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THE NINETIES FMV HIT AND ITS STUDIO'S TROUBLES

WORMS!

TEAM17 AND THE 25-YEAR ROAD TO WORMS RUMBLE

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AND MUCH MORE!

PLUS!

How Magic: The Gathering Arena can prepare us for life after lockdown

This pandemic has given people a lot of time to reflect on how they can improve themselves. Some are getting fit, some are trying to be more creative, or practise better self-care. Me? I'm doing the important task of learning to play the astoundingly complex card game, *Magic: The Gathering*.

The plan is simple: by using its digital adaptation *Magic: The Gathering Arena*, I'm aiming to pick up as much as I can about the game and how to play so that once the pandemic is over, I can go and comfortably take part in the game's local (or, as I live in the back-end of nowhere, the near-local) scene for real. My end of the pandemic is hopefully going to be celebrated with making new friends and playing lots of card games, but I've got time to hone up on my skills before then.

Magic events often involve lots of people crammed into poorly ventilated rooms, which, in the age of Covid-19, is a disaster waiting to happen. So it's no surprise that the game's creator, Wizards of the Coast, has decided to cancel all physical events for the game (including ones held in local shops) for at least the remainder of 2020. This ban means many people simply have no outlet to play the physical game anymore, and so there has been something of a boom in the numbers playing adaptations like *Arena* or its older sibling, *MTG Online*.

Last year, Wizards announced that one billion games of *Arena* had been played since its September 2018 launch. Since then, that number has more than doubled, with 2.5 billion having been played up to September 2020. This year, *Arena* has become the focal point for all things *Magic*, with three of the sets released this year (*Ikoria*, *Core 2021*, and the

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recent *Zendikar Rising*) seeing a digital launch before the more traditional paper one. While it's great that Wizards has acted responsibly and safely, and has ways to keep the game ticking over while the virus is still around, it has given rise to an interesting problem.

A digital launch when people have nothing but free time to play means each new set, and the changes they bring to the wider game, is being 'solved' quicker than any purely physical release, forcing Wizards to react quicker than ever before. Only four days after the paper edition of *Zendikar Rising* had come out, Wizards made the decision to ban a card that had dominated the metagame since its digital launch a week earlier. Maintaining balance in a time when people are mastering the new content so rapidly is an endless struggle, and there's no sign of this trend slowing down any time soon.

I knew nothing about *Magic: The Gathering* three months ago, so the fact I can even somewhat confidently talk about things like set releases, metagames, and card banning illustrates a different point that developers of all kinds of games need to take note of.
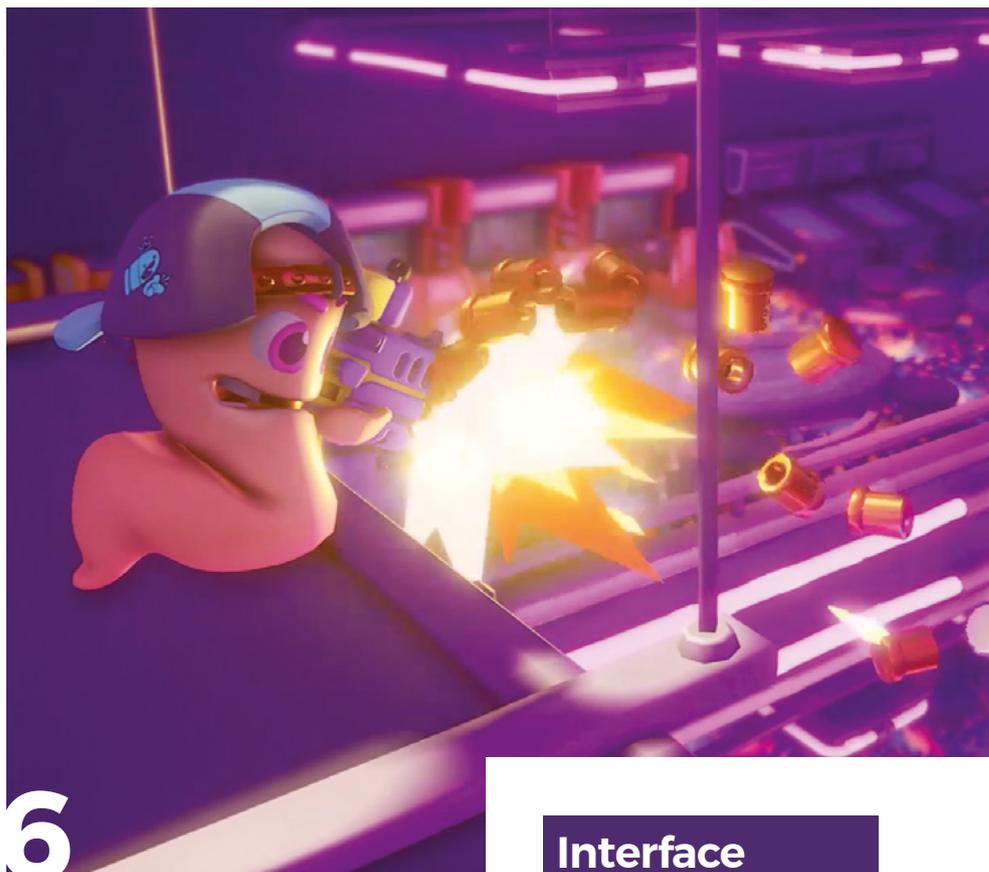
Covid-19 is making a wave of enthusiastic hobbyists who will be hungry for more new experiences once these trying times are done with. We will come out of lockdown, we will head to the shops and the events and the tournaments, or go to our friends' houses, and developers should be planning how they will cater to that just as much as they have for the at-home player over the last few months.

People talk a lot about 'the new normal' with regard to Covid-19, but developers who are able to plan ahead for the 'new new normal' that comes after it will also, I'm sure, be rewarded for their efforts. ⓦ

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WELCOME

If you missed *Crucible*,
Amazon's multiplayer shooter,
then don't feel bad – it passed
much of the rest of the world
by, too. Launched in May, the
game was online for just a few
weeks before Amazon decided
to drag it back into closed
beta. In early October, Amazon
Games announced that *Crucible*
was being discontinued, with its
servers scheduled for shut-down
the following month.

It's a sad end for a game that
started with big ambitions.
But in an early sign of trouble
behind the scenes, some of
its more original ideas – such
as a 'gamesmaster' player
who can affect events – were
soon dropped. We can only
guess how many thousands
of personnel hours went into
Crucible, given that Amazon
announced it in 2016 and work
would have begun long before.

This got me thinking about
what it must be like to work
on a game like *Crucible*.
Imagine being, say, an artist,
diligently crafting characters,
backgrounds or weapons, only
to see your hard work vanish
only weeks after launch. At their
best, games allow artists and
designers to create new worlds
and tell stories in captivating
new ways. On the downside, it's
also a medium where months of
work can vanish forever. In most
other media, it's highly unusual
for a project to be cancelled
years after it was greenlit;
instances of movies being
withdrawn and vanishing into
the archives shortly after release
are incredibly rare. *Crucible*'s
fate is a reminder, then, of just
how brutal the collision of art
and commerce that is the game
industry can be.

Ryan Lambie
Editor

TOTAL WORMAGE

With a brand new take on a quarter-century-old series arriving soon, we sit down with Team17 staff from across the years to talk about both the upcoming Worms Rumble and the past 25 years of shouting 'incoming!'

So long turn-based air strikes, at least for the time being: *Worms Rumble*, the first new game bearing the annelid branding since 2016, has opted for something of a pivot. Yep, it's real-time. And double-yep, it's a 32-player battle royale situation. Cue screeching noises from the internet. But wait! This is a sidestep for the series, sure, but it's not the end of *Worms* as we know it – and, as it's sounding so far, this could well be the sort of experiment that proves fruitful. We chatted with Danny Martin, producer

on *Worms Rumble*, for his thoughts on how this dalliance into real-time mechanics is looking. You'll also see contributions from Colin Surridge, programmer, Kevin Carthew, creative director, and Nick Gomersall, art director – with much more from those chaps to follow after our *Rumble* natter.

What prompted the move to real-time? How can you ensure it's still *Worms*-y without the turn-based aspect?
Danny Martin: We tried years ago to do another real-time type of *Worms*, but didn't get it off the ground. But we started prototyping *Rumble* either the beginning of last year or just before that – we were doing it in Unreal so that it could quickly come together. And very quickly we were able to see we had something fun on our hands, because when we did internal test sessions where we just looked at the usability – we got as much of the team as we could to play a few games together – it was a lot of fun; even in those early days, people were laughing, having a good time. We asked people to come in for five- or ten-minute sessions, but they'd hang around, they'd say 'I just want another go, that was a lot of fun'. So while it's

⌄ The shift from steady (but time-limited) turn-based combat to frantic real-time action is going to be an adjustment for series faithful, but it looks to work.

NOW

quite a change, it is risky, but even early on internally we knew we had something pretty special in our hands. It's evolved from that prototype, but there's still a lot of love for it going around. I'm excited for *Worms Rumble* – we still love the turn-based versions of the game, but it'll be good to try something different. It's exciting times.
Colin Surridge: What it reminds me of is – you know in normal *Worms*, when you've got five seconds left on your clock and you still haven't made your shot and you're trying to aim it? It's that feeling, but for about ten minutes a stretch.

What's the feeling on the fundamental change in approach?

DM: I've been here about ten years, and when I arrived, *Worms* was already an established brand, but I think even now working on *Worms Rumble* – it's a change of tack for the series. One of the reasons why I've done it really is to try something new. We still love the turn-based versions of the games, there's still longevity in that, but I think with *Worms Rumble* it's *nice* to try something new, and it may be a direction we take moving forwards... Although I've been working on *Rumble* for quite a while now, we're still really excited to play it. Even when you finish work, you just want to play a few more games – it has that 'one more turn' element to it. The characters themselves are really appealing, they've got a lot of life in them. There's still a long way to go with the franchise, and we're not going to stop any time soon.

> ### "It'll be good to try something different – it's exciting times"

Was it a hard sell to the brass, to pivot so significantly?

DM: It was something of a hard sell. When we first started looking at it, it wasn't that long since *Worms W.M.D* had come out so we were really thinking about what the next *Worms* game might be when we got around to it – we were trying to get ahead of ourselves. Thinking about it, it seemed really hard to top *W.M.D*, because it was such a great core version of the game, it was incredibly feature-rich. Bringing out another succession to that, not so long off the back of doing such a high-quality version of the classic title, it's like 'Where do you go? Where do you take it?' The core design of *Worms* raises challenges in terms of how you do things like making it more than four players, six players, 32 players, but still making it good. Imagine a 32-player turn-based game; it just wouldn't quite work. *Rumble*, even though it's a leap into the unknown for us, allows us to answer a lot of questions that are pertinent to modern game design trends while still keeping it recognisably *Worms*. It's still *recognised* as *Worms*, but it allows the freedom to do things that we would like to do, that would be challenging in a traditional entry to the series.
Kevin Carthew: To answer your question about it being a difficult sell: it was all about that prototype. It had a very strong prototype, playable online almost right from the off, though only up to 15 players. It looked like *W.M.D* for a little while because we were reusing sprites and

graphics from that to cobble it together, but I remember the turning point being taking it into an office and doing an unrehearsed, unplanned pitch for it. We got about 15 people playing it, and everybody could just see, without being prompted, that people wanted to play it again, that it had that stickiness. It was a really successful pitch, and it was the prototype that got us over the line in terms of it being a sell.

Why such a long gap between *Worms W.M.D* and *Worms Rumble*?

CS: *Escapists*, *Overcooked*...
[laughter all round]
DM: That's good though, because it shows we're not *just* the *Worms* guys anymore, we are looking at alternative games. It's helped, too – now we're on *Worms Rumble* there's a bit more hunger, a bit more passion because of the gap, especially in the team internally. There's been a break, and we've come back to it with a different take... I think it's helped to keep the passion alive for the franchise.

Worms Rumble **releases on PC, PS5, and PS4 in December** ➡
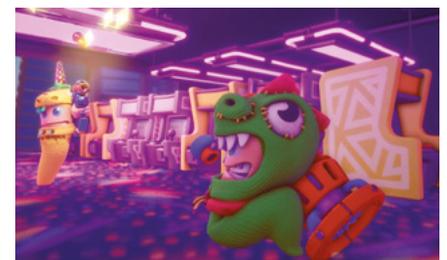
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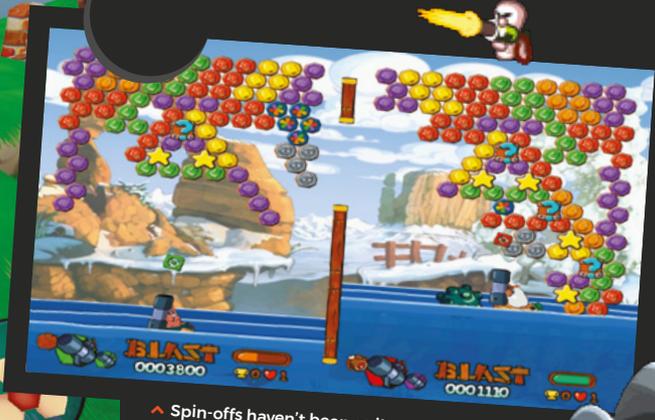
^ **Worms 3D** saw players naturally gravitate towards drowning opponents, necessitating a shift in coding for future three-dimensional outings where worms would be 'sucked' towards land more often.

^ Spin-offs haven't been quite as numerous as you might expect, but the likes of *Worms Blast* have shown up and been... OK.

In yet another example of time being utterly relentless, 2020 marks the 25th birthday of the original *Worms*. It's a whopping anniversary; an enduring legacy from the unlikeliest of sources. Starting life as an Amiga Format competition entry named *Total Wormage* (it didn't win), creator Andy Davidson shopped proto-*Worms* to publishers until landing with Yorkshire-based Team17. The studio polished the early version up, renamed it *Worms*, and released it to an unsuspecting world in October 1995 on the Amiga. Shortly afterwards it was ported to the then-new PlayStation, and from there, its impact only grew – soon enough, *Worms* was a cultural phenomenon, everyone knew it, everyone had played it, and Team17 had itself an IP – one it has stuck with, updated, and experimented with ever since.

With 75-ish years of experience at the studio sat in front of us, we took full advantage of our access to the Team17 veterans, as we looked back over the history of the series. In raw numbers we have: Colin Surridge (joined 1995), Kevin Carthew (joined 1998), Nick Gomersall (joined 2002), and Danny Martin (joined 2010). That's a lot of experience – but then there *has* been a lot of *Worms*.

Why do you think *Worms* endures?
Colin Surridge: I think it self-balances. It's one of those games where, when you start losing, you're not actually out of the game – you have a tactical advantage when you have fewer worms than the other teams, because your remaining units get more turns consecutively. So you don't give up, whereas in a lot of games, once you start losing, people rage-quit because they think they can't win. It's not like that with *Worms*.
Kevin Carthew: It's interesting because there were games like *Worms* around before it released. You think about *Scorched Earth*, *Scorched Tanks*, *Gorillas* – there were artillery games before, but none of them had that breakout potential that *Worms* did. I was still at school when *Worms* first came around. I was a huge Amiga nerd and a big fan of Team17, and we all played it... I'm sure our GCSEs suffered because of *Worms*. Loads of people share that anecdote and that same story. I think as well, a big part of the reason why it's endured is the character of the worm – it accounts for so much. When I still had enough hair to go into a barber's, I can remember the person cutting my hair was asking me what I did for a living. I explained, but she didn't play games so had no idea what I was talking about. But

as soon as I said it was a little character with a high-pitched squeaky voice, she said: 'I'm sure I used to have that as my text message sound' – the worm, when you call in an air strike, shouts 'Incoming!', and she had that set as her notification sound. It's really endured. There were games like it before, but it's the character that has endured over the years and given it such a broad appeal. So many people seem to be able to identify with it.

What did *Worms* do for Team17, for the UK games scene, for gaming as a whole?
CS: I can remember at the time the original *Worms* came out we were doing some in-house games, but a lot of them got canned, they just didn't pan out. Then *Worms* came along and gave us a pretty good focus – it did so well we could immediately start talking about doing a sequel, and then a sequel for that, and so on. So it gave the ➡

2001

WORMS WORLD PARTY
(PC, DC, PS1)

2002

WORMS BLAST
(PC, PS2, GC)

2003

WORMS 3D
(PC, PS2, GC, Xbox)

2004

WORMS GOLF
(Mobile)

WORMS FORTS: UNDER SIEGE
(PC, PS2, Xbox)

BL

14

55 KEITH CHEGWIN
100

OFFA
86

41 RUBBERDUCK
45

ZIPPY
59

BAZOOKA

WORMS WIND

NERRYNEN

ATHOS
100

PORTHOS
48

NINJA ROPE
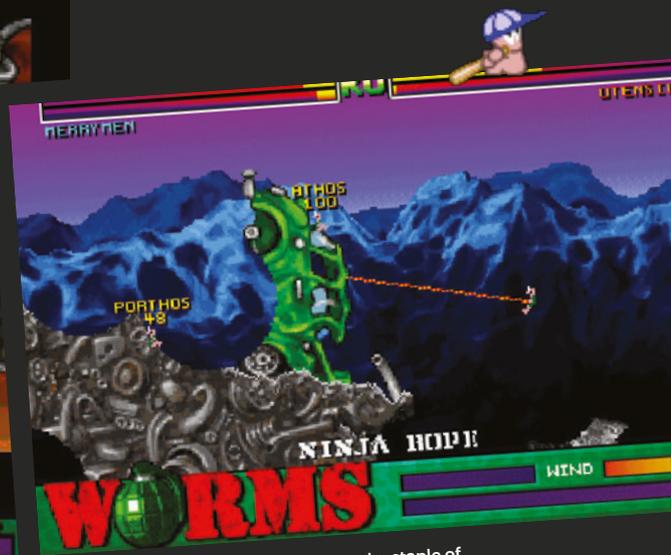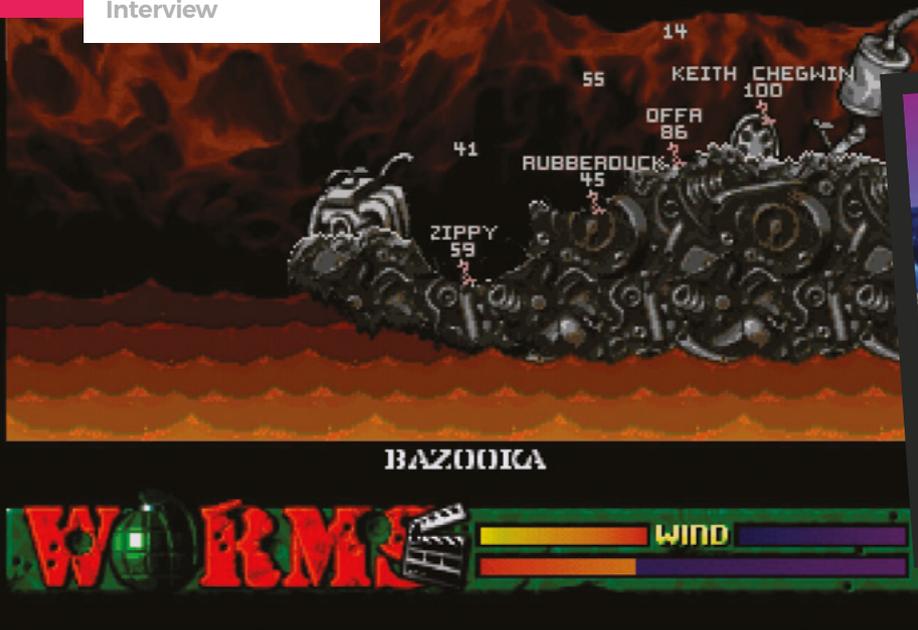
WORMS WIND

^ The ninja rope has long been the staple of skilled – and unskilled – players; just like the bazooka, it never feels like *Worms* without one.

^ *The Director's Cut* released on the Amiga in 1997, well after the machine was in any way relevant, but it acted as a love letter to the format that spawned the series.

company an IP – something it could draw upon. We still did work for hire back then, but we were also a publisher in our own right, and that gave us the ability to do that. At the time, if you didn't have your own IP, you were dead in the water.

KC: It was huge for Team17. We basically built a business around it, I think. It did export around the world really well. It was massive on PlayStation at a time when *Worms* just did not look like the kind of titles that were big on PlayStation. It wasn't flashy; it wasn't 3D; it looked like an indie game. But it was absolutely huge for Sony, and that helped expand its popularity. Then, like I say, Team17 built a business off it. I think it was so big that it kind of blotted out the sun – it was hard to do anything other than *Worms* because it was such a guaranteed success for a long time. It continues to be to some degree for us.

Of all the games, it seems *Worms Armageddon* resonates the most with people. Why?

CS: That's a hard one. *Worms Armageddon* was very customisable, very smooth, very quick to get into a game. A slightly older

graphics style to what we have now that seemed to resonate quite well at the time... There were a lot of intelligent decisions made in that by a guy called Karl Morton, who was the main game programmer – there was a lot of under-the-hood stuff happening that you didn't know he'd programmed into it. The example I nearly always give is dud mines: if you land on a mine, there's a chance it won't go off. But if you try running away, it's *guaranteed* to go off. If you try and run for it, it's going to be exciting – it either goes off and you've cleared it, or you get hit. If you stop still, it's exciting, because then you don't know if it will or won't go off. It's such a tiny, subtle thing in there but it did make a lot of difference. But I've never totally understood why people prefer *Armageddon* to *World Party*, for instance, because *World Party* was *Armageddon* with a lot of extra stuff added.

KC: It is a pretty close-run thing between those two titles. I think it comes down to people preferring either game against all of the other games, more than it comes down to people preferring either *World Party* or *Armageddon*. But as Colin says, it's quite hard to put your finger on what it is about those games that makes them so good, but when

2005

WORMS 4: MAYHEM
(PC, PS2, Xbox)

2006

WORMS: OPEN WARFARE
(PSP, NDS)

2007

WORMS
(XBLA, PSN & iOS 2009])

WORMS: OPEN WARFARE 2
(PSP, NDS)

you play them, you *understand* what it is that makes them so good. The closest we've come to it since is *Worms W.M.D*, where we went with a fine-tooth comb through the old code to try and find what it was that made it tick. It feels super-reliable, does *Armageddon*. It's the fact that it's fully deterministic – you give it the same inputs, you get the same outputs from it each and every single time. I don't know if Col can speak to this, but I remember one of the programmers explaining to me that it uses fixed math, it doesn't use floating point for anything, so it just feels rock-solid. You know the *Street Fighter* games, how there's some special sauce that just makes them feel tight? *Worms Armageddon* feels tight all the way through.

CS: There wasn't really floating-point maths easily accessible back then – you couldn't guarantee everyone's PC would have a floating-point coprocessor. It's that long ago. Right now, that code running on a modern machine without VSync, you'd probably get five or six hundred frames a second, something like that – if not a lot more than that. It's just a very tight game. You jump, and you could guess pretty much exactly where you would land.

What about your forays into the 3D games? How did that change things?

KC: Going into 3D was really interesting because it was totally uncharted territory [for us] at the time. I don't think we would have done it were it not the trend at the time. The PlayStation came out and really ushered in the era of 3D-accelerated graphics, 3DFX graphics cards, and so on and so forth. It wasn't even a possibility technically until that point in time, and

then even when it became a possibility, it almost felt like there was pressure from publishers to do it, rather than pressure from Team17 internally to do it. We must have kicked it around for two or three years before someone hit on a technical solution for it. I've always been happy with how those games turned out, but I remember it feeling like... the mood around Team17 at the time was like it was a huge leap into the unknown, to the point where you even had people saying they didn't want to work on it because they were scared it was going to 'ruin' *Worms*. It almost felt like if we did the 3D versions, there'd be no going back – though obviously, it wasn't the case. I can think about the amount of technical challenges, the amount of prototypes that we did, the amount of playtesting that went into it...

CS: There was a lot of tricky stuff with *Worms 3D*. A lot of the reasons why the 2D *Worms* works so well relates to the accidental repercussions of what you do: you miss with a grenade, it bounces off the landscape, it hits a

> ## "It wasn't flashy. It looked like an indie game"

mine that blows something up – that's quite easy in 2D, there are only really two directions a projectile can go. When you're talking 3D, it could bounce in a direction that *does something boring*. And that's far more likely than it doing something fun. So they had to work on tech to bias that toward something interesting, which is quite hard to do.

Danny Martin: In those games, because you're surrounded by water on all sides, and because water means instant death for the worms in the game, naturally, you'll always look for the water kills first. Because in the 3D version, water is on all sides, and so water deaths are easier to come by. In *Worms 4: Mayhem* – the second 3D game – the worms are actually attracted to the landscape, so it's harder to knock them into the water. This was because the game just boiled down to getting prodded and blasted into the water all the time. So the worms are actually sucked onto the landscape in some of the 3D games. I think it's one of those little tricks happening under the hood that isn't immediately obvious and nobody really knows about. ➡

An early hit on Xbox Live Arcade (and later PSN), *Worms*' 2007 release was a do-over of the handheld *Open Warfare*.
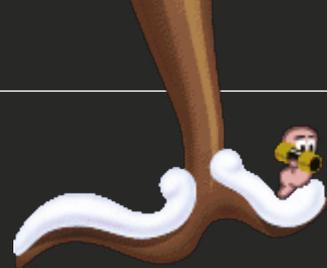
CS: Yeah, there's definitely a bias in how you get caught up in explosions and stuff. Couldn't be too much, otherwise it'd be very obvious what we were doing, so it had to look like chance.

What's the rationale behind changing the worms' looks every few years or so?
Nick Gomersall: It's quite a complex character to draw, strangely enough, even if you look at the games from ten years ago. One of the benefits is that you can make it what you need it to be, so you can personalise it really well. In terms of taste, obviously we look at what's there in pop culture at the time to try and keep it current, but largely it's been the same kind of silhouette and details throughout its life, apart from the very early days.
KC: The biggest step-change was from *Worms* to *Worms 2* – the worm only rendered in about eight pixels in the original, so you'd have no idea what they looked like; all the personality came from the voices

and the box art, essentially. From *Worms* to *Worms 2*, I can remember the artist at the time saying the worms were maybe around 24 or 32 pixels high, so it was really designed to read expressions at that size – even though it was still really small, it was about three or four times the resolution of the first *Worms* game, and that's where you got those iconic, long-standing things coming in like the big doe eyes, the black pupils, the eyebrows.
NG: That's an important point, in terms of the readability of the game. They're simplistic to enable you to perceive them properly on the screen. [With *W.M.D*] we were looking at kids TV shows and things like that. You could see a kind of flavour... it's almost like the whites of the eyes were old-fashioned, stylistically, so dropping those, making the pupils larger, that brought with it some animation issues. How do you get the character across if you haven't got that framing for eyes, and so on. It was a little challenge I think we did pretty well with. It's generally followed a formula over the years – there have been exceptions, but it's been [tweaking] rather than re-engineering.

How have things changed from a coding and development perspective over the years?
KC: Interestingly, *Worms* has been our own tech platform right up until *Rumble*. We have our own internal tech platform called XOM, which pretty much every Team17 game was built using. It was hell for designers and artists...
CS: And programmers.
KC: ...because we would always need programmers to build our tools for us. Production needs to run a tight ship, so many of the resources go into making the core game as good as possible, that's where the coders will spend their time. But that's a bit of a catch-22 situation because we also need those programmers to build tools and processes to support the rest of the development team. So even *Worms W.M.D* was built in XOM, a really antiquated platform that's been around since about 1998 – that's when we first started developing games using it. A guy called Stefan Boberg put it together – [now technical director on the Unreal Engine team at Epic]. Unreal has been massive for *Rumble*. The rise of third-party engines has been huge, it's fantastic for artists and designers. I don't know what the coder's perspective is on that...
CS: Oh, it's a lot easier than XOM! There's documentation.
KC: And tools!

And how has the creation of *Worms* changed when it comes to the people making it?
CS: Team size has increased quite a bit from the early days, but we're just a much bigger company now and it takes us longer to make these games.

> ## "We basically built a business around *Worms*"

GRENADE – 2 SECOND, LOW BOUNCE
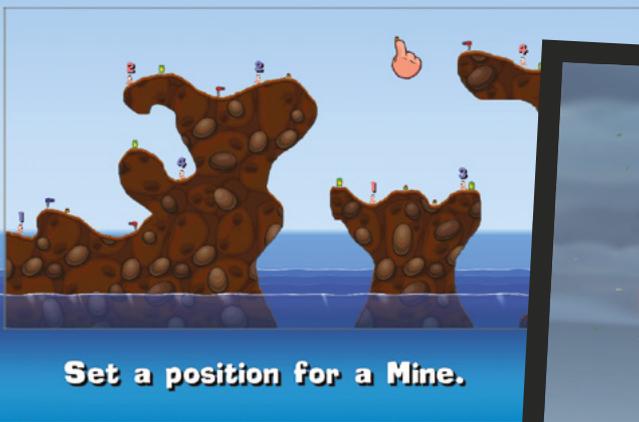
⌃ Levels in *Worms* – and many other entries – can be spawned with codes, but later games allowed straightforward creation, like *Worms Reloaded*.

Set a position for a Mine.

⌃ 2016's *Worms W.M.D* was, genuinely, one of the best versions of the game yet seen – gorgeous, well-crafted, and a lot of fun, it's worth a peep if you've not had a play yet.

If you think about *Worms 2* there was probably about six people full-time on that, not all coders, artists, and so on. But you wouldn't even think about a project of the sizes we're doing now with that sort of number for your team.

KC: *Worms: W.M.D* was a pretty big team. I remember at one time the entire company was working on it. We must have been about 70 at that time.

DM: Yeah, it was a few months where we got everybody to help. That was a big one.

KC: Thinking of something like *W.M.D* and its relation to *Worms Armageddon*, I don't think we'd have been able to make that game feel the way that it felt if we hadn't kept hold of some of those staff from the early days. The lead designer on *W.M.D* had been involved in *Armageddon* and *World Party*, [and] knew what it was at its core that made it tick. We don't have many people left from those super-early days, but it's vitally important if you want to make a solid-feeling classic *Worms* experience that somebody understands what it is that gets that experience across. There's no documentation for it; it just relies on somebody understanding the game.

What's a direction you weren't able to go in with the series?

KC: For a long time there was a *Worms* karting game [*Worms Battle Rally*] – it started

life as a kind of *Worms Mario Kart*, then it became somewhere in between *Mario Kart* and *Twisted Metal*. Designing tracks for it was an impossible task because it had to both be an arena you could do battle in, and a track you could race around satisfyingly… It still boggles my mind how close we were to having a finished product, and it just got canned, nothing happened with it. So yeah, certainly a few spin-offs that have never quite seen the light of day.

CS: We did go through a phase when we were [just] trying to make a game that could have worms in it, so we weren't just restricted to that [standard style]. I think *Worms Blast* came from that.

KC: *Blast* sort of grew out of people looking at *Puzzle Bobble* and saying 'That looks like an easy game to make, that can't be hard, we'll just make a game like that'…

CS: [laughing] Yep!

KC: The amazing thing about that game was there was never really a core design. There was a scripting language, a character controller, and some basic rules. The designer was given the scripting language; someone said 'There you go, make a game'. There were about four designers working on it, all with their own interpretation of what the game was, all going in their own completely separate directions, which is

why every single level feels like a minigame more than a coherent puzzle game. The designers also coded the HUD, so that ran from the level scripting language, which is why if you look at the game sometimes the HUD is in one type of font, sometimes it's a little bit bigger, sometimes smaller; one designer's HUD flashed on and off when it got to the last ten seconds, one of them didn't. It's all over the place in terms of consistency.

Can we have a *Worms: The Director's Cut* re-release?

[silence, laughter, we're pointed towards the Worms Armageddon 3.8 fan-made update from July of this year]

DM: The *Worms Armageddon* update was probably our *Snyder Cut*.

KC: What a great last question to wrong-foot us with, none of us have an answer for that.

CS: All I thought was 'I'm looking after the back catalogue right now, please no!' Ⓦ

2014	**2015**	**2016**	**2020**
WORMS BATTLEGROUNDS (PS4, XO)	**WORMS 4** (iOS, Android)	**WORMS W.M.D** (PS4, XBO, PC, Switch [2017])	**WORMS RUMBLE** (PS5, PS4, PC)

The Medium

Bloober Team's forthcoming psychological horror forges a link between worlds

Info

GENRE
Horror

FORMAT
PC / Xbox Series X/S

DEVELOPER
Bloober Team

PUBLISHER
Bloober Team

RELEASE
10 December 2020

⌄ **Areas inaccessible in the material world are sometimes open in the spirit realm.**

O ver the course of the last decade, Poland's Bloober Team has built a reputation for making atmospheric and well-written horror games. *Layers of Fear* and its sequel (released in 2016 and 2019 respectively) created a Gothic sense of slow-build dread worthy of Edgar Allan Poe. *Observer* (2017) was a compelling mix of horror and cyberpunk. Even the licensed title *Blair Witch*, although flawed – we awarded it 60 percent in issue 23 – constructed a convincing mid-nineties era of chunky phones, Polaroid cameras, and haunted forests.

