're best off ignoring that, or you're going to be playing an inferior game.

There are things that let *Disjunction* down, from the rote story to inconsistent check-pointing that can be maddening at times. None of these rough edges would make me hesitate recommending a solid stealth experience with some good ideas.



Stupid sexy cyborg-man.

Info

GENRE
Stealth-action RPG

FORMAT
PC (tested) / PS4 / Xbox One / Mac / Switch

DEVELOPER
Ape Tribe Games

PUBLISHER
Sold Out

PRICE
£12.99

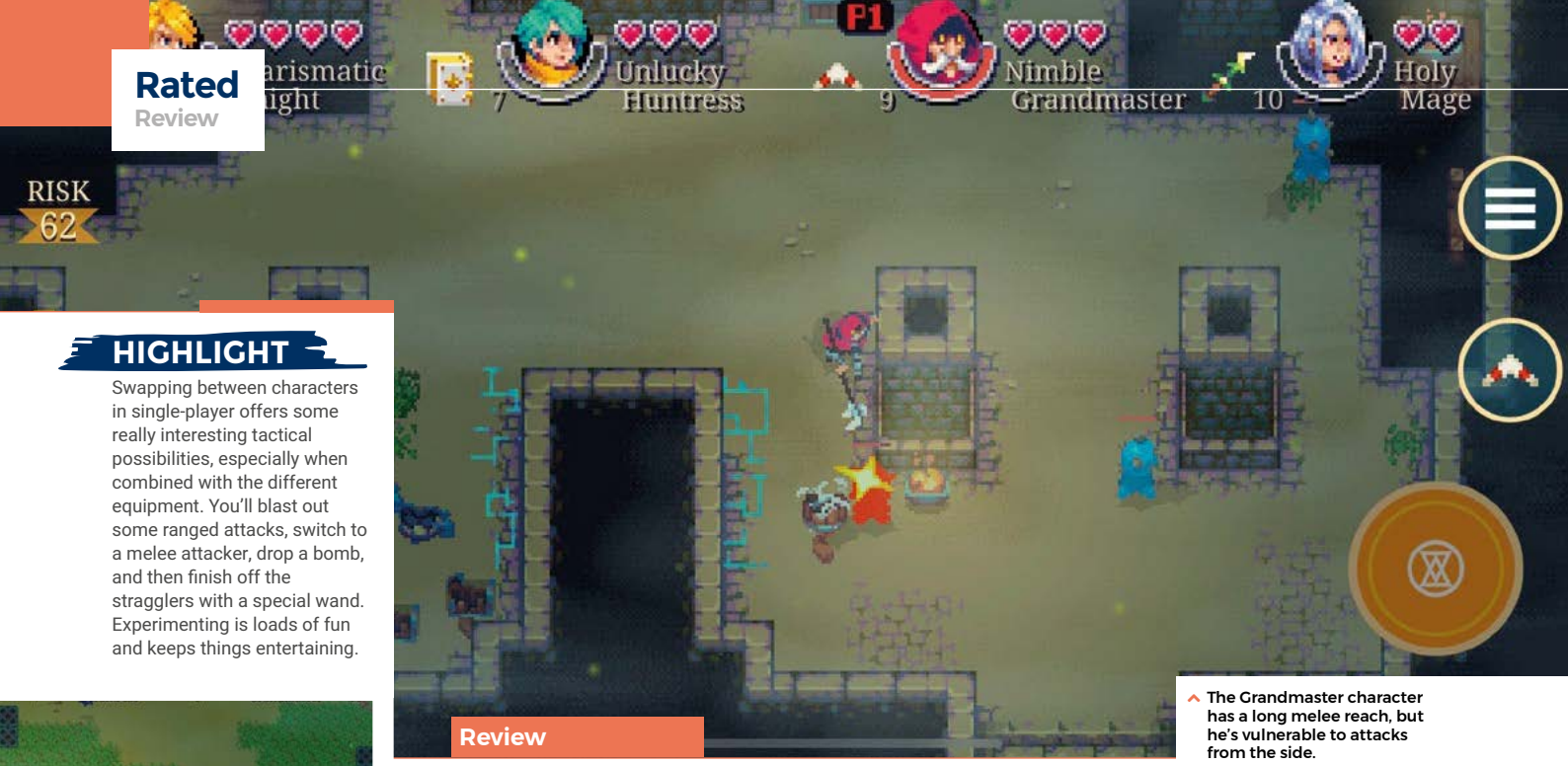
RELEASE
Out now

REVIEWED BY
Paul Walker-Emig

VERDICT

A sneaky success from a new studio showing plenty of potential.

72%



The Grandmaster character has a long melee reach, but he's vulnerable to attacks from the side.

HIGHLIGHT

Swapping between characters in single-player offers some really interesting tactical possibilities, especially when combined with the different equipment. You'll blast out some ranged attacks, switch to a melee attacker, drop a bomb, and then finish off the stragglers with a special wand. Experimenting is loads of fun and keeps things entertaining.

Review

Oceanhorn: Chronos Dungeon

A hack-and-slash RPG that's infinitely more fun when played with a few friends

Info

GENRE
RPG

FORMAT
iOS

DEVELOPER
Cornfox & Brothers

PUBLISHER
Cornfox & Brothers

PRICE
Free (Apple Arcade)

RELEASE
Out now

REVIEWED BY
Harry Slater

VERDICT

With friends, this is a must-play. On your own, it loses its sparkle a lot quicker.

76%

The best moments in *Oceanhorn: Chronos Dungeon* are the ones you make yourself. The same-room co-operative gameplay is designed to elicit reactions, the simple controls meaning anyone with an iOS device and an Apple Arcade subscription can jump in to slice up monsters and set the fantastical world to rights.

That world is randomly generated, meaning each time you step into the game, you're going to be facing something slightly different. The experience remains mainly the same, though. You wander through dungeons, smashing pots and crates, butchering skeletons, blobs, and bats, and making your way to the exit stairs.

There are some interesting ideas here. One of them involves a golden statue that's hidden on every level. Find it, spend some of your hard-earned gold, and you can take the difficulty – or risk, as it's called in the game – down a few notches. Your characters change between playthroughs, too, with a random build based on star signs and temperament granted at random.

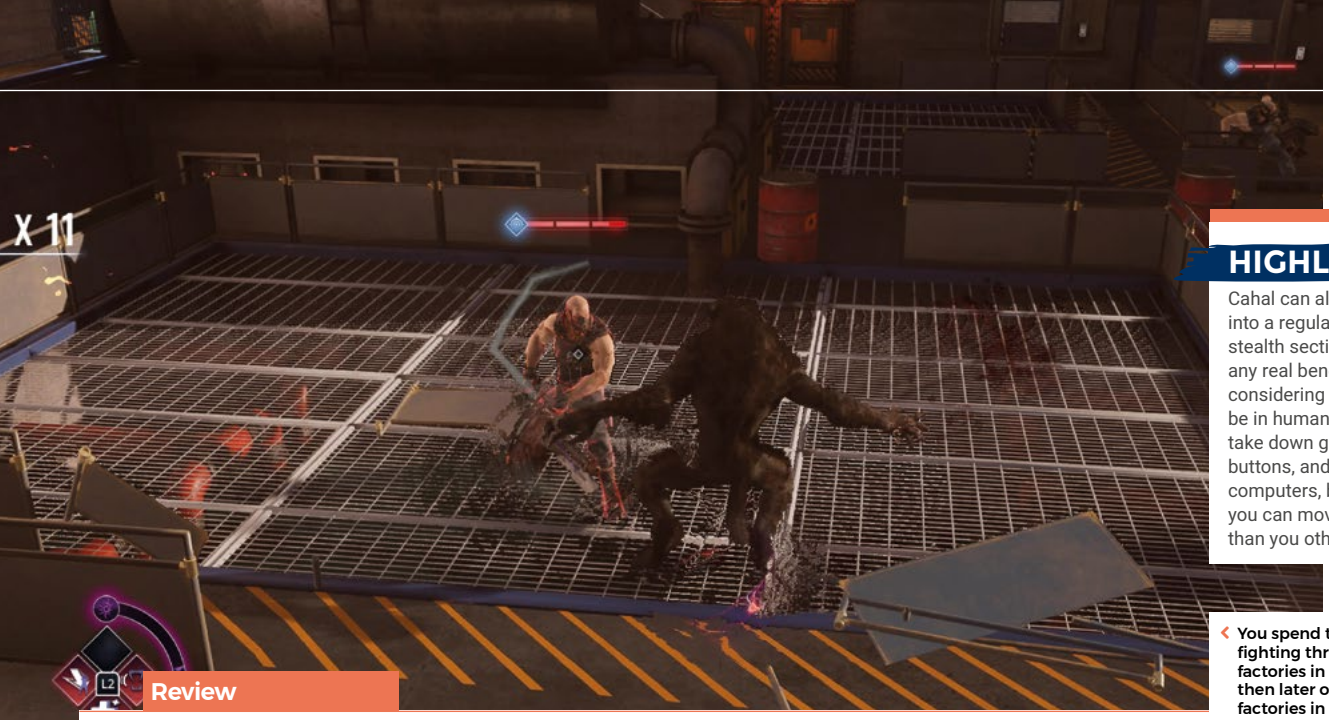
When you're playing with fewer than four players, you can swap between the idle characters with a tap on the top of the screen. Characters have different strengths and weaknesses, and get boosts depending on the season and setting of the level, so making use of all of them is one of the keys to success.

You also get one piece of equipment. These can be offensive – bombs, energy-blasting wands, razor-edged boomerangs – or used to revive fallen heroes when their health drops to zero.

The violence here is tight and sharp, and it's easy to get overwhelmed if you're not paying attention. You need to pick the right time to attack, keep away from enemies when they start to flash, and use your gear to turn the tables if things start to go awry. In multiplayer games, you'll need to work together, using the skills of the different warriors together to battle back the villainous hordes.

This is definitely a game you're going to want to play with others. The single-player is solid, and it'll keep you entertained for a while, but it slowly and surely falls flat if there's no one else to share the experience with. Throw in some friends, and you're dealing with a completely different beast.

It's a real shame there isn't an online mode here, although regular challenges do manage to keep things fresher than they otherwise would be. As a single-player experience, *Oceanhorn: Chronos Dungeon* lacks the meat it needs to keep you deeply engaged. With friends, it's a brilliant piece of social glue that'll have you adventuring for hours.



Review

You spend the game fighting through grey factories in a forest, and then later on through grey factories in the desert.