Bloober's next game will continue in the same vein, with a plot that once again places an emphasis on mystery rather than gore. *The Medium*'s title character is Marianne, a psychic plagued by the vision of a child's murder.

Eventually, her investigations lead her to an abandoned hotel – a labyrinth of hidden clues and supernatural threats. Marianne isn't, in the words of producer Jacek Zięba, a "demon slayer", and there are moments in the game where she'll simply have to use stealth to avoid the hotel's ghostly inhabitants. But her main ability is what separates *The Medium* from Bloober's earlier games: she can see both everyday reality and the spirit world at the same time. For us sitting in our comfy chairs at home, this is represented as a third-person, split-screen perspective, with the game's 'real' world rendered in one part of the screen and the supernatural plane in another. As we guide Marianne through the grubby corridors and lodgings of the deserted hotel, we'll simultaneously see the twisted version of that reality: what looks like a rotting desk in one viewport looks like an organic, plant-like morass in the other.

It's a concept that Bloober has been playing with since 2012, but it's taken years of prototyping – and the advent of next-gen PC and console hardware – for the team to make these dual realities run smoothly next to each other. "*The Medium* is set in two worlds at once, so we had to render two levels together at the same time – in a way it is like creating two games that work simultaneously," Zięba tells us. "The next-generation consoles were the only way we could do this… it presents a production challenge because there's double the workload when creating specific levels and cutscenes, but it's totally worth it when you can give players something unique and new."
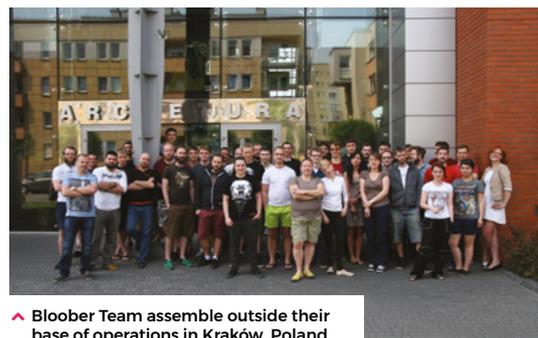
SIMULTANEOUS DUAL-REALITY GAMEPLAY
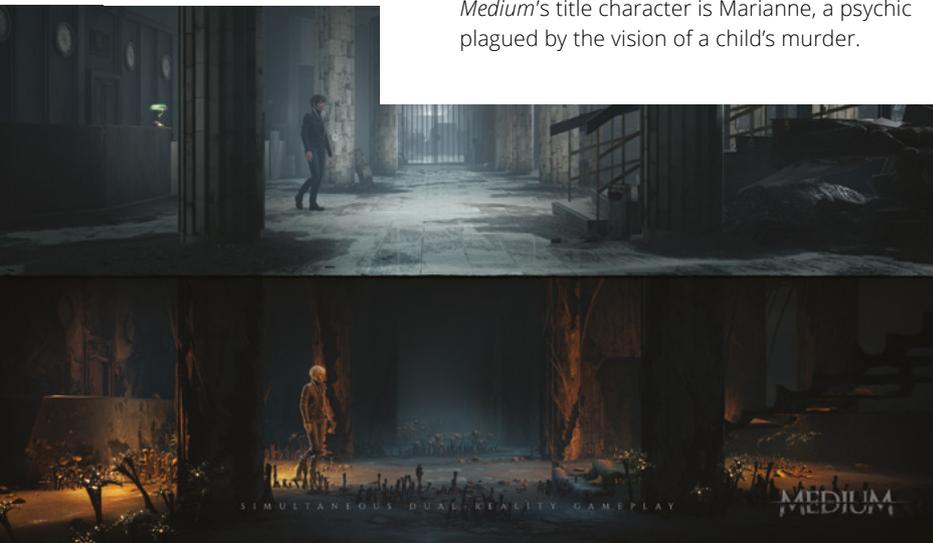
^ The game's hotel setting is creepy enough without the ghostly goings-on Marianne can see on the spiritual plane.

^ Bloober Team assemble outside their base of operations in Kraków, Poland.

^ The perpetually busy Troy Baker provides the voice – and some performance capture work – for *The Medium*'s antagonist, dubbed The Maw.

The Medium's dual realities also make for some satisfying puzzles: as a July gameplay video revealed, Marianne can use her powers to spot switches and passageways that are invisible in the earthly realm, and disconnect her spirit from her physical form to explore locked rooms. "We're quite satisfied with how we use the dual reality to create innovative puzzles," says Zięba, but adds, "I wouldn't go as far as to call it a puzzle game – some players could misinterpret it and expect something different than what the game actually is."

ANOTHER WORLD

Bloober Team has come up with two distinct visual styles to help orient the player in *The Medium*'s twin worlds, and the same is true of its music: Bloober's Arkadiusz Reikowski is providing the soundtrack for the everyday realm, while the ghostly domain is being scored by *Silent Hill*'s Akira Yamaoka. "The worlds in the game are also in a sense, two soundtracks," Zięba explains. "Thanks to this, we have a unique combination of two specific approaches to creating music and sound in the game, which we mix together throughout. Yamaoka's work mainly focuses on musical paths to the spiritual world, which in many cases [are] the darker places we will visit in the game. Then we have the work of [Reikowski] composing music for the real world – Poland in the late nineties. So we have two worlds, two composers, two different

> **"The worlds in the game are, in a sense, two soundtracks"**

approaches and styles, but everything is created in such a way to be connected at the end, that in our opinion is the perfect combination."

Put it all together, and we have the makings of a fascinating chiller; one that mixes puzzle-solving, stealth, action, and that intriguing split-screen mechanic. For Zięba, it's all part of the studio's aim to think beyond the usual tropes of horror cinema, and come up with new ways of telling scary interactive stories. "Horror's a tricky genre, because the tricks you use to scare people get old pretty fast and you have to constantly come up with new ones," he says. "Horror in games is different; thanks to interactivity and player's agency, games have long moved away from movies and come up with their own unique ways of storytelling. I think in the horror genre, filmmakers and game developers can and should learn from one another, because the need for new tricks is so great." ⓦ

DARK SEED

If you're looking for a psychological horror game to play through while you're waiting for *The Medium*'s release, you could do a lot worse than check out *Dark Seed*. Developed by Cyberdreams and released in 1992, it's a point-and-click adventure based on the work of the late Swiss artist H.R. Giger. While Bloober Team didn't look to *Dark Seed* when making *The Medium* ("Our main inspiration has always been the *Silent Hill* series, and in particular *Silent Hill 2* and the works of [Polish artist] Zdzisław Beksiński," Zięba says), its story also takes place in two contrasting worlds: a Los Angeles mansion and a dark, twisted parallel dimension occupied by aliens. It's a flawed game, but one packed with nightmarish imagery – as well as Giger's artwork, there's also its protagonist's shudder-inducing mullet.

Another bug hunt

Blasting invaders sees a shift in tone in Earth Defense Force: World Brothers

Info

GENRE
Voxel blaster

FORMAT
Switch, PS4

DEVELOPER
Yuke's

PUBLISHER
D3 Publisher

RELEASE
Early 2021 (EU/US)

⌄ **You can make your own four-troop 'cell', where you're able to freely switch between units in real time. Oh hello, strategic decision-making…**

T he *Earth Defense Force* series is the archetypal cult classic. We all know the story by now: a vastly ambitious, puddle-shallow, superbly fun series comprising of blasting giant bugs (and more) in destructible cities the world over, which started life as a budget series and *somehow* carried on for 15-plus years now. What doesn't tend to get mentioned is the little things that make *EDF* so genuinely, heartwarmingly quirky. Singing a single line from a song in the vain hope your online squadmates would carry on the tune, say. Hearing one of your AI squadmates saying "We're on an exciting underground adventure!" while heading straight into the certain death of an underground giant ants' nest, perhaps. Blowing up an entire city with absolutely no repercussions just because you *really* hate those giant spiders, maybe. It's a franchise with a lot of genuine affection showered on it, so it's always nice to see a new entry make itself known.

EDF: World Brothers actually looks to be making a real attempt to raise its head out of the world of little-known cult attraction games. Now this has been attempted before, most recently with *EDF: Iron Rain* from 2019 – but these previous efforts all leveraged a more serious tone and an attempt to take the series in a banal, military-themed direction. *World Brothers* turns its heels on what came before and heads off its own way: bright colours and voxels are the key here, and it's all been done with the express intention of lowering the game's age rating and thus broadening its potential appeal.

"We've done our best to ensure that our fans would continue to find fun with our series," explains Nobuyuki Okajima, series producer on the *EDF* games. "However, this required time, and we're very sorry that we've had our customers wait for so long between each game release. We wanted to thank our *EDF* fans out there with an event that would offer something that would bring out the fun throughout our series, and thus began our plan to create *EDF: World Brothers*. *EDF* is very easy to get into, so we sincerely believe that the game is meant for a broad range of audiences, from our younger gamers to seasoned players, both genders alike."

But catering for the series' hardcore fans meant a push to more immersive battles and graphics, Okajima goes on to say, meaning these titles received higher age ratings. Then, of course, there was always the issue of ever-more realistically rendered insects and arachnids putting some players off. Accessibility is a big thing for the team: "We wanted to attend to and address such issues… we wanted to bring about a game that reached out to a broader range of audiences," Okajima says. "And after deep deliberation, we came up with the voxel design for *EDF: World Brothers*."

The voxel design of *World Brothers* doesn't make for changes to the core *EDF* experience: you're still dashing about large open city spaces blasting invading creatures and having a whale of a time doing it, but the artistic flourish does mean the game moves away from the (sort of, kind of) more realistic tone of previous entries. The voxel planet has been attacked by six alien motherships and, as such, has broken apart into cubes. "In the real world, that would mean doom for humankind," says Okajima, "but in the voxel world, it just means that the world, broken into parts, is floating in space with everything in it, from cities to landmarks and more. These broken parts are where the battles take place." Meaning one level might see you in your usual vague cityscape, while another will see you battling in front of a cube-y Big Ben as you blast alien beasties by the dozen.

Adding to this is the fact *EDF: World Brothers* is a celebration of sorts for the series – plenty (though not all) enemies from past games appear, the world introduces those real-life landmarks, and every soldier class from previous titles is included – wing divers and heavies for the win, and all that. Building a four-unit squad, you're free to swap between your troops at any time – this real-time selection is actually a new feature for the series and could genuinely add to the depth of things, as in previous games you were indeed limited to the single class you chose for the mission. Balance has been a challenge for Yuke's, Okajima explains, but the hope is everything'll be alright on the night: "The game

"We sincerely believe that the game is meant for a broad range of audiences"

systems employed were different between each game," he says. "Hence, we did our best to keep what elements were well received, while merging them into *EDF: World Brothers* in a way that made the game feel natural and organic, and this was quite a challenge to overcome."

Edging closer to 20 years in the business is a feat for any series – but it's certainly more so when said series started as a budget game, and has never really achieved worldwide superstardom. But, as Okajima says, there has always been a fanbase for *EDF*, and that's what's helped it continue: "I didn't expect it to be as popular as it is today, back when *EDF* was introduced as part of the *Simple 2000* series," he says. "When *EDF2* was released, we noticed it already had a strong fan base, which brought more players into the game, so we sought to make *EDF3* and beyond into a unique line-up of third-person shooter games. We really appreciate and thank all our fans who joined themselves as *EDF* members to help support the series!" As for *World Brothers*? Well, Okajima is keeping his hopes modest... relatively: "I wish I had the brazenness to say it would do magnificently awesome," he says. "What I can say is that I hope we have as many players possible join themselves into the voxel world of *EDF*. The more the merrier, and of course the more [there are] the safer it will be on voxel Earth." Ⓦ

TECHNICALLY

The *EDF* series is one infamous for its chugging technical performance: a mark of shame for any triple-A series, but a badge of wonky pride for this cheap-and-cheerful franchise. All the same, Okajima is hopeful this time around things will be a bit smoother for everyone: "I'm sure the final call will come from our players," he says, "but we've done our best to ensure that we've overcome technical issues from previous games." Part of this is down to *World Brothers* using Unreal Engine: "[Unreal] helped to reduce the overall time needed to build our game system," Okajima continues. "In turn, this allowed us to spend more time on the game content itself, so it definitely helped with developing the game." All the same, we have some hope there's at least a *bit* of shonkiness in there. Wouldn't be the same without.

That was the month that was


03

01

02

Venture Forth

01. Potato Doom

Really that's the story in the headline: a chap on YouTube by the name of Equalo decided to try and get *DOOM* running on a Raspberry Pi Zero, powered entirely by potatoes. He failed. He did, however, get *DOOM* running on a scientific calculator using just the power of potatoes. It's yet one more example of people getting *DOOM* running in any way they can, and it's genuinely an exercise in ludicrous commitment to an experiment, and while nobody wants you to leave these here pages, you really should go and watch the video right now: **wfmag.cc/Doomtato**.

02. Projekt Crunch

Bloomberg's Jason Schreier revealed allegations of mandatory crunch at CD Projekt Red in the run-up to (and likely following) *Cyberpunk 2077*'s release. The studio's claims of (paid) overtime limited to 48 hours per week were challenged by the reporter and sources within CDPR, who stated the crunch has been going on since around May 2019 – for some departments even earlier than that – with 16-plus-hour days and weekends being lost to work demands. It certainly paints a different picture from the official line of six-day weeks being introduced to help squash bugs in the build-up to launch.
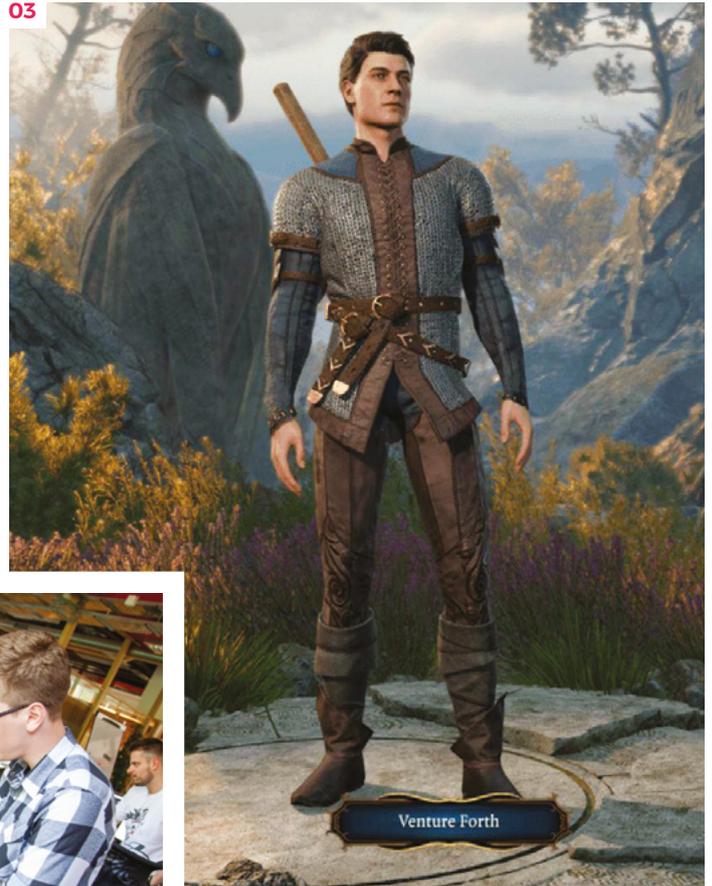
03. Stop being boring

Check out the image above this story. What do you see? If you said 'the dullest created character ever made', you're spot on. Larian, developer of *Baldur's Gate 3*, called out players of the Early Access version of the game for making dull created adventurers – the above image being an average of the most popular choices made in the game's character creation tool. A basic, vanilla, white dude. "Congratulations, you've basically made the default Vault Dweller," Larian wrote. "What the hell, guys. We gave you demon eyes, horns, and even tails. We are sorely disappointed. Go crazy. We worked hard on this." Be wild, children.

Our own Konstantinos Dimopoulos' book is out 12 Nov: **wfmag.cc/citybook**

Dreamcast Mini rumours start, won't stop. We're OK with this

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DATE: AUG 24 2020
TIME: 10:23:39 UTC
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04. Epic Apples

The ongoing legal battle between Epic and Apple, coming about after the latter removed the former's game *Fortnite* from its store over a dispute about the 30% slice of profits Apple takes, has seen a stark warning from the judge presiding. A decision on the case, according to Judge Yvonne Gonzalez Rogers, could have "the potential for significant and serious ramifications for Sony, Nintendo, Microsoft, and their video game platforms," as it relates to operating 'walled garden' storefronts. We're keeping a close eye on this one, but it's likely to stretch on for a long time yet.

05. NESISS

Retro gaming is all well and good, but it doesn't have that extra layer of modern connectivity we see in games made for the contemporary audience… well, apart from this Nintendo Entertainment System game that tracks the International Space Station, at least. Developed by Vi Grey, *International Space Station Tracker* does exactly that: tracks the real-time, real-world (or real-space) position of the ISS and shows it on screen. It's not the most exciting from a gameplay perspective, sure, but it's a fantastic proof of concept for the 35-year-old console. Read more here: **wfmag.cc/NESISS**.

06. Xecuter arrests

Chances are if you've paid any attention to 'hacking' (and by that we mean piracy) circles in the last couple of decades you'll be familiar with the name Team Xecuter. Purveyors of hardware manufactured with the intention of circumventing copy protection on anything from the original Xbox all the way through to the Switch, it's surprising that the team has operated semi-openly for so long. Less surprising was the US Department of Justice's announcement that two of Xecuter's top brass, Max Louarn and Gary Bowser, had been arrested and deported from the Dominican Republic to the US where they will face eleven felony charges. It may have taken a while, but it seems the DoJ isn't mucking about.

Indivisible development stops after most staff leave studio

Rambo joins RoboCop and Terminator in *Mortal Kombat 11*, **because sure**
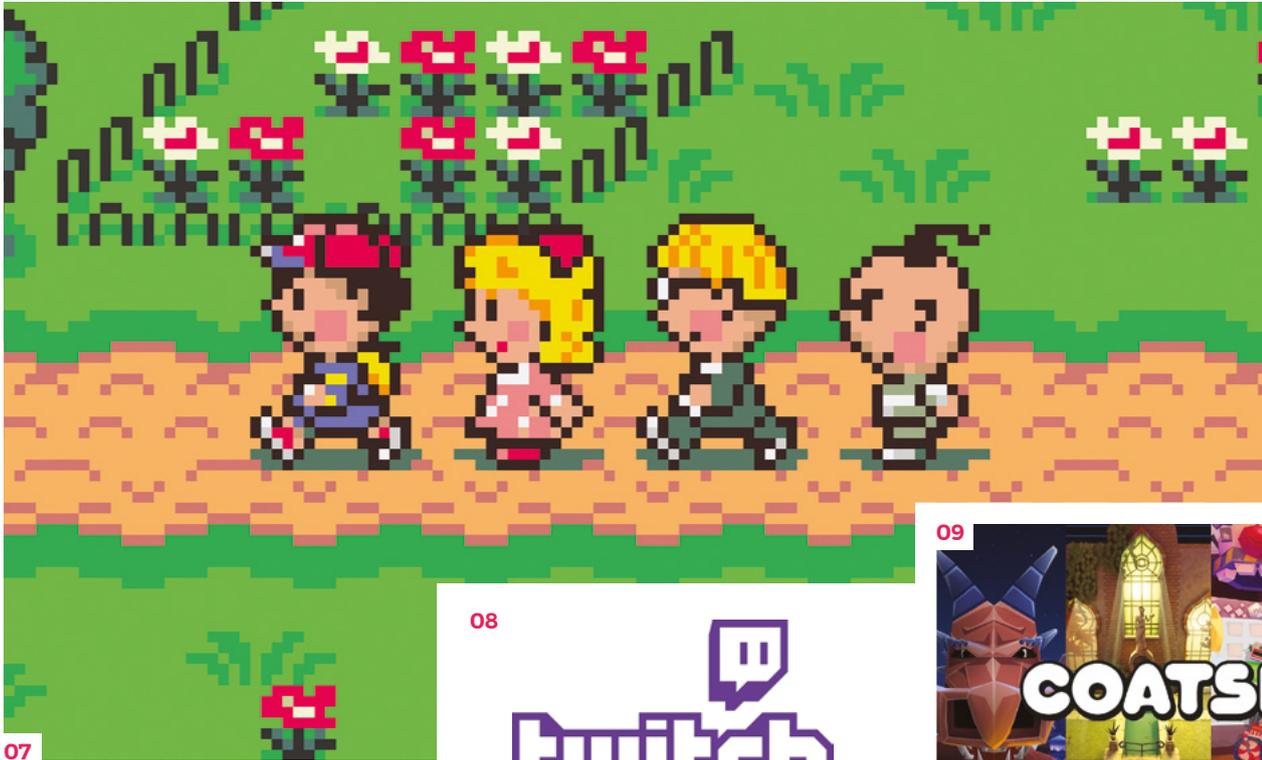
07. Hacks for good

Hacking of old games is often done for good reasons, but it's not often it's done for lovely and wholesome reasons. All that changes today (and likely changed before, but this is the thing we're talking about for now) with a selection of hacks of NES and SNES ROMs that remove full-screen flashing imagery in order to help people with photosensitive epilepsy and related conditions play games without ill-effects. It's a limited selection at the time of writing – to be expected when it's an entirely community-led thing – but there are some classics like *EarthBound* and *Mega Man 2* edited for those with sensitivity to flashing images. Please do still be careful, as these aren't official-and-fully-tested projects. You can find a list of the hacks through here: **wfmag.cc/flashfriendly**.

08. Twitch allegations

While Twitch openly stood with those accusing streamers under its umbrella of abuse, those who worked inside the company have been telling a different story. Allegations surfaced early in October via GamesIndustry.biz that Twitch management routinely 'swept accounts of harassment and abuse under the rug', and that these incidents of harassment were 'overt and part of the job'. Twitch responded to the claims with a statement: "Many of these allegations are years old, and we've taken numerous steps to better protect and support our employees and community, and will continue to invest time and resources in this area."

09. PHOGedaboutit

Coatsink, publishers of Wireframe cover darling *PHOGS!*, has been acquired by Swedish company Thunderful Group for a tremendous £23 million – half cash, half in shares – with the potential for the figure to rise to £42.5 million, depending on Coatsink's performance in coming years. The UK company joins Image & Form, Zoink, and Rising Star Games under the Thunderful banner, though it will remain independent.

Along similar lines, Sumo Group announced an acquisition of its own, picking up Oregon, USA-based Pipeworks Inc. The move was made to improve Sumo's presence in the US, and sees the company's headcount rise to just shy of a thousand. Not bad at all.

Overcooked! All You Can Eat coming on PS5 and new Xbox, includes *everything*

Amazon Game Studios' *Crucible* falters no more: it's been cancelled
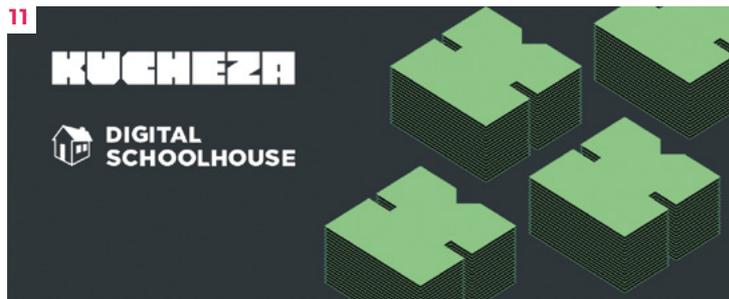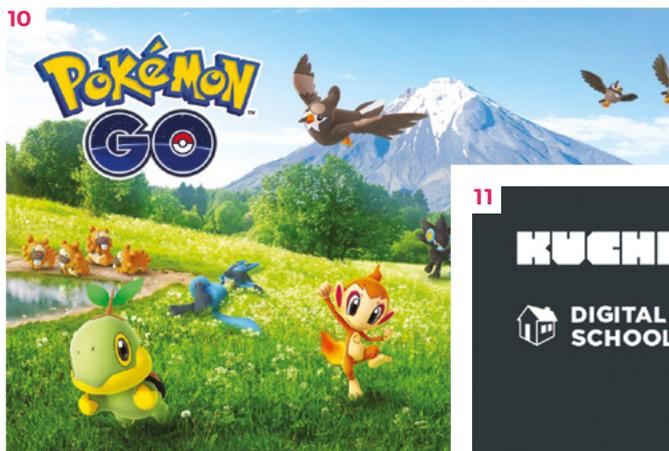
10. Pokémon GO-local

Niantic, developer of *Pokémon GO*, began its local business recovery initiative in early October, which will see small businesses from the UK, US, Mexico, Canada, and Japan featured in the mobile game's map in order to help 'drive awareness and commerce'. Free advertising on a big platform, basically. The initiative saw the public voting on which businesses should feature, with the likes of Blitzkrieg Chop, an inclusive hairdresser in Worthing, being among the first UK-based companies to get a shout-out. It's a fine idea on Niantic's part: here's hoping it helps struggling businesses out in these trying times.

11. digischool

UKIE's in-house computing programme, Digital Schoolhouse, has taken its lessons international for the first time, partnering with Nigerian esports and gaming company Kucheza Gaming in order to bring computer science lessons to young people in the country. The project began in September and will see students getting access to opportunities to improve their digital skillset, as well as planned game jams bringing together students from both Nigeria and the UK to take part. Bukola Akingbade, founder and CEO of Kucheza Gaming, said: "Creative industries have a pivotal role to play in building future digital skills in a continent like Africa."

12. Ms Bethesda

The surprise deal to acquire Bethesda might have cost a pretty penny – $7.5 billion, actually – but Xbox chief Phil Spencer is confident that investment can be recouped. Oh, and that it won't rely on Bethesda games being available on all formats. Speaking to Kotaku, Spencer said the deal was not done to "take games away" from anyone, but that: "We have xCloud and PC and Game Pass and our console base, I don't have to go ship [Bethesda] games on any other platform other than the platforms that we support in order to kind of make the deal work for us." Can't fault the confidence there, Big Philly.

PlayStation web store drops old formats; the past is a foreign country

Stardew Valley 1.5 to add split-screen co-op; no reason to ever stop playing

Post Apocalypse

Book adaptations, HD remakes, Dreamcast Mini games...
Here's what you've been saying this month

Wireframe
LIFTING THE LID ON VIDEO GAMES

ANIMAL FARM
The inside story of a fascinating literary adaptation

TAKING SIDES
How to design better warring game factions

MONKEY ISLAND
Behind the scenes of a classic series

SEA OF STARS
THE MAKERS OF THE MESSENGER RETURN WITH AN ACTION RPG EPIC

THE LIGHT FANTASTIC

Issue #43

Triple, eh?

Congratulations on another terrific issue. I knew I was going to like it following Ryan Lambie's editorial, which asked where triple-A games can go from here. Sadly, I feel like I have an answer for him: that increasingly, we're going to see an accelerated shift towards games that we watch rather than play.

This isn't a new phenomenon of course, but I'm taken by how many of the big titles are reluctant to let you have an extended period of, say, half an hour where you're simply allowed to sit and play without a cutscene kicking in. Even something as brilliant as *The Last of Us Part II* only let me play along half the time, and the truth for me is that sometimes I'm not really in a mood to watch a film, no matter how keen game developers are to make one.

I fear that as consoles become about what looks good on a YouTube clip, a stream, or a brief television advert even more, then the need to make games that look stunning and that continue to push what's possible from a visual standpoint will dampen the desire to let us actually play them.

Hope I'm wrong.
E Franklin

Ryan writes:
In terms of the industry's most successful games, I think there's an increasing split between the kinds of community-centric titles that live or die on the engagement of their millions of players – *Fortnite, Roblox, PUBG* and the like – and those that pursue scale and 'cinematic' storytelling (the astonishing landscapes of *Red Dead Redemption 2*; the bleakly beautiful *The Last of Us Part II*). Attempting to blend the two strands is perhaps the riskiest path of all: just look at the calamitous launch of last year's *Anthem*.

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

Remasters

It was with some interest that I awaited news of EA's latest remaster, *Need For Speed: Hot Pursuit*. I love this game, and when rumours of it first started appearing earlier this year – via the time-honoured method of a swiftly deleted Amazon listing – I was keen to find out more.

Not that I could. The current way that PR campaigns for games are managed to within an nth of their existence meant that a final confirmation of the game's (re)release didn't actually arrive until last month. Sadly, for EA at least, by that stage I'd cut my losses, dug the Xbox 360 out of the loft, and have been playing my old version perfectly happily ever since. I'll spend that £35 I've saved on some cake instead.
T Stone

Ryan writes:
I often have mixed feelings about these HD remasters

in general: they offer more of the same, but a bit sharper and shinier. Then again, they also let us revisit games we used to enjoy but no longer have access to (because the disc drive on your Xbox 360's broken, say), and occasionally, they really hit the mark. Grezzo's 3DS remake of *Ocarina of Time*, for example, was an absolute joy.

Play the book

While I was intrigued by your feature in the last Wireframe on the upcoming computer game adaptation of *Animal Farm*, it did make me wonder if developers might be missing a trick by not turning further works of literature into games.

Just imagine the engagement of young students, for instance, if they could battle their way through Shakespeare's *Henry V* on an Xbox. Or what about an interactive journey through the less fruity parts of Chaucer's *The Canterbury Tales*?

Older readers shouldn't be left out, either. A PlayStation VR adaptation of *Fifty Shades of Grey* could provide an excuse to dust down those headsets – or

how about a take on George Orwell's *1984* that controls every camera in your house and turns them towards you? It'd be an ideal game to debut via that Amazon Alexa thingy. I really think gaming is onto something here, and I look forward to hearing what other readers suggest. I charge 10%.
J Harris

Ryan writes:
I can see this idea really livening up GCSE English lessons: *Frankenstein* as an action puzzler; *Great Expectations* as a point-and-click adventure; *Romeo and Juliet* as a dating sim. Someone call EA.

Shortcuts

Over on Twitter, we asked: with Sega teasing the Dreamcast Mini, would you buy one, and what games would you like to see on it?

All of the Dreamcast games will be in my version. I desire the Dreamcast ProMax+. It's like the Dreamcast but the size of a living room. I will live within it, protecting all of the Dreamcast games. Seaman will live there with me, and we shall discuss the day's big topics. **@chrisslight**

Yes I would. *Virtua Tennis, Crazy Taxi, Jet Set Radio, Power Stone 2, Daytona,* another game of *Power Stone 2, Samba De Amigo, Power Stone 2,* and a dab of *ChuChu Rocket!.* #PowerStone2. **@simonbrew**

One? I want two please. **@gnomeslair**

YES! *Jet Set Radio. Power Stone 2. Bomberman Online. Cannon Spike. Twinkle Star Sprites. Giga Wing. Gunbird 2. MSR. Tokyo Highway Challenge. Mr Driller. Alien Front Online. Sega Bass Fishing. Shenmue II. Zombie Revenge.* I could go on... Best console for a classic arcade experience. **@hentaistash**

Can't think of a better candidate for a Mini-style revival. We *know* the NES, SNES, etc, are great, but a Mini Dreamcast with a well-curated selection of games both slept-on and due-for-reappraisal would be ace. (*Power Stone 1 + 2* with online play please.) **@MichaelJLeader**

The burning question

With Rambo set to appear in *Mortal Kombat 11*, we wondered: what other retro action characters should appear in the brawler next? In a shock victory, Conan beat Grant Mitchell with 41 percent of the Twitter vote versus Grant's 39.7. Here's a compromise, though: stick a wig on Grant's head and have him play Conan. Everybody wins!
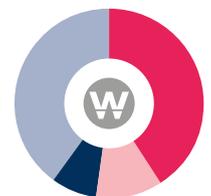
🟥 **Conan The Barbarian** - 41%
🟦 **Max 'Timecop' Walker** - 7.7%
🟦 **Grant Mitchell** - 39.7%
🟪 **Hudson Hawk** - 11.5%

Incoming

GigaBash

September's Tokyo Game Show saw a wealth of titles unveiled, ranging from revivals of ancient relics, to high-profile sequels, to completely new properties. In the latter category we have *GigaBash*, an arena brawler that sees giant monsters duke it out among a thicket of crumbling skyscrapers. We've seen riffs on the idea since *Rampage* and *King of the Monsters* in the early nineties, but the online competitive play and playful sense of anarchy could make for a fun kaiju experience.

NieR Replicant ver.1.22474487139...

The sheer brilliance of PlatinumGames' *NieR:Automata* brought the action RPG property to a wider audience, so Square Enix is capitalising on all that with a forthcoming remake of the 2010 Japanese exclusive, *NieR Replicant* (yes, that really is the game's full title printed above – and no, we won't be typing it again). As you'd expect from a remake, it'll bring the earlier game's bleak future world up to date for the PS4 and Xbox One. There's no word as to whether the remaster will also be appearing on PS5 and Xbox Series X, or whether it will feature at least a token appearance from the older Nier character that featured in the original western release all those years ago. This one's due out in April 2021.

Witchery Academy

Take a dash of the Japanese anime *Little Witch Academia*, add it to a *Story of Seasons*-like life sim, and you'll have a fair idea of what to expect from indie developer Cubenary's upcoming title. You'll find lots of gardening, exploration, and potion-making, but there'll also be plenty of time to relax with your feline spirit companion. Sounds good to us.
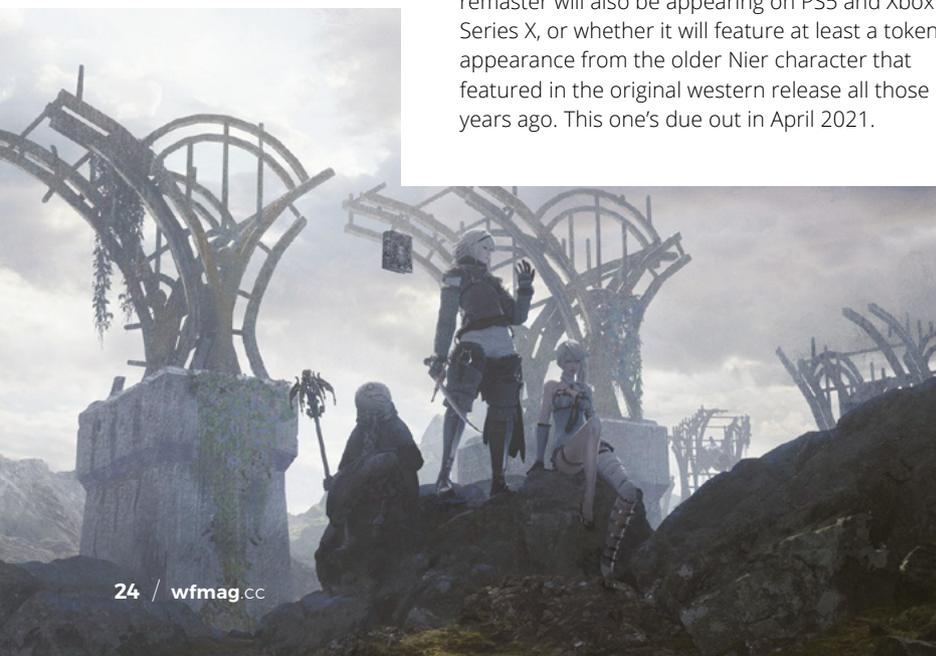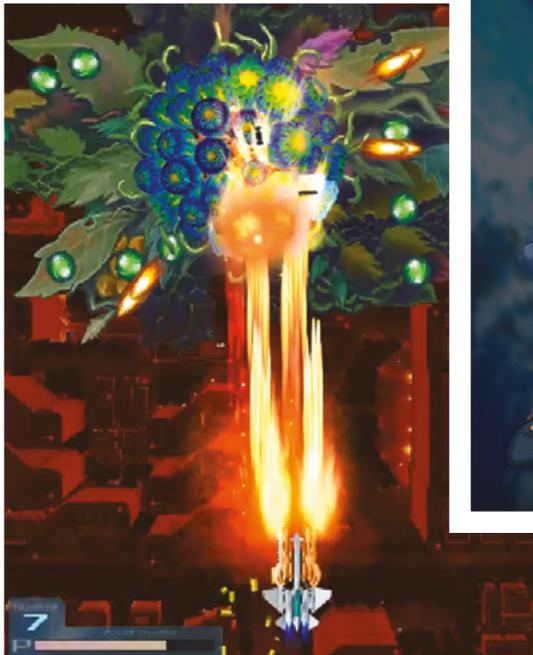

Dynasty Warriors 9: Empires

No, *Dynasty Warriors 9* didn't exactly set the world ablaze when it came out in 2018, but KOEI TECMO is hoping to breathe a bit of life into its open-world hack-and-slash with this upcoming spin-off which, following series tradition, will add a strategy layer to the sword-play. Whether it'll make players warm to what was generally described as a disappointing sequel remains to be seen. It's due out for next- and current-gen consoles in early 2021.

Aleste Collection ⬆

This PS4 and Nintendo Switch collection gathers together four of Compile's cult shooters from the Sega Master System and Game Gear era – that's *Power Strike* (known as *Aleste* in Japan), *Power Strike II*, *GG Aleste*, and *GG Aleste II* (confusingly, also known as *Power Strike II* in the west). The *Aleste Collection* will also include *GG Aleste 3* – a sequel that could, in theory, run on the Game Gear's old hardware; it will even be playable on a version of the Game Gear Micro device bundled with the Japan-exclusive *Limited Edition* collection. Keen to know more, we got in touch with M2, who kindly gave us some more details on this likeably niche set. First, they will fix the slowdown and sprite flicker that reared its head in the original titles; "Options to fix the technical issues of the originals are among our priorities," says M2. *Power Strike II*, once a European exclusive, will also run at the same speed as the 50Hz original – so players in 60Hz TV regions who've only played the game at an insanely rapid tempo will also get to experience it as Compile originally intended. M2's remaining tight-lipped about *GG Aleste 3*, but the glimpse of the game we've seen so far hints at a chunky, fast-paced blaster that pushes the Game Gear to its limits.
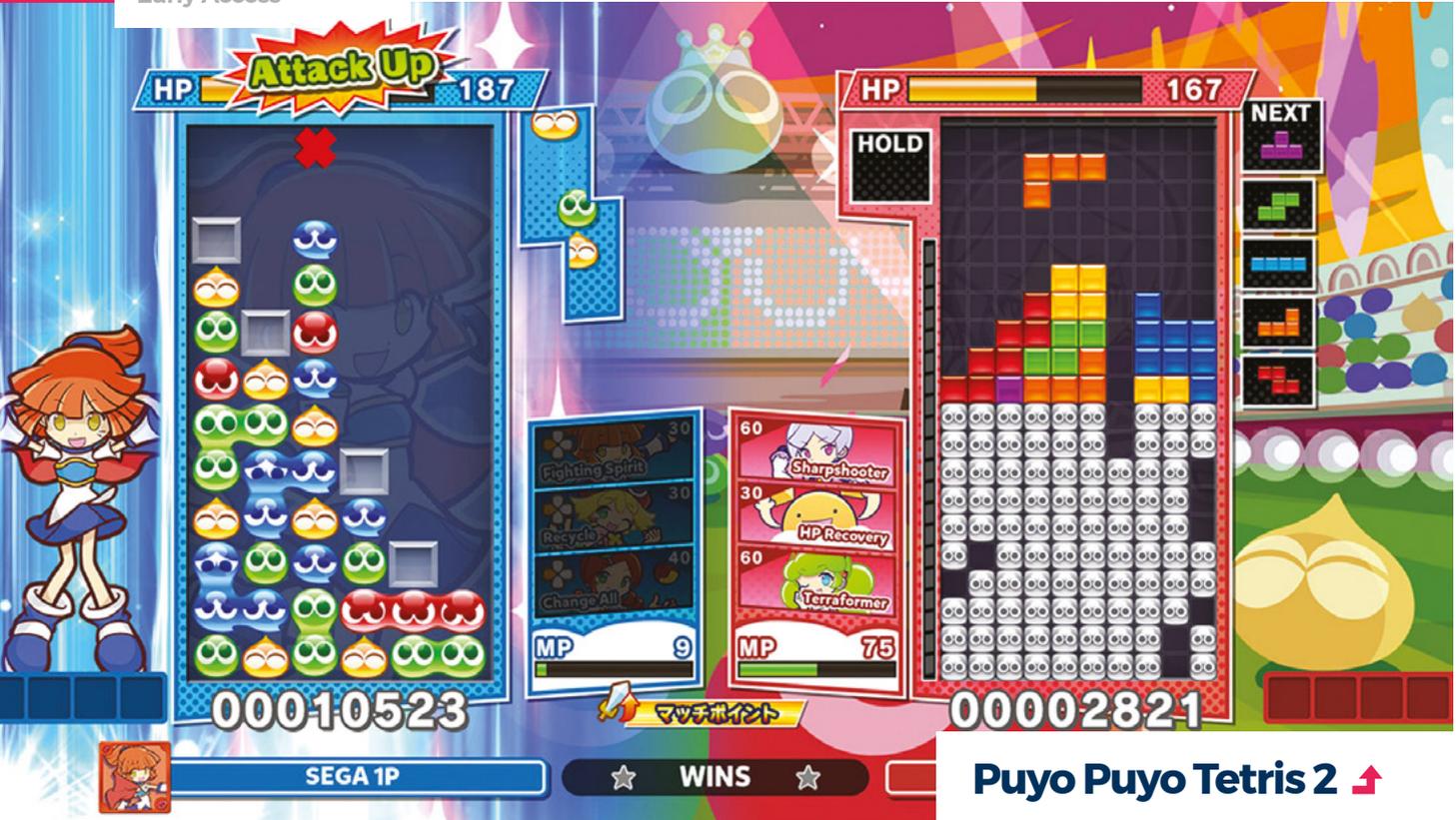
Aleste Branch ⬆

We've covered M2's big upcoming project – a major new entry in the *Aleste* series – before in these pages, but here's an update: it was originally planned for release this autumn, but M2 has now announced that it's pushing the launch back to allow more time for refinement. Studio boss Naoki Horii has stated that the game will only come out "when the staff is confident about its quality." In a recent live stream, he also recalls that no less an authority than Hiroshi Iushi – creator of *Radiant Silvergun* and *Ikaruga* – playtested a build of *Aleste Branch* and "gave a lengthy lecture on what qualifies as an *Aleste* game for, like, 256 hours." Sounds like M2's *Aleste* revival needs just a little more time in the oven.

Pocky & Rocky 2021 ➡

Super Nintendo owners may remember *Pocky & Rocky*, a top-down shooter called *KiKi KaiKai: Nazo no Kuro Mantle* in Japan. Based heavily on eastern folklore, it was a delightful – if tough – blaster that really came to life when played with a friend. Thanks to developer Tengo Project, we're getting a new game in the series that will serve as both a sequel and a remake of the 16-bit title, complete with colourful sprites and chirpy chiptune music. The studio previously made the superb *Wild Guns Reloaded* and *The Ninja Saviors: Return of the Warriors* remakes, and also worked on the original *Pocky & Rocky*, so we're expecting big things from this one.

Cotton Reboot! ⌄

Yes, it's another shooting game revival – this time of developer Success' whimsical side-scroller, *Cotton: Fantastic Night Dreams*. This will be a refined version of the version that first appeared on the Sharp X68000 computer back in 1991, and will feature additional Arrange and online Score Attack modes, plus a new 16:9 aspect ratio. Expect this one to emerge for the PS4 and Switch in February 2021.

Puyo Puyo Tetris 2 ⤊

Sega's 2014 release mashed up two seminal puzzlers to enjoyable effect; we were sort of hoping that a sequel might throw in a third one into the mix – *Puyo Puyo Tetris Pipe Mania*, anyone? – but maybe that would be pushing things a bit too far. Still, Sega's crossover sequel will offer a few new bits and pieces to keep us interested, including new battle modes and an RPG-like campaign. It's coming to almost every major system you can think of this December.

Disgaea 6:
Defiance of Destiny ⌄

The tactical RPG famous for its sharp anime art style and outlandishly high stats is back for the first time in six years – and *Defiance of Destiny* looks like a sequel well worth looking forward to. With a new protagonist – the feisty zombie, Zed – and a leap to full-3D character models, *Disgaea 6* looks like a logical progression of developer Nippon Ichi Software's series, but one that also retains the same mix of absorbing strategy and zany humour.

Scavengers

Winter's approaching (or it is if you're reading these pages in the northern hemisphere), so it's a logical time to start looking ahead to *Scavengers* – Midwinter Entertainment's upcoming, free-to-play survival shooter. Squads of up to three players don hats and gloves and fight to the death in a series of chilly wastelands, and try not to get frostbite in the process. Fortunately, there are lots of exploding barrels dotted around to keep them all warm.
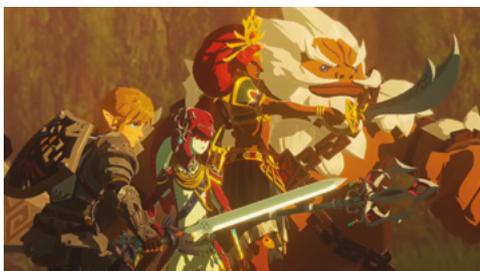
Hyrule Warriors:
Age of Calamity

We'll likely be waiting a while before we get that proper *Breath of the Wild* sequel, given how quiet Nintendo is about it, but here's a solid stop-gap. It's both another new entry in the hack-and-slash series, and also a prequel to *Breath of the Wild*, with a plot that takes place a full century before that game's events. Just how did Hyrule get so horribly messed up? We'll find out when *Age of Calamity* launches on 20 November.

Ni no Kuni – Cross Worlds

We'd very much like a third proper *Ni no Kuni* sequel please, LEVEL-5, preferably with the first game's lovable sidekick Drippy restored to his rightful place (seriously, why he didn't feature in the second game remains a mystery to us). Until then, there's *Cross Worlds*, an upcoming Android and iOS title in development at Netmarble. This spin-off looks exceptionally good for a mobile game; some gameplay footage was shown off at TGS 2020 (**wfmag.cc/crossworlds**), and the lush, soft-focus anime look is still present and correct from the earlier console releases. Eminent composer Joe Hisaishi is providing the soundtrack, too, so this looks as though it'll be every bit the exquisitely crafted, full-featured JRPG that the others were. Still no sign of Drippy, though. Bah.

Final Fantasy XVI

If it feels like you've been waiting an eternity for the next true *Final Fantasy* sequel, then don't worry: producer Naoki Yoshida hears you. In an attempt to head off jokes that *Final Fantasy XVI* won't be finished for another decade or so, Yoshida and his team put together a trailer largely made up from in-game footage – the idea being to reassure us all that the project is at least somewhat near completion. "If we were to just release a pre-rendered trailer, then people will say something like, 'Well, guess I'll see in 2035!'" Yoshida said during a live stream. He didn't establish exactly when the sequel will be released, though, so we guess we'll see it emerge around the year 2029.

TRILOBYTE GAMES

THE TRIALS OF TRILOBYTE

Trilobyte helped kick-start an era of full-motion video on CD-ROM. So why did the studio behind The 7th Guest end up cancelling more projects than it released?

WRITTEN BY **DAVID CROOKES**

"**M**y gravestone will say, 'he made a pretty good Solitaire game'," says Graeme Devine, pondering his games industry legacy with a chuckle. He's referring to his most recent effort, *Full Deck Solitaire*, which was certainly a success – "It's my primary source of income," he points out – but it's hardly the title most gamers will associate with his name. As the designer on *Quake III Arena* and *Halo Wars*, Devine's worked on some big-name franchises, and also developed a ground-breaking horror adventure: *The 7th Guest*.

Featuring real-life actors and full-motion video, *The 7th Guest* was dubbed by Microsoft supremo Bill Gates as "the new standard in interactive entertainment". It sold a couple of million copies, yet its success was far from preordained – before its release in 1993, many felt it was a gamble that wouldn't resonate with audiences. Devine simply worked on a hunch – and besides, he'd long proven himself to be an ambitious, resilient developer: one who'd been dealt hands both good and bad from the moment he began making games.

Aged just 16, Devine ported *Pole Position* to home computers for Atari, only to be expelled from school for taking time off to make it. Then he got a job at Atari, only to be laid off with the vast majority of other staff when Commodore founder Jack Tramiel took over. After setting up the development company Program Techniques with a friend, he received a royalty cheque for £28,000 for his work on Xcel – and later discovered his friend's cousin walked away with £25,000 of it. But better times ➡

> *The 7th Guest's* Graeme Devine, relaxing in a suitably horrific locale.

came with his next studio, Industrial Concepts & Design. It made a number of games for Mastertronic, including *Metropolis* and *Turbo Champions*, which subsequently led to a golden opportunity. In 1988, Martin Alper, co-founder of Mastertronic (later Virgin Mastertronic), called. "He was opening a new office in the United States and said no one there knew how to turn on a computer," Devine recalls. "He asked me to fly over for six months and help get it up and running."

The young coder jetted to the US and never came back.

CD OR NOT CD?

In the late eighties, the industry was still largely concerned with selling games on cassettes, floppy disks, and cartridges – the idea of putting games on compact discs still hadn't occurred to most firms in the west.

Then Devine became acquainted with Rob Landeros, a former Cinemaware art director who'd been at Virgin Mastertronic since September 1989. Devine and Landeros hit off almost immediately. "Graeme was a whiz-kid, a young dude, and we got along," Landeros says. "We formed our own little division within the company and even had business cards printed that said something like 'vice president of new technologies.'"

The following year, they began attending conferences where the emerging medium of CD-ROM was on the agenda. "Rob liked the idea

The Guest's Legacy
Graeme Devine says *The 7th Guest* has been hugely influential. "If you look at *The Room* [Fireproof Games' 2012 puzzler], you can see the origins in our game, and it's like, yeah, we did OK," he says. "For me, the joy has always been in having people play your game or reading about someone playing your game and seeing they've enjoyed it or have questions about it. Whether it's a good review or a bad one, the fact is someone has cared enough to write it."

▲ *Tender Loving Care* was finally released by Aftermath Media after Rob Landeros was asked to leave Trilobyte. Credit: Aftermath Media.

of graphically expressive games, and so we attended this talk by Philips about the CD-i and another by Microsoft about the upcoming version of Windows 3.0 with multimedia extensions," says Devine. "But every demo they showed us was text-based. It was all about encyclopedias."

Neither developer was enthused. "They were talking about how fast text search was, and all Rob and I could see was the potential to use megabytes of space," Devine continues. Indeed, as Landeros adds: "Developers were always scrounging for space and we were thinking about how we could fill 650 megabytes – video and graphics felt a perfect use."

The pair jotted some ideas on a napkin. "Yes, we really had a napkin moment," Devine laughs. What began as a digital version of the board game Clue, but based on the TV series *Twin Peaks*, soon evolved into a game set in a haunted house where players solved puzzles. The game would make cinematic use of digital compression and full-motion video. "Martin [Alper] looked at the plan for our game on CD-ROM and said, 'I'm going to have to fire you,'" Devine recalls.

GROOVIE KIND OF LOVE

Martin Alper wasn't being short-sighted. He wanted the game to be made, but feared Virgin's other developers would become demoralised. "Virgin would have had to form a new division, and office politics could have led to cliques saying we were separate and doing our own special thing," explains Landeros. The solution was for the pair to set up their own studio – and so Trilobyte was born. "Martin loved the idea," says Devine of the company's first project. "He told us it was going to be the future of gaming and, as long as there was a version on floppy disk, allowing the money spent on development to be recovered, he was happy."

As far as the three men were concerned, this was ground-breaking stuff. "We didn't know about anyone else doing this kind of thing. We certainly weren't aware of *Myst*," Devine says. "But there was a pushback – story puzzle games weren't seen as true games, and the design wasn't perceived as a true game design."

American horror writer Matthew J. Costello was asked to write the script; Devine was lead programmer, and Landeros worked on the puzzles and art direction. "Our first thought

was to find a large mansion and take a 360-pan video of the interior, but we'd need a really large building otherwise the rooms would look too claustrophobic," says Landeros. "Fortunately, one of our artists, Robert Stein III, had gotten a copy of 3D Studio and he went home one night and came back with a rendered room that had a flickering fireplace, a table and chairs that would rise up and spin around. We were blown away."

Even so, detractors pointed out the difficulties of gaining quality animation from a medium that streamed at 150kB per second. Devine worked on a game engine called GROOVIE capable of playing compressed video at double the normal resolution, while the live-action footage was captured in a two-day shoot at a cost of $24,000. "We shot it on Super VHS without even thinking about digitising it, and with barely a thought about the blue screen," Devine explains. "We just got a blue screen from a party store and didn't consider what chromakey it had to be in." Made of paper, the blue screen caused a blurred line to appear around the ghosts. "We had to learn how to capture the footage – I wrote a serial port control code to capture frame-by-frame," Devine says.

BEGINNING OF THE END
The team's progress was such that, when Martin Alpert caught sight of an early demo at CES in 1992, he was immediately impressed. "When we got to the Virgin booth, we showed the demo and Martin was taken aback," Devine says. "He wanted to get it straight on the show floor even though we believed it wasn't yet worthy. These were demo graphics – pre-renders – but Martin took another game off and put *The 7th Guest* in its place, and soon the booth was packed. Roberta Williams [co-founder of Sierra On-Line] brought over a team and said it was incredible. That's when we realised we had something."

From that point, the game was only going to be shipped on CD-ROM. Musician George Alistair Sanger – known as The Fat Man – was brought on board to help produce a 30-minute long audio track, and a more robust demo showing graphics mixed with video playing at 15 frames per second was created in time for the following year's CES.

Money was getting ever tight, however. About $500,000 had been spent on the graphics alone, and the cash flow began to dry up. But when the game finally saw the light of day in

⌃ This puzzle in *The 7th Guest* required six guests to receive an equal share of cake, making good use of the player's logical abilities.

"WE DIDN'T KNOW ABOUT ANYONE ELSE DOING THIS KIND OF THING"

1993, it flew off the shelves. People bought CD-ROM drives just to play the game.

"The gold rush came after we launched," Devine says, recalling that 60,000 copies were sold on the first day. "Virgin was making a lot of money, and other publishers were taking notes." Nintendo licensed *The 7th Guest* to prevent the game from being released on the Sega CD. An unreleased version was made for the 3DO, but the game did make it over to the Philips CD-i.

"I recently watched a documentary about *Myst*, and the developers were told that they had to be like *The 7th Guest*, which was interesting," says Devine. But there was also a scramble to get another game out of the door, and so Landeros began making a sequel called *The 11th Hour* while Devine was finishing off *The 7th Guest*. Cracks soon appeared.

"It was the beginning of the end for Trilobyte," Devine laments.

THE NEXT TIME
The 11th Hour began life around October 1992, and Costello was again asked to write the script. A new director, David Wheeler, had been brought on board. "We wanted to upgrade the video aspect of the game, and David was an experienced filmmaker who had worked in TV," Landeros says. Wheeler revised Costello's script and introduced over-the-shoulder shots, close-ups, and other movie-type techniques. It proved to be a problem. "Full-motion video in real life, on location, made compression harder," Landeros says.

Devine looked at the 64-minutes worth of footage with dismay. "I'd spoken to the director and asked that the camera be kept still while ➔

△ Devine's partner in game dev, Rob Landeros.

shooting, but I was looking at this video footage and the camera was moving. It was impossible to compress."

Landeros doesn't recall Devine raising the issue prior to the shoot, but does remember that communication was becoming fraught. The sequel was much larger – production had grown from the five or so core members of *The 7th Guest* to more than 60 people – and Virgin wanted a hit on the scale of Trilobyte's debut.

Cyan's *Myst* was now out and selling in droves. Sega, Philips, Commodore, and The 3DO Company were ploughing huge sums into CD-ROM, and developers were stuffing discs with cutscenes, FMV, and soundtracks. There was a strong desire to make the format a success, since it was so much cheaper than the pricey cartridges favoured by Nintendo.

Virgin wanted *The 11th Hour* to hit the shops in spring 1994, but the footage caused headaches for Devine. The original technology wasn't up to the task of handling the footage. "We had to redo what we had," Devine says – and that meant rewriting the engine. Writing in Wired magazine at the time, Devine observed: "Sometimes it doesn't pay to get out of bed."
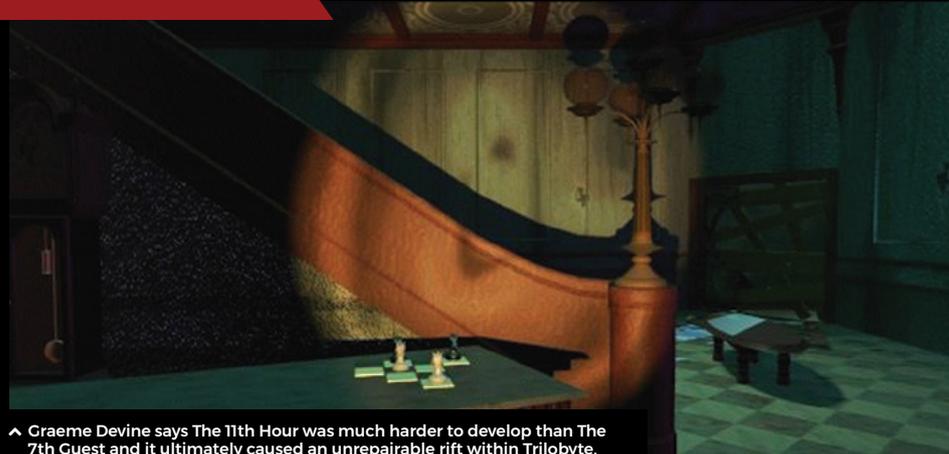
Getting board

In recent years, Matthew Costello messaged Rob Landeros to discuss the popularity of board games. "He said I should maybe do something and I thought about it for about 15 minutes and understood how *The 7th Guest* would work well," Landeros says. "I envisaged the board game would be a Clue-like board with a map of the house and puzzles in the form of cards and we took it to Kickstarter." The board game raised $61,933 from 713 backers, taking it above its goal of $57,611. An expansion pack called *The Stauf Tales* has since been released.

△ Trilobyte's third game, *Clandestiny*, was published in 1996. Rather than continue with FMV, the game was styled like a cartoon.

△ *Clandestiny* was re-released on the Mac App Store in 2011. "It's probably my favourite Trilobyte game," says Graeme Devine.

TLC REQUIRED

Despite the problems with *The 11th Hour*, Trilobyte decided to take on even more work. "We bought a game that was in production called *Dog Eat Dog* and spent $400,000 on video shoots for it while never getting to the point of integrating their technology with ours," Devine says. The game was never released.

Financially, at least, things were looking good for Trilobyte in the mid-nineties. There was a $1 million investment from a venture capital fund, interest from entertainment giants including Fox and Disney, and a $5 million cash injection from Microsoft co-founder Paul Allen. But still, *The 11th Hour* sailed past its intended 1994 release date with little to show. Devine was suffering from migraines, and yet Landeros began work on yet another game: a psychological thriller called *Tender Loving Care*. "We should have done things much differently," Devine says. "I really wish we had."

By now, CD-ROM was standard, but DOS was on its way out. "Windows 95 meant a huge change," Devine explains. Eventually, in December 1995, *The 11th Hour* was released. It sold close to 300,000 copies within the first six months, although there were reports that Windows 95 users were struggling to install it.

In the midst of these troubles, Devine started on another game, *Clandestiny* – a cartoon puzzler aimed at children that eventually sold just 5500 copies. "I loved *Clandestiny*, but it didn't really get a fair shake; we tried to publish

▲ Graeme Devine says The 11th Hour was much harder to develop than The 7th Guest and it ultimately caused an unrepairable rift within Trilobyte.

▲ The graphics were enhanced for The 11th Hour, but the filmed footage caused the release date to slip.

it ourselves and do our own marketing at a point when the company was beginning to go under," says Devine.

Tiredness was setting in. Landeros began work on *The 7th Guest 3*, but it was canned. Wheeler joined Trilobyte's management, and Devine moved to another building to work. Cash flow was poor, and Devine and Landeros weren't talking. *Tender Loving Care* hit the buffers when the company's board asked Landeros to leave, but he was allowed to form a new company, Aftermath Media, to finish the game. Meanwhile, Trilobyte sought a fresh direction. FMV was out, and Devine headed development on a 3D top-down tank game which became *Extreme Warfare*, and a driving game called *Baja Racing*. Both were cancelled.

There was a final stab at creating *The 7th Guest 3*, but it was too late. "It came right at the end when Trilobyte was going under," Devine says. "We were making a new version of the classic game with *The 11th Hour* technology, rendered in 16-bits and with better sound and better music. It got as far as early renders but we never really got further than that." Finally, the company was put to sleep.

"You could throw a hundred rocks at what caused Trilobyte to implode," Devine says. "Technology changed, and Rob and I weren't


▲ *The 7th Guest* was ported to the Philips CD-i player in 1993, but compatibility issues meant a new version of the game had to be released.

⌄ *The 7th Guest* could have been released for the Sega CD, but Nintendo paid $1 million for the rights to stop it appearing on its rival system.

getting along. There was pressure from the board, the venture capital, not being good managers and not appointing a CEO. It was chewed up from the inside."

KICKING ON

Yet Trilobyte lives on. Landeros currently runs the company, which bounced back in 2010 with *The 7th Guest* for iPhone and iPad, followed by *The 7th Guest: Infection*, which homed in on a rebuilt version of the Microscope Puzzle which wasn't included in the earlier release. "I could see every old TV show or game was being revised, so I thought *The 7th Guest* could come back," Landeros says. "Graeme sold me the company for a dollar, and it wasn't that difficult to port the game to iOS. Although we never managed to do the same for *The 11th Hour* – the technology was impossible to crack."

In 2013, a Kickstarter campaign began, aiming to create *The 7th Guest 3: The Collector*, but fell far short of its $435,000 target. But love for the franchise remains, and a remastered 25th-anniversary edition was released last year. As for Devine and Landeros, an old friendship has since been rekindled. "Earlier this year, I was approached by GDC to talk about the making of the game, and I wrote to Rob asking if he wanted to do it with me," Devine says. Regrettably, another bad hand – coronavirus – ended up putting this on hold. "But we spoke on Skype for hours – for the first time for 15 years," Devine says. Could the partnership be brought back from the dead? It appears not. But Trilobyte has been an important part of both their careers. "I made great friends, and we made great products," Devine adds. Certainly, with *The 7th Guest*, they've shown that some creative gambles really can pay off. Ⓦ

Tend and pretend:
the secret life of gendered games
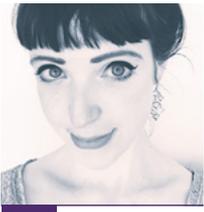
LOTTIE BEVAN

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.

"One glance at *Ooblets* tells you it's the yin to *Dark Souls'* yang"

Simon Baron-Cohen is a leading clinical psychologist who developed something called the 'empathising-systemising theory'. Essentially, it suggests that the brains of those born male tend to be systemising (having an interest in and talent for understanding how things work) and the brains of those born female tend to be good at empathising (having an interest in and talent for understanding how people feel). To be clear, this doesn't mean men can't be deeply empathetic or that women can't be brilliant engineers. It's just a way of explaining broad neurological patterns observed in humans and what they might mean.

This theory came up recently because I've been playing *Ooblets*, the Early Access Epic Store cuteathon borne of *Pokémon* and *Stardew Valley*. "Manage your farm, grow and train your ooblets, explore strange lands, and have dance-offs!", its blurb blurbs. It mashes the best parts of several genres together – farming, pets, customisation, 'combat' – adds a few of its own excellent improvements, and packages them up in a surprisingly ironic kawaii pastel world. One glance at it tells you it's the yin to *Dark Souls'* yang: cute, easy, relaxing, and more traditionally female than most other PC games.

My fiancé, meanwhile, is playing *Conan Exiles*. Its graphics are realistic, its combat frequent and violent, and the average breast size of female characters damns all to chronic back pain. "Survive in a vast open-world sandbox, build a home and kingdom, dominate your enemies," blurbs the blurb. Tonally, Conan's a world away from ooblets and dance-offs, and demonstrably geared towards traditional male preference. But thematically and mechanically, they're a lot more similar than it appears. I don't have to break my ooblets on a Wheel of Pain to make them dance on my team, but I do have to plant and water them on my farm until they hatch – a classic 'tend and befriend' mechanic.

▲ **What is best in life? To dance in front of your enemies, grow sweetibeeties, and hear the squeaks of your ooblets.**

My fiancé doesn't have to grow sweetiebeeties to grind into Froobtose to make cakes to give to people so they'll be his friend, but he does have to feed his captive wild panther certain types of raw meat to make it do what he wants – a classic simulation mechanic. We're both farming, building, capturing, exploring, and engaging in some sort of combat. Our games just come with traditionally feminine or masculine veneers.