HIGHLIGHT

Cahal can also shapeshift into a regular wolf during stealth sections. There aren't any real benefits to this considering you still have to be in human form to silently take down guards, push buttons, and interact with computers, but it does mean you can move a lot faster than you otherwise would.

Werewolf: The Apocalypse – Earthblood

You'll have a more enjoyable time howling at the moon

It's a bad sign when the actual act of being a werewolf isn't particularly satisfying in a werewolf video game. There's an inherent power fantasy involved when you're behind the eyes of a giant mythical beast, yet, *Werewolf: The Apocalypse – Earthblood* misses out on the whole 'power' angle by a large margin. This can be attributed to a few different factors, from the way combat functions, to a misguided over-reliance on stealth, and the game's banal story.

Let's start with the combat. One of the main problems with *Earthblood*'s fisticuffs is that it lacks a tangible sense of weight. This would be a glaring omission in most action games, but especially one where you're a ten-foot-tall hunk of pure muscle and rage. Limited animations compound the issue by making each swing of your deadly claws feel clunky and lifeless, while the enemy AI rarely ever reacts to your scything blows. That last part might be the most egregious of the bunch considering the amount of regular humans you fight. You would think these armed guards were being inconvenienced by a toddler as opposed to ravished by a deadly lycanthrope.

Different enemy types shake things up a tad by forcing you to dodge shotgun blasts and silver bullet-tinged sniper fire. There's also a small assortment of abilities for you to unleash, but *Earthblood*'s skill tree is underwhelming, with most of the options improving existing abilities rather than adding new ones. Simplistic button-mashing is the key to ending most fights, while bland and uninspired environments do little to alleviate the tedium.

The story is more entertaining on paper, but that's merely a mirage. Part of the *World of Darkness* series of tabletop role-playing games, *Earthblood* does tap into its tabletop origins by delving into the series' complex lore. The problem with this is that *Earthblood* assumes you already know everything there is to know about the *World of Darkness* by constantly using concepts and terminology it refuses to explain. You're going to be in the dark for all its big picture ideas if you're not familiar with the source.

All you really need to know is that you play as a werewolf called Cahal who's part of a tribe of eco-terrorists. As it turns out, the lycanthrope population is very big on environmentalism, so you're pitted against an evil corporation that's knowingly polluting the environment. This sounds mildly interesting and is at least unique, but the story suffers through stale dialogue and wooden voice acting, where Cahal sounds bored and uninterested when he's supposed to be wrestling with an uncontrollable rage.

Stealth is *Earthblood*'s strongest component by virtue of being merely competent. Its frequency is misplaced, though, considering how irrelevant it makes the whole werewolf concept. And that's where *Earthblood*'s failures lie: being a werewolf just isn't fun. Nothing else will reconcile that disappointing conclusion.

Info

GENRE
Action adventure

FORMAT
PS5 (tested) / PS4 / Xbox One / XB X/S / PC

DEVELOPER
Cyanide

PUBLISHER
Nacon, Big Ben Interactive

PRICE
£44.99

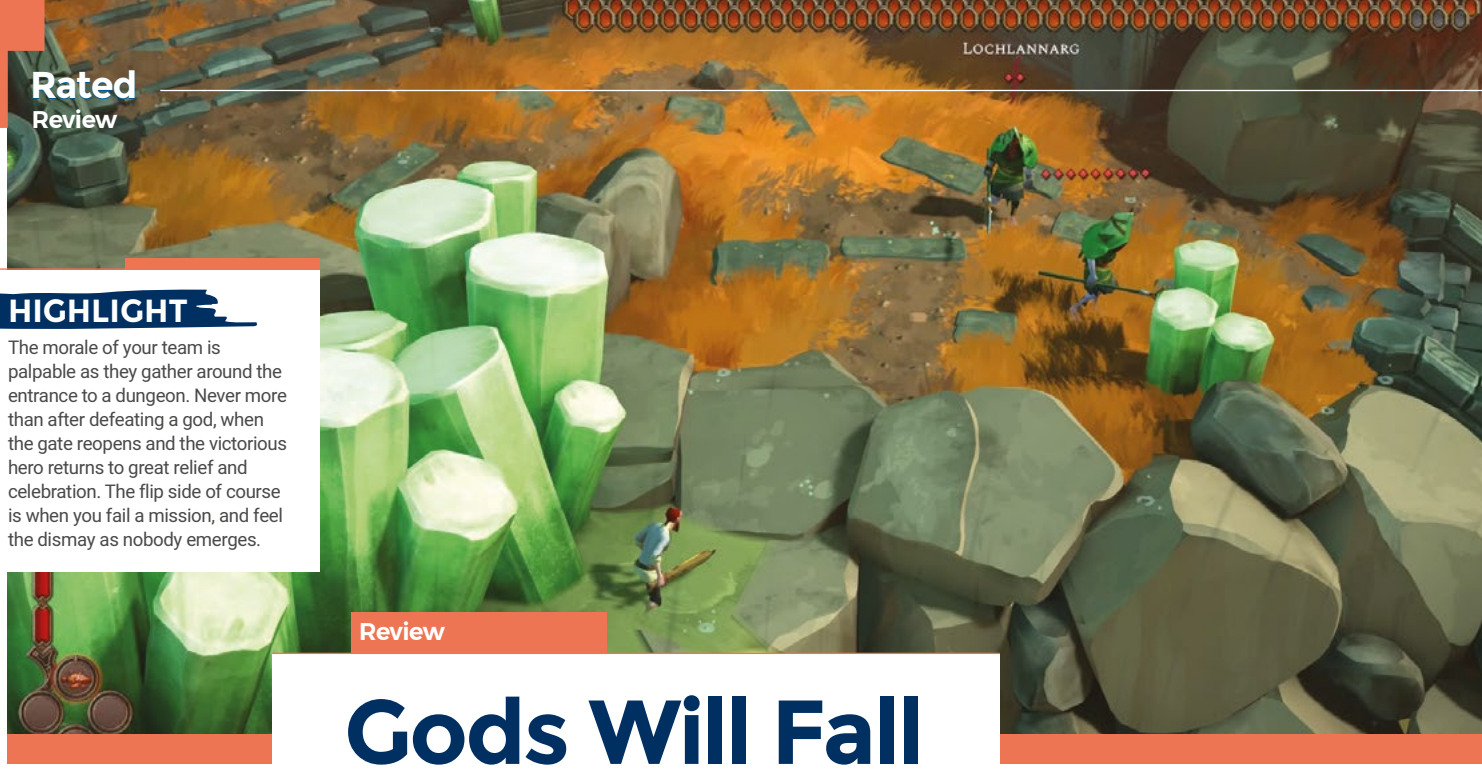
RELEASE
Out now

REVIEWED BY
Richard Wakeling

VERDICT

Bad combat is the silver bullet through the heart for this werewolf action game.

26%



HIGHLIGHT

The morale of your team is palpable as they gather around the entrance to a dungeon. Never more than after defeating a god, when the gate reopens and the victorious hero returns to great relief and celebration. The flip side of course is when you fail a mission, and feel the dismay as nobody emerges.

The realms vary greatly in shape, from flat spreads to clifftop climbs.

Review

Gods Will Fall

Make your makers meet their makers

Even deities can push their luck too far. *Gods Will Fall* shows what happens when a bunch of eldritch dictators overindulge in human sacrifice: now there's a mob of lapsed pagans marching around their homeland, intent on extinguishing their wrath.

You control this eight-strong group, scouting the isle of the gods before selecting any of the ten gates that grant access to their divine realms. Only one would-be champion can enter at a time, to bash through clusters of crazed acolytes then smite the deity itself. Fail, and that warrior is lost until another team member destroys the god in question. Oh, and each new game shuffles the difficulty of the realms, so you don't know on arrival which are sparsely protected and which are crammed with monsters.

There's a hint of the classic *Mega Man* formula here as you dip toes into stages early on, losing a life or two, before zeroing in on a manageable zone, beating a boss, and earning stat boosts. *Gods Will Fall* adds more intriguing wrinkles to this fabric, though, by intertwining its numbers game with the randomised biographies and personalities of your charges. Stats may rise or fall as victors evolve into raging champions or return from battle exhausted. A warrior might be reduced by fear for a period, or be spurred on by vengeance if their best mate falls.

Combined with the do-or-die structure, these personal touches nudge up the stakes of each mini-odyssey. Death can come quickly from rank-and-file mutants or clumsy missteps into sheer drops (some of which are annoyingly hard to spot), while tricky boss encounters are energised by the prospect of redoing the whole mission should you fall. But you also just want your chosen underdog to succeed, whether you've sent in a proven hero or cowed underachiever. Each step through the densely woven monuments to enslavement and depravity feels singular and nervy.

There's a double-edged sword here, however, and not the kind wielded by your Celtic combatants – *Gods Will Fall*'s pleasing blend of proc-gen and bespoke design is also the source of its limitations. It would feel lesser without its crafted layouts and their unique quirks, such as a hellish descent that throws you into its grubby gutter should you die, from where you might just climb back up. But these, and various tactical morsels, aren't quite enough to stop the maps becoming routine after a few forays. Combat too hits a sweet spot where you've adjusted to the foibles of different weapon types and slipped into a slick rhythm, before starting to feel one-note.

Fortunately, with the ability to rescue lost fighters, it's not a big ask to finish the game in a few attempts. That's fine, but it leaves scant reason to revisit and begs the question whether all the random elements were worth the bother. *Gods Will Fall* is a strange hybrid, then, whose charms are entangled with its flaws. Still, nobody's perfect – not even gods.

A god's health is partially tied to its acolytes – kill more to make the boss easier.