It's obviously not true that women only like easy and cute games or that men only like violence and breasts. But games data does support Baron-Cohen's conclusions: you'll find a lot of male players of *Football Manager* (a systems-driven PC game about men's football) and a lot of female players of *Pokémon GO* (a socially driven mobile game about cute animals). It's great that both types – and all the spectrum in between them – exist, catering for the full breadth of human interest. But the next time you pick up a game that strikes you as particularly feminine or masculine, pause to think about what you really do in it. Is it *Dark Souls* in a dress? That's more common than you'd think. Ⓦ

GAME
The Falconeer

ARTIST
Tomas Sala

RELEASE
10 November 2020

WEBSITE
wfmag.cc/falconeer

The Falconeer

"I'm not into making hyperreal 'next-gen graphics'," says Dutch game developer and artist, Tomas Sala. "I don't care about graphics; I care about originality, design, and the best possible presentation of my art. I like sharp edges, clean, simple shapes. I like doing more with less."

Sala's latest title, *The Falconeer*, is undoubtedly an example of doing more with less. An aerial combat game where you pilot a deadly bird of prey rather than, say, an expensive fighter plane, it takes place in an open world so vast that it's hard to believe it was crafted by Sala, working entirely by himself. But by going for an artfully limited aesthetic rather than absolute realism, Sala's managed to create a gorgeous-looking fantasy action game with the resources available to him. "I create landscapes with the simplest shapes, that don't shy away from showing the maker's hand – a triangle here, an edge there," Sala explains. "That's my hand that made those, that's my art. But I'll use every scrap of technology to imbue those landscapes with colour and emotional resonance.

"Today, someone like me can create for the best hardware around and create their mindscapes, no AI, procedural, or crunched artists needed. Just an artist, creating worlds you've never seen, never visited, as original and individual as one human speck. I call that Next-Gen!"

Launc

As a new generation arrives, we take a dewy-eyed look back at the launch line-ups offered by Sony and Microsoft in years gone by

WRITTEN BY
IAN DRANSFIELD

You can learn a lot about a console from what titles it hits the market with – it's a statement of intent for a new generation of gaming, after all. Equally, you can also forget a lot of the games that came out with a machine – and often with good reason. With the Xbox Series S/X and PlayStation 5 releasing while this very magazine is on sale, we thought it apt to look at a selection of those launch titles from generations past.

PlayStation

LAUNCH DATES
3 Dec 1994 (Japan) / 9 Sep 1995 (US) / 29 Sep 1995 (EU)

THE GOOD

THE… LESS GOOD

RIDGE RACER

Up there with the best launch titles of all time, *Ridge Racer* brought the arcade experience to the home in a way we'd just not seen before. Prior to the PlayStation's debut, 'arcade perfect' was a term used somewhat loosely. Post-*Ridge*, it took on a whole new meaning. It speaks volumes for Namco's drift-heavy racer that the series is still utterly synonymous with Sony's platform, even with it releasing on plenty of other formats since.

RAPID RELOAD

Rapid Reload only launched in Europe and Japan (as *Gunner's Heaven*). By no means a classic, it was still a fine riff on the *Gunstar Heroes* side-scrolling shooter model and offered a different upgrade path to the other, 3D-heavy PlayStation titles. Where the polygonal pursuits tempted you with the new flashy graphical style, *Rapid Reload* showed you the 2D style you were familiar with, and how it could be ramped up for this new generation.

WIPEOUT

Psygnosis' first attempt at futuristic hover-racing was by no means a classic, nor does it stand up in the face of its far superior sequels. But what *Wipeout* did do, was bring *the cool* to the PlayStation brand. A key aspect of Sony's marketing was the lifestyle side of things – bringing games consoles to the attention of young adults, rather than teens and kids, and all the money that would lead them to. In that respect, *Wipeout* was a resounding success.

STREET FIGHTER: THE MOVIE

Not only was *Street Fighter*'s Van Damme tie-in a hot mess in-game, but it also acted as an advert for the benefits of the *previous* generation – that being one with functional, fantastic versions of proper *Street Fighter*. Why bother playing the PlayStation version when you could stick with what you had, and enjoy some of the finest conversions of some of the finest fighting games ever made?

htime

PlayStation 2

LAUNCH DATES
4 March 2000 (Japan), 26 Oct 2000 (US), 24 Nov 2000 (EU)

THE GOOD

THE... LESS GOOD

FANTAVISION

You can see through to its very core that *Fantavision* was intended as a tech demo for the PlayStation 2, made to highlight the system's ability to produce some dazzling particle effects and other such lighting-related lovelies. The fact that it translated to a solid *Missile Command*-alike was just a happy accident, really. The PS2's launch line-up wasn't strong in general, but even so, *Fantavision* was a fine little curio in the mix.

TIMESPLITTERS

The spiritual successor to *GoldenEye* and *Perfect Dark* few knew they needed, Timesplitters was responsible for more PS2 multitaps sold at launch than any other game. While lacking as a single-player jaunt, the four-player split-screen made up for those shortcomings and provided owners of the new console with something to be genuinely proud of: a multiplayer classic, and a series people still clamour for a return to.
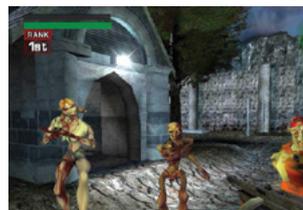
TEKKEN TAG TOURNAMENT

Where *Ridge Racer* on the original PlayStation was almost arcade-perfect, *Tekken Tag Tournament* actually went beyond. It all came down to the updated engine, which allowed for more detailed character models and stages, as well as updated music and the sort of tweaked fighting mechanics you'd expect from a do-over like this. It wasn't the best in the series, but it was a fine start for the PS2.

SURFING H3O

Launching with the PS2 in the US, Surfing H3O was a reworked version of the Japanese original that dropped an entire storyline about alien interlopers and huge waves caused by a chunk of the moon crashing into the Earth's ocean. If it had retained the wacky storyline, maybe it would have been a fun little distraction. Without it, it was just a terrible release – and published by Rockstar Games, of all companies. ➡

COST-TO-FUN RATIO

Because it's always fun to look at, here's the price of the consoles mentioned at launch, adjusted for inflation – and with their original launch prices in brackets, because we're kind like that.

Xbox Series S, 2020: **£250**

PS5 Digital, 2020: **£360**

PS4, 2013: **£404** (£350)

Xbox 360, 2005: **£421** (£280)

PS5, 2020: **£450**

Xbox Series X, 2020: **£450**

Xbox, 2002: **£492** (£300)

Xbox One, 2013: **£497** (£430)

PS2, 2000: **£508** (£300)

PS1, 1995: **£581** (£300)

PS3, 2007: **£594** (£425)

Xbox

LAUNCH DATES
15 Nov 2001 (US), 22 Feb 2002 (Japan), 14 March 2002 (EU)

THE GOOD

HALO:
### COMBAT EVOLVED

There's a *small* chance you know this one: *Halo* changed first-person shooters on console forever. Lots of features were already present in the genre – twin-stick controls implemented properly, for one – but Bungie's sci-fi masterpiece was the game that codified it so elegantly, so confidently, and with such readily apparent skill that it was impossible to do it any other way after the game launched with the Xbox.

DEAD OR ALIVE 3

Before the utter 'yeesh'-inducing energy of the series in recent years, *Dead or Alive 3* was actually a well-respected and technically impressive fighter. As well as being a solid game, *Dead or Alive 3* proved to be one of the technical showcases Microsoft could boast about – the Team Ninja game being an Xbox exclusive meant any praise of it was direct praise of the console powering it.
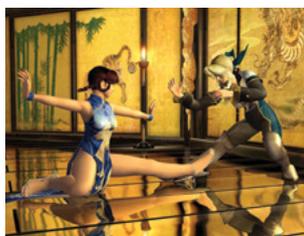
PROJECT
GOTHAM RACING

Rumour and speculation has it that the Xbox was actually the Dreamcast 2 in all but name (also sans Sega) – giving some credence to that was *Project Gotham Racing*; follow-up to the DC's fantastic *Metropolis Street Racer*. As well as a real looker, *PGR* also leveraged its ability to challenge players in ways other than just driving faster than opponents, mainly through its kudos system, and provided many a late night of competitive entertainment.

THE… LESS GOOD

SHREK

A mess of a game, very much from the period when licensed tie-ins were invariably garbage, *Shrek* is notable for two things: one, not featuring any of the stars from the film. And two, being made by DICE – *Battlefield*'s creator. Okay, it was the Canadian office, which focused on licensed tie-ins, but it's still funny to look back at such a bad game and see DICE's name associated with it.

Xbox 360

LAUNCH DATES
22 Nov 2005 (US), 2 Dec 2005 (EU), 10 Dec 2005 (Japan)

THE GOOD

PROJECT GOTHAM RACING 3

You want something fast and pretty to sell your new console: you look to racing games. *Project Gotham Racing 3* did for the Xbox 360 what its predecessor did for the original console – only this time around with far more polygons in its supercars. The core concept remained the same, but revolution was never the point here: it was a next-gen evolution, perfect to draw in players with the pretties.

CONDEMNED: CRIMINAL ORIGINS

It didn't need to be particularly big and flashy – in fact, that would be anti what *Condemned* was all about – but Monolith's first-person horror game managed to be one of the most 'next-gen' of the Xbox 360's launch titles. Its mix of gorgeous graphics, thick atmosphere, and creative touches made it stand out from the crowd and was sure to have drawn in many a player to the fledgling system.

CALL OF DUTY 2

This wasn't the *COD* we all know today, but it was the game that started the series' rise to gaming blockbuster. With a design focused more on intense action – dare we say, a console-like approach – and a robust multiplayer mode, *Call of Duty 2* breathed new life into the Second World War sub-genre of FPSs and introduced an entire generation to the concept of finishing a game on veteran difficulty *just to show that you could.*

THE… LESS GOOD

PERFECT DARK ZERO

This might seem harsh at first glance, but… that's because it is. No, look: the fact is the hype behind this *Perfect Dark* sequel was *very present*. The hope behind it was even more present, as it would see Rare's grand return to a game world that made them the studio we had loved pre-Microsoft buyout. *Perfect Dark Zero* ended up a *painfully* mediocre game littered with some good ideas, more bad ideas, and a Tupperware aesthetic that haunted the dreams of many. ➤

BUT WHAT ABOUT THE BIG N?

Nintendo hasn't been forgotten, it's just not in the frame with a new console launch – that'll probably be next year, or 2022, if rumours are to be believed. Still, it's worth a quick look at some of those classic launch games from Ninty's past:

SUPER MARIO BROS. `NES`

Only a launch title in the States, it… well, doesn't matter. It's *Super Mario Bros.*, *the* game, and it was there day one in the US. What a way to kick off a home console revolution.

TETRIS `GAME BOY`

There was *Super Mario Land* too, but there's been no game as closely linked to a platform as *Tetris* was – and is – to the Game Boy. An absolute banger, and a legend.

SUPER MARIO WORLD `SNES`

Needing to step things up after releasing the NES alongside a game that redefined everything, Nintendo came out of the blocks with something, can you believe it, *even better.*

SUPER MARIO 64 `N64`

And then when the N64 came out, Nintendo decided to perfect the 3D platformer with its first effort. Seriously, what a run.

WII SPORTS `WII`

Some might baulk, some would be wrong: there's arguably no more perfect a launch game on any platform, ever, than Wii Sports. A legend for all the right reasons. Though mainly bowling.

THE LEGEND OF ZELDA: BREATH OF THE WILD `SWITCH`

Just when we thought Ninty had drifted off somewhat with the epic launch titles, things were knocked out of the park, nation, planet, solar system with *BotW*: one of *the best games ever made.*

HANDY

Also worth a quick mention is the PSP and PS Vita – Xbox hasn't bothered with a handheld, and that's unlikely to change any time soon. Both of Sony's pocket consoles had some cracking launch titles, though – like:

UNCHARTED:
GOLDEN ABYSS   `PS VITA`

A proper, full-fat *Uncharted* game in your hands, *Golden Abyss* had to have all the gimmicky touch/camera/tilt doohickery crowbarred in to make it show off the Vita's extraneous features – but it was still a great game.

LUMINES:
PUZZLE FUSION   `PSP`

Too often overlooked, *Lumines* marked the beginning for a new breed of puzzle game: not just challenging and fun, but utterly *cool* to boot. *Tetris Effect* owes a lot to this particular PSP launch game, is all we're saying.

WIPEOUT 2048   `PS VITA`

Harking back to the glory days of the series, *Wipeout 2048* was one of the Vita's first games, and SCE Studio Liverpool's (aka Psygnosis) final release. A sad time, but a fine game to go out on.

TWISTED METAL:
HEAD-ON   `PSP`

A series that had never *quite* got there, not until this pared-back, retconned sequel to *Twisted Metal 2* made itself known. Simple, dumb, and a lot of fun, it mixed the old style of the series with the new tech of the PSP to good effect.

PlayStation 3

LAUNCH DATES
11 Nov 2006 (Japan), 17 Nov 2006 (US), 23 Mar 2007 (EU)

THE GOOD

MOTORSTORM

Sony got it in the neck for this off-road racer, and with good cause: its early preview videos showed a game very different in visual fidelity to that of the final product, and the internet was *mad*. Thing was, when *MotorStorm* did arrive, it was a genuinely good racing game with some neat ideas and – while not as good as those in that first trailer – visuals that felt particularly next-genny. Especially the debris. Such good debris.

FIGHT NIGHT ROUND 3

Find a better-looking launch title. We'll wait. OK, so *Fight Night Round 3* looked just as good on Xbox 360, but that's not the point: on PS3 it launched with the console in Europe, meaning that from day one, owners of Sony's new console had access to a solid sports game with a level of visual splendour they hadn't – and couldn't – have seen in the prior console generation. It gave that feeling of stepping up to something new, technologically.

VIRTUA FIGHTER 5

Another title benefitting from Europe's delayed PS3 launch was *Virtua Fighter 5*, as it meant Sega's fantastic 3D brawler arrived day-and-date with the console. Aside from the fact it's one of the finest technical fighting games ever, *VF5*'s PS3 outing is notable for one other big reason: it saw one of Sega's flagship franchises releasing alongside its former bitter rival's console. Not only did it mark another great AM2 release, but it also marked a changing of the guard when it came to what games went where.

THE… LESS GOOD

GENJI: DAYS OF THE BLADE

You've likely encountered the 'giant enemy crab' and 'massive damage' memes at some point. Such was the hilarity of this *Genji*'s pre-launch hype. Sadly, rather than backing up the comedy with a worthwhile game, we instead got a trudge through blandness, an obtuse control scheme, and an utterly forgettable storyline – aside from said giant crab (who was an enemy). *Genji* should have been so much better.

PlayStation 4

THE GOOD

THE... LESS GOOD

RESOGUN

The rise of digital-only games came to pass in the prior generation, so it was no surprise that one of the PlayStation 4's PSN launch games was brilliant. *Resogun* took *Defender*'s mechanics and reinvented them for 2013: gorgeous graphics, a thumping soundtrack, and tricky mechanics that fell just on the right side of *fun*-challenging. Housemarque has been a surefire thing in most releases over the years; *Resogun* was no different.

BATTLEFIELD 4

Sometimes the big studios *do* pull off something special with their launch games – like *Battlefield 4*. While its single-player might have been a let-down, multiplayer shone brighter than it ever had on a console release in the series' past. Battles were bigger, took place in vast, interactive maps, and the whole *Battlefield* package just worked far better on PS4 than it ever had in previous generations.

ASSASSIN'S CREED IV: BLACK FLAG

And, of course, there was *Assassin's Creed IV* - the other big game that pulled off something special on day one. A marked improvement over the PS3 version, it ran smoother, looked nicer, and – likely as a result of this – felt a lot better to play. It's still one of the best entries in the series, and was a fine title to help kick off a new console generation with. Safe to say it was the same story as an Xbox One launch title.

KNACK

Knack wasn't exactly a *Genji*-level failure for Sony, but expectations behind this 'playable Pixar film' were pretty darn high. So when it released and players realised it was little more than a demonstration of how good the PS4 was at particle effects with a threadbare – and thoroughly boring – game wrapped around it, people were... not impressed, let's say. The sequel lifted things *a bit*, but *Knack* never did capture the hearts of the public.

Xbox One

THE GOOD

THE... LESS GOOD

FORZA MOTORSPORT 5

Another impactful racing game at launch, *Forza Motorsport 5* brought a sheen to the series that made us coo in unison at just how much vehicles are capable of glistening in the sunlight. Admittedly it was stripped back in many ways when compared to its Xbox 360 predecessor, but as a launch game *Forza 5* hit the right notes: it was familiar, people knew how to play it, and it looked incredible.

DEAD RISING 3

On one hand, *Dead Rising 3* displayed some technical hitches that will have made people second-guess this new generation Xbox. On the other hand, it was a fun mix of comedy and terror, and allowed you to bulldoze (literally) through thousands of the undead in situations that were always joyous. It would never go down as a game that changed the world, but *Dead Rising 3* did go down as a fun new thing to put in your fun new toy.

KILLER INSTINCT

Killer Instinct's first season wasn't the best – but the foundations were laid by how it was set out: a game released over 'seasons', free-to-play options, an evolving set of mechanics. Eventually this revamp of the Rare original became a celebrated game on the competitive fighting game circuit, with big tournaments and champions emerging. No, it wasn't the best at launch, but *Killer Instinct* turned into something of note.

FIGHTER WITHIN

A Kinect-powered fighting game, it was fair to expect a gimmick – but a fun one – with *Fighter Within*. Show off the new motion tracking tech, have a giggle, move on. We didn't even get that much from this risible, half-broken, and genuinely stupid demi-game. It's not something to celebrate, but the Xbox One goes down in history as having one of the worst games ever made available at launch. Well done! Ⓦ
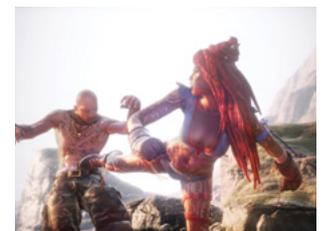
Toolbox

The art, theory, and production of video games

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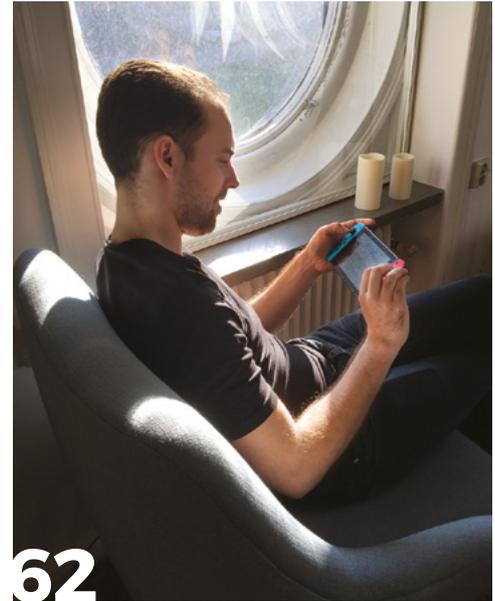
50

⌄ **Making your first VR game for one of these isn't as hard as you think. Follow our guide on page 50.**
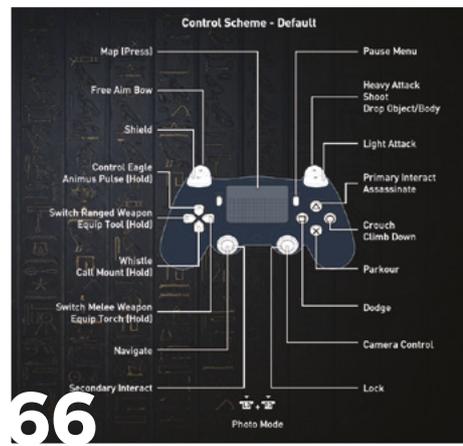
54

46

66

⌃ Design a space colony worthy
of *Alien: Isolation*'s creepy
Sevastopol. See page 46.

How to build a space station

A guide to building a detailed video game city in deep space

AUTHOR
KONSTANTINOS DIMOPOULOS

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

THE DISTRICTS OF PREY

Nathan Cheever, who worked on the world design for Human Head Studio's take on *Prey 2*, offers some amazing insights in his Gamasutra article on the design of the Central City's Bowery district. You can read it at **wfmag.cc/prey2**.

⌃ The massive Citadel sitting at the core of the *Mass Effect* universe is a dynamic, evolving, and yet, ancient space station worth studying.

Figuring out how to build a city deep in space for a CRPG is an interesting creative exercise. Handily, it also means I can show one of the many ways designers can approach exotic city environments within a specific genre, as well as an example of constructing the fundamentals of a fictional city from the ground up.

As opposed to, say, a fantasy metropolis, a city-sized space station is comparatively easy to design, since it comes with certain built-in requirements and restrictions, and is placed in an instantly recognisable setting. A space station's boundaries are always absolute, never feel artificial, and, dramatically, protect the humans living within from certain death.
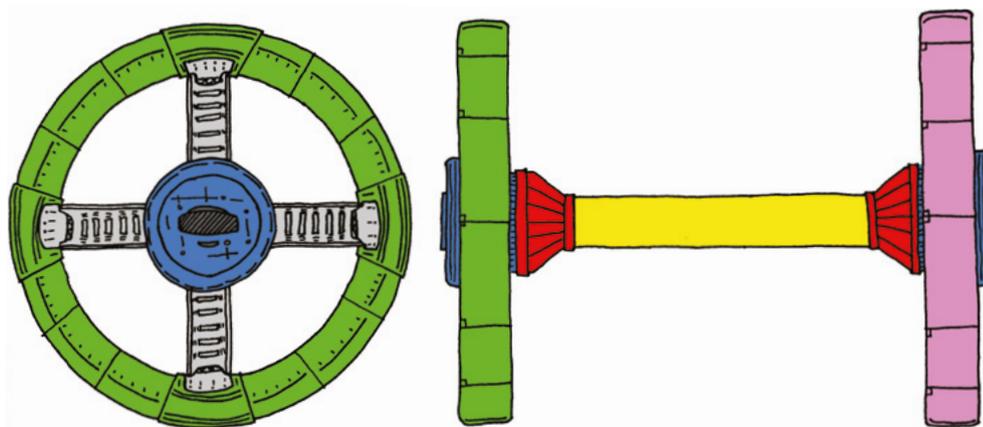
Having said that, there are three sets of requirements that must guide us: RPG gameplay needs, the demands and physics of a space station, and the basics of urbanism. We need to craft a logical place packed with detail, which allows for a variety of interaction types – multiple approaches are a staple of good RPG design – and functions like a convincing city. Gravity, air, energy, water, food, and heat are core necessities.

We'll call our space city Eurynome. Admittedly, I rarely name cities this early in their creation, but naming things often happens almost spontaneously, and whenever an interesting option pops up, it's worth stopping and taking notice. Besides, the name felt instantly right – it fits a place that didn't slowly evolve over time but was instead assigned a handle during construction. Greek mythology has long influenced the sci-fi genre, and the goddess Eurynome, daughter of the Titan Oceanus and mother of the Graces, felt apt, and could perhaps help guide the rest of the creative process.

Titans, for instance, are often associated with mining or heavy machinery in science fiction, and asteroid mining could act as a plausible core function for the space station. With mining comes the need for long-term storage, interstellar transportation, and some rudimentary refinery. Add a small science team conducting deep space research, and the function of the station as a journey stop, and we have the basics of a proper economy. We now know what Eurynome does. Its exact location isn't as important, but estimating

a time distance of a month or so to the nearest resupply location would support its travel stop logic, while its placement in an asteroid belt supports the mining idea.

Set 100 years from now, the station features impressive technology but nothing magical by our standards. Its scale, a medium-to-small city of roughly 40,000 humans, allows for a manageable level of complexity both for players and designers. Densities should be high and residences small as space is limited, and much is taken up by the essentials: the water – recycling system and (mined) ice storages, the air purifiers and warehouses for imported fresh air, heat generators, as well as refineries and port facilities. Vast solar panels powering everything lie outside the station.

> **"Gravity, air, energy, water, food, and heat are core necessities"**

Giving form to all this requires a bit of planning, and a few ideas as to what a near-future space station could look like. I aimed for a legible urban structure with two rotating wheels (tori, if you will) connected by a long, non-rotating cylinder. Gravity acts as the main class differentiator in this *2001: A Space Odyssey*-inspired design. The well-off live in the gravity-rich, rotating green and magenta wheels, and the poor, in the cylindrical yellow centre of Eurynome as shown in **Figure 1**. The magenta wheel also houses most research and higher education facilities, whereas the green one is more focused on administration. The blue sections act as the two space ports, with the refineries and warehouse areas next to them highlighted in red.

Connecting the ports and running across the cylinder's centre is the station's rail system. It has few stations, as its main purpose is to connect the affluent areas and the ports. Around it, workers and migrants live without the luxury of artificial gravity in small, boxy buildings constructed on the inner surface of Eurynome's cylinder, and completely surrounding the rail line. People here use magnetic boots to walk around the constantly illuminated section, and exercise in small, cheap gyms to keep their bones relatively healthy. Though the station lacks simulated weather, not all its areas are equally well air-conditioned, and here the air is stale. Add the lack of windows, and you have a properly claustrophobic section where life is made tolerable through small eating places, humble bars, and countless stalls that are part of a seemingly chaotic micro-economy. A few schools and hospitals also exist, but are less characteristic than the police patrolling on their hoverbikes.

Take an elevator from a port to the wheels though, and everything dramatically changes. Holographic skies with day/night cycles, and a slightly sea-scented air make things instantly pleasant. Observation decks offer spectacular views of the galaxy, as do the Hilton hotel's expensive suites. The latter serves as both a reference to *2001: A Space Odyssey*, and an often-needed familiar element. Museums, gardens, restaurants, comfortable residences, elegant clubs, and even trees complete the idyllic picture, which almost feels like Earth.

The next creative step is to imbue Eurynome with life. To top off the city, I'd suggest coming up with a layered history, and start naming things and people. Granularity and dynamism are important elements of a living environment – think of a cult's disturbing graffiti, for example, or the old, obsolete station core – whereas an RPG could take advantage of the station's vulnerabilities and tensions. Radiation leaks, small meteorite strikes, and political struggles can provide plot points or quests, and support whichever core story unfolds in Eurynome. ⓦ

RESEARCH

One of the key ways we can get inspired and come up with new, interesting ideas when working on imaginary new worlds is through research. Try approaching varied and contradicting sources, read vaguely related stories, watch thematically fitting movies, play games old and new, and look into the history of architecture, urbanism, and human societies. Maybe even search for unique takes in pulp artwork or modernist sculpture, and always keep an eye out for intriguing scientific or academic approaches. If possible, set a week or two aside for this.

❮ The iconic and scientifically plausible Space Station V from *2001: A Space Odyssey* inspired and deeply influenced the structure of Eurynome.

The principles of game design

This month, Howard reflects on the ten-month development of Raiders of the Lost Ark on the Atari 2600 – and cracking a bullwhip in the office

AUTHOR
HOWARD SCOTT WARSHAW

Howard is a video game pioneer who authored several of Atari's most famous and infamous titles. This is an excerpt from his upcoming book, Once Upon Atari: How I Made History by Killing an Industry. **onceuponatari.com**

I did four games at Atari. I'm known mainly for three games since my fourth, *Saboteur*, wouldn't be released for 20 more years (making it the *longest* game development in history). My first game, *Yars' Revenge*, is my glory. My third, *E.T.*, is my infamy. *Saboteur* is my unfinished symphony. But my second game, *Raiders of the Lost Ark*, is the forgotten one.

E.T. gets lots of attention, and *Yars* gets its fair share of press. *Saboteur* got excellent reviews, but it can't be the forgotten game because nobody ever heard of it in the first place.

Somehow, my *Raiders of the Lost Ark* game got lost in the shuffle. I've done over a hundred interviews about my games, but *Raiders* has only

come up two or three times. In my trio of million-sellers, *Raiders* is the overlooked middle child.

Whereas *Yars* was a game for the eyes and ears, *Raiders* was a game for the mind. I wanted *Raiders* to feel like the biggest game any VCS player could imagine. It was my most ambitious undertaking (except for the others).

Raiders started amid the turmoil around releasing *Yars*, continued through one bonus plan introduction, an attempt to leave and go to another company, a second bonus plan introduction, and ultimately ended right at the beginning of the *E.T.* project. That's a lot of twists and turns. No wonder I walked around with a bullwhip.

I felt tremendous pressure to succeed on *Raiders*, for two reasons: first, it was going to be Atari's (and the world's) second adventure-style video game. The first one, *Adventure* by Warren Robinett, is a genre-defining masterwork. If I'm going to stand on his shoulders, I better be able to see for a very long distance.

▼ Ah, *Raiders of the Lost Ark*.
A cartographer's delight.
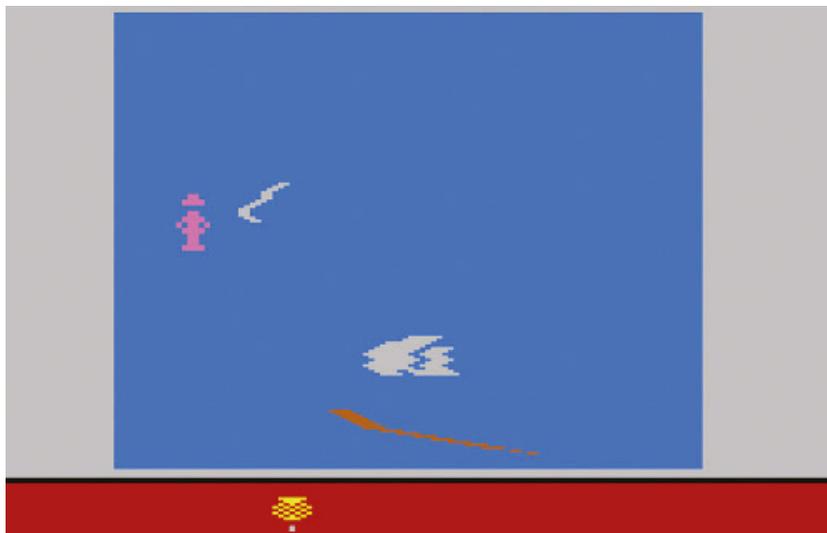
▲ Howard Scott Warshaw, pictured (sans bullwhip) with *Raiders* director Steven Spielberg. The game's success led directly to the production of Atari's *E.T.*
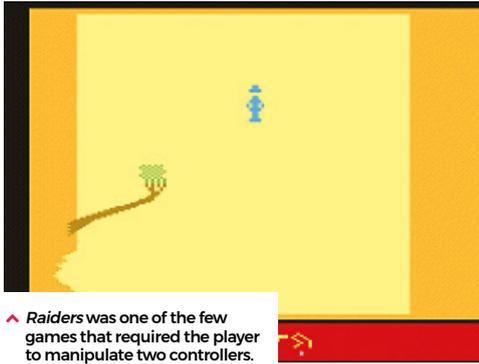
↑ *Raiders* was one of the few games that required the player to manipulate two controllers.

The second source of pressure stems from the success of *Yars' Revenge*. I'd ask myself: am I a one-hit wonder? Is that all I've got? Was I just lucky? These questions haunted me throughout this development. I didn't become truly confident as a game designer and programmer until I finished *Raiders*. And just as I did, a stubby-legged alien came knocking on my door.

Then there's my theory that innovators are people with boundary issues. At Atari, I was truly an innovator, and one rule I violated was Nolan's Law, the fundamental video game design principle at Atari. It states: "The best games are easy to learn and difficult to master. They should reward the first quarter and the hundredth."

This is a great rule, for coin-ops. I don't think it applies to home games. I prefer "difficult to learn, difficult to master." Here's why.

If I can ask more of a player initially, I can make a deeper game that provides longer playability and greater satisfaction. I made some games which required the player to read the manual, or as we say in tech, RTFM. Coin-op players might walk away after two or three quarters, but home gamers pay a full bag of quarters right up front. They're already motivated to get their money's worth.

Raiders busted other conventions as well. For instance, I used two controllers for one player. That was a weird thing to do, but it created the possibility of complex inventory control and added a new dimension of gameplay. This was a hassle for some people, but many worked through it to enjoy something fresh and new. Was that a good choice? I don't know. It did sell over a million, but it didn't sell three or four million. I often wish life had do-overs.

I also opted for a graphical score. I liked this idea since you can see how you are progressing in the game. But it really lacked score clarity, and the player can never actually reach the ark. This is a decision I regret, and it's the first thing I'd change on *Raiders of the Lost Ark*. I would still use the graphic display, but I would add a numerical score. To all the players who found this frustrating, let me just say: sorry, my bad.

One other thing: in *Raiders*, there are places where you seem to get trapped or stuck. The truth is, players are *never* stuck in this game. There is *always* a way out.

One last thing worth mentioning: *Raiders* was the game for which I was best outfitted. Walking around Atari HQ with my whip and hat, cracking the whip in the hallways, made working on this game a little more special for me.