Info

GENRE
Action-adventure

FORMAT
PS4 (tested) / PC / Switch / Xbox One / XB X/S

DEVELOPER
Clever Beans

PUBLISHER
Deepsilver

PRICE
£19.99

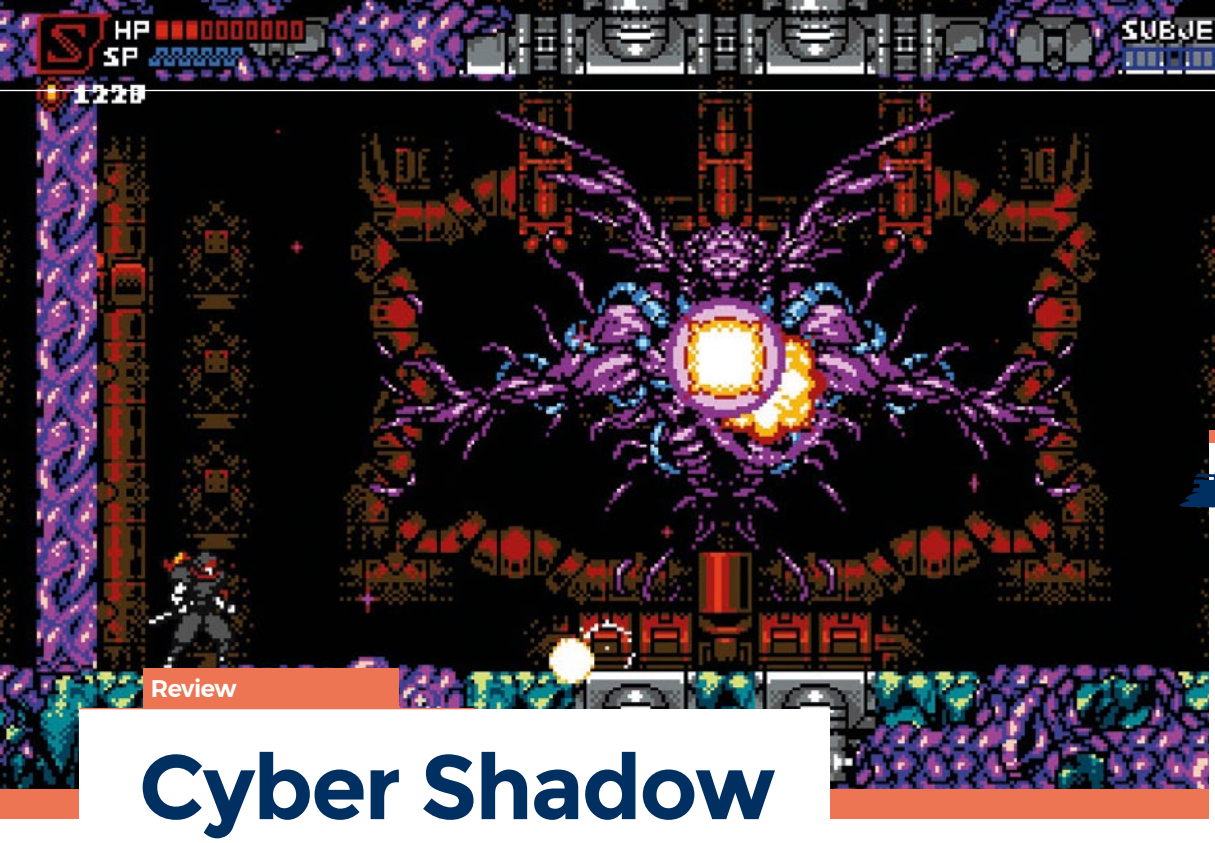
RELEASE
Out now

REVIEWED BY
Jon Bailes

VERDICT

An original take on *Souls*-like combat that runs out of steam a little too soon.

68%



Review

Cyber Shadow

Cyber Shadows Die Twice

Cyber Shadow looks and plays like an HD take on the NES *Ninja Gaiden* games but with Ryu Hayabusa transplanted into a cyberpunk future. Mechanical Head Studios' debut action-platformer has a story, if you're interested, in why the dark future still has ninja clans. But the real draw here is the retro thrill of running, jumping, and slicing your way through gorgeous pixel art environments.

Cyber Shadow is the first externally developed game published by Yacht Club Games, and it fits right in with the tone the *Shovel Knight* dev has established for itself. Like that 2014 hit, it looks the way you remember, but with a significantly expanded pixel count and colour palette. And, more importantly, with some of the rough edges sanded off the gameplay.

Not all the rough edges, though. *Cyber Shadow* is the toughest platformer I've played in a long time, and that difficulty can, unfortunately, come from some frustrating design choices. Unlike other recent masocore platformers, *Cyber Shadow* has a nasty habit of separating checkpoints by really long distances. You thankfully have unlimited lives, but even with that modern convenience, I was often stuck on one section for an hour at a time. The level design is consistently engaging, but the varied threats that kept me on edge quickly became frustrating. I found myself wishing that Mechanical Head had kept the same content in place, but with extra checkpoints to take some of the edge off.

Cyber Shadow offers minor tweaks that can make the difficulty less punishing. At each of the checkpoints, you have the option to spend orange orbs that you can collect throughout each level on upgrades that can provide a small buff. This system feels pretty undercooked, though. Given that you can keep orange orbs when you die, I always had more than enough to buy upgrades every time they were available.

Additionally, the upgrades on offer are inconsistent, and, often, when I reached a really difficult section, there was nothing useful for sale. So, rather than feeling like a potential purchase to help you proceed through especially difficult moments, these purchases instead feel like foregone conclusions. Of course you'll buy it. What else are you going to do with all this cash? Not that it will help much.

Overall, *Cyber Shadow* is a fine homage that does little to differentiate itself from the many tough-as-nails action platformers that came before. Its one innovation feels inessential. But, if you really like being a ninja who is having a hard time, check it out.

The platforming action heats up once you unlock the double-jump toward the end of the game.

HIGHLIGHT

Cyber Shadow's boss battles are tough but creative, and these encounters are the one arena where the game's difficulty feels most fair. With checkpoints right outside the boss chamber, you can focus purely on nailing this one short but challenging encounter, instead of maintaining a high level of performance across drawn-out platforming.

Info

GENRE
Action-platformer

FORMAT
PC (tested) / Mac / Linux / PS4 / PS5 / Xbox One / Switch

DEVELOPER
Mechanical Head Studios

PUBLISHER
Yacht Club Games

PRICE
£17.99

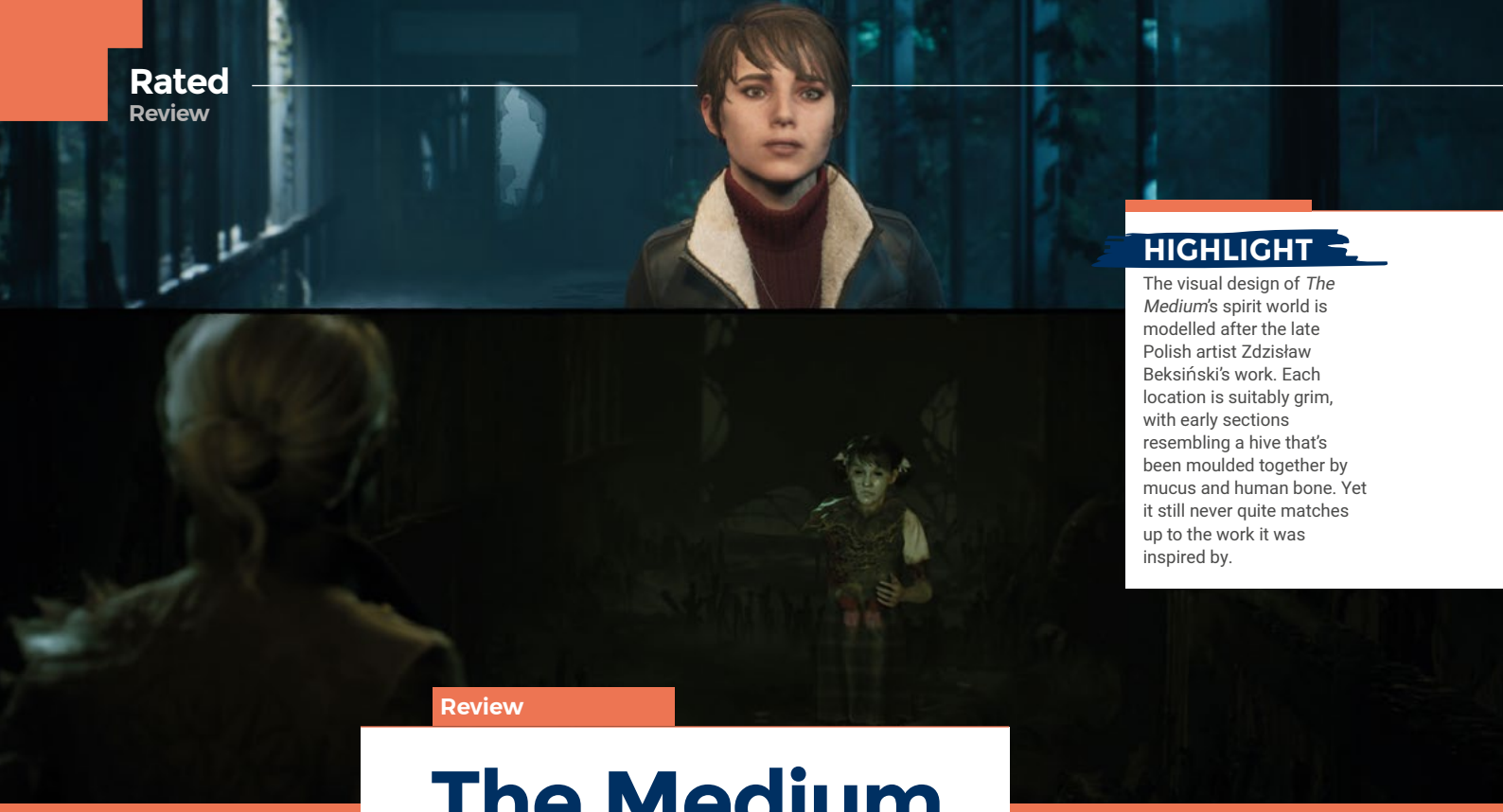
RELEASE
Out now

REVIEWED BY
Andrew King

VERDICT

***Cyber Shadow* has tight platforming, solid action, and impressive art, but feels most defined by its frustrating difficulty.**

65%



HIGHLIGHT

The visual design of *The Medium*'s spirit world is modelled after the late Polish artist Zdzisław Beksiński's work. Each location is suitably grim, with early sections resembling a hive that's been moulded together by mucus and human bone. Yet it still never quite matches up to the work it was inspired by.

^ The split-screen mechanic allows for some unique framing during cutscenes, but the real world is generally only used to show Marianne talking to herself.

Review

The Medium

A psychological horror game that's light on both

Death seeps into every facet of *The Medium*, from the opening line of dialogue to its final poignant moments. Combine this morbid theme with fixed camera angles, a score partially composed by Akira Yamaoka, and Bloober Team's history of developing horror games, and it would be logical to surmise that *The Medium* is a terrifying love letter to *Silent Hill* and games of its ilk. Aside from one cheap jump scare, however, *The Medium* is almost entirely bereft of tension and frights, instead relying on its story to carry you through to the end credits.

That story centres on protagonist Marianne, a clairvoyant who's able to commune with the dead in both the real world and the spirit realm. After receiving a mysterious phone call urging her to investigate a post-war holiday camp called the Niwa Resort, Marianne heads to the Polish hinterland in search of answers. What she initially finds is a brutalist eyesore of Soviet architecture – the resort now dilapidated and morose after decades of neglect. *The Medium*'s central mystery revolves around what exactly happened to the denizens of this hotel to leave it in such a state, but the narrative gradually expands and evolves into a tale that's deeply personal for Marianne.

There are missteps, such as attempts to tackle PTSD and child abuse in a manner that lacks the required depth and tact, and some of its story threads act as unnecessary padding. But the heart of Marianne's journey is a compelling one; it's just a shame that it stands apart as the only aspect of *The Medium* that's interested in coaxing you towards its conclusion.

The actual act of playing the game is consistently dull. Take the marriage between the real world and the spirit world as a prime example. This is an interesting concept that uses split-screen to place you in both words simultaneously. It's an impressive technical feat, but the way it's used is disappointing, with progression often achieved by completing the most predictable puzzles, often revolving around finding spirit energy to power up junction boxes and open the path forward. Sometimes puzzles are slightly more involved, tapping into the setting and its history, but these moments are few and far between. When not puzzling you're avoiding a malevolent spirit called The Maw, the form of which is revealed way too early, meaning there's no suspense in future encounters.

> **"The actual act of playing the game is consistently dull"**

Piecing together Marianne's past is the only engrossing part of *The Medium*. There are interesting ideas scattered throughout, but these moments are fleeting and bogged down by humdrum puzzle and stealth sections. Even the game's headline gimmick squanders its potential by playing it too safe, rendering its dimension-switching mechanic little more than a backdrop for bland puzzle-solving.

Info

GENRE
Psychological horror

FORMAT
PC (tested) / XBS X/S

DEVELOPER
Bloober Team

PUBLISHER
Bloober Team

PRICE
£39.99

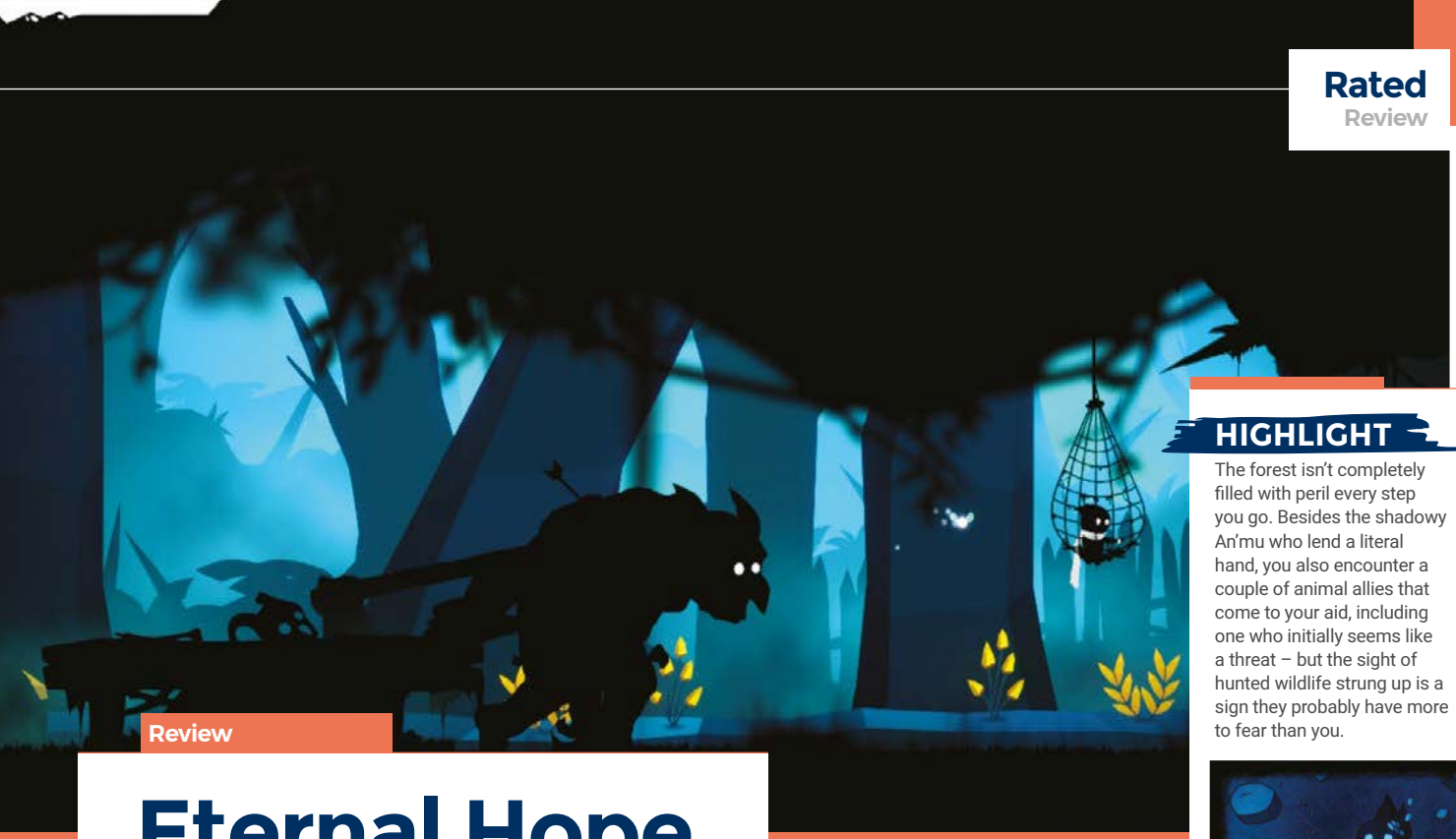
RELEASE
Out now

REVIEWED BY
Richard Wakeling

VERDICT

The Medium lacks scares and struggles to fulfil the potential of its headline gimmick.

44%



Review

Eternal Hope

Can love conquer all?

Within a few minutes, *Eternal Hope* will have your emotions careening from one end to the next. Things start off rather twee as your silhouetted boy Ti'bi mopes about alone in the woods, until one day he happens to meet the love of his life, only for her to be taken away after a tragic accident. But when a shadowy figure called the Keeper of Souls tells Ti'bi he can still save his belle by retrieving fragments of her soul, our protagonist is prepared to go to hell and back for love.

What this boils down to is a 2D puzzle platformer where you have the power to shift between your world and a shadow plane where you're also assisted – sometimes unwittingly – by masked figures reminiscent of *Spirited Away*'s No-Face. A mysterious fairy called Heli, who accompanies you for most of your journey, isn't just there to chat lore, but also to keep your power in check, with a gauge limiting the time you can remain in the shadow world. For the most part, the puzzles are basic, and simply require getting from A to B by pushing or pulling an object or hitting a switch. The shifting mechanic adds a bit of a twist, but not enough on its own. Having otherworldly beings appear in the shadow world is one thing, but there's no real logic to platforms or objects only being in one realm or the other, so it comes off as a contrivance.

"The obvious influence is *Limbo*, but *Eternal Hope* lacks the same mystery"

Each of the short chapters does try to introduce a new threat or mechanic, from fleeing from traps and trolls to manipulating water levels while avoiding drowning yourself. Much of this will feel familiar, but it's all executed with real design flair, and the controls are nicely judged. The obvious influence is *Limbo* – down to the silhouette figures with white dots for eyes – but *Eternal Hope* lacks the same mystery in its storytelling, even if it does sometimes succeed in tugging at your heartstrings. It doesn't help that its visuals are sometimes more complicated than they need to be, so there are moments where you don't realise which objects can be interacted with and which are simply part of the background. On a number of occasions, I found myself stuck on puzzles where I didn't realise something was interactable or that I had to die a few times before the solution became apparent, which led to some frustrating trial-and-error moments.

For a game that can be finished in a couple of hours, *Eternal Hope* often feels like it drags on for longer, as it doesn't manage to do enough to make its puzzles and encounters have the same level of invention and intrigue as its influences. After that emotional opening, I was surprised to find myself a bit bored by the time *Eternal Hope*'s predictable conclusion emerged from the shadows.

HIGHLIGHT

The forest isn't completely filled with peril every step you go. Besides the shadowy An'mu who lend a literal hand, you also encounter a couple of animal allies that come to your aid, including one who initially seems like a threat – but the sight of hunted wildlife strung up is a sign they probably have more to fear than you.

Cutscenes using some simple yet effective illustrations do much of the story's emotional heavy lifting.