I did fight with marketing towards the end of development. They wanted to put a lot of the secrets in the manual so people would be able to play the game. I didn't want to do that, since adventure games need to present a real challenge to players and handing out the secrets seemed like the opposite of that. It's important to remember this was pre-internet. There were no guides or cheat codes or video run-throughs to teach the players how to go. In the end, marketing won, and I turned over all the secrets. I want to be crystal-clear about this: marketing was absolutely right! I thank you merry marketeers for protecting me from myself here.

Raiders was ten months of intense development. There were distractions and conflicts and long hours and hard choices all along the way. There are certainly some oddities in *Raiders of the Lost Ark*, but there is nothing fundamentally wrong with the game. I would not venture to say the same thing about *E.T.* There is definitely something wrong with *that* game. Ⓦ

↑ One of the earliest movie-to-game adaptations, *Raiders* enjoyed a lavish marketing spend.

They sold a million

Check out this table:

Game	Dev time	Volume of attention	My...
E.T.*	5 weeks	!!!!!!!!!!!!!!!!!!!!!!!!!!!!!	3rd
Yars*	7 months	!!!!!!!!!!!!!!!!!!!!!	1st
Raiders*	10 months	!!!!!	2nd
Saboteur	14 months	!	4th

* indicates over one million units sold

It seems the more time I spend on a game, the less attention it receives, which is an odd feeling for me. [NOTE to the Sales Number Nerd: Each of my first three games sold well over a million units. Even after subtracting returns, *E.T.* still crossed 1.5 million in sales. Since *Saboteur* was never released back then, I can say honestly that every game I released for Atari was a million-seller. I don't think anyone else (who did more than one game) can make this claim.]

Make your own **virtual reality 3D Shooter**

How to turn a 3D shooter into a VR game for a variety of viewers, from Google Cardboard to gaming headsets

AUTHOR
MARK VANSTONE

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

Download the code from GitHub: **wfmag.cc/ wfmag44**

Browser development has really matured of late, with a number of exciting new features coming to the fore. Where WebGL was well supported, the new WebXR (previously WebVR) is now becoming standard in modern browsers. JavaScript ES5 has now been superseded by ES6, and with these new technologies, making browser-based apps – and specifically 3D games – is now a serious proposition. The other part of VR technology, the hardware, has also evolved – as mobile tech has become more powerful, so have the opportunities for cost-effective VR experiences. If you have an old mobile phone, perhaps an iPhone 6 or a Samsung S7, you can get a Google Cardboard headset for £6 and turn it into a rudimentary VR viewer. In this article, we'll show you how to set up a 3D shooter to run not only on that hardware, but also on other viewers such as the Gear VR or Daydream, and even gaming headsets such as the Oculus, HTC, or Valve. All of these have web browsers built in which can support WebXR or a 3D display, and although there are some differences between how they work, the process of displaying a 3D scene is mostly the same on all of them, so we can use the Three.js JavaScript library.

To begin, we'll start with the Three.js 3D shooter we made in Wireframe #32 – if you missed it, you can download a copy from **wfmag.cc/32**. We'll use the same models and much of the same code. The first change, though, is to update the code to run as an ES6 module. The non-module version of Three.js is being phased out at the end of 2020, so it's probably best to get with the times and use the new stuff. As with our earlier shooter, you'll need to run this code from a secure web server, which, for mobile phones and gaming headsets, will mean uploading it to somewhere suitable, but if you want to see it running, you can play it at **technovisual.co.uk/vr**.

GET MODULAR
For the module conversion, all we need to do is declare our script as `type="module"` and then

Our shooter, now in VR format. Blast aliens from the sky as they fly over the mountains.
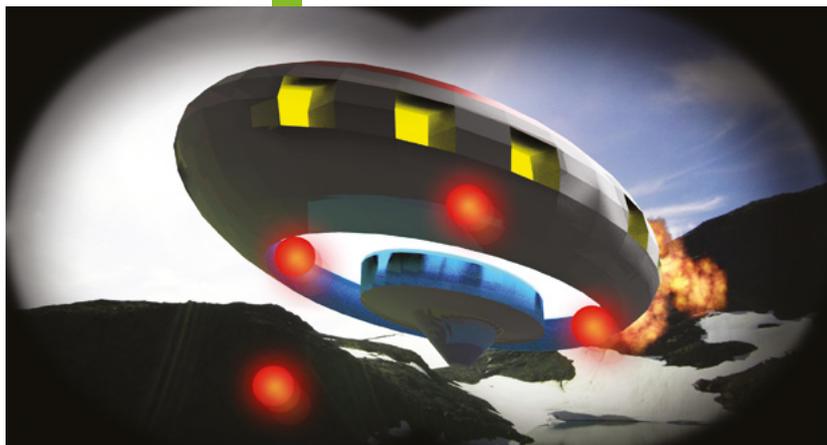
With a mobile phone you can create a stereoscopic display for use with a simple Cardboard viewer.

we can load in the Three.js modules using the import method, such as:

```
import * as THREE from './build/three.module.js';
```

This will load the core module. Then other modules can be loaded by using:

```
import { GLTFLoader } from './modules/jsm/
loaders/GLTFLoader.js';
```

This allows us to use the GLTFLoader class. We can also dispense with the s3d object we previously used to hold all the scene data, as the variables created in each module are local to that module, meaning we can use common variable names without the risk of overlapping with other code. This will also have the effect of making the code easier to read.

"Making browser-based apps and 3D games is now a serious proposition"

Once we've converted our code to use the new Three.js modules, we'll be able to run the game as we did with our shooter from issue 32. You may notice that in **Code Listing 1** we're importing the core library from **./build** and the modules from **./modules/jsm**. This is important, as the modules refer backwards in the directory structure to the core library.

BASIC VR VIEWERS

Now we need to consider the hardware we're going to use to run our game. Let's start at our baseline, Google Cardboard, and work up from there. Available from many outlets online (including Google's store: **wfmag.cc/buycard**), it's a cut-out kit, which you fold up to create a viewer. There are two lenses to look through, two magnets in a recess on the side, and velcro tabs to hold a mobile phone. The magnets on the side serve as a selection mechanism which we'll explore later.

There's a wide range of VR viewers and headsets on the market, from Google Cardboard to pricey gaming headsets like the Oculus, HTC, HP, Microsoft, and Valve ranges.

Next, we have Gear VR-style viewers. There are many different types, priced from around £12 to £40, and these are essentially a better-built plastic version of the Cardboard but with a button on top to act as a selector. Phones of varying sizes can be used, and as long as the device isn't more than about four years old, it should be up-to-date enough to run the 3D software. For example, the six-year-old Samsung S5 is capable of displaying VR, but it's a bit too slow to make the experience pleasant, whereas a five-year-old iPhone 6 is quite capable of displaying simple VR scenes smoothly. (With iPhones, you may need to switch on Experimental Features in the Safari settings, however.)

PROPER PRO KIT

Gaming headsets are a bit different, since they have a built-in screen in the headset, and – in the case of the Oculus Go and Quest – an Android ➡

HEALTH AND SAFETY NOTE

If you're not used to using VR viewers, you may feel disorientated while playing this example. Make sure you have no objects around you to bump into, and use the viewer while sitting down if you feel disorientated standing up.

CODE LISTING 1:

```
<script type="module">
    import * as THREE from './build/three.module.js';
    import { DeviceOrientationControls } from './modules/jsm/controls/
DeviceOrientationControls.js';
    import { StereoEffect } from './modules/jsm/effects/StereoEffect.js';
    import { GLTFLoader } from './modules/jsm/loaders/GLTFLoader.js';
    import { VRButton } from './modules/jsm/webxr/VRButton.js';
```

computer in there as well. Tethered headsets use the power of a connected computer to generate the display, and all of them use a slightly different Three.js system from the cheaper viewers to generate the 3D display. As time goes on, it's likely that more mobile phones will be compatible with the VR software used by the untethered gaming headsets. Gaming headsets also have sensors that track your movement as well as the tilt of the headset, providing six degrees of freedom.

WHAT NEEDS TO CHANGE?

Let's get onto the code changes we need to accommodate these viewers. For the lower-end hardware, we'll need to render a dual-screen view which is provided by the StereoEffect.js module. This is much like other post-processing effects in Three.js, where instead of writing the renderer object to the screen, we create an effect object from the renderer and then, when it comes to the render update, we draw the effect to the screen instead. We create the effect using:

> **"The display will now show the two scenes that create a stereoscopic image"**

```
effect = new StereoEffect(renderer);
```

And then in the `render` call:

```
effect.render(scene, camera);
```

The display will now show the two scenes that create a stereoscopic image in the viewer. Next, we need to change the way we pan around the scene. Previously, we used a mouse drag or screen touch to move the perspective, but obviously, this isn't suitable for VR. Thankfully, there's a DeviceOrientationControls module

which will sense the tilt of the phone. If we replace our OrbitControls class with a DeviceOrientationControls class, we should see the scene moving as we tilt the device. When placed inside a headset, the view shifts as we move our head around – it's as if we're standing in the scene. The way we do this is to wait for a `deviceorientation` event from the browser and then create the new object as per **Code Listing 2**. You may need to switch device orientation on in your browser settings.

Now for the tricky bit: letting the player fire their cannons. With Google Cardboard, the solution is quite ingenious. Remember the pair of magnets we mentioned earlier? One of these magnets can slide up and down, and when it does, the magnetic field changes around it. This change can be picked up by a mobile phone's magnetometer, if it has one. The support for this is a little bit patchy, and although Android phones generally do have magnetometer support, the iPhones we tested didn't seem to have settings to switch this on, although it's possibly there somewhere. We can, however, write a detection function to sense if a change has taken place and if so, trigger a `click` event as in **Code Listing 3**. Viewers with a button on top are a bit more straightforward. The button moves a lever that presses a capacitive pad against the screen which, in turn, registers a `touchstart` event we can detect with the following line of code:

```
document.addEventListener('touchstart',
simulateClick, true);
```
.

The other potential issue with this type of 3D display is that if you have any HTML elements overlaid on top of your 3D scene, you'll need to have two of them – one for the left and one for the right – so things like the player's score will need two text elements rather than one.

IMMERSIVE ENVIRONMENT

So now for the big one: gaming headsets. First, let's deal with the display differences. Three.js has built-in support for VR headsets, but there are a few extra things we should add. We set up our scene in the same way as before, but once we've added our 3D objects, we need to set up

CODE LISTING 2:

```
function setOrientationControls(e) {
    controls = new DeviceOrientationControls(camera, true);
    controls.connect();
    controls.update();
    window.removeEventListener('deviceorientation', setOrientationControls, true);
}
window.addEventListener('deviceorientation', setOrientationControls, true);
```
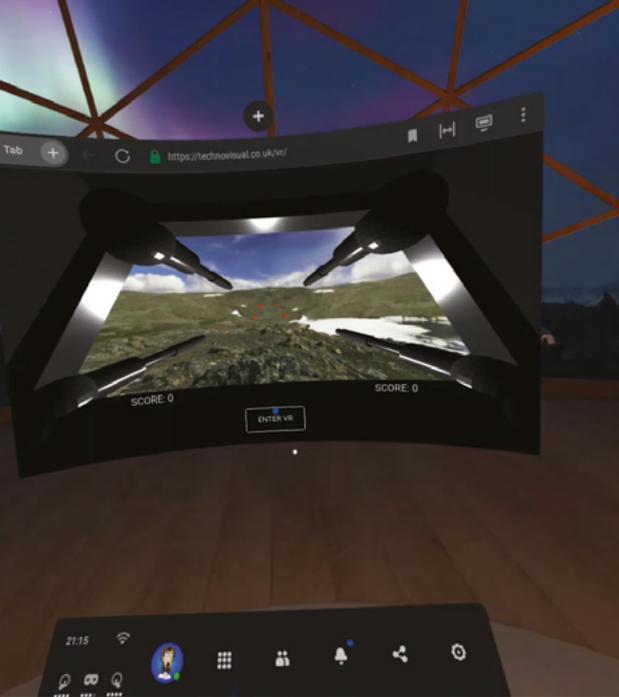
From a browser window inside a gaming headset environment, you can launch a Three.js VR experience.

the renderer differently. We don't use the stereo effect, but we need to set the following to true:

```
renderer.xr.enabled = true;
```

And also:

```
renderer.outputEncoding = THREE.sRGBEncoding;
```

There's also a slightly different way of handling the **render** loop; instead of requesting an animation frame to get things going, we call **renderer.setAnimationLoop(render);** and that starts the **render** loop for us. The VR system is initiated by a button added to the scene from the VRButton.js module. We do this by writing:

```
document.body.appendChild( VRButton.
createButton( renderer ) );
```

This will display the button on the page and will either say 'ENTER VR' or 'VR NOT SUPPORTED' if we're running in a non-compatible browser. When selected, this button switches the display into VR mode, and if you're wearing a headset, you'll find yourself in the middle of a 3D environment. In this case, the gun turret moves with your head as you look around.

One of the things which is different in Three.js between the normal screen display and VR mode is that the camera matrix isn't updated. If you query the camera for its position or rotation, it will return zeros, and if you try to set its position, it won't make any difference. To have an object (like our turret cannons) fixed to the camera, we need to have a different strategy than the previous example, where we queried the position and rotation of the camera and set the guns to match. The simple way around this is when we load the

CODE LISTING 3:

```
var sensor;
var lastSensorX;
function detectMagnetSystem(){
    try {
        sensor = new Magnetometer();
        if (sensor!==undefined) {
            sensor.start();
        }
    } catch(err) {
                console.log("Magnetometer not supported. Make sure you configure
chrome://flags/#enable-generic-sensor-extra-classes and deliver via HTTPS.");
    }
    if (sensor !== undefined) {
    sensor.onreading = () => {
        var delta= sensor.x-lastSensorX;
        if (delta > 10 ) {
            simulateClick();
        }
        lastSensorX = sensor.x;
    }
    sensor.onerror = event => console.log(event.error.name + "
(Magnetometer): ", event.error.message);
    }
}
```

guns model, we make it a child of the camera, then when the camera moves, it does too.

We next need to configure a controller so that the fire button makes our turret fire a volley of plasma balls. If we get a controller object from **controller1 = renderer.xr.getController(0);** then we can add an event listener to it with **controller1.addEventListener('selectstart', simulateClick);**. The specifics of the controller may vary between systems. The Oculus Quest that this example was tested on provided **controller[0]** as the left-hand controller. Other systems, such as the Oculus Go, only have one controller. If you want to see the controller in the VR environment, Three.js provides a module called XRControllerModelFactory which fetches a model of the controllers your system uses and adds them to the scene.

That's it! We have a simple yet fun VR shooter. There's some updated code for playing sound effects using the Three.js library rather than through the web browser, and in the full listing (at **wfmag.cc/wfmag44**) a menu screen allows you to choose between stereo and VR displays. Play the full game at **technovisual.co.uk/vr**. Ⓦ

Narrative Showdown:
Hades vs Pyre

We pit Supergiant Games' mythological dungeon crawl Hades against its older fantasy sport story, Pyre

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.

What's the purpose of story in a video game? This question lies at the heart of both the writing and narrative design disciplines. Is it just a context for gameplay, or to compel the player to keep playing rather than tiring of the game mechanics? Or is it to stab the player in the feelings, to teach them a little about themselves, and to expand their mind the way that great works in other media so often do?

In *Pyre*, the player guides a group of exiles across a blasted landscape known as the Downside, which they've all been banished to by the Commonwealth, a problematic nation in need of revolution. Three of your outcasts at a time compete in religious sporting rituals known as rites. At the end of each event, the winning team nominates one member to be 'Liberated'; forgiven of their crimes, they're transported back to the Commonwealth.

Winning a championship and selecting a character to liberate is a difficult choice, since

you lose both their strategic value as a player (and therefore possibly your ability to get more people freed down the line), *and* you lose their social presence between matches. But you also have further competing motivations: you're attempting to seed a revolution in the Commonwealth, and the revolution's degree of success depends on you sending back the most suitable individuals.

Beyond that even, you come to care for these characters. Each one makes a compelling case to be released, and it's impossible to liberate all the characters since you only get seven rites. In fact, some of your *competitors* will make convincing cases to be released, leading to situations where you'll consider throwing a match.

In my last column, I defined the gold-standard Complex Ethical choice as being a decision with huge stakes and too many variables to be predictable, and this is why *Pyre*'s liberation choices are so effective. Furthermore, all choices involve character. Even when deciding whether to take a quick but exposed coastal route to your next match, or go through a jungle (slower, but safer), each is represented by a character arguing for their preference, and the chosen route's narration reveals a sliver more of that character's inner life. The downside of this, as a writer? Huge swathes of words are completely missed by every player, because they lie on unchosen branches.

Supergiant's latest story is about Zagreus, son of the mythological Hades, in his endlessly repeating quest to escape the labyrinthine underworld his crappy dad runs. Along the way, you'll speak to an extended family of gods

Hades: This interaction plays on your first meeting with Theseus and the Minotaur, but... it's jarring when you already met the Minotaur ten minutes ago.
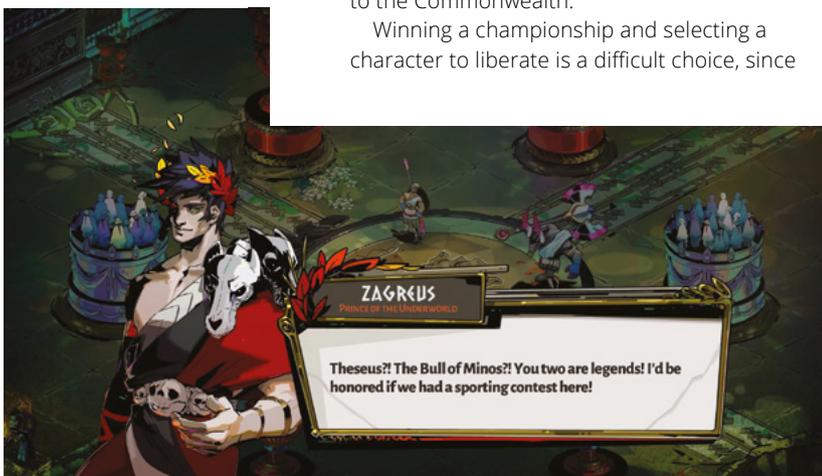
^ *Pyre:* **One of the game's many narrative innovations was having additional lore appear when hovering the cursor over key words.**

^ *Hades:* **Some rooms ask you to choose favourites between gods. This choice could have narrative stakes, but instead, the gods immediately forget your choice.**

and mortals, and each time you encounter them, they'll have new stuff to say. The story particularly advances every time you're killed and returned to the House of Hades, compensating for your failed attempt by giving you a bunch of characters who'll have new, well-written things to say, urging you to go again.

Behind the scenes, the story works by queuing up nuggets of dialogue which are tagged with varying levels of priority and have different conditions which must be met before they're unlocked. When I encounter a character, the game selects the most interesting interaction from the library. So if I recently defeated the character of Meg for the first time, next time I speak to my mentor Achilles, the game will look at the available dialogues and skip over the low-priority characterising chit-chat. It will note that a somewhat higher-urgency conversation about Meg has been unlocked, and serve up that one. *Heaven's Vault* was more or less an entire game of this, as was *The Stanley Parable* back in 2011, but *Hades* marks the first time it's been applied well to an inherently addictive genre. But in *Hades*, there are so many possible interactions that it frequently becomes unwieldy, and the characters reveal their inner workings. It often presents its content in a strange order, breaking the illusion that these are lively characters eager to talk to me about my latest exploits, like watching a stage actor forget which scene they're in.

Early on, I made it to the end of the second hell-layer the first time I reached it. More than one character commented on my meeting with the layer's final boss, then, *much later* fed me their "Oh, I heard you reached layer two? Good on you!" content. Unfortunately, this means I no longer really see the characters as people, and I'm instead thinking about how to manipulate

> **"Behind the scenes, the story works by queuing up nuggets of dialogue"**

their programming. After the stumble, I can't see the stage actor as her character again.

Hades is what happens when a writer writes some greatly branching, variable stuff, then gets frustrated that players don't see much of it. In order to make the player see more, they make a game with infinite replayability built-in and mostly non-branching content. Now, everyone sees a much larger part of the whole. But what can make interactive narrative choices so compelling is *stakes*. I need to have something unique to gain, and other things I must therefore lose, in a truly memorable dilemma. Without those stakes, the choice becomes irrelevant. What makes you so invested in *Pyre*, or *Mass Effect*, is not that we feel we've seen everything, but that we feel the story was uniquely *ours*.

If the goal of writing in a game is to provide a story engaging enough that you stick around to uncover it all, then *Hades* does a good job. At 20 hours in, its story hasn't been emotive or transcendental in the way that even Supergiant's debut *Bastion* felt, but I do find myself fascinated by its central mystery: figuring out *why* this family is so dysfunctional. Fascinated enough to carry me through more gameplay than *Pyre*.

But if the job of writing in a game is to strike the player in the heart, to give me an unforgettable experience, *Pyre* wins. *Pyre*'s critical decision points are agonising, and knowing they're coming encourages you to spend time thinking about its characters as complex human beings, fleshing out their desires and faults in your head. For my money, *Pyre* takes it. ⓦ

SUPERGIANT VS FAILURE

Pyre was the studio's first attempt to solve the problem of death. The narrative effect of a shift to sports-action gameplay was that failure was no longer an end state. Their characters were freed to process their failures rather than have them erased by a restart, leading to more real-feeling relationships but also meaning the game could respond to a wider spectrum of player performance: shades of victory and also shades of defeat. Inversely, *Hades* solves death by simply making dying over and over *the point*. The characters are constantly processing defeat, and only occasionally deal with victory.

Tutorials: why it's better to let players do the work

Tutorial pop-ups during gameplay are boring and ineffective, so here's a different approach

AUTHOR
STUART MAINE

Stuart Maine has been a designer for 22 years across PC, console, and mobile. He helped set up Well Played Games, and is currently working on *Warhammer Combat Cards*.

Teaching players the 'rules' of your game is a fundamental part of development. It's not just that players need to understand how your game's fictional universe operates ('in this game, you can fall any distance without taking damage', 'in this game, ghosts are real'), but they also need to know how to interact with this game's mechanics. And the

really annoying bit is that players don't want to be taught these things, but they'll still blame you if something they don't understand gets in their way! So rather than present players with explicit 'This is how a feature works' tutorials, some games teach through a much more effective approach – letting the player's brain do the work.

Let's first look at the elements your game might need to teach its players, how the three-stage 'demonstrate-practice-master' method works, and why it's more effective than traditional tutorials.

USE EXPECTATIONS

Unless you're making a hyper-casual game or one for very young kids, I think it's safe to assume your players have played games before. That means they come into your game with an in-built set of assumptions, and you should think carefully about any time you're going to break these expectations.

For example, in a 2D side-scrolling game, the first thing I'm going to do is press right to make my character set off through the level. I 'know' this is the correct thing to do because A) the character is facing right, B) two-thirds of the screen view is to my character's right, and C) I have experience playing other games like this. So if in your game I'm supposed to go right then don't interrupt play with an unnecessary tutorial,
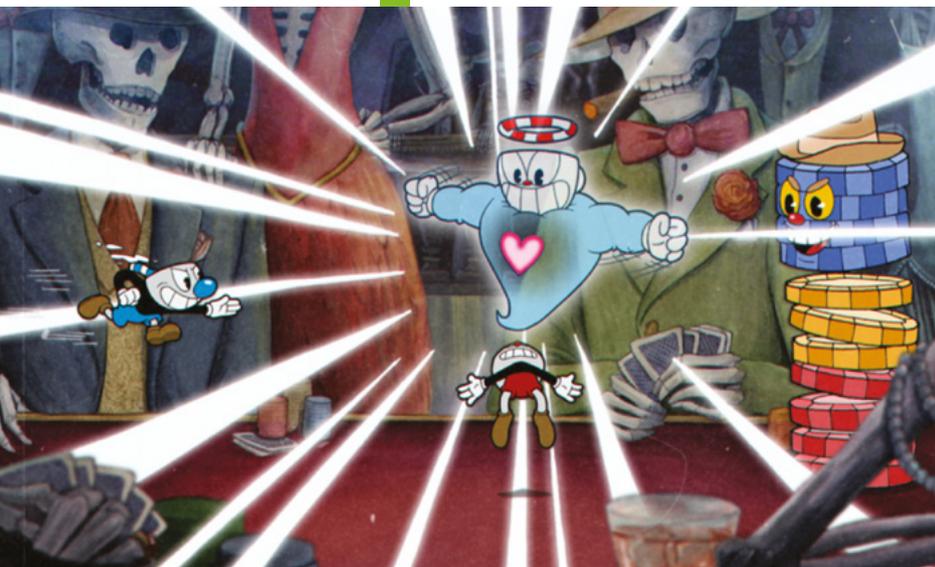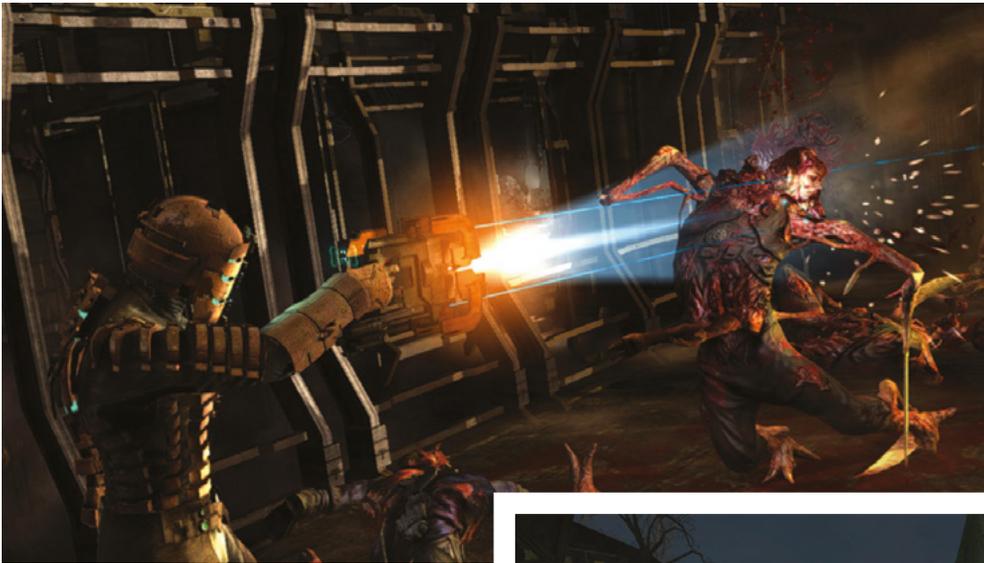
> ⌄ Players already 'know' a lot about your game from screenshots and videos, so build on that or confound their expectations for deliberate effect.

but if you want me to instead go up, down or, heaven forbid, left, then you'll need to teach me that.

As mentioned, the traditional way to teach players things like this is a message which pops up saying 'Go left!', but there are two problems with this technique. First, these types of messages break the fourth wall, snapping players out of the experience to remind them that they're playing a game and it's time to learn something. More pressingly, a lot of players don't read these messages because they just want to get on with the game, or wrongly assume they already know what you're trying to tell them. All of which means they fail to learn something potentially critical, get stuck, and then get frustrated.

Having to ensure players understand a concept leads to situations like the tutorials in EA's *Dead Space* which, while they're at least presented through 'in-universe' methods, repeat over and over that the game is about shooting enemy limbs off to the extent that you end up thinking 'Yes, I know already!' (though I'll bet there are still players shooting enemies in the torso and wondering why the game's so difficult).

THE THREE-STEP PROCESS
Which leads us to the tutorial process popularised by companies like Valve and Nintendo, where they basically embed as much of their learning in gameplay as possible. Rather than outright saying 'This is how this thing works', they instead show a game 'rule' then let

"If I'm supposed to go right, don't interrupt play with an unnecessary tutorial"

the player's brain figure out the rest – effectively teaching the player key concepts without them even realising they're in a tutorial.

This works because human brains are very good at spotting sequences, and by extension, working out the next step in a sequence without explicitly being told it. Games can employ this useful quirk in a three-step process – demonstrate, practice, and master:

Demonstrate: Show the player something so they see a 'rule' of your game in action but can't interact with it yet. For example, in the *Mega Man* series, when you meet the Hammer Joe enemy, you're positioned on screen so you can watch him fire his boomerang-type shot without being hit by it. Being able to observe from safety gives you time to learn the attack timing and think about potential techniques to defeat him. ➡

A+B=C
There's plenty of research about how humans don't like to learn new things because forming new neural pathways takes a lot of energy (so it's easier for brains to fall back on what they already know). On the other hand, humans like to work out patterns and rules, which may be why getting players to learn by connecting A + B to conclude C is so effective. Check the start of this TED talk from musician Bobby McFerrin for a demonstration of how our brains are wired to make the jump from A to B to C without being told: **wfmag.cc/Bobby**.

> Perhaps because the rules of using portals don't relate to anything in the real world, Valve spent half a game teaching how to use them.

> Many TED talks cover gaming, but ones focusing on psychology / behaviour and education can give surprising insights.

Bobby McFerrin

SUPER TUTOR BROS.

A classic example of teaching through play is the first level of *Mario Bros.* on the NES. Without text, this teaches you to move right, jump on angry-looking characters, jump gaps safely and then under pressure. Perhaps its cleverest trick is teaching that mushrooms are power-ups and not threats. The first mushroom you encounter moves away rather than aggressively towards you, bounces off a pipe and comes back (so now you know that's a thing), and then if you try to jump over the mushroom Mario bangs his head on a block and ends up collecting it anyway.

Practice: Demonstrating is good, but it's even better if you can then let the player interact with and explore what they just learned from a position of safety. Being safe is important here, because if players are threatened, they'll just resort to techniques they already know and won't take what they should be learning on board. For example, in *Half-Life 2*, when you visit Ravenholm you see a saw-blade has cut a zombie in half (showing you that these blades can be weapons), then you pull the blade out with the Gravity Gun and fire it into an approaching zombie who can't reach you over a barrier (letting you practice aiming with it from safety).

Master: Finally, force the player to use what they saw and practised in a real, dangerous situation so they 'internalise' that thing and store it as just another aspect of the game. This, for example, is basically how every classic *Zelda* dungeon works, with each built around a new tool that players must use over and over before finally using it to defeat that dungeon's boss. Returning to the *Half-Life* Ravenholm example, the game basically forces you to use the Gravity Gun/saw-blade

"Force the player to use what they practised in a real, dangerous situation"

combo by making ammo for other weapons hard to come by for the entire level.

RUN WITH IT

Of course, once players have demonstrated mastery, you can continue to use whatever they've just learned throughout the game, layering it with other threats or new rules to keep it interesting. Check out *Titanfall 2*'s single-player campaign as an example of introducing new concepts, playing with and twisting them over the course of a level and then abandoning them to move onto the next one.

CASE STUDY: PORTAL

Valve's *Portal* is a great example of the three-stage method, both because the studio could build on what they'd learned with *Half-Life* and because the 'open portals and step-through' mechanics of the game promised to be a real nightmare to teach players. In the end, pretty much the entire first half of the game is a tutorial, but because it's interesting, fun, and has an engaging narrative, you simply don't notice.

The game is divided into 'test chambers', each of which is basically a tutorial for a single concept. They mix traditional first-person shooter mechanics with learning how portals work, and importantly, they only introduce one new mechanic per chamber (then later return to those mechanics with added complexity).

Demonstrate: There are several occasions where players can watch how portals work through windows, letting them get their brain around what's happening without threats interrupting the learning.

Practice: You don't start the game with the ability to make portals; you have to get used to how they work before you're given that power. Also, when you get the ability to make portals, you're stuck until you do so – meaning you can't ignore this mechanic.

Master: There are many other concepts that you learn and need to master, including how physics works with portals, which surfaces can't have portals made on them, and which things are dangerous.
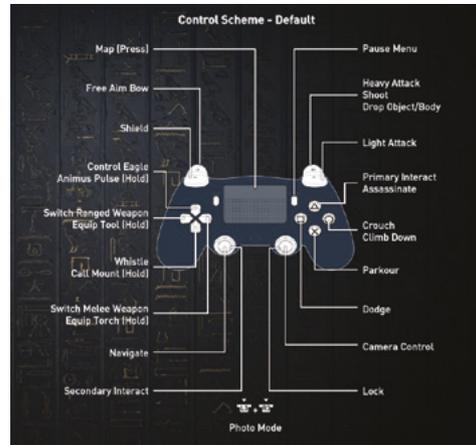
Finally, because you're repeatedly taken through the demonstrate-practice-master process, it's great when you start to subvert that structure. Even though it's part of the narrative, it still feels like you're being naughty and 'breaking the game'.

CONCLUSION
If the demonstrate-practice-master technique is so effective, why doesn't every game use it? In my opinion, it's most likely because it takes a lot of time to work out which elements of the game can be taught in this way, and then to create and polish the demonstrate-practice-master gameplay sequences to do so.