Info

GENRE
Puzzle platformer

FORMAT
PC / Mac / Xbox One

DEVELOPER
Doublehit Games

PUBLISHER
Kwalee

PRICE
£7.19

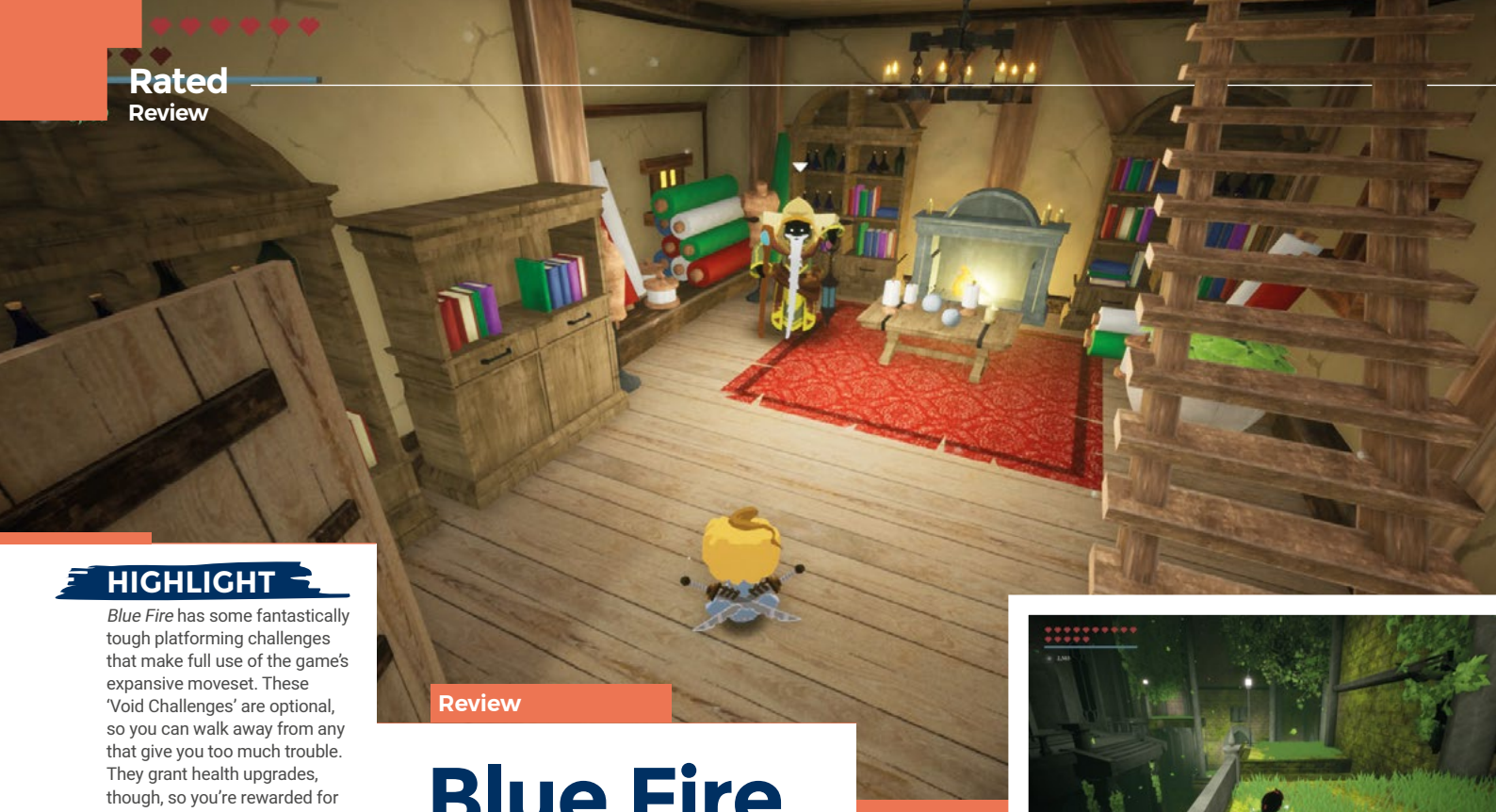
RELEASE
Out now

REVIEWED BY
Alan Wen

VERDICT

A heartfelt story that's sadly hollow in execution.

55%



HIGHLIGHT

Blue Fire has some fantastically tough platforming challenges that make full use of the game's expansive moveset. These 'Void Challenges' are optional, so you can walk away from any that give you too much trouble. They grant health upgrades, though, so you're rewarded for mastering the platforming.

Review

Blue Fire

Providing a familiar warmth

Navigating *Blue Fire*'s world requires wall-running, dashing, double jumping, and more.

Info

GENRE
3D action-platformer

FORMAT
PC (tested) / Switch

DEVELOPER
Robi Studios

PUBLISHER
Graffiti Games

PRICE
£15.49

RELEASE
Out now

REVIEWED BY
Andrew King

VERDICT

***Blue Fire* isn't the least bit original, but – occasionally annoying reliance on backtracking, aside – it is a terrific pastiche of other, more groundbreaking games.**

78%

Blue Fire isn't doing anything new, and that's OK.

During my 25 hours with the debut title from Robi Studios, I thought, "Hey, this is a lot like *The Wind Waker*," and, "Hey, this is a lot like *Dark Souls*," and, "Hey, this is a lot like *Super Mario Sunshine*," and I was correct each time. Derivativeness notwithstanding, *Blue Fire* is one more data point in a welcome recent trend: a full-fledged, big, 3D platformer from an indie studio that also manages to feel great to play.

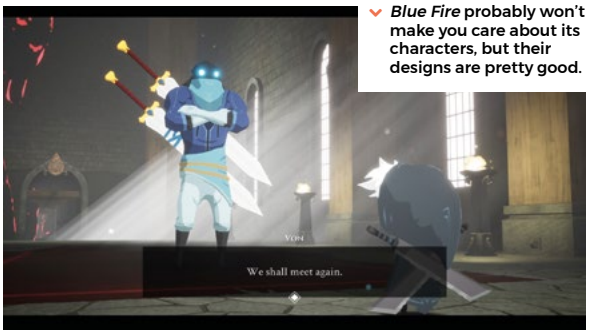
"A full-fledged 3D platformer from an indie studio that feels great to play"

Its interconnected world, Penumbra, is terrific to explore. I loved using my double jump, dash, and wall-run to navigate its ominous spaces. All of your adventures happen within a castle floating in the sky, and while most of this self-contained world is delightfully dark, the spots of colour – like the verdant Stoneheart City and the lava lakes of Firefall River – keep it visually interesting. Each new area is an exciting discovery.

Combat isn't super-deep, and mostly requires locking on to your enemies and wailing on them with the same attack until they die. You also have a ranged energy shot, but many bosses are immune, so you won't want to rely on it when things get tough. Despite the limitations of combat options, your character's jump-focused moveset makes fights energetic and acrobatic. Boss encounters can occasionally be a pain point, but are mostly good fun.

Blue Fire has a strange structure, though, that hurts its momentum somewhat in the later game. The early hours pack in plenty of exploration and a few *Zelda*-style dungeons, which I loved solving. But the later game mostly finds you searching through areas you've already visited in search of critical path boss battles. Exploration is still rewarding, though, with side content hidden away throughout Penumbra that makes backtracking worthwhile.

Though I've rolled credits, *Blue Fire*'s world still has plenty of secrets to find. It may not be doing anything new, but it offers a world that's well worth exploring as well as, like the name implies, one that's comfortingly warm.



Blue Fire probably won't make you care about its characters, but their designs are pretty good.

CUSTOM PC

THE BEST-SELLING MAG FOR PC HARDWARE, OVERCLOCKING, GAMING & MODDING

THE MAGAZINE FOR

PC HARDWARE ENTHUSIASTS

ISSUE 212 OUT NOW

VISIT **CUSTOMPC.CO.UK** TO LEARN MORE

Backwards compatible

WRITTEN BY IAN "EVERDRIVE" DRANSFIELD

The Rarest games

GoldenEye 007 HD landed the other month, but there was always something in the back of my head saying that would happen. The abandoned pre-*Star Fox Adventures* Rare project, *Dinosaur Planet*? Nope. Never going to happen. Holy grail stuff. Well, here we are, me sitting at my desk happily playing away at a game Rare worked on for years before it was bundled up and reformed into a GameCube adventure starring Fox McCloud at the behest of Nintendo honcho Shigeru Miyamoto. This is: a surprise.

So *Dinosaur Planet*, then: it's *Star Fox Adventures*. Basically. In fact, the version leaked online – apparently from a collector and unrelated to Nintendo having a hell of a lot of its data nicked – comes from the point where the game had been updated to include Fox McCloud as a playable character. There's plenty that carried over from *Dinosaur Planet* into the finished GameCube game, so it's not hugely unrecognisable if you've ever played *Adventures* – action-adventure, a *Zelda*-lite feel to things, dinosaur companions, that sort of thing.

But where the game might not be hugely surprising, the fact I've been sat here playing it on an N64 absolutely is.

See, where *Star Fox Adventures* was an odd misfire for both Rare and Nintendo, *before* all that, *Dinosaur Planet* was meant to be the N64's last big game. Well, one of its last big games. I don't think it was particularly well-known at the turn of the millennium, and quietly transitioned to a *Star Fox* game behind the scenes (in this version, Fox McCloud is sometimes still referred to as Sabre, the original name for the character he was introduced to replace). But for years we've known *Dinosaur Planet* was a thing, and as with so many tantalising cancelled games, it's always seemed ethereal, forever out of reach. Similar to the remastered *GoldenEye 007 HD*, you could say.

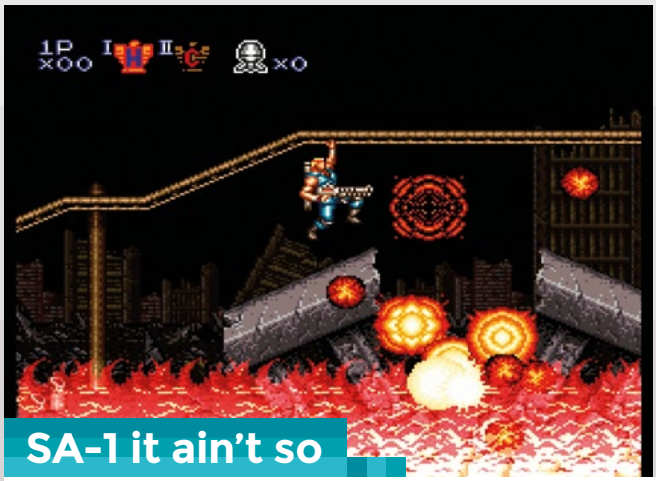
So while I might not be utterly enamoured with the actual game – and by

crikey it makes the N64 (original hardware, fact fans) chug a fair bit – the mere fact we are able to play this once-lost curio speaks volumes for the power of the internet, and collectors, and wonderful nerds the world over. Now let's work on rescuing *Prey 2* from the bin, shall we?

DOOM's genesis

I'll never stop playing ports of *DOOM*, and I'll never stop being surprised by them – good and bad. The most recent additions to the list come in the form of *MegaDoom* and a couple of versions of the game ported by flashcart-making master, krikzz. The latter offered a huge surprise, in that krikzz had been able to hack together a version of *DOOM* that would work on a stock Mega Drive with no enhancements or workarounds necessary. The downside? It runs at around two or three *seconds per frame*. Another version from the hacker works on his Mega EverDrive Pro flashcart, and runs a smidge better as it takes advantage of the cartridge's FPGA – it's still woefully, unplayably slow though, so not anything beyond a curio.

I'd given up all hope 'til a Valentine's Day release, though, when someone going by the handle **@GamesUniq** on Twitter released *MegaDoom*. It's another version requiring the Mega Everdrive Pro and uses the FPGA again, but this... crikey, *it works*. It's a stable frame rate, runs quickly, has everything from the original game, supports a bunch of different wads – it's *DOOM*! OK, so it's cheating, it'd never run on a regular cart, but it is still *DOOM* on the Mega Drive, and for that, I will be eternally impressed. Check it out here: **wfmag.cc/MegaDoom**.