Companies like Valve and Nintendo can take the time to playtest their games over and over, working out which concepts players aren't understanding and adding hidden tutorials to their game to solve this. For smaller teams, you may need to focus on teaching your game's biggest USP (unique selling point), so you're confident players will 'get' that at least.

However, it's important to note that while teaching a player your game's key concepts in an engaging manner is always going to be better than simply displaying a tutorial message, time spent on this area means other sections of the game inevitably take a hit. Weighing up whether to improve your tutorial or focus elsewhere is difficult, particularly if your game involves a lot of complex mechanics and concepts.

For instance, the notoriously hard-to-get-into game, *Warframe*, tried eight different tutorials, none of which improved early player retention. In the end, the team simply accepted that most players would bounce off their game but those that remained would love it, and focused their efforts elsewhere. Even so, I recommend always considering if something can be taught through gameplay, because if you can do it, then not only have you ensured players have grasped your mechanic, but you've removed a boring tutorial and gained some free gameplay, too. Ⓦ

< Many games teach players their controls through play, but neglect to teach them the mechanics and concepts of the game in the same way.

CONCEPTS, NOT CONTROLS
You'll notice that this article is about teaching players rules, concepts, and systems, not the controls of your game (i.e. 'Press this button to do this thing'). That's a whole other article, so all I'll say is to think very carefully before you change the 'default' controls players expect games in that genre or on that platform to use. There are so many things you need to teach players, why add more by needing to explain that in this game the W key doesn't make you move forward, or the right trigger doesn't make you shoot?
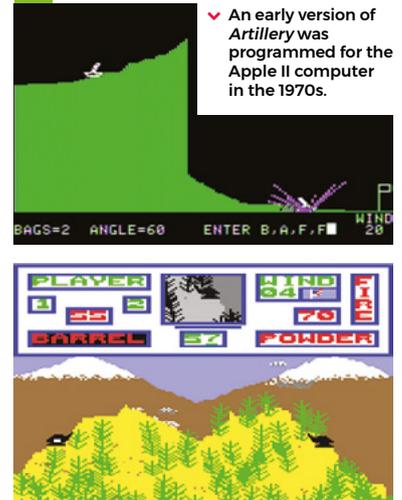

⌃ Good tutorials are even more important in free-to-play games because players have no initial monetary investment, so will quit if they get bored/confused/frustrated.

< Several playtesting companies help studios work out what to teach players. PlaytestCloud is a cheap alternative, though you have to draw your own conclusions.
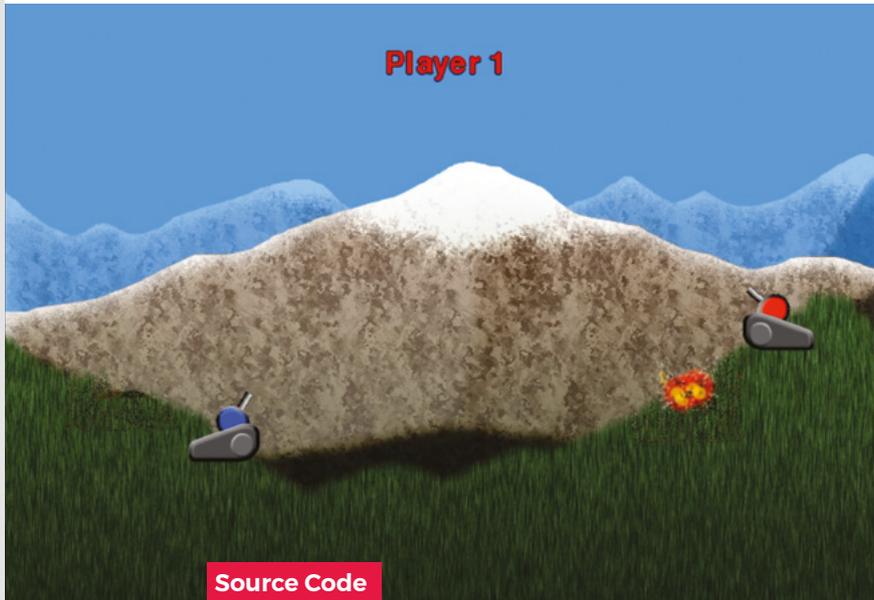
An early version of *Artillery* was programmed for the Apple II computer in the 1970s.

Artillery Duel was an early example of the genre, and appeared on such systems as the Bally Astrocade and Commodore 64 (pictured).

Our homage to the artillery game genre. Fire away at your opponent, and hope they don't hit back first.

Code your own
Artillery-style tank game

Fire artillery shells to blow up the enemy with our take on a classic two-player artillery game

AUTHOR
MARK VANSTONE

To pick just one artillery game is difficult since it's a genre in its own right. Artillery simulations and games have been around for almost as long as computers, and most commonly see two players take turns to adjust the trajectory of their tank's turret and fire a projectile at their opponent. The earliest versions for microcomputers appeared in the mid-seventies, and the genre continued to develop; increasingly complex scenarios appeared involving historical settings or, as we saw on page six, even mad ideas like battles between factions of worms.

To code the basics of an artillery game, we'll need two tanks with turrets, a landscape, and some code to work out who shot what, in which direction, and where said shot landed. Let's start with the landscape. If we create a landscape in two parts – a backdrop and foreground – we can make the foreground destructible so that when a missile explodes it damages part of the landscape. This is a common

effect used in artillery games, and sometimes makes the gameplay more complicated as the battle progresses. In our example, we have a grass foreground overlaid on a mountain scene. We then need a cannon for each player. In this case, we've used a two-part image, one for the base and one for the turret, which means the latter can be rotated using the up and down keys.

For this code example, we can use the Python dictionary to store several bits of data about the game objects, including the Actor objects. This makes the data handling tidy and is quite similar to the way that JSON is used in JavaScript. We can use this method for the two cannons, the projectile, and an explosion object. As this is a two-player game, we'll alternate between the two guns, allowing the arrow keys to change the angle of the cannon. When the **SPACE** bar is pressed, we call the firing sequence, which places the projectile at the same position as the gun firing it. We then move the missile through the air, reducing the

speed as it goes and allowing the effects of gravity to pull it towards the ground.

We can work out whether the bullet has hit anything with two checks. The first is to do a pixel check with the foreground. If this comes back as not transparent, then it has hit the ground, and we can start an explosion. To create a hole in the foreground, we can write transparent pixels randomly around the point of contact and then set off an explosion animation. If we test for a collision with a gun, we may find that the bullet has hit the other player and after blowing up the tank, the game ends. If the impact only hit the landscape, though, we can switch control over to the other player and let them have a go.

So that's your basic artillery game. But rest assured there are plenty of things to add – for example, wind direction, power of the shot, variable damage depending on proximity, or making the tanks fall into holes left by the explosions. You could even change the guns into little wiggly creatures and make your own homage to *Worms*. 🅦

Artillery-style tank game in Python

Here's Mark's code for an artillery-style tank game. To get it working on your system, you'll need to install Pygame Zero – full instructions are available at **wfmag.cc/pgzero**.

```python
# Artillery
from random import randint
from pygame import Surface, image
from pygame.locals import *
import math

landSurface = Surface((800,600),SRCALPHA)
landSurface.blit(image.load('images/landscape.png') ,(0,0))
gun1 = {"name": "Player 1", "actor": Actor('gunbody1', center=(700,
300)), "turret": Actor('gunbarrel1', center=(695, 280)), "angle": 30,
"multiplier": 1, "color": (255,0,0)}
gun2 = {"name": "Player 2", "actor": Actor('gunbody2', center=(200,
400)), "turret": Actor('gunbarrel2', center=(210, 380)), "angle": 30,
"multiplier": -1, "color": (0,0,255)}
bullet = {"active": False, "actor": Actor('bullet', center=(0, 0)),
"angle": 0, "speed": 0, "count":0}
bang = {"actor": Actor('expl1', center=(0, 0)), "frame": 0}
activePlayer = gun1
gameState = 0

def draw():
    screen.blit('background',(0,0))
    screen.blit(landSurface, (0, 0))
    if bullet["active"] == True: bullet["actor"].draw()
    if gameState != 1:
        gun1["turret"].draw()
        gun1["actor"].draw()
    if gameState != 2:
        gun2["turret"].draw()
        gun2["actor"].draw()
    if gameState == 0: drawText(activePlayer["name"],
activePlayer["color"])
    if gameState == 1: drawText("Player 2 Wins!", (0,255,0))
    if gameState == 2: drawText("Player 1 Wins!", (0,255,0))
    if bang["frame"] != 0: bang["actor"].draw()

def update():
    global activePlayer, gameState
    if gameState == 0:
        if keyboard.space and bullet["active"] == False: fireBullet()
        if keyboard.up: activePlayer["angle"] =
limit(activePlayer["angle"]-1,5,90)
        if keyboard.down: activePlayer["angle"] =
limit(activePlayer["angle"]+1,5,90)
        gun1["turret"].angle = gun1["angle"]
        gun2["turret"].angle = -gun2["angle"]
        if bullet["active"] == True:
            bullet["count"] += 1
            bullet["speed"] = bullet["speed"]*0.991
            bullet["actor"].pos = getNewPos(90-bullet["angle"])
            if checkBullet(bullet["actor"].pos) :
                explosion(bullet["actor"].pos)
                bullet["active"] = False
                if activePlayer == gun1: activePlayer = gun2
                else: activePlayer = gun1
            if bullet["actor"].y > 600: bullet["active"] = False

    if bang["frame"] > 0:
        bang["actor"].image = "expl"+str(int(bang["frame"]))
        bang["frame"] += 0.2
        if bang["frame"] > 6: bang["frame"] = 0

def limit(n, minn, maxn):
    return max(min(maxn, n), minn)

def fireBullet():
    bullet["active"] = True
    bullet["actor"].pos = activePlayer["turret"].pos
    bullet["angle"] = activePlayer["angle"] * activePlayer["multiplier"]
    bullet["speed"] = 10
    bullet["count"] = 0
    sounds.canon.play()

def getNewPos(angle):
    newX = bullet["actor"].x - (bullet["speed"]*math.cos(math.
radians(angle)))
    newY = bullet["actor"].y - (bullet["speed"]*math.sin(math.
radians(angle)))
    newY += 10-bullet["speed"]
    if bullet["count"] == 60: sounds.whine.play()
    return newX, newY

def checkBullet(pos):
    global gameState
    if pos[0]>0 and pos[0]<800 and pos[1]>0 and pos[1]<600:
        pixel = landSurface.get_at((int(pos[0]),int(pos[1])))
        if pixel[3] > 0: return True
    if gun1["actor"].collidepoint(pos):
        gameState = 1
        explosion(gun1["actor"].pos)
    if gun2["actor"].collidepoint(pos):
        gameState = 2
        explosion(gun2["actor"].pos)
    return False

def explosion(pos):
    x = int(pos[0])
    y = int(pos[1])
    sounds.explosion.play()
    bullet["active"] = False
    bang["actor"].pos = pos
    bang["frame"] = 1
    for c in range(2000):
        landSurface.set_at((x+randint(0,100)-50,y+randint(0,100)-50),
(0,0,0,0))
        if c < 1500: landSurface.set_at((x+randint(0,50)-
25,y+randint(0,40)-20), (0,0,0,0))
        if c < 1000: landSurface.set_at((x+randint(0,20)-
10,y+randint(0,30)-15), (0,0,0,0))

def drawText(t,col):
    screen.draw.text(t, center = (400, 60), owidth=0.5, ocolor=(0,0,0),
color=col , fontsize=40)
```

Pre-production in the echo chamber: building out an idea without going insane

Here, we'll look at how to make the most of dedicated creative time alone, to build a game concept into something pitchable

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David Ventura is the creative director of Ichigoichie, a Stockholm games studio. He has worked as a technology manager at iNiS in Japan, and Propellerhead Software in Sweden. Twitter: **@gamedeventura**

T hanks to coronavirus, hundreds of millions of people all over the world are stuck in their homes and using the opportunity to build things. For creative endeavours, this situation is a dual-edged sword. On one hand, you have lots of time to focus and fewer excuses for not making that game you've always dreamed of. This can also be an echo chamber of easily accessible media and no external constraints, leading to procrastination and analysis paralysis. But never fear! Creativity and productivity *can* go hand in hand with the right combination of effective self-management and inspiration. In this article, I'll take you through a quick overview of setting up a structured framework for success, a detailed list of things you'll need to build, and finally a brief strategy guide for the most common pitfalls in concept development.

A PRE-PRODUCTION FRAMEWORK

Building a game from scratch is a daunting task. The possibilities are thrilling, but how do you know what to focus on, and in which order? We're going to look at what I call a 'pitch-playable' build, which is the threshold you'd expect a publisher to express serious interest in to green-light your concept. What we'll assemble is a set of deliverables to send to a potential external partner. This will most likely be built around a demonstration of the core game loop, essentially the nexus of everything that makes your game fun.

For the purposes of this article, I'm going to assume you already have a solid idea and a core

◇ The key value of *Hexagroove* is delivering a unique kind of real-time strategic gameplay that encourages creative expression.

< Iterative prototyping of the core game loop in *Hexagroove* led to the inclusion of various minigames that exercised physical skills to complement the main strategic ones.
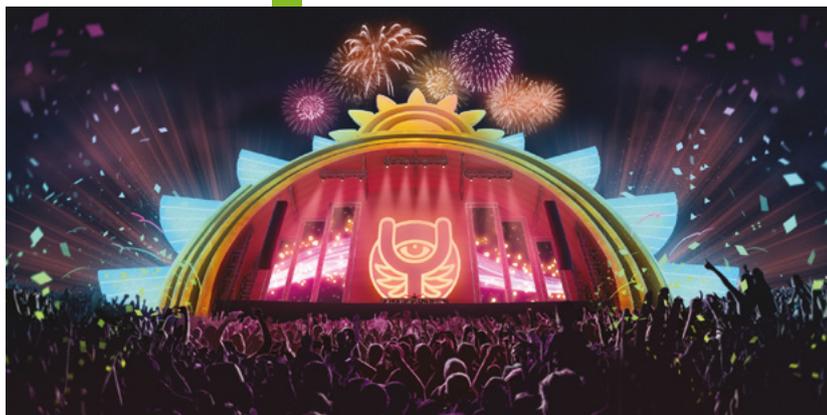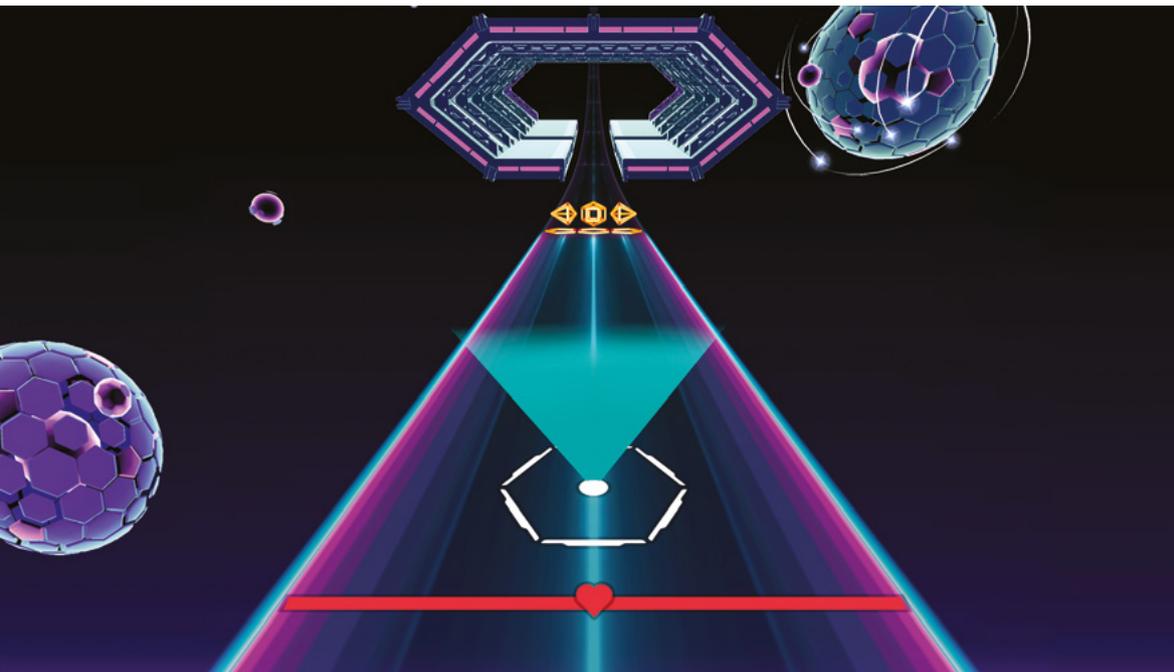
interaction prototype which illustrates the most basic kind of activity the player will be doing in your game. It can be an emoji-filled, unbalanced skeleton built on a mountain of hacks, but it should also be fun enough that you can imagine its potential.

The first thing to do is know and build on your concept's strengths. What will this game do best – better than any other? What is the unique selling point that causes people to raise their eyebrows when you explain it briefly? Who is this game for, and what is your competition? These are the first things you should be able to answer confidently with a good knowledge of the market.

The key value that your game will deliver to players could be any number of things. It may be an original art style, a well-loved story with a twist, or a fresh kind of gameplay other titles haven't delivered yet. This key value is likely tied to your studio's style and background, and to a lesser extent, the values of the publishers that you're considering pitching to. At Ichigoichie, we're game designers as much as musicians, and bringing the joy of musical expression into game design is our forte. So we always take a core interaction-first priority and build everything else around that. This value will set the secondary priorities (and accordingly, time investment) of everything else you're going to do in pre-production.

> **"Building a game from scratch is a daunting task"**

FOUNDATIONAL DOCUMENTS

Putting together your pitch-playable package for a publisher isn't always the same, but often includes:

- Core game loop prototype
- An art and possibly sound bible draft
- One-page game design document
- Budget with scopes
- Market analysis/projections
- Pitch deck

The first of these things is likely where your pitch will live or die, but the other elements show that you've done your research and are savvy enough to understand the business and risks involved.

Your art bible is a great way to showcase the graphical vision you have for the project, and is best done before you dive into producing visuals. This is in the interest of cost-effective management, and also to confirm that the game is going to be built with a cohesive visual style. This document will likely be finalised before production begins, and define a number of key features for your game's art style. Some of the important topics to cover include your palettes, lines and patterns, scale and proportions of characters and scenery, and inspirations from prior historical, religious, or artistic movements. ➡

∨ Experimentation is important but must be done within controlled bounds to drive your project to completion.
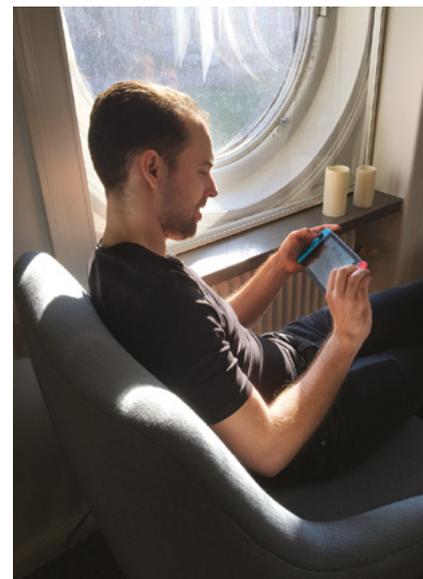
		Hours	
Core game loop	80 %	32	
pitch deck / videos	10 %	4	
game design doc	5 %	2	
budget / projections	2 %	0,8	
art style	2 %	0,8	
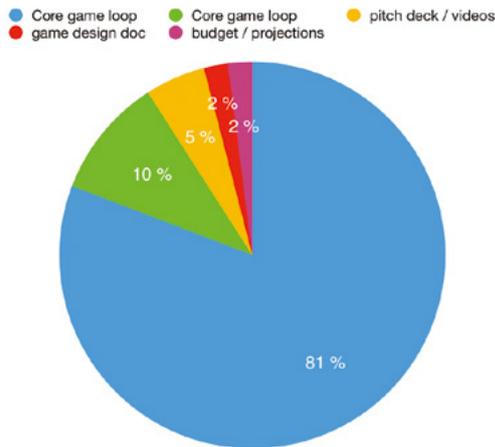
> **Figure 1:** Keeping numerical limits on how you spend your time can ease your conscience that you've done your best and invested in what matters.

If your title's sound design is a big part of its identity, you'll do well to produce a similar document that covers both the mechanical and emotional axes of how the player will experience audio in your title.

Unlike a sound or art bible, your one-page game design document (GDD) will almost certainly be a living thing which is updated throughout the course of production. This A4 piece of paper will give the development team and interested external collaborators a deeper look into what makes the title fun.

At Ichigoichie, we take a UX-centric approach to designing and measuring the entertainment value of our products, so after a two- to three-line introduction to the GDD we cover the hypotheses we hope to prove (or disprove and iterate on) in the title. Two hypotheses from *Hexagroove: Tactical DJ* were that making music could be guided, and that game-assisted performing of music can be challenging and rewarding. Later on in pre-production, we tested our hypotheses in order of descending risk, with successive interaction prototypes user-tested with outsiders in our demographic. Other likely things to include in your one-page GDD are a key feature list, core/meta-game loops, and brief summaries of the art and audio style.

"Time is the most valuable resource you'll ever have"

To illustrate the financial aspects of your title, you'll need to include a scoped budget and a short market analysis with sales projections, using existing titles' success as watermarks. The budget for a publisher doesn't need to be as detailed as the one you'll be keeping internally, but it should illustrate what percentages of the money will be split between engineering, art, sound, project management, and any external administrative costs. Having a small/medium/large three-tiered budget can help show the publisher what you consider to be the bare minimum to get your title off the ground, as well as a deluxe, scaled experience if they really buy into the concept.

To offset these costs, you should have an idea of how many copies you can sell at a competitive MSRP. Using data from sources like other publishers' sales reports or Steam Spy can further mitigate financial risk.

Finally, all these pre-production materials should be distilled into a digestible pitch deck of no more than 15–20 slides. One slide for each key element is a good yard-stick, and the order the slides come in should be tailored both to keep the eyes on the material (start with a hook), and built around the values of the sponsor you're hunting for. A pitch to a platform holder should show cognisance of their indie strategy and the points they want to promote in their ecosystem. The same goes for publishers who showcase their brand as being the prime producer of a certain aesthetic or gameplay style.

Altogether, this is quite a lot of material! So given you only have limited resources until you send this off, how do you decide what to focus on? How much time you spend on each one of these things goes back to your key values and those of the publisher(s) you're hunting. One particular breakdown can be seen in **Figure 1**.

You'll need to plan your investment for the pre-production period to match these numbers accordingly. In terms of absolute time, I find it useful to pick a semi-arbitrary number out of the blue, say two months, and shoot for that. When I do estimation like this, it's influenced by my experience, the tech we have on hand, and what the internal and external financial/market conditions are like. The point is that in general,

the amount of time taken for a task expands to fit the deadline, so you might as well start with one, stick to it, and do your best to build something fantastic in the time you have.

Now that we know what we need to build, and how much time to roughly spend on each part, here are some behaviours we'll need to foster when taking on the challenge.

SUCCESSFUL BEHAVIOURS
Time is the most valuable resource you'll ever have, so the effective creator knows where their time is going. Start keeping a log of your work hours for three to ten days, and you'll be amazed at the things you learn. After learning where your time is going, you can be more selective about where to spend it (**Figure 2**).

There's a system popularised by Stephen Covey where tasks are divided into four regions over two axes: importance and urgency. Every day before starting work, take five minutes to sort your tasks into one of these groups. You should be doing the ones that are important. If you're the leader of a group, doing tasks that are important and *not* urgent is where you should be spending most of your time, because these are the tasks that pave the road for future success. If a task isn't yet in one of these four groups, don't do it. Once it is, let the unimportant ones slide. Importance is easily discernible by how well the task ties into that priority and key-value work we did in part one.

	Urgent	Not Urgent
Important	* fix broken build download link * get user test feedback to devs	* create risk analysis * set up tasks for next sprint based
Not important	* buy and deliver snacks to today's user testing session * decide/attend industry mixer this evening	* fix occasional shader bug

The road to development hell may be paved with good intentions, but it's also littered with shiny baubles that can drag you into a morass of wasted time. If you find yourself caught in one of these snares, **Figure 3** will show you a trick or two to break free.

DON'T FORGET THE FUEL
This article has covered a large range of materials you'll need to produce for a game title in pre-production, and a few 'dry' techniques for managing what is often a very 'wet' process of creating something original. People may argue you can't optimise creativity. Though this dark art is best left to run free, refining and managing your process can help make sure your creative energy is directed to the most important things. If you get lost or confused, go back to what brought you here in the first place: the light that shines in your own heart. Here's to your dream coming to life, and not being forever archived in a dusty folder on your hard drive. Ⓦ

> ⌃ **Figure 2:** Though this matrix was popularised by Stephen Covey in *The 7 Habits of Highly Effective People*, it is credited to former US president, Dwight Eisenhower.

Pitfall	Strategies
Can't stay focused on one idea	Declutter your information sources. Set a deadline, prove out the concept by date X, and then ditch it if it doesn't test well enough.
Getting stuck on one part of the deliverables	See the time/priority limit, stick to it and split the time daily/weekly/etc. throughout the process so the quality of everything comes up together and is always ready for critique
Getting stuck on trying to complete the core interaction	This is a prototype, not production! We're selling for potential. If you see some smiles and laughter when testing, this means there is a lot of hope!
Getting stuck polishing one thing in the prototype far too long	Split time inside the prototype the same way the whole project is split. Percentage of times comes down to the USP and what makes this title shine.
Get stuck looking for references/inspirations somewhere else	Knowing your medium is important, but this can easily be a procrastination technique. Pick X games or media pieces you'll use for inspiration and timebox interacting with them. If the game in question is expansive, focus on the part of the production you're doing right now, like feedback, UI, etc.
Feeling unmotivated, depressed	Why aren't you enthusiastic, is it fear or embarrassment, failure? Remember why you're doing this, go back to your guiding star/fondest gaming memory.

⌃ **Figure 3:** Ultimately, most of the difficulties you'll encounter during your project will be with yourself. Keeping a positive outlook and having a cheat sheet before things go bad can help you in times of uncertainty.

FURTHER READING
Software engineering is a field that has long laboured over the usage of time and waste. Seminal books like *The Mythical Man-Month* (by Fred Brooks) delve into the fundamental nature of project management and how easily it can be derailed. For more details on the concepts presented here, check out *The Effective Executive (*Peter Drucker*), The Practicing Mind (*Thomas M. Sterner*),* and Randy Pausch's wonderful lectures, which are the foundation of this article.

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Indie reflections:
Making Anew Part 14

How do you manage an indie dev team?
Jeff has a few words of advice

Setting goals, creating a project schedule, and leading a team are critical components in the game development process. Project management is challenging for teams of all sizes and levels of experience – even the best managers in the industry struggle at times to keep the ship afloat. Project management is a vast topic to explore, and in this article, I'll share some insights into ways that you can successfully manage your team and finish your game.

HERDING CATS

On my first day of graduate school, many years ago, my animation professor asked our class, "Why do we make films?" Silence. The question was intentionally open-ended. His answer, "To finish them." While seemingly obvious, his response was profound and has resonated with me throughout my career. Any seasoned game developer will tell you that starting a game is fun and exciting, but finishing one is deceptively difficult and takes a tremendous amount of effort and determination. The tools and techniques of project management can help you get to the finish line.

Begin by setting a realistic timeline for the overall project. Are you making a small game demo to prove out a design idea or gameplay technique, or is your game larger in scope and more fully featured? Conservatively plan to spend twice as much time as you think you will need, because your game will likely take far longer to complete than you can imagine at the outset. The initial time estimate will be one of the most important project management decisions you make, because this large chunk of time will need to be split up and managed in myriad ways throughout development. Some of the toughest development challenges you will inevitably face are dealing with 'unknown unknowns'. These are problems you cannot anticipate, that you are not well-equipped to solve, and are difficult or impossible to schedule. Add time to account for these challenges.

Next, break up the development cycle into the following major phases: pre-production, alpha, beta, and release. Pre-production should take up the least amount of time. Set goals for art, gameplay, design, and features, and start prototyping each as soon as possible. Hire your team and make sure they have clear roles and responsibilities assigned. Alpha will take the most amount of time and constitutes the bulk of your project – this is when most of the work on the game is completed. Your goal during alpha is to get the game to a near-complete state, where all features are in place, and almost all of the content is present in the game world. Then, during beta, you will send fully playable game builds out into the world to be playtested with the goal of squashing bugs and improving gameplay. Your beta testers can be privately selected, you can hire an external company to perform this task, or you can use a mechanism such as Steam's Early Access to enlist players. Release will be the shortest and most intense phase of

⌄ Project managers wear these glasses because they are the rock stars of the dev team.
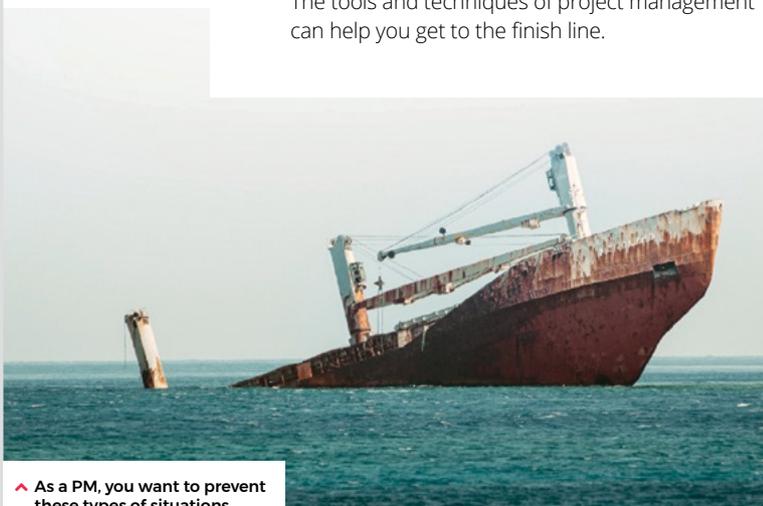
⌃ As a PM, you want to prevent these types of situations.
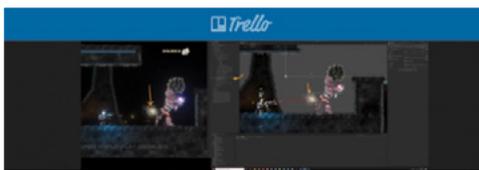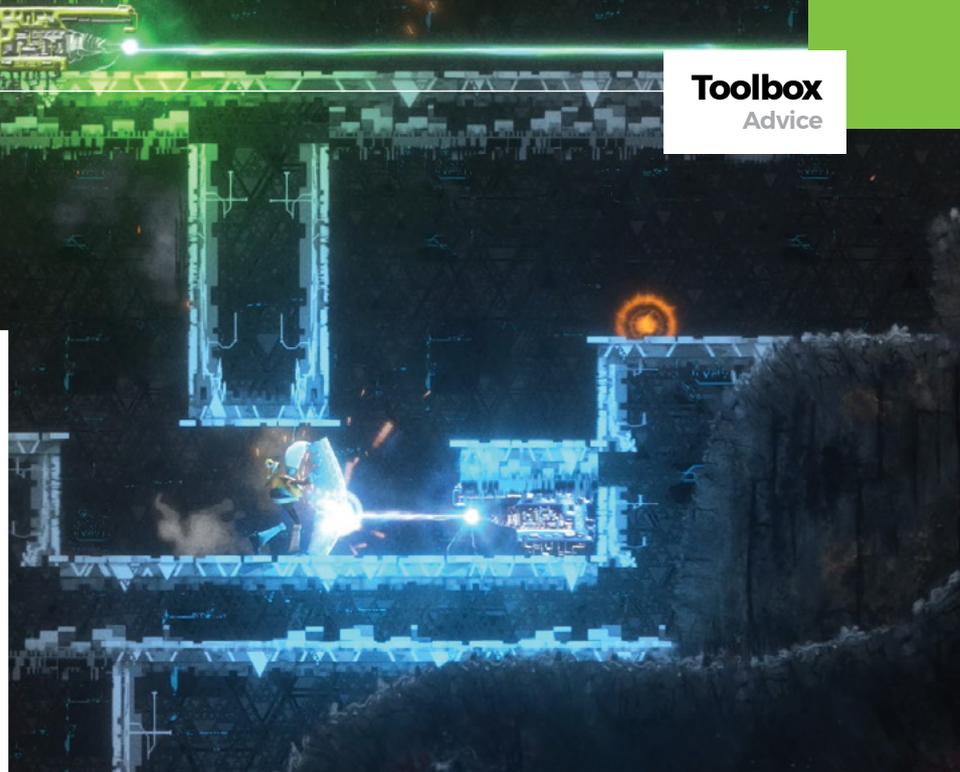
production (I'll write a dedicated article on this subject in the near future).

Time and money are limited resources in game development, so you'll need to do your best to stick to the schedule to avoid overrun in these areas. Clearly communicate deadlines and major milestones to your team and make sure each person is accountable for hitting these important dates. If deadlines slip regularly, strategise on ways to complete the work more efficiently, or make cuts to planned content. Try to set core work hours for the team when all members are awake, alert, working productively, and available to communicate and troubleshoot issues. Conduct regularly scheduled weekly meetings with the full team, either in-person, or virtually using a platform such as Zoom, Skype, Discord, or Google Meet. Ask each team member to briefly report on recently completed tasks, challenges they are currently facing, as well as any foreseeable obstacles or blockers. No matter how busy you are, don't skip these weekly meetings, even if they only last a few minutes! They foster open communication and a sense of collaboration, so don't fall into the habit of cancelling or skipping them.

Identifying problems early on, before they become emergencies that jeopardise the forward movement of your project, is a crucial skill to

develop as a project manager. This requires regular communication with your team, and a progressive attitude toward tackling problems head-on, rather than ignoring them. As the sign outside my dentist's office states, "Prevention is cheap. Neglect is costly." Use an online tool to organise and manage your team's responsibilities, track dependencies, and anticipate future roadblocks in order to avoid negative surprises. As the PM on *Anew: The Distant Light*, I use Trello to track the hundreds of ongoing individual tasks. Trello's card system is a great way to ensure each team member is aware of upcoming deadlines and has the necessary information and assets to meet them on time. No matter how much planning you do, always be flexible with your schedule. Many planned tasks will take longer to complete, and if you're lucky, some will get done sooner than anticipated. Each week, make adjustments to the schedule to account for these changes. Strive to strike a balance between keeping the larger picture in view as well as focusing on the details currently at hand.

Whether you're making your first game or your tenth, treat your teammates with respect and as professionals. Remember, even when things become difficult (and trust me, they will), you're all on the same team and working toward a common goal – to finish your game to the best of your abilities. Approach problems with an open mind, be a good listener, and process all the information on the table before making any important decisions. Managing the development of a game is like herding cats. Guide those cute, chaotic little furballs over the finish line, and then take a nice long nap in the sun when you're done. ⓦ

"Identify problems early on, before they become emergencies"

⌃ **The best PMs shield (get it… shield?) their teams from time and cost overruns.**

⌃ **An example of a scheduling task from *Anew*. Trello is great for managing the development of your game.**

Become a cat whisperer

It takes years to learn how to effectively lead a group of smart, talented people in the creation of a video game. The best way to improve your PM skills is by *doing*: experience the process first-hand, take notes, reflect on things gone wrong in order to learn from your mistakes, and strive to improve your processes the next time around. I also recommend searching for 'project management' on the GDC YouTube channel and studying past conference presentations focused on this subject.

GAME
Eastern Exorcist

STUDIO
Wildfire Game

RELEASE
Out now (Steam Early Access)

WEBSITE
wfmag.cc/eastern-exorcist

Eastern Exorcist

A side-scrolling hack-and-slash, *Eastern Exorcist*'s aggressive action is complemented by the sumptuous delicacy of its visuals. Inspired by Chinese opera and ink-and-paint art, indie studio Wildfire Game have woven a rich fantasy world of misty landscapes and toothsome monsters. According to Wildfire co-founder Shaoyan Chen, *Eastern Exorcist*'s handcrafted look was created using a mixture of traditional pen-and-paper sketches and computer animation, with the game built in Unity to provide a pseudo-3D look. "Our art colleagues are quite serious about the graphics," Chen tells us. "They're full of love for their work... We've spent a lot of time and energy polishing, and I admire their professionalism. And the team were all old colleagues before, so a longer run-in time was also our advantage."

What's all the more impressive is that such a striking, detailed game was created by a small team of at most ten members; you can read more about how Wildfire made *Eastern Exorcist* on page 78. Until then, feast your eyes on some of the spectacular concept art from its production.

Exploring gaming's
new generation of

Elderly Protagonists

WRITTEN BY **ALEXANDER CHATZIIOANNOU**

For decades, the medium has treated them as afterthoughts. Isn't it time for senior characters to receive leading roles, too? We meet the developers who think it is

A menace to society: your victims in *Bad Street Brawler* are not just old; they appear to be blind, too.
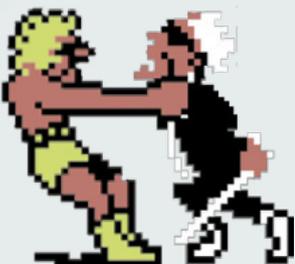
In July 2019, Ubisoft executive Alain Corre said of Helen, the elderly assassin in *Watch Dogs: Legion*: "Nobody has dared do anything with a granny before." Mockery was the prevailing – and not inappropriate – response from the gaming public. This mixture of historical cluelessness and self-promoting bluster is par for the course in a triple-A industry prone to misrepresenting the progress made by indie studios as its own, but there was at least a grain of truth in Corre's boast. In an age of expanding inclusivity, there's a demographic glaringly absent from the endless parade of video game characters that jostle for our attention: older folk.

The developers interviewed for this piece have all made games that revolve around aged

or ageing characters, and their approaches, concerns, and projections all vary. Yet there was a single constant in their replies: all of them had a hard time naming a video game character that directly influenced their own. Designer Daniel Black, who gave us sprightly septuagenarian Jack Glover in *The Last Time*, came the closest, relating how he "enjoyed watching Sam Fisher grow older and experience different life events through the *Splinter Cell* series", though he had to concede that "you never play him at a very advanced age and he's always in peak physical condition."

For others, inspiration seems to have come mainly from cinema and, to a lesser extent, literature and the visual arts. We're being presented with increasingly relatable human stories about the lives of kids, youths, and adults

▲ **A typically reflective moment in Broken Games' adventure puzzler,** *Old Man's Journey*.

in games, but when the needle moves past middle age, the medium has little to offer (and, no, Token Drunk Sensei in Fighting Game doesn't count). So where are gaming's elderly protagonists, and do we have reasons to believe the medium is expanding to accept them?

ORIGINS: COMEDY AND EXAGGERATION

The economic realities of the early eighties games industry could partly account for the scarcity of elderly protagonists. Games were a product aimed mainly at kids and largely made by so-called 'bedroom coders' – self-taught developers, often still in their teens, operating straight from their parents' homes. These are ages, and we've all been there, where 'old' denotes someone with children and an office job, not a person in their 60s or beyond. For the majority of both producers and consumers

> **"Elderly characters were exaggerated caricatures"**

associated with the video game market of that era, life over 65 was less than a blink on the horizon; it was a faint echo from another universe. As a result, the few elderly characters that did emerge were exaggerated caricatures; their age-based otherness played for laughs.

*Bad Street Brawler (*aka *Street Hassle)* was arguably the crassest – which isn't to say entirely unfunny – affirmation of that paradigm. Beam Software's notorious side-scrolling beat-'em-up had your scantily clad, mullet-sporting muscle man kick, punch, and headbutt the hell out of frail, white-haired folk.

On the opposite end of the spectrum, a rather more belligerent role was reserved for 1984's *Bionic Granny* (not to be confused with TV's *Super Gran* – that show was the subject of two game adaptations later in the decade). In the famously terrible *Bionic Granny*, players controlled the

titular character as she ➡ lurked outside a school, whacking departing pupils with her cane. *Watch Dogs: Legion*'s Helen may not have been the first elderly protagonist, but at least we've come this far since the eighties – Helen is, ostensibly, fighting cops in a fascist state, not assaulting a bunch of schoolchildren on their way to lunch.

BOOKENDING LIFE NARRATIVES

If the medium's early representations of the elderly were mostly confined to tragicomic victims or marauding hags, dubiously bolstered by the stereotypical smiling nana of a point-and-click here and the brooding wizard of an RPG there, it's no surprise that contemporary developers find little to draw on for a more grounded story about senior characters.

Rather than attempt to scrutinise the experience of advanced age itself, it's perhaps easier for storytellers to portray it as another stage of development – a bookend to a broader life narrative. This isn't a new technique, having been used as early as Activision's classic *Alter Ego*, which tasked you with guiding the choices of an individual from the earliest stages of infancy until their death. Jason Rohrer's *Passage* is based on a similar premise, though treated in a more poetically minimalist manner, sending you, along with a spouse, down a seemingly endless, empty corridor where minute changes are gradually introduced, your hair thinning, your pace slowing, culminating in two predictable yet poignant final developments.

It's personal

These are often strongly personal works, channelling memories of loved ones. In *The Last Time*, Daniel Black based Jack's care home on the establishment where his grandparents spent their last years. Visiting his mother in Brazil, Klos Cunha "noticed certain signs that come with age: she was getting lonelier, with her children getting more distant and close relatives passing away", none of which was intentionally used in *The Fifth Apartment*, "but the feeling was there and materialised itself as a character." Brendon Chung also hinted that "family members and relatives played a part in inspiring *Quadrilateral Cowboy*", but "would prefer not to get into detail about it."

^ Ahead of its time? Among its many options, *Alter Ego* allowed you to pursue a university degree in your later years.
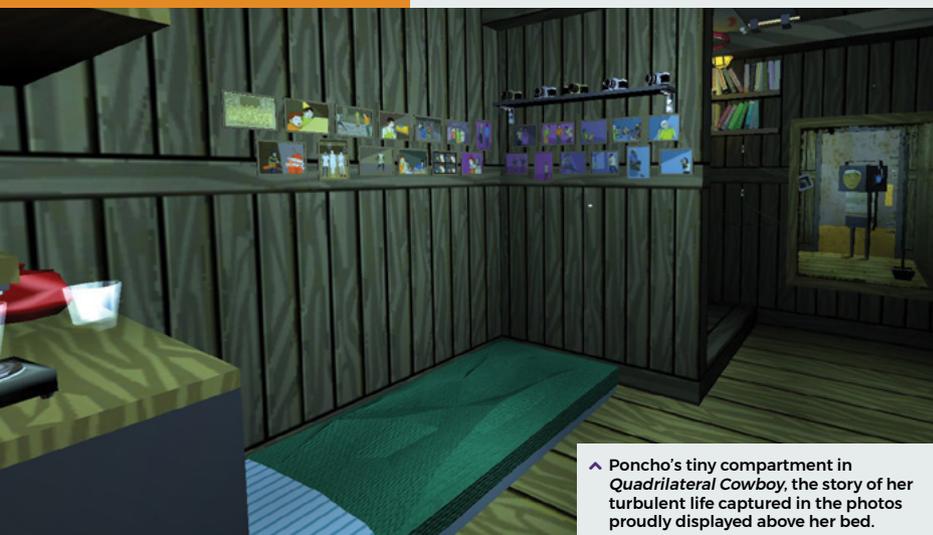
Some of the more insightful of these bookending snippets, however, aren't necessary or even expected parts of a character arc. Brendon Chung, the mind behind Blendo Games and co-developer of *Quadrilateral Cowboy*, added a brief epilogue to the story of Poncho, revisiting his irrepressibly rebellious heroine several decades after her main adventure has taken place.

Following the series of proto-cyberpunk heists she executes alongside her disenfranchised besties, including a raid at the Malta Stock Exchange and sneaking into an orbiting neurosurgery ward, we return to an aged, though no less defiant, Poncho. She's still riding her shoddy hoverbike and still living in poverty, eating instant ramen and sleeping on a dirty mattress. The latter is now crowned by a series of photos proudly displaying her youthful exploits; a collection meant to convey "the feeling of taking an honest look back at your life. What have you built, what have you destroyed, what are the tiny things you've done to make this world a better place?"

The gently wistful scene isn't inserted to round off a detailed biographical narrative. On the contrary, Chung wants the player's imagination to fill in the blanks of the gang's story by providing "just that – a glimpse. They'll have more adventures and great moments and low moments in the intervening years, and there's something beautiful about knowing that."

IN SEARCH OF REDEMPTION

If *Quadrilateral Cowboy*'s bitter-sweet coda serves to validate the visible chapters of young Poncho's story through a brief peek at her later years, then *Old Man's Journey* reverses both that temporal structure and its purpose. In Broken Rules' game, we're tasked with solving spatial puzzles to guide the protagonist through an idyllic Mediterranean countryside as he attempts to reconnect with his estranged family. Creative director Clemens Scott

^ Poncho's tiny compartment in *Quadrilateral Cowboy*, the story of her turbulent life captured in the photos proudly displayed above her bed.

argues that choosing an elderly hero "allowed us to reflect on his past life and his questionable choices, while still creating empathy for him through his journey for redemption." In this way, skipping the character's younger years, hinting at the pain he caused only via momentary vignettes, curtails the impulse to judge and opens up space for forgiveness, for "players to finish the game with a sense of hopefulness and pleasure."

> "*The Last Time* succeeds, despite its bleak premise, in painting an uplifting picture"

On the other hand, *The Last Time*'s guilt-ridden protagonist, policeman Jack Glover, bears no responsibility for the moment that ruined his life several decades earlier. During the game's brisk introduction, a seemingly routine burglary call turns to tragedy as the young officer's partner is murdered in cold blood by an unstable home invader. As with *Old Man's Journey*, the game mostly revolves around the protagonist's later years, in particular, his final attempt to track down

his friend's killer. According to Daniel Black, Jack's age "allows the player to experience obstacles that elderly people can face – loneliness, lack of respect." A traditional point-and-click of unusual optimism and warmth, *The Last Time* succeeds, despite its bleak premise, in painting an uplifting picture of the newly energised Jack. He charges inside a burning nursing home to rescue a senile veteran, and busts an impressive repertory of dance moves inside a trendy nightclub, every little adventure reinforcing Black's central message "that you're never too old to change."

TIRED BODIES, LONELY LIVES

Most of the titles discussed so far feature relatively healthy, active senior characters. Poncho remains a biker; the unnamed Old Man traverses a marathon's length of hills and forests; and Jack transforms into a balding superhero when the need arises. But there are also games that attempt to grapple with the problems that arrive in our ➤

Jack

I'm kind of excited. It's been a while since I had an outing.

^ Junipers and tombstones: starting the long walk towards the bench of *The Graveyard*.

later years, whether mental, physical, or social. Tale of Tales has created a walking simulator in the truest sense, with the intentionally lethargic pace of *The Graveyard*'s heroine making an ordeal of her stroll. As her gait slowly deteriorates into a hobble and the awkward tank controls discourage thoughts of veering off path, it becomes clear that these rudimentary tweaks of movement mechanics are meant not just to comment on the physical struggles of the elderly, but also to convey a sense of encroaching isolation. A flurry of activity seems to be ignored by the old woman. Police sirens blare in the distance; the birds raise

a ruckus on the trees above. But when all your conscious effort is focused toward reaching a bench to rest your weary legs, life outside fades into insignificance.

The Fifth Apartment's sole character faces similar challenges but in an even more oppressive setting. Everything in her gloomy Parisian home signifies someone who has abandoned hope. The floors are rotting, there's mould on the walls, and the plumbing seems to whisper in human voices as if her brain tries to will companionship into existence. The TV rests front and centre in an underlit living room where she spends most of her time, killing empty hours before going to bed. Arguably worst of all is the balcony, where light, street-level bustle, and an accordion rendition of, ironically, *La Vie en Rose* provide a harrowing counterpoint to her loneliness. A vivid portrait

v *Quadrilateral Cowboy*'s epilogue hints at a lifetime of joy and adventure.

> A short break from the daily routine: the mailman visits in *The Stillness of the Wind*.

Silver Screen

"Angry grandmas aren't taking Lara Croft and Nathan Drake away from anyone"

of alienation resulting, as co-creator Klos Cunha recalls, in a "number of people who sought me out after they finished the game, telling me it moved them and encouraged them to call their mothers and grandmothers." *The Fifth Apartment* is an uncomfortable experience and, if its impact is somewhat undercut by a horror subplot forced on it by the demands of the Ludum Dare competition for which it was made, it's a testament to Cunha, Ricardo Bess, and Bruno Poli's talents that they still managed to generate such a response.

OLDER FOLKS ARE HUMAN, TOO

Thirty-five years after the antics of *Bionic Granny*, the release of *The Stillness of the Wind* seems emblematic of the medium's changing relationship with its elder protagonists. In the intervening decades, the teenagers that casually beat up near-helpless bystanders in *Bad Street Brawler* have grown up. Those whose attachment to video games has withstood the demands of family life, the worries of a career, and the convenience of Netflix are now less likely to view elderly characters as a punchline. The popularity of young, lithe, presentable leads will never fade – angry grandmas aren't taking Lara Croft and Nathan Drake away from anyone – but there's reason to assume that as the medium's audience gets older, their interest in relatable characters and situations will grow too. Most of the games in this piece came out over the last five years; surely, more will follow.

The importance of *The Stillness of the Wind* in this historical shift lies in the way it subtly reframes the possibilities and expectations for elder protagonists. Yes, preceding games have taken a sympathetic, nuanced look at their heroes and heroines but, nevertheless, what was obvious in their stories was an anxiety to connect, the need for a dramatic hook. Talma, on the other hand,

patiently caring for her remote farm, requires neither a grand redemption arc nor an appeal to our sentimentality to justify her leading role. Developer Coyan Cardenas explains how his game's emotional restraint is "reinforced from a design perspective, too" as "the mechanics are completely focused on the mundane chores and everyday necessities of living – there is no stop and cry button, there is no give up option." We'll feed the animals and tend to the garden and, just before going to bed, read letters from a distant cousin or niece that has moved to the city. Her life might not make for conventional video game narrative but, through Talma, *The Stillness of the Wind* introduces an unprecedented degree of humanity to the medium's elderly protagonists: no longer martyrs, monsters, or saints; just people. Ⓦ

▲ **Loneliness hangs thickly in *The Fifth Apartment*.**

How Eastern Exorcist went from saggy old sofa to Steam

Chinese developer Wildfire Game explains how it made a sumptuous 2D hack-and-slash on a shoestring budget

^ **Shaoyan Chen, Wildfire Game co-founder.**

T he world of *Eastern Exorcist* is, quite simply, gorgeous: trees sway in the breeze and mountains loom up through distant mists while, in the foreground, an army of supernatural creatures leap and slither into view. Chinese indie studio Wildfire Game's 2D hack-and-slash is steeped in its own country's artwork, storytelling, and folklore, with every frame crafted with precision and care. It's all the more remarkable, then, that such an engrossingly taut and beautiful-looking game was made by a tiny studio working on a minuscule budget; when work began on *Eastern Exorcist* about three years ago, there were just four developers working on it from the discomfort of an old sofa. Back then, developer and studio co-founder Shaoyan Chen had just left a much larger game company, and had sunk his meagre savings into the new project. "That was very tough for us at the beginning," Chen recalls. "We invested by ourselves and realised it would be [financially] hard for a long time. Therefore, monitors, computers, and sofas were all bought second-hand, to save anything we could."

Working together in a single room, the fledgling team spent just under a year building

an initial prototype, which soon attracted vital interest from investors; with that extra funding secured, the studio expanded from four developers to ten. "Then it took another year to complete a significant milestone in the game, and we went to find a publisher," Chen continues, referring to Chinese video-sharing platform turned game publisher, Bilibili. "But every time we got new funds, they were mainly invested in the game, which means our lifestyle hardly changed."

TOUGH GOING

Working conditions may have remained austere, but *Eastern Exorcist* soon burgeoned into the eye-catching experience that first hit Steam Early Access in August. Taking its cue from games as varied as *Dark Souls*, *Ori and the Blind Forest*, *Salt and Sanctuary*, and *Onimusha: Warlords*, *Eastern Exorcist* is an unspeakably tough yet rewarding action fantasy; your protagonist, the athletic exorcist of the title, is capable of flipping and slashing his sword through enemies both large and small – which is just as well, since the game's world positively heaves with a wild menagerie of demons and monsters. Like *Dark Souls*, *Eastern Exorcist*'s bosses will take time, patience, and mastery of blocks, attacks, and parries to defeat,
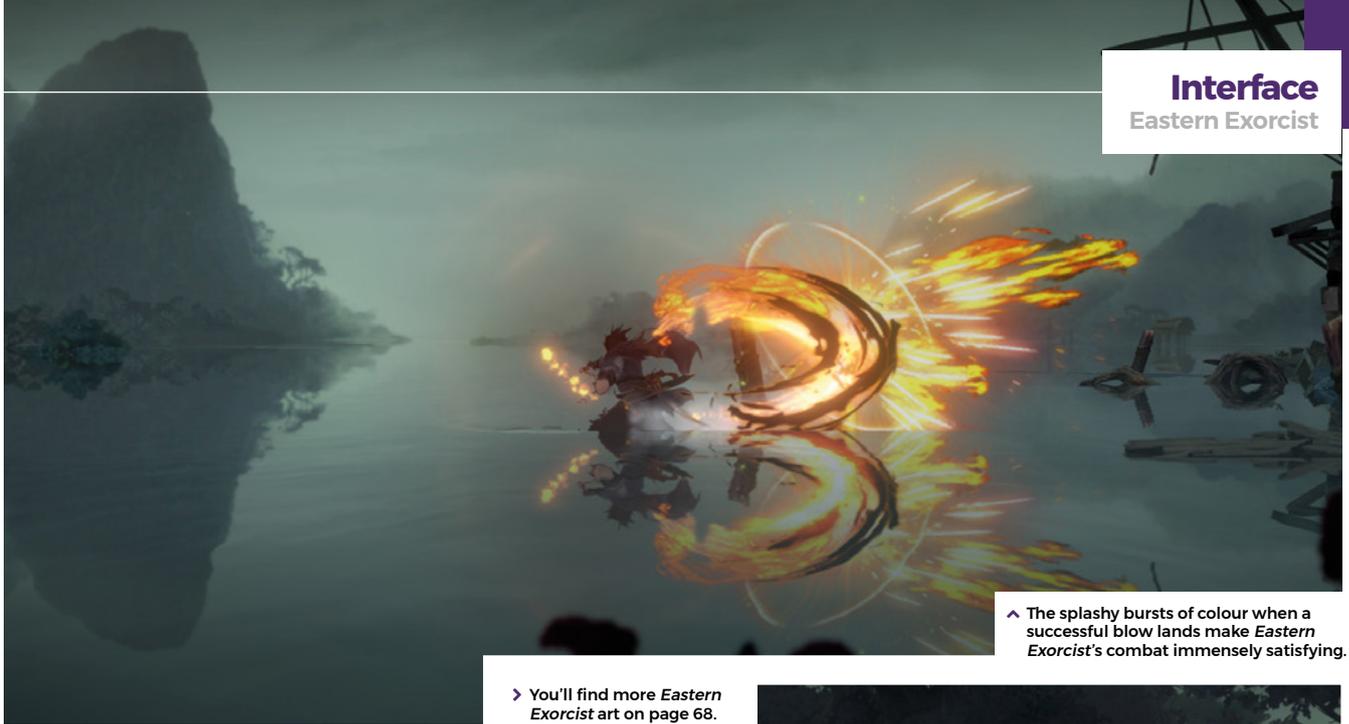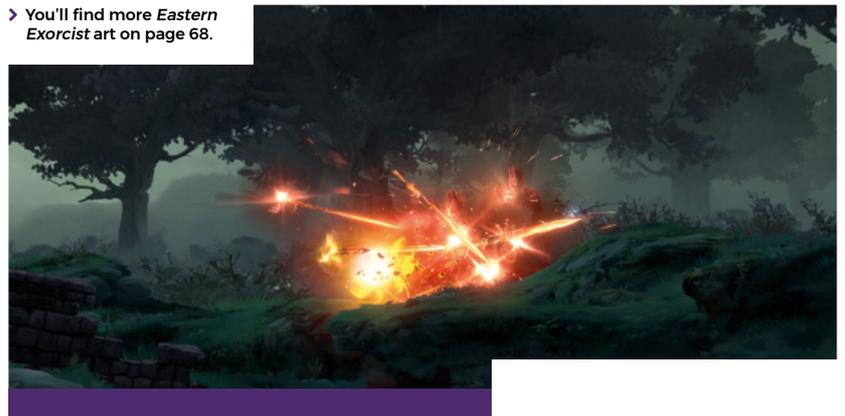
The splashy bursts of colour when a successful blow lands make *Eastern Exorcist*'s combat immensely satisfying.

> You'll find more *Eastern Exorcist* art on page 68.

The game's use of foreground layers gives the 2D artwork real atmosphere and depth.

but the game's tight controls and captivating visuals make practice more than worthwhile.

Created in Unity, *Eastern Exorcist* mixes 2D hand-drawn artwork and 3D models to craft the illusion of a hand-painted world inspired by Chinese artists such as Quanzong Zhang and Zixi Wei; there are real moments of drama and imagination here, too – we were particularly taken by a boss encounter on a weather-beaten jetty, in which a huge aquatic beast (or Fish Fiend, as the game calls it) leaps from the foaming sea and lunges at the player with its snapping jaws. *Eastern Exorcist* may have a fraction of the budget of your typical triple-A game, but it more than makes up for this through sheer artistry – and, Chen points out, the team's willingness to push themselves to uncomfortable lengths to achieve the results they were after. "The animation was made by combining traditional, hand-drawn keyframes and software tweening," Chen explains. "This shouldn't be a problem for a professional developer, but it takes time to design… it was basically done by increasing our working hours

"There were no shortcuts. It was just that everyone wanted to get the project done"

and reducing our salaries. There were no shortcuts. It was just that everyone wanted to get the project done."

Or course, long working hours and low pay aren't sustainable practices at any level of game development, and Chen admits that "how to balance life and work also needs to be considered" now that *Eastern Exorcist* is in Early Access. But with Wildfire Game now looking to *Eastern Exorcist*'s next phase – "We need to polish and adjust what we've already shown to players," he says – and a port to PlayStation 4 planned, Chen hopes that the game will be successful enough to ease the difficulties the studio has felt over the past three years.

"We've been short of money since the beginning of the project," says Chen. "More money can speed up the development, and also can lead to a better life for our developers. I hope that after the launch of the product, we'll achieve profitability so that we can have less economic pressures in the future." But, he adds, "we're still keeping that old sofa." Ⓦ

MAGNIFICENT MURAMASA

One of the games Shaoyan Chen cites as an influence on *Eastern Exorcist* is the wonderful *Muramasa: The Demon Blade*, or *Oboro Muramasa* as it's known in Japan. Developed by Vanillaware and released for the Wii in 2009, it's arguably among the prettiest games ever made for Nintendo's remote-waggling system. Like *Eastern Exorcist*, it's a side-scrolling hack-and-slash with painterly graphics and a strong folklore theme. Aside from a 2013 port to the PlayStation Vita, though, *Muramasa* has so far failed to emerge for other systems – a pity, as we'd love to see its vibrant, fluid visuals remastered in glorious HD. Until that happens, at least we'll have *Eastern Exorcist*.
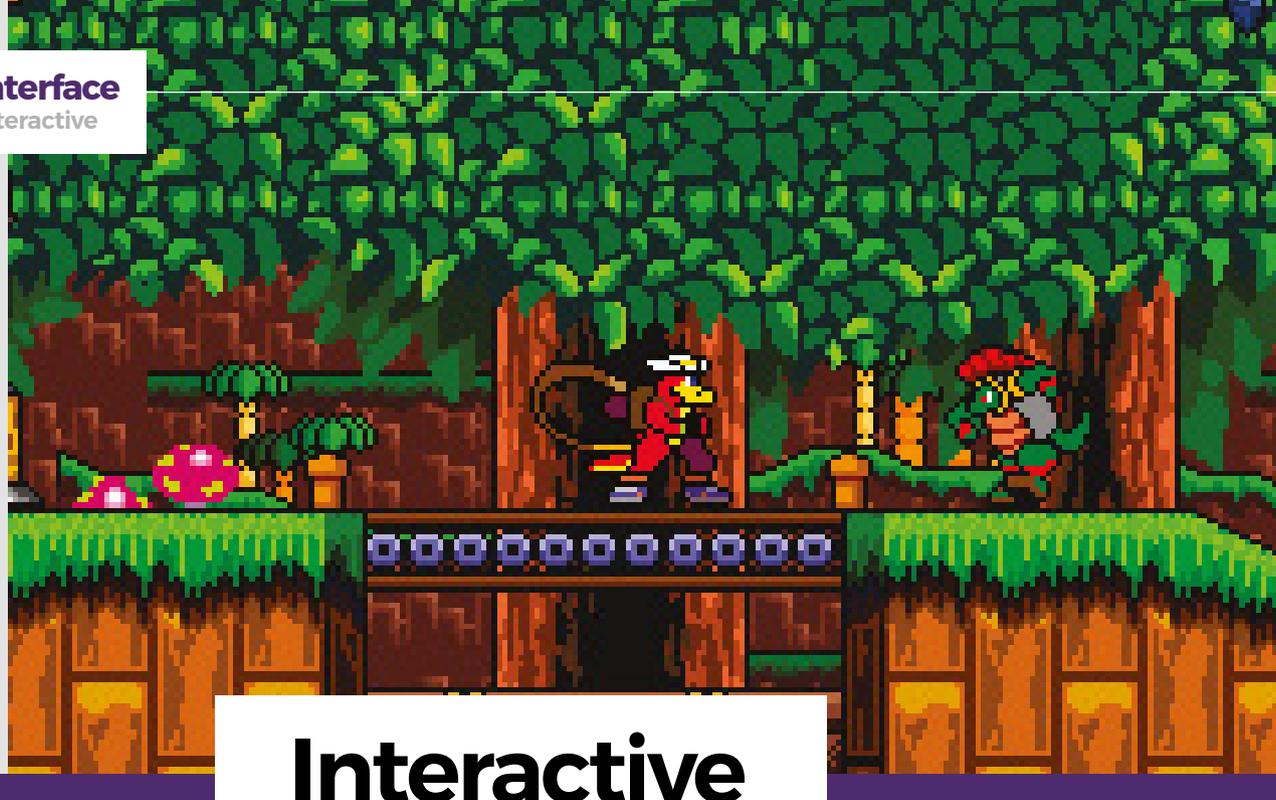
Interactive

Brock Crocodile

Javed Miah chats to us about the seven-year (and counting) process of making a homage to Sega's 16-bit peak

⌄ **Hub worlds provide a welcome change of pace between the jumping and boss battling, and allow the game's wealth of incidental characters to come to the fore.**

Sega's far from the powerhouse it was in the 1990s, but the firm's late 20th-century heyday is still fondly remembered by a generation of fans; hence the arrival of such devices as the Sega Mega Drive Mini and the curiously tiny Game Gear Micro. For British indie developer Javed Miah, his upcoming game *Brock Crocodile* is an expression of his love for all things Sega; what began as a Sonic the Hedgehog fan project 20 years ago has since blossomed into a much broader side-scrolling platformer that takes its cue from a variety of golden-era Sega titles.

"The idea itself of the character is a very old one," says Miah. "As a kid in the nineties, I had dreams of making my own games when I grew up, and I started sketching out game characters and worlds. Brock was one of the earliest ideas to come about. Fast forward to 2010, and one night in late September, while practising my pixel art, I decided to draw Brock and co. Every couple of months, I would revisit it and do level tilesets and character sprites as I tried improving my art skills. Sometime in late 2013, I finally decided to take the plunge and started working on the game engine using Multimedia Fusion."

Although imagined as a side-scrolling platformer from the beginning, and starring a whip-cracking crocodilian hero inspired by Indiana Jones, Miah's game has changed considerably over the past seven years. It began as a distinctly 8-bit infused action game, with a limited colour palette and smaller sprites inspired by Sega Master System titles like *Wonder Boy III: The Dragon's Trap* or *Dynamite Dux*, but Miah opted to give the whole project a graphical upgrade in 2015. "After some feedback from fans, I decided to 'jump' up a generation and aimed to emulate the Mega Drive instead," Miah tells us. "This meant a complete graphical overhaul, redesigning various sprites, and reworking how the game worked."

In its revised form, *Brock Crocodile* is now a platform adventure of two contrasting halves: there's the relaxing pace of the game's town hubs, where Brock can chat to the locals about his progress through the adventure

▲ **Brock Crocodile** is far from the first game to use a whip/swinging mechanic, but this one's nicely balanced and fun to use.

and buy upgrades, and the more hectic action stages, which are loaded with traps, items to collect, and enemies to defeat. Brock's whip is, unsurprisingly, his main line of defence: it can be used as both a melee weapon and as a means of swinging across spiked pits, while a secondary attack, an upgradeable 'fruitgun', is useful for blasting foes at a distance.