SA-1 it ain't so

Elsewhere in mucking about with old consoles, I've been playing my way through a bunch of SNES games that have been enhanced thanks to one nifty little trick. Nintendo's early nineties beast was beset with various enhancement chips in cartridges, including the Super Accelerator 1 (SA-1) – titles like *Super Mario RPG* and *Kirby's Fun Pak* using that particular bit of hardware. But now we have a few more games – *Contra III*, *Race Drivin'*, *Super Mario World*, *Super R-Type*, *Gradius III*, and maybe some others – that can tap into the SA-1's extra grunt. At least if you're emulating or can cannibalise an existing SA-1 cartridge, that is. What I've found with these upgrades is a bunch of games that run almost entirely without slowdown, seeming to actually run faster than the original versions, and there's a distinct feeling that – maybe – developers designed some things with slowdown in mind. Because crikey, they seem a lot harder. It's going to be cool to see what else these dedicated modder-hackers can come up with in future, though.

Backwards compatible

WRITTEN BY RYAN LAMBIE

Ultimate Sega Game Gear: Part 3

If this mini-series on modifying a Game Gear has had any use at all, I hope it's this: it proves that if even a clumsy oaf such as myself can successfully breathe life into a broken console, then you can do it, too. As previous instalments have proven, the McWill screen isn't what you'd call a drop-in solution – there are components to be removed from the console and wires to be soldered onto thin data lines – but even with my cheap soldering iron and unsteady hand, I managed to get it installed and working.

With the soldering work done, next comes the last and (hopefully) more straightforward step: rehousing the whole lot in a brand new shell courtesy of Retro Six (**retrosix.co.uk**). As part of the project, I also have new buttons, membranes to replace the worn old ones, and a shiny new lens for the screen. The shell even comes with a complete set of screws for both the case itself and the circuit boards – which is handy, because my current ones are quite dirty and even corroded in places, most likely from a leaking battery.

Fitting everything back together is as simple as locating the boards in the new shell and screwing them into position – albeit with a check to make sure none of the wires will get caught on the screw posts when the two halves of the shell are married up. On this subject, it's important to remember to cut off the post that holds the security bit screw, just above the Game Gear's cartridge slot – the McWill screen's ribbon cable is situated right underneath, so it's vital that you snip this off with a pair of flush-cuts or pliers before you start reassembling the console. (And to reiterate my warning from last month – don't be a scatterbrain and put the security bit screw in the back of the Game Gear at the end. It'll almost certainly destroy the McWill mod's ribbon cable. Ahem.)

At last: my ultimate Sega Game Gear is finished. It's love at first sight.

The CleanPower is a straight drop-in swap for the Game Gear's original power board, meaning I can power it with a modern USB-C cable.

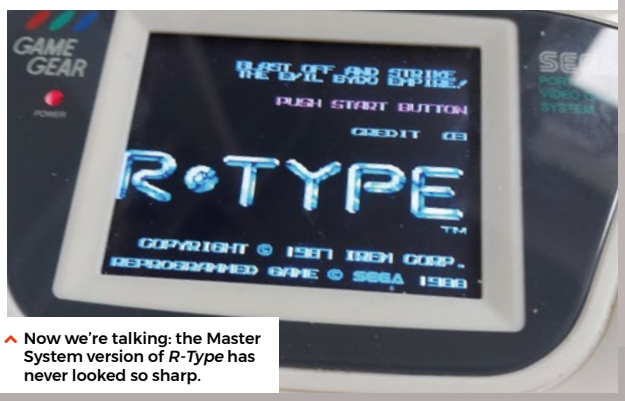
Once I've got the buttons, membranes, and speaker installed, I can screw the main board back in place. I then turn my attention to the CleanPower Regulator – Retro Six's replacement power board which provides USB-C input. This is a straight swap for the Game Gear's OEM board, and simply screws in place like the original. With that and the sound-board installed, I'm almost done; all that's left to do is reconnect the power and sound cables, screw the two halves of the shell together, and apply the new lens – this has an adhesive back, so it's a case of making sure it's straight before pressing it in position.

As you can see from the pictures, the results are impressive – and if you're not into the white-and-teal look of the case and buttons, there are all kinds of other shell colours available. It's been a long and, at times, fiddly project, but the end product has made the effort worthwhile: with that pin-sharp screen and responsive new button membranes, it's arguably even better than the system Sega first gave us over three decades ago.

Master Blaster

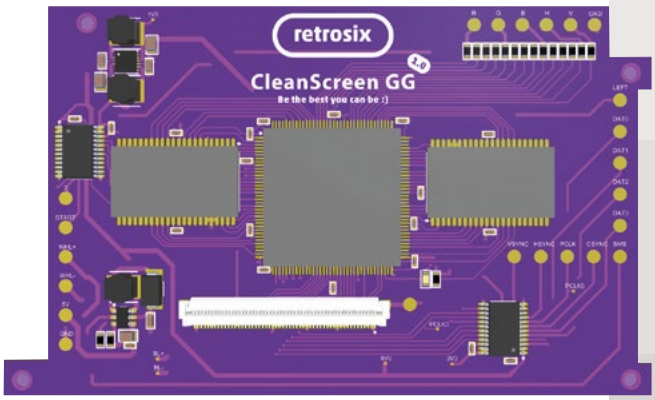
One of the Sega Game Gear's pluses was its compatibility with the Master System: with the addition of a chunky adapter, you could happily slot in the latter's cartridges to enjoy, say, *Alex Kidd in Miracle World* on the go. There was, however, a catch: the Game Gear's blurry, 160 × 144 pixel screen couldn't always faithfully render the Master System's 256 × 192 resolution games, which left some titles borderline unplayable. Install a McWill (or similar) screen, however, and you'll find that Master System games now look positively sparkling, with the new 320 × 192 panel capable of crisply rendering every pixel. This is ably demonstrated with a quick blast of *R-Type*: on an original Game Gear screen, its tiny bullets are almost invisible and impossible to avoid. With a modern display, it's pin-sharp and perfectly playable, with none of the pesky ghosting effects that plagued fast-moving games on the handheld's OEM screen.

It's taken the best part of 30 years, but suddenly, the Master Gear converter – or the cheap 'Gear Master' knock-off pictured here – opens up a whole library of extra 8-bit Sega games.



Now we're talking: the Master System version of *R-Type* has never looked so sharp.

McWill-ternatives



As you've probably gathered, the McWill screen is a great modification, but it's also about seven years old now. This means that other companies have stepped in with similar solutions of their own. I haven't tried any of the alternatives yet, but I've read nothing but good things about RetroKAI's Magic Screen, which comes with such improvements as a working brightness function (something the McWill currently lacks) and something called an Easy Soldering Guide – essentially a small PCB which sidesteps the need to solder wires to the Game Gear motherboard's datalines. At €84.99, it's also slightly cheaper than the McWill, which retails for around £100. At the other end of the affordability spectrum, there are the numerous McWill 'homages' you'll find on Chinese outlets like AliExpress. These typically cost about £50 excluding shipping; I can't personally vouch for their quality or longevity, but I've read on several forums that the resulting image is on a par with the McWill.

Finally, there's Retro Six's CleanScreen, a cheaper alternative to the McWill; it's a shade over £50 for the driver board and a TFT or IPS display, and reportedly easier to install. We're hoping to get our hands on one for a future edition of the magazine, since it sounds like a more beginner-friendly alternative to the McWill: there are just three components to remove from the Game Gear's PCB, while an accompanying wire-free kit cuts down the amount of fiddly soldering required. Watch this space.

Destruction derby

A nice, relaxing car crash: Ian's entering Wreckfest

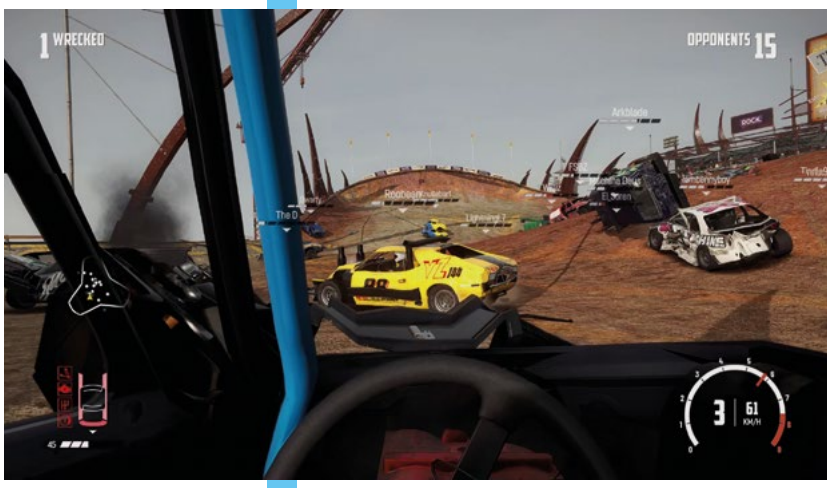
Spoiler: the game I've actually been playing most this month is *The Last of Us Part II*, but given it's a) big and long, and b) at times utterly harrowing, I haven't finished it. Maybe playing a game about a viral outbreak wiping out most of humanity wasn't the best of ideas for the sanctity of one's mental health, but there you go. Regardless, I wanted something dumb. Having craved a replacement for PS1 classic *Destruction Derby 2* for many a year, my eyes pricked up when I saw *Wreckfest* had been added to Xbox's Game Pass. It's called *Wreckfest*, for one, and it has a picture of broken and busted cars on its artwork. Seemed like a goer to me.

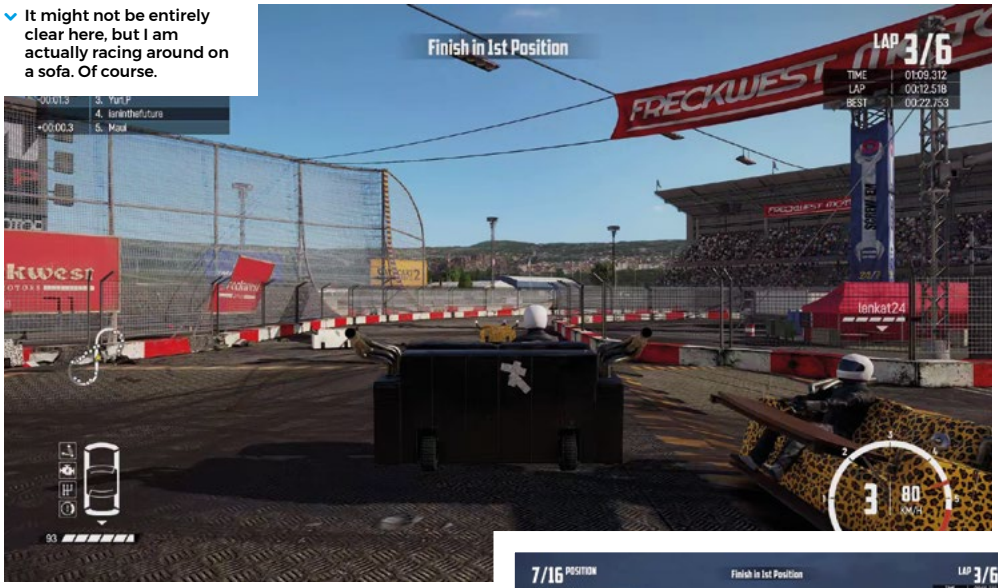
And, well, it's plugged that gap. Basically. Nothing can recreate the nostalgia, of course, and nothing will ever quite be as magical as the first time you saw a car do a proper barrel roll down a hill because of Excellent And Accurate Physics, but *Wreckfest* has been doing a job. It's a mix of racing and destruction derbies; the former is a mix of the usual racing game fun where your brain switches off and you go with the flow, punctuated with the odd wrong turn into sheer, unmitigated frustration. It's one of those games where the slightest mistake has you going from first place to 16th in a few seconds.