Brock Crocodile's level layouts, with their multiple routes, recalls Sonic's early adventures at first glance, but the pace of movement is closer to another nineties game cited by Miah: Donald Duck's Mega Drive outing, *QuackShot*. The game's twin hub worlds, meanwhile, draw on the action-RPG stylings of the *Wonder Boy* series, albeit with a bit of nineties attitude from the NPC dialogue, courtesy of writer Luke Habib. *Brock Crocodile* may have begun as a solo passion project, but Miah's gradually amassed a small team to support him as it's expanded in scope. "It was a very natural growth," says Miah. "In 2014, I met Ap0c (Steve Lakawicz) who's been contributing every sound effect and music track you hear on the project. In 2015, we brought our writer Luke Habib on board. Then the pace of the project really picked up when we brought on another artist, Miles Arquio, and coder Mark Boyde-Shaw in 2018, as they both took over the duties I'd been managing, allowing me to focus more on level design and coming up with new ideas for the game."

Despite that growing team of developers, *Brock Crocodile* remains a part-time project; something Miah and his collaborators are fitting around day jobs and other commitments. As a result, Miah did find himself scaling his ambitions back at one stage; what began as a roster of some 20 boss enemy types was cut in half (so each area now has just one boss rather than two), and the number of hubs was cut from four to two. Difficult decisions like these were important to keeping the game manageable, but Miah still found ways to incorporate some of his ideas into the more condensed areas. "One of the minibosses we had planned was at the end of the first bee [themed] stage," he explains. "Brock would run onto a movie set for a giant monster film, and he would have to battle a patched up Mecha-Croczilla. While this idea was dropped, we managed to combine it with the boss you see at the end of the bee stage now, where the boss is piloting a mechanised bee monster."

Playing through the latest *Brock Crocodile* demo (**wfmag.cc/brock-croc**), it's clear just how much effort Miah and his small team have put into this nineties love letter. Every character in the game, from the most imposing boss to the most incidental NPC, is accompanied by detailed art and a similarly in-depth backstory. With those characters and boss fights now in place, Miah says that his long-running project is now on its final stretch; there are levels to design and cutscenes still to be completed, but he hopes the finished game will emerge for PC in 2021. As for a port to consoles, Miah isn't ruling it out. "We're happy to explore the option for ports, such as the Nintendo Switch, but for that, we need people to show their support for the project and let us know on our social media accounts," he says. "With enough support, it's something we can look into in the future!" ⓦ

> **"As a kid in the nineties, I had dreams of making my own games when I grew up"**

▲ **Brock Crocodile**'s character art comes courtesy of Miles Arquio, and it's absolutely on point.

PET CROC SOUNDS

Brock Crocodile enthusiastically recreates the feel of 16-bit era games, which also extends to the music, Miah explains. "To create the soundtrack, Steve Lakawicz has been using DefleMask," he says. "DefleMask is a music tracker that allows you to write music that adheres to the specific limitations of many old gaming consoles – including Sega Mega Drive, PC Engine, Sega Master System, and more. The true advantage to this, however, is that it also allows you to export your music in formats that can easily be played back on actual game consoles – which is something the team and I feel very passionate about. The entire soundtrack and all of the sound effects you hear in *Brock Crocodile* are recorded directly from actual Mega Drive hardware."

Online Diary

GITTIN' GUD

Seems eliminating direct competition has a
calming effect. This month: Forza Horizon 4

WRITTEN BY **IAN 'RTC' DRANSFIELD**

I didn't load up *Forza Horizon 4* for these pages – it was just a game I've had in the library for a while that I've never touched, for whatever reason. I'm unlikely to intentionally choose a racing game, see, because I am officially bad at them... at least when in direct competition. But after a few minutes' play, it dawned on me: I was playing online whether I wanted to or not, and I was... er... *enjoying* it. It's all thanks to the fact that you can indeed avoid that direct, in-the-moment, one-on-one (or one-on-eleven) competition.

See, *Forza Horizon 4* throws in a morass of mini-challenges, records, and leaderboards between you and other players. Key to the feature, though, is how it highlights your standing in the game's community in comparison to folks on your friends list – you discovered a new road? Nice one! Here's how many hundreds of discovered roads behind Billy The Chin, that guy you met once 14 years ago, you are. You walloped through that speed camera at 92.3 miles per hour? Amazing, but your old boss did it quicker. Surely you can, y'know, do better? It's constant, popping up after every seemingly innocuous *thing* occurs, and it's utterly intoxicating.

By no means is this the first game to implement such a system – I don't remember what is, but I know one of Criterion's *Need for Speed* games, likely *Hot Pursuit*, introduced these live mini-leaderboards as a bullet point on the back of the box EA Branded Feature, so they've been knocking around for at least a decade in racing game circles. But who cares if it works, and it's fun, and it suddenly, subtly, pushes you into a world where you're playing a game entirely in single-player but actually it's being pushed forward by multiplayer-focused elements. I don't want to race against others online, because I'll lose. But repeatedly attempting one speed trap, over and over, at my own pace, trying to beat Jon who worked on Play magazine? I will take that challenge, friends. And thus am I backdoored into actually playing online. Damn.

Suitably hooked in a matter of an hour or so – *Forza Horizon 4* is *really good*, after all – I also moved onto some of the other more obvious online modes the game has to offer. Seemingly understanding the world isn't actually full of hypercompetitive nimrods with all the grace in victory of an elephant on a tightrope, developer

△ Your author, seen here taking advantage of a car that should have made him better at things, actually being worse at things.

Driving practicals

Play online
You can actually play *Forza Horizon 4* in a *pure* online mode of sorts – races and that sort of thing, so if that's what you're after, you're still catered for here. And, hey – it works, and is fun. So… good.

Speed kills
That is to say, just choosing fast cars all the time kills all the fun. There's plenty to be had in *Forza Horizon 4* from those ludicrous hypercars down to the equally ludicrous Peel P50 (top speed 43mph). Mixing it up makes for more fun. Who knew?

Small stuff
Don't sweat it: *Forza Horizon 4* is all about just mucking about and trying to ignore the incredibly irritating designed-by-committee 'personality' that makes an attempt to suck all the joy out of things. But when you're just driving around, you don't have to think at all. It's liberating.

Playground Games introduces other ways to play, using something called 'co-operative' or something like that. No idea. What it amounts to is getting to a place when a klaxon sounds, forming an impromptu, rag-tag team, and racing your way through a few set goals that *can only be achieved* by working as a team. Alright, so it's not like your car doors have to be touching as though you're holding hands, or some carefully angled braking can help teammates slingshot their way around courses quicker – it's not *that* sort of working together. But it is everyone in the group working to achieve a common goal – an overall distance jumped, a maximum speed achieved,

⌄ Edinburgh is a fine re-creation of the real thing, and it's endlessly gratifying to see Not London in a game as big as this.

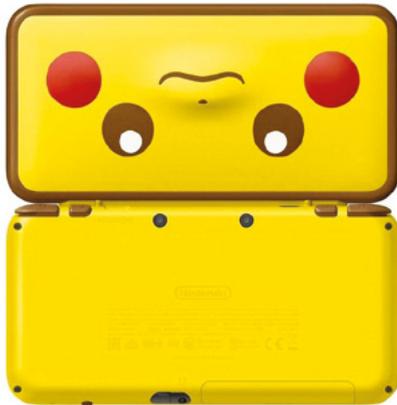### "*Forza Horizon 4* throws in a morass of challenges, records, and leaderboards"

a lot of skidding around corners (poorly in my experience), that sort of thing. It's soft-touch teamwork, introduced seamlessly and handled impeccably: you meet up, form up, attempt the task, and move on. Win or lose, it matters little: it's the friends you make along the way. Friends who admittedly all just drive off as soon as we finished our outings, but hey.

That's something I've felt percolating in my brain while pootling around in any number of super, hyper, or rubbishcars – another factor that means, while it's unlikely to come up again on these pages, *Forza Horizon 4* will definitely be something I stick with for a while: wins and losses don't matter that much. Outside of the 'proper' online racing, which you can still take part in, *Horizon 4* is just a big amalgamation of parts of Britain to ghost-ride your whip (modern reference) around. You take part, but you're not pushed. You compete, but you're not on the edge of your seat. You beat those speed records, but it's not the be-all, end-all. And then, once you've soaked in enough stealthily introduced competition and had your fill of seeing pop-ups about alleged friends you don't actually know at all, who are well ahead of you in the progress stakes, then you can just block all that nonsense out and enjoy a drive around Edinburgh in a car that costs more than five houses. ⓦ

Nintendo 3DS

As Nintendo winds up production on its 3D handheld, here's a look back at its bumpy launch, gradual rise, and its quietly superb library of games

▲ *The Legend of Zelda: Ocarina of Time 3D* really showed off what the 3DS could do, and still holds up as a remaster.

I t wasn't the greatest of starts, frankly. When early adopters stumped up the best part of £230 for a brand new Nintendo 3DS back in 2011, only to see the price slashed by around 40 percent just a few months later, the olive branch of a few downloadable games from the eShop and an 'Ambassador Certificate' were a pretty meagre consolation. But then, a cloud of confusion hung over the 3DS as soon as it was announced; that it closely resembled the already hugely popular Nintendo DS, by then on the market for almost seven years, led some to believe that it was simply the same handheld system with an added stereoscopic screen and a few other quality-of-life improvements. The 3DS's launch was a precursor to what

happened not long afterwards with the Wii U, whose name was so similar to its predecessor, the Wii, that less clued-up sections of the media wrongly assumed it was some kind of minor update rather than an entirely new console. Ah, 2010s Nintendo – marketing wasn't exactly your strong point.

From the vantage point of the year 2020, the 3DS looks like a product of its time. The system was announced a little over a year after James Cameron's 2009 event movie *Avatar* convinced Hollywood that 3D films really were the future this time, and not the passing fad they were in previous decades. But where movie-goers and even TV watchers had to wear glasses of some sort to enjoy their 3D, Nintendo's big selling point for the 3DS was its in-screen stereo effect, which made cunning use of something called a parallax barrier to create the illusion of depth. On the 3DS's better launch titles, the 3D worked surprisingly well, and later models of the handheld – which employed head-tracking technology – improved the effect further still.

A headline-catching selling point though the 3D was, it only served to distract from the handheld's other innovations – which were, if anything, of more lasting importance. The circle pad provided support for analogue controls while retaining the slim, clam-shell form factor of the DS; the improved processor meant that the 3DS could render 3D polygonal games far more convincingly than its forebear; and while it wasn't perfect, the eShop integration made purchasing and downloading games a relatively pleasant process.

▲ Nintendo's Reggie Fils-Aimé was confident that fans would pay $250 for glasses-free 3D gaming. The broader public seemed less enamoured, at least at first.

Not everything about the 3DS was perfect right out of the box, though: its case design was angular, its glossy finish easy to scratch, and its face buttons were tiny and awkward to press. Then there were its more experimental ideas, such as its twin cameras, AR mode (see box), and StreetPass.

Nintendo may have begun to regret its use of 3D as a selling point, too, when industry watchdogs began to note just how slow the handheld was to take off when it arrived in February and March 2011. The 3DS was projected to sell 4 million units in its first month; instead, it sold 3.61 million – that might not sound like much of a difference, but it was enough to spook Nintendo. "It is clear from our market research that many people feel that they 'want' and 'want to buy' Nintendo 3DS," said Nintendo's then-president, Satoru Iwata. "But on the other hand, there is a big proposition that not many people believe 'Now is the time to buy it!'. The penetration will not gain speed without overcoming this challenge."

"Ah, 2010s Nintendo – marketing wasn't exactly your strong point"

It didn't help that Nintendo had much to contend with at this point: its Japanese launch in February 2011 came just weeks before the devastating Tōhoku earthquake which rocked the country to its foundations. Meanwhile, gaming on mobile phones was really taking off, bolstered by the *Angry Birds* phenomenon; and as a ➡

▲ The 3D effect in launch title *Pilotwings Resort* was undoubtedly impressive. If only the game itself had just a little more depth.
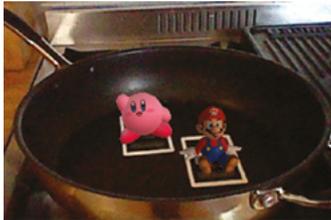
Augmented Reality

The Nintendo 3DS's AR Games were among its most novel and charming new ideas. The console came packaged with a set of cards which, when placed on a flat surface, were detected by the system's twin cameras and triggered one of a handful of minigames. Our favourite? *Archery*, which saw you blasting targets as they popped up on, say, your kitchen table. It was a neat effect to show to friends, and it's a pity more wasn't done with AR beyond these initial tech demos. Still, conjuring up 3D models of your favourite Nintendo characters, and photographing them in strange real-world situations, was briefly a fun pastime back in 2011.

proper, grown-up handheld device, the sleek and powerful PlayStation Vita, which launched in December 2011 in Japan, looked like a serious competitor – particularly as its $249.99 retail price put it in the same bracket as the 3DS.

One somewhat embarrassing price cut later, though, and things began to get moving for the 3DS; by the end of its launch year, the system was amassing a stronger line-up of games, and sales finally began to soar, eclipsing even the DS's first twelve months on the market. It was certainly a far cry from the 3DS's

launch, where the likes of *Super Monkey Ball 3D* and *Pilotwings Resort* did little to capture the public's imagination.

Tellingly, Nintendo began moving away from the 3D-as-selling-point approach not long into the 3DS's lifespan; the ultra-cheap 2DS did away with the clam-shell form factor and 3D entirely, and the revised New 2DS, which reintroduced the hinged screens but still ignored the stereoscopy, provided a fine balance of comfort and affordability. The '3DS family' was bumped up even further with the 3DS XL and later the New 3DS XL, which provided larger screens and another more rounded, comfortable case design; by 2015, the boxy first iteration had been left far behind.

By 2017, Nintendo had launched the Switch – its nimble hybrid of handheld and under-the-telly console. The marketing wobbles of the early 2010s were a distant memory, and if Nintendo was keen to stress that the 3DS line wasn't going anywhere, it was pretty

∧ **The 3DS soon gained enough momentum to spawn a bewildering range of variants and special editions. This Pikachu-themed New 2DS XL was one of the most distinctive.**

▲ Following the 3DS's £80+ post-launch price cut, Nintendo compensated early adopters with a selection of downloadable games, including *Balloon Fight*. Nice.

▲ Although never much of a looker, the original 2DS made the system more affordable for parents and their kids.

clear that the Switch represented a consolidation of sorts, between the two disparate strands of the Big N's hardware business. Sure enough, Nintendo announced in September 2020 that the 3DS's production was coming to an end, its gap in the market now filled by the Switch and its cut-down, handheld-only Switch Lite.

The 3DS's nine-year history has been something of a mixed bag for Nintendo, then. Its launch was calamitous, yet it ended its first year on a high note. Its initial releases were thin and somewhat uninspiring, but first-party games, such as *Super Mario 3D Land*, and the remaster of *The Legend of Zelda: Ocarina of Time* made a stronger case for the handheld's 3D effect, while third-party developers blessed its library with such cracking titles as *Resident Evil: Revelations* and *Bravely Default*. In terms of cold, hard figures, the 3DS ended its life as Nintendo's least successful handheld, its sales far eclipsed by the original Game Boy (circa 118 million units sold), the Game Boy Advance (circa 85 million), and the absurdly popular DS (154 million).

> **"The 3DS's nine-year history has been a mixed bag for Nintendo"**

But still, the 3DS shifted just shy of 76 million units in its various guises – a number which, given the shifting tides of handheld gaming in the 2010s, was still pretty impressive.

The stereoscopic craze has well and truly faded in 2020, and at present, it doesn't look as though Nintendo is keen to dabble in that arena again.

But while the 3DS saw mixed fortunes, it still stands as a unique and fascinating system, with a respectable library of games that couldn't be experienced the same way on any other handheld.

There's also something else to bear in mind: at the time of writing, James Cameron's *Avatar 2* is still a distant dot on the horizon. The Hollywood director has suggested in interviews that it'll once

again change cinema, this time with glasses-free 3D.

If that's the case, then maybe – just maybe – Nintendo will decide to revive the 3DS line. Probably best not to hold your breath, though. Ⓦ

# Ten Nintendo 3DS
must-play games

Thinking of catching up on the 3DS's library?
You could do a lot worse than start with these

01

Ghost Recon: Shadow Wars
2011

Arguably the best of the 3DS's launch titles, *Tom Clancy's Ghost Recon: Shadow Wars* is another sterling turn-based tactics game from the genre's seasoned veteran, Julian Gollop. A handheld, military-themed spiritual successor to Gollop's *XCOM* series, this was a rare early 3DS title that offered longevity, depth, and some properly tense missions.
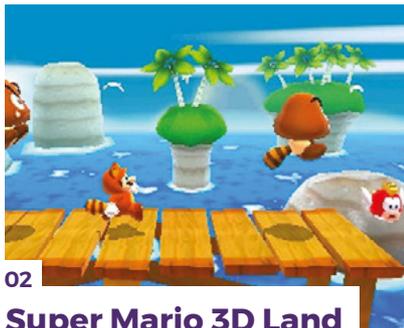
02

Super Mario 3D Land
2011

After a slow launch phase, Nintendo's *Super Mario* sequel gave would-be 3DS owners a reason to adopt the system. Rather than mimic the scale of the contemporary *Super Mario Galaxy* games, *3D Land* instead offered intimate, compact levels and a perspective that accentuated the sense of depth without giving us all headaches. What a cracker this game is.

03

Animal Crossing: New Leaf
2012

A 3DS list wouldn't be complete without a mention of Nintendo's life sim, which was a far more convincing entry than the Wii's tentative *City Folk*, released four years earlier. As town mayor, you get to tax the animals and spend the cash on follies like bridges and water features – a cathartic change of pace from paying off Tom Nook's outrageous mortgage fees.

04

Kid Icarus: Uprising
2012

No, this wasn't quite the follow-up fans of the earlier titles might have wanted or expected, given that it's essentially a 3D shooter rather than a 2D platformer, but it's an exhilarating game all the same. The controls take a bit of getting used to, but the pace of the action and wealth of upgrades make perseverance worthwhile.

05

Luigi's Mansion: Dark Moon
2013

Nintendo hadn't revisited *Luigi's Mansion* since the GameCube era, so this ghost-busting sequel was a welcome surprise. The 3D does wonders for the spin-off's spooky atmosphere, too: stalking around a haunted house and sucking up spooks with Luigi's Poltergust 5000 is one of the 3DS's most pure and visually appealing pleasures.

06

Tomodachi Life
2014

A showcase for just how out-there Nintendo could be with its ideas, *Tomodachi Life* serves as a kind of digital sandbox for your army of Mii characters. The actual life sim aspect of the game is slender at best, but there's a particular appeal in watching a caricature of Britney Spears sing full-throated opera with a bobble-headed Albert Einstein.
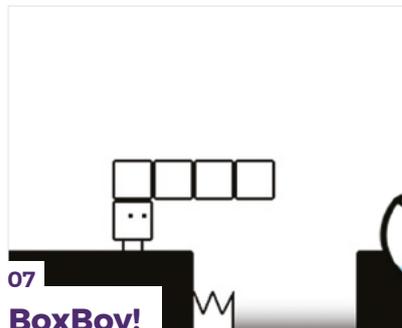
07

BoxBoy!
2015

Kirby creators HAL Laboratory stripped everything down to the bare essentials for this charming platform-puzzler, which involves manipulating a cuboid character's extendible body to clear obstacles. If you enjoyed *Thomas Was Alone*, you'll enjoy this one – and its sequels, *BoxBoxBoy!*, *Bye-Bye BoxBoy!*, and the Switch's *BoxBoy! + BoxGirl!*.
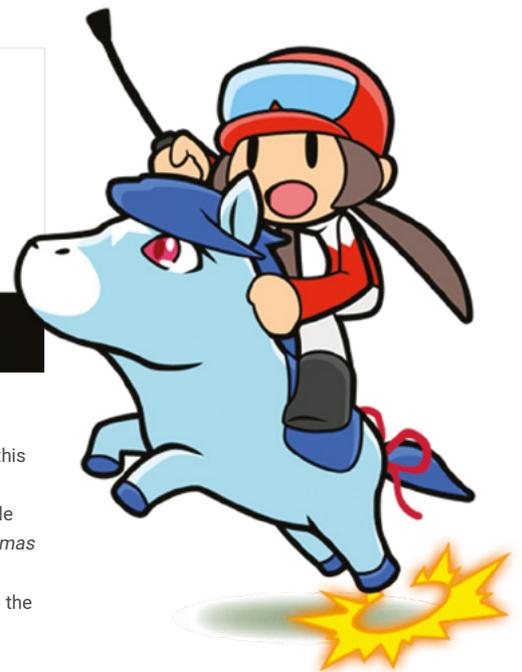
08

Sega 3D Classics Collection
2016

One thing we learned in our years with the 3DS: retro games often looked fantastic in 3D. Japanese studio M2 ported a batch of Sega's hits for the eShop, which later came bundled in this physical collection. The studio's reworked, more colourful version of the Master System's *Fantasy Zone II* makes the cartridge worth purchasing by itself.

09

Kirby: Planet Robobot
2016

HAL Laboratory didn't push the boundaries of its fluffy platformer franchise too much with *Planet Robobot*, but its charm remains present and correct, and its central mechanic – which sees the diminutive Kirby strap himself into a hulking robot suit – gives it a feel of its own. HAL's use of 3D also brings its whimsical landscapes to life.

10

Pocket Card Jockey
2016

Currently exclusive to the 3DS eShop, this mix of solitaire and, er, racing horse management is one of the most adorable games on the system. Races are won by clearing cards at speed, and you build your menagerie of horses by breeding new, faster ones. It's a real oddity from *Pokémon* studio Game Freak, but one well worth downloading.

Next-Gen, Shmext-Gen

STEVE MCNEIL
Steve thinks £450 is
a lot of money.

So, it's that time again. The latest lumps of game machine are soon to be winging their way to early adopters across the planet. For just £450, a bleeding-edge console can be yours, if you're willing to navigate the shambles that is timed launches on online stores. How is it still the case that, at the agreed time, the web page you can buy the thing on isn't just turned on by a computer in a bunker somewhere? I'm sure it's more complicated than that, but I also don't care.

I've never bought a console on day one, ever, but I'm a sucker for 'new' 'things' and so all year I've been convincing myself that this time I'm doing it right; getting both the Xbox Series X and PS5 on launch. I watched the reveal shows for the consoles and their games, and convinced myself this would be a wonderful thing and that I would, finally, be truly happy. If they'd have gone on sale the moment the live streams finished, I'd have thrown my wallet through the internet at them. But then it started to become apparent that all might not be well…

Flagship titles like *Halo* got pushed back, and *Cyberpunk 2077* wouldn't be getting its next-gen version until 2021. Sure, I could play the PS4 version on PS5 and get a free upgrade down the line. But I haven't got time to play *Cyberpunk* anyway. I've got a four-year-old. I certainly don't want to buy a £450 PS5, play the PS4 version on it, then get jealous next year when people are playing the prettier version. As for the games

> ## "If they'd gone on sale the moment the live streams finished, I'd have thrown my wallet through the internet at them"

that *will* be available on launch, it's slim pickings. The latest iterations of established franchises like *Assassin's Creed*, *NBA 2K*, and *Dirt* will all be available on current-gen, and I'm sure *Fortnite* and *Tetris* will look lovely on the new machines but… so what?

I was probably most excited about *Gears Tactics*, as that very much scratches a favourite itch of mine, but I will literally get that free on day one with Game Pass on my Xbox One, and I've just discovered it's already out on PC anyway. *Marvel's Spider-Man: Miles Morales* looks fun too, but I've already got the core game on PS4. Given it's going to cost £50 (thankfully less than the ridiculous £70 which seems to be the norm for next-gen games), it's hard not to feel like £500 is a hell of a lot for what essentially feels like DLC.

I've already been stung once with this stuff as well. I upgraded to the PS4 Pro and was massively underwhelmed with the difference it made. I seem to remember it made PSVR a bit clearer, but PSVR just makes me sick so that hardly feels like a win, unless you're an emetophiliac.

As you can probably tell, I can't really see a single solid reason to commit the best part of a grand this November – and that's *before* I buy any games – for two very expensive doorstops.

I have pre-ordered both. Man, I love games. And I'm an idiot. ⓦ

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Reviews, retro games, and lots more besides

OUR SCORES

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Trash. Unplayable; a broken mess.

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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?
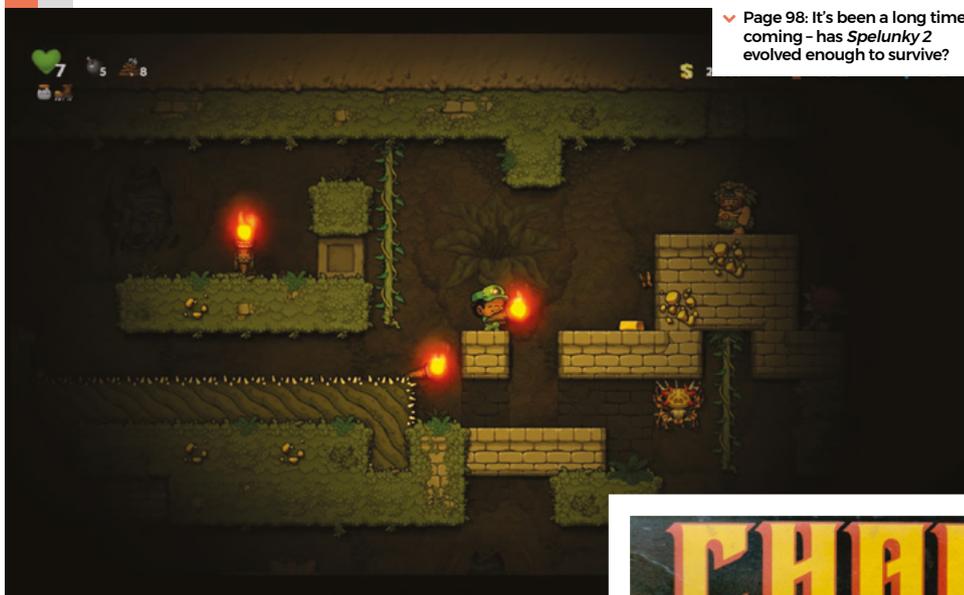
∨ **Page 98:** It's been a long time
coming – has *Spelunky 2*
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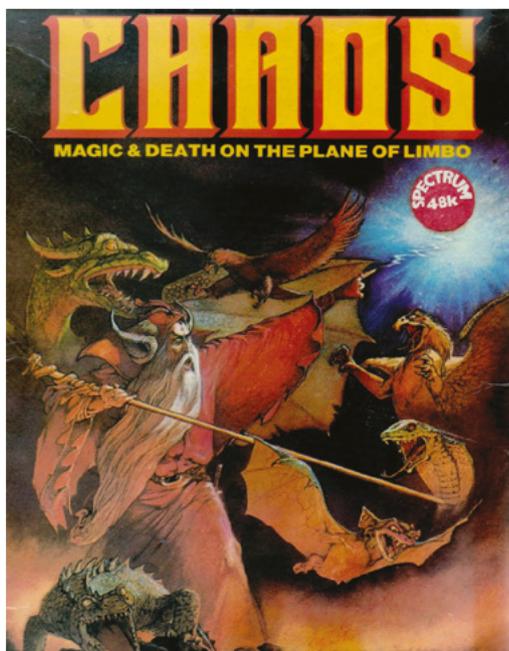
‹ **Page 112:** If more
games had
covers like this,
the world would
be a better place.

PLUS

Review

Marvel's Avengers

Not quite mighty. Better than Age of Ultron

REVIEWED BY
Andrew King

HIGHLIGHT

The mentor-mentee relationship between Bruce Banner and Kamala Khan is the emotional heart of this story. Troy Baker and Sandra Saad deliver the best performances of the game, and kept me invested in seeing the story through to its conclusion.

Marvel's Avengers feels like two helicarriers passing in the night. It's a cinematic, story-driven, third-person brawler from Crystal Dynamics, the developer behind the acclaimed 2013 *Tomb Raider* reboot and its 2015 sequel. It's a *Destiny*-style live service game that publisher Square Enix wants you to play – and spend money on – forever. It's pretty good at being each of those things, but never at the same time.

As a narrative action game, *Marvel's Avengers* starts off on a remarkably strong foot, putting players in the stretchy shoes of Kamala Khan – aka Ms. Marvel. Kamala is a finalist in an Avengers fan fiction contest and, as a result, has been invited to attend the supergroup's A-Day celebration on their famous helicarrier in San Francisco. Once she arrives, escorted by her loving father, she walks around the carnival-like setup, finding Avengers-themed toys and palling around with Earth's Mightiest Heroes themselves. Little action happens at first, and the game benefits from this slow build, establishing its lesser-known heroine as worthy to hang with the billion-grossing beefcakes.

But the festivities are interrupted when AIM, a villainous scientific organisation, attacks A-Day, releasing a gas that turns thousands of bystanders, including Kamala, into superpowered 'Inhumans'. The Avengers receive the blame, split up, and disappear. The game then jumps forward five years and Kamala's story begins in earnest as she sets out in search of the Avengers, and really, any form of resistance to AIM. These early missions are linear and cinematic, and only really slow down upon death (when, at least on a base PS4, I was treated to frustratingly long load times).

Bruce Banner's reluctant mentorship of Kamala Khan is the single-player campaign's highlight.

⌃ You spend a lot of time beating up robots.
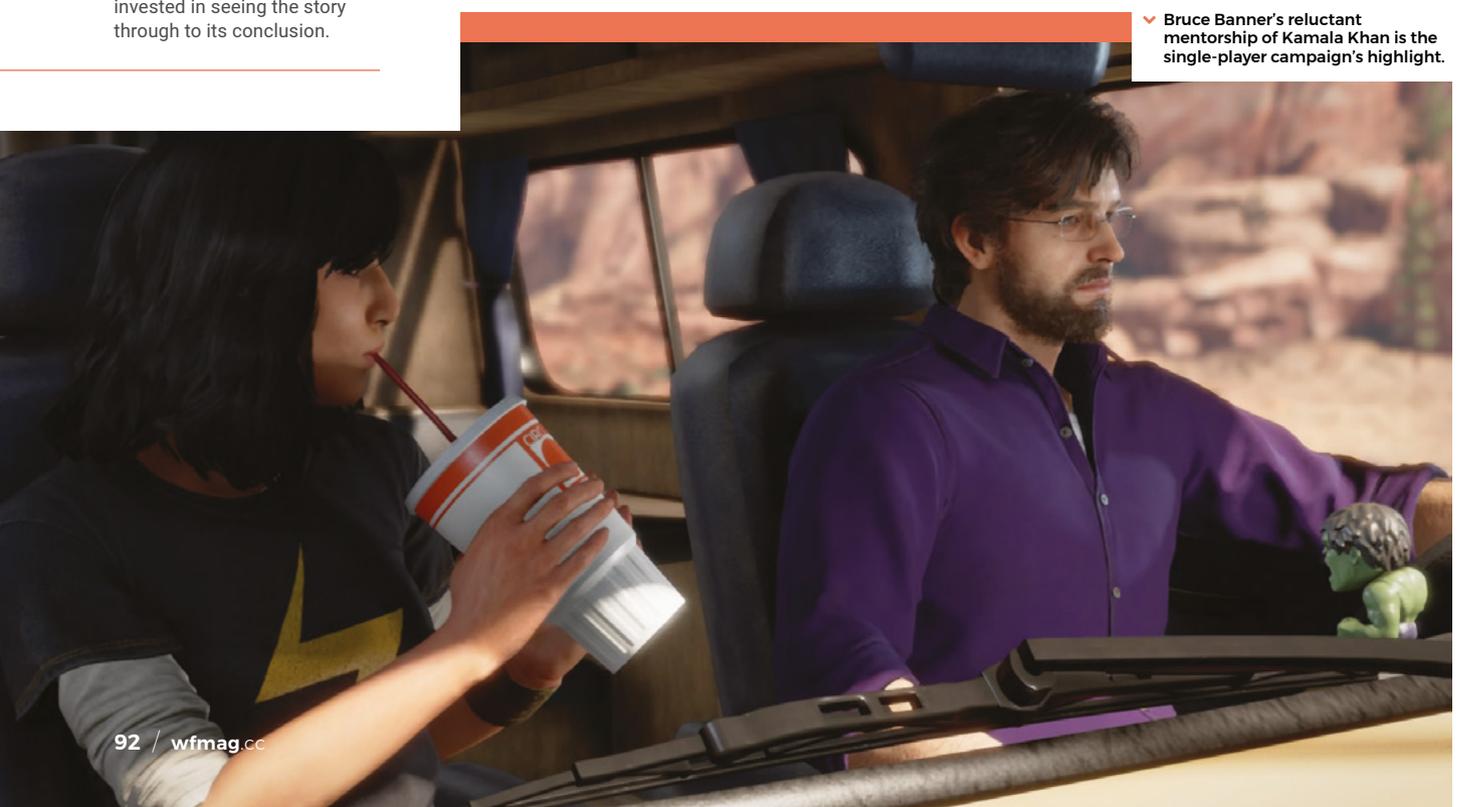