The latter is where most of the fun can be found – for me, at least – because it's just wanton catharsis. Of course, I'd prefer it if I had this running through VR and had hooked up some kind of force feedback chair situation to simulate the entire effect (and impact) of it all, but this will do. This is making me sound like some kind of thrill-seeker, but really, I think it's just lockdown boredom creeping through to the pages. Smashing cars, with the slightest hint of strategy about it, is just a lot of fun when it's done competently, as it is in *Wreckfest*.

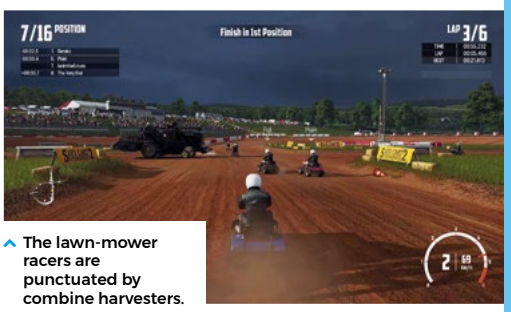
But best of all: this is a silly game. It comes at you with a straight face, the cars are analogues to real-life bangers and racing vehicles, and both races and destruction events are built on the foundations of strong real-world physics simulations. But then you find yourself racing around on sit-on lawn-mowers, with a couple of racers driving combine harvesters for

In-car views might be atmospheric, but they're useless for knowing what's actually going on at times like this.





It might not be entirely clear here, but I am actually racing around on a sofa. Of course.



The lawn-mower racers are punctuated by combine harvesters.

some reason. Carcasses (they're not dead) fly as crashes knock racers out of their seats, and the whole thing swiftly devolves into beautiful, chaotic nonsense. When you hit your first sofa race, it's hard not to at least raise a smile. I mean, watching eight sofas smash into each other at high speed and most of their riders go rag-dolling through the air at equally high speed is *objectively* funny. It just is.

All of this means I'm delighted I chose to give *Wreckfest* a chance, because it's exactly what I wanted. It taps into my happy memories of destruction-based racing games, it presents everything in a competent – nay, *solid* – package, and it's able to have a bit of fun with things along the way. There is depth in the way you can modify your vehicles, but it's limited. There's a hint of tactics in setting your gear-box ratios et al. before a race, or opting for the ol' switcheroo during a destruction derby and driving around in reverse to protect your vulnerable engine. But (and I don't think anyone at developer Bugbear Entertainment will mind if I say this), it's not like *Wreckfest* is a particularly taxing game on the grey matter. To be fair, that's absolutely something we've all needed in our lives for a fair while now – games can be (and are) art, the depth of the experience is limited only by the human imagination, and we're only in the very early days of what it is video games as a whole will end up producing as this grand experiment rolls on. But sometimes, you just want to crash cars and see the metal-warping carnage unfold.

"Sometimes, you just want to crash cars and see the metal-warping carnage unfold"

The Last of Us Part II is still taking up more of the real estate in my head, because it's just that type of experience – but *Wreckfest* has wedged itself firmly in there alongside Naughty Dog's haughty dog ("game"). There's absolutely no chance in all heck I'll still be playing *Wreckfest* much by next issue, I can tell you that, but it would be foolish of me to say it's not something I'm going to come back to periodically.

Where *Forza Horizon 4* has the presentation and the 'cool' going for it, *Wreckfest* both encourages crashing *and* doesn't try to be some kind of aspirational lifestyle simulator full of inhuman automatons masquerading as Gap models. And sofa racing *is funny*.

Wireframe Recommends

Destruction Derby 2
PS1, PC
The game that made me realise the (then-)next-generation had arrived, *DD2*'s incredible, life-like physics model might have been technically bettered, but it'll never be bettered in my heart.

Twisted Metal 2
PS1, PC
While this one didn't make me think the next-gen had arrived, it did make me grin from ear to ear by adding in zany characters and machine guns. Still does make me grin, actually.

The Last of Us Part II
PS4
I avoided talking about it in detail this issue, but by next month, things should be suitably far along that I can dive right in. Because hey, it's clearly brilliant.

Stuck in the mud

It takes a heck of a lot of patience to end up as immobile as Ryan does in SnowRunner

I'm stuck on the side of a hill and I'm raging. After what feels like hours of slow progress – getting my truck trapped in a quagmire for the umpteenth time, using my winch and careful blasts of acceleration to untrap myself, only to get trapped again – I'm well and truly stranded this time. I can't drive forward; I can't reverse; even lashing my trusty winch to a nearby tree doesn't help. By now I'm shouting at the screen quite a lot. And then I realise that, in the midst of my frustration, I've accidentally engaged my handbrake. I turn it back off with a dab of the right button, and I suddenly realise I'm not quite so stuck after all. Ahem.

So goes my first hour with *SnowRunner*, the latest in Saber Interactive's series (see also: *Spintires* and *MudRunner*) that has long made a feature out of slow, painful progress. Rather than hurtle around tracks, you trundle, grind, and skitter your way from point A to point B. There are missions to complete – in my first, I have to find a bigger haulage truck, then find materials to fix a bridge – and successfully finishing them requires skilful navigation of the rough, all-American terrain and careful deployment of the tools you have available to you.

Because this is a driving sim, those tools are basically whatever's equipped in your current truck: the aforementioned winch is ideal for pulling you out of lakes of slippery muck, but you'll also need to learn when and where to employ all-wheel drive (which gives you more power, but at the expense of fuel), low gear (which helps you navigate rutted tracks at low speeds), and when to simply throw your vehicle in reverse and choose a different course. Although the tone couldn't be more different, *SnowRunner* shares a bit of DNA with Hideo Kojima's *Death Stranding*: both are about the minutiae of reading terrain and getting from one place to another, often at an incredibly slow pace. There's also the contrasting interplay between frustration and mild exhilaration: there are the moments of knuckle-gnawing irritation as you realise you've chosen a horrible path

It's telling that, unusually for a driving sim, there's no speedo in *SnowRunner*. Your progress is measured in the vast quantities of fuel you gobble up.

Whip the camera around, and you'll see your driver. Look at those dead eyes. This guy's seen a *lot* of mud.

Ah. I'm stuck. Again.

that'll take ages to manoeuvre your way back out of, but these are often followed by the low-key thrill of freeing yourself from a grimy prison or completing an objective.

And you know what? It's gripping. More gripping than the slippy tyres on my battered old haulage truck, at least. So gripping, in fact, that my initial frustration at my slow progress and constant mishaps (like accidentally engaging the handbrake without even noticing) gave way before I'd consciously noticed it. It was only towards the second hour that I realised the muscles in my shoulders were tense from gripping my controller as I tried to guide my fragile truck up the side of yet another hill.

By this point, I'd gotten a better handle on the basic controls, and finished my first mission. Having gotten to a watchtower, I uncovered the location of the big haulage truck I'd need to pick up the steel and wood required to fix up a nearby bridge. But after getting infuriatingly stuck between two trees, and noticing that the day was drawing to a close, I decided to take a shortcut down the side of a steep bank, which resulted in some wince-inducing damage to my engine and suspension, but meant I got to the big truck I needed without having to take a longer route around some winding, rutted tracks.

By the time I'd hopped into my hulking flatbed truck and driven over to the small town where the steel girders awaited, night was beginning to fall, and it struck me just how pretty *SnowRunner* actually is: it's a modest sort of pretty, granted, but there's something soothing about the way the sky falls from pale blue to purple as the sun sets, or how the mist and fog plays on the trees as the bright lights of the town give way to rural Michigan's rocky landscapes. (It was around this point, as I admired the boulders and trees jutting out of the mist, that I realised I had no idea how to turn the headlights on – fortunately, an on-screen prompt saved me from navigating the byways of Michigan in pitch darkness.)

"You trundle, grind, and skitter your way from points A to B"

A few trips back and forth and I'd repaired my first bridge – an act that opened up a bit more of the map, prompting an invite from the game to claw my way to a garage somewhere on the other side of yet more rugged terrain. Letting off an inward cheer, I set a marker for said garage, headed down a dirt track, and... promptly got stuck in another bog. Lashing my winch to a nearby tree, I gritted my teeth, tensed the muscles in my back, and started grumpily dragging myself out of yet another grotty mire. Ah well. Here's mud in your eye.

Wireframe Recommends

ATV Simulator

ZX SPECTRUM, C64, AMSTRAD CPC

The limitations of 8-bit computers meant that the variety of terrain was somewhat limited here, but there was still a nervy thrill to driving your little quad bike over hay bales, blocky hillocks, and, er, seals playing with beach balls.

Colin McRae Rally

PSONE, PC, GAME BOY

Sure, it's more than looking its age these days, but *Colin McRae Rally* still has that perfect balance between arcade thrills and (somewhat) realistic car handling. It's a racer we still load up and enjoy from time to time.

Super Off Road

ARCADE/VARIOUS

An early (1989) stab at having trucks trundling around muddy tracks, *Super Off Road* is also one of the most entertaining top-down racers ever. We'd pay actual money out of our wallets if someone could revive this one for a new era.

GoldenEye 007

Spray and pray took a back seat to aim mode in the Bond classic

RARE / 1997 / N64

For some reason, possibly contained in a boxout on these very pages, the topic of *GoldenEye 007* has been at the forefront of many a mind in recent weeks. In heading back to the wonderful world of the world's worst spy (he never, ever blends in) though, one thing stands out more than the rest: aim mode. We're accustomed to how first-person shooters work on pads these days, but back in 1997, it was still a relatively new thing – especially with an analogue stick – to move your gunman with anything other than a keyboard and mouse.

We'd got by OK for a while with standard controllers, of course – a static series of inputs for a thoroughly digital time while skating around low-res, warped-polygon mazes, but things had changed. The 3D space had gone from a technical showcase to an integral part of a game's design, and with that came the need to shoot your guns at people who weren't just stood right in front of you (or registered as though they were, à la *DOOM* etc.). Standard controllers picked up the baton, of course, and I have strong flashbacks to an era of having to press shoulder buttons to look up and down – but this was *boxy*, imprecise. It wouldn't do.

Rare, of course, understood this – that's why it invented aim mode for *GoldenEye 007*. Well, I say 'invented' – it's the earliest example I could find of a system like this in a console FPS, but there's every chance something else did it prior. Either way, it was the game with Pierce Brosnan's mug on the front of it that *popularised* the concept. And what a simple concept it was: you hold a button, a cross-hair appears on screen, and from there, you can precisely target whoever or whatever you like without movement – halted while holding the button – factoring in.

"Aim mode did a great job while it lasted, but it was – rightly – usurped by a better mechanic"

Suddenly, what was an imprecise and somewhat clunky approach to hitting the target became an elegant, smooth solution that empowered players to – quite literally – take their best shot. Of course, a lot of this came down to three very important factors at play: *GoldenEye 007* in its very early days was pitched as a rail shooter like *Operation Wolf*; the N64 featured an analogue stick on its controller as standard, and *GoldenEye 007* was being made specifically for the console. Had it been any other combination of the three, it's unlikely we'd have ended up with a solution that fitted so very well – had it been a game also coming to the PlayStation, say, where not everybody had an analogue controller, there's no reason Rare would have thought of introducing a mechanic in which players control a cross-hair on the screen, given digital inputs would make the whole process... let's go with 'irritating'. So it really was perfect storm stuff.

That additional input players have via aim mode lifts the whole experience of *GoldenEye 007*; even if the core mechanics are similar to any other FPS before or since, the *feeling* you get thanks to that extra slice of controllability marks the whole game as something different. Something

more. It strips away some of the feelings of linearity – of an FPS being whack-a-mole across various grey corridors – as you wrest direct control of Bond's aiming arm and take full advantage of that licence to kill. Pop, body shot. Pop-pop, couple in the arms. Pop, ah yes, I shot him in the groin as I am a monster.

Aim mode made its return in the *GoldenEye 007* follow-up that came sans Bond, in 2000's *Perfect Dark*. The breakaway dev team of Free Radical, formed from many of the old hands behind *GoldenEye 007* and *Perfect Dark*, kept aim mode relevant in the PS2/Xbox/GameCube era with its *TimeSplitters* series. There are other examples too, often in titles named *Operation Smash The Foreigners* and the like, but aim mode specifically didn't find a huge footing in the world of the FPS. Not for a bad reason, mind you.

Because, of course, we've evolved into using aim down sights (ADS) for the vast majority of FPSs these days: the 3D re-creation of a lovingly crafted and rendered gun model raising up to the centre of the screen, the camera zooming in to emulate our avatar leaning forward into an aiming stance, and the chance to pick our targets however we see fit using a bit of metal, or a red dot, or a holographic sight, or some other terrifying thing that makes it easier and easier for people to kill other people.

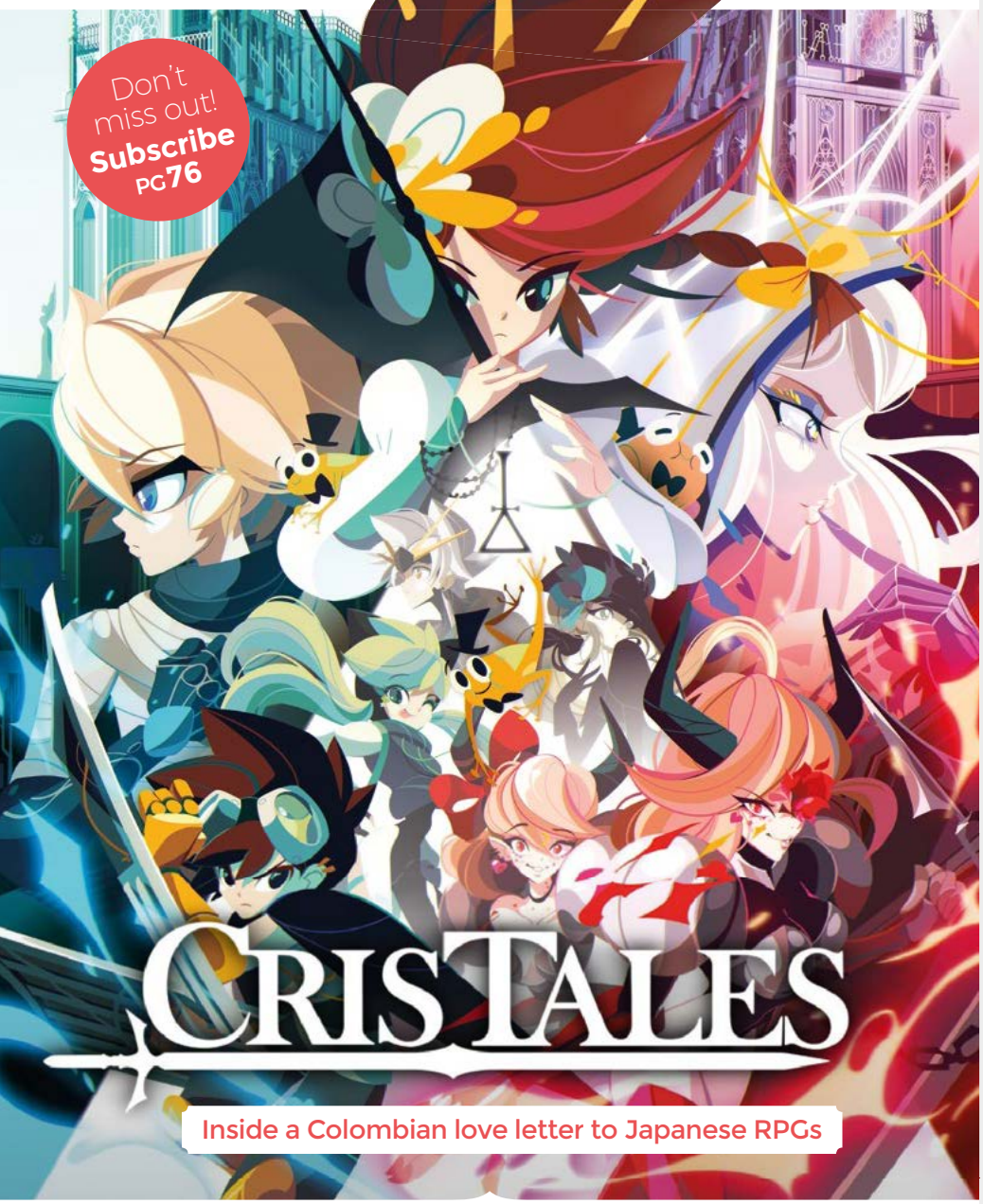
Aim mode served a purpose and did a great job while it lasted, however it was – quite rightly – usurped by a better mechanic. But that doesn't stop it from being a killer feature in its own right, though.

Hello Dear

You may have heard about *GoldenEye 007*'s HD version getting leaked on the interweb, maybe from the very pages of Wireframe last issue, but we're still here to report that… it's actually pretty good, yeah. It's a 2007-ish era remake of the N64 original and brings with it basically everything from that first iteration, adding on top a nice sheen of high-def goodness. We can't tell you where to get it, or even how to play it, but if you're curious enough, then all the information's out there online, so fill your boots.

Next Issue

ON SALE 6 MAY



Inside a Colombian love letter to Japanese RPGs

Also

- **Western developers and their experiences in Japan**
- The most influential Japanese games of all time
- Recreate Metroid's Morph Ball in Unreal Engine
- **Charting the rise and dramatic fall of EA Sports BIG**

Editorial

Editor
Ryan Lambie
Email ryan.lambie@raspberrypi.com

Features Editor
Ian Dransfield
Email ian.dransfield@raspberrypi.com

Sub-Editors
David Higgs & Vel Ilic

Design

criticalmedia.co.uk

Head of Design
Lee Allen

Designers
Sam Ribbits, Lucy Cowan

Contributors

Jon Bailes, Lottie Bevan, Dan Cooper, Marc Duddleston, Konstantinos Dimopoulos, Antony de Fault, Don Everhart, Malindy Hetfeld, Andrew King, Steve McNeil, Harry Slater, Millicent Thomas, Richard Wakeling, Paul Walker-Emig, Howard Scott Warshaw, Alan Wen

Publishing

Publishing Director
Russell Barnes
Email russell@raspberrypi.com

Director of Communications
Liz Upton

CEO
Eben Upton

Advertising

Commercial Manager
Charlie Milligan
Email charlotte.milligan@raspberrypi.com
Tel +44 (0)7725 368887

Distribution

Seymour Distribution Ltd
2 East Poultry Ave, London EC1A 9PT
Tel +44 (0)207 429 4000

Subscriptions

Unit 6, The Enterprise Centre, Kelvin Lane, Manor Royal, Crawley, West Sussex, RH10 9PE

To subscribe
Call 01293 312192 or visit wfmag.cc/subscribe

Subscription queries
wireframe@subscriptionhelpline.co.uk

This magazine is printed on paper sourced from sustainable forests and the printer operates an environmental management system which has been assessed as conforming to ISO 14001.

Wireframe magazine is published by Raspberry Pi (Trading) Ltd, Maurice Wilkes Building, St. John's Innovation Park, Cowley Road, Cambridge, CB4 0DS. The publisher, editor, and contributors accept no responsibility in respect of any omissions or errors relating to goods, products or services referred to or advertised in the magazine. Except where otherwise noted, content in this magazine is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported (CC BY-NC-SA 3.0).

ISSN: 2631-6722 (print), 2631-6730 (online).

PHILIPS
Monitors

get in the moment

innovation + you

Momentum 32” 4K UHD, LCD display with Ambiglow
326M6VJRMB

4K Ultra HD

VESA CERTIFIED DisplayHDR™ 400

UltraWideColor

Adaptive Sync

Available at:
amazon ebuyer.com SCAN

AGON
ULTIMATE IMMERSION
with the
AG49UCX
DQHD
5120x1440
120HZ
1 MS
AMD
FreeSync
Premium Pro
HDR 400
Available at:
amazon
OVERCLOCKERS UK
AOC
@aocgaming
@aoc_gaming
@aocgaming
aocgaming.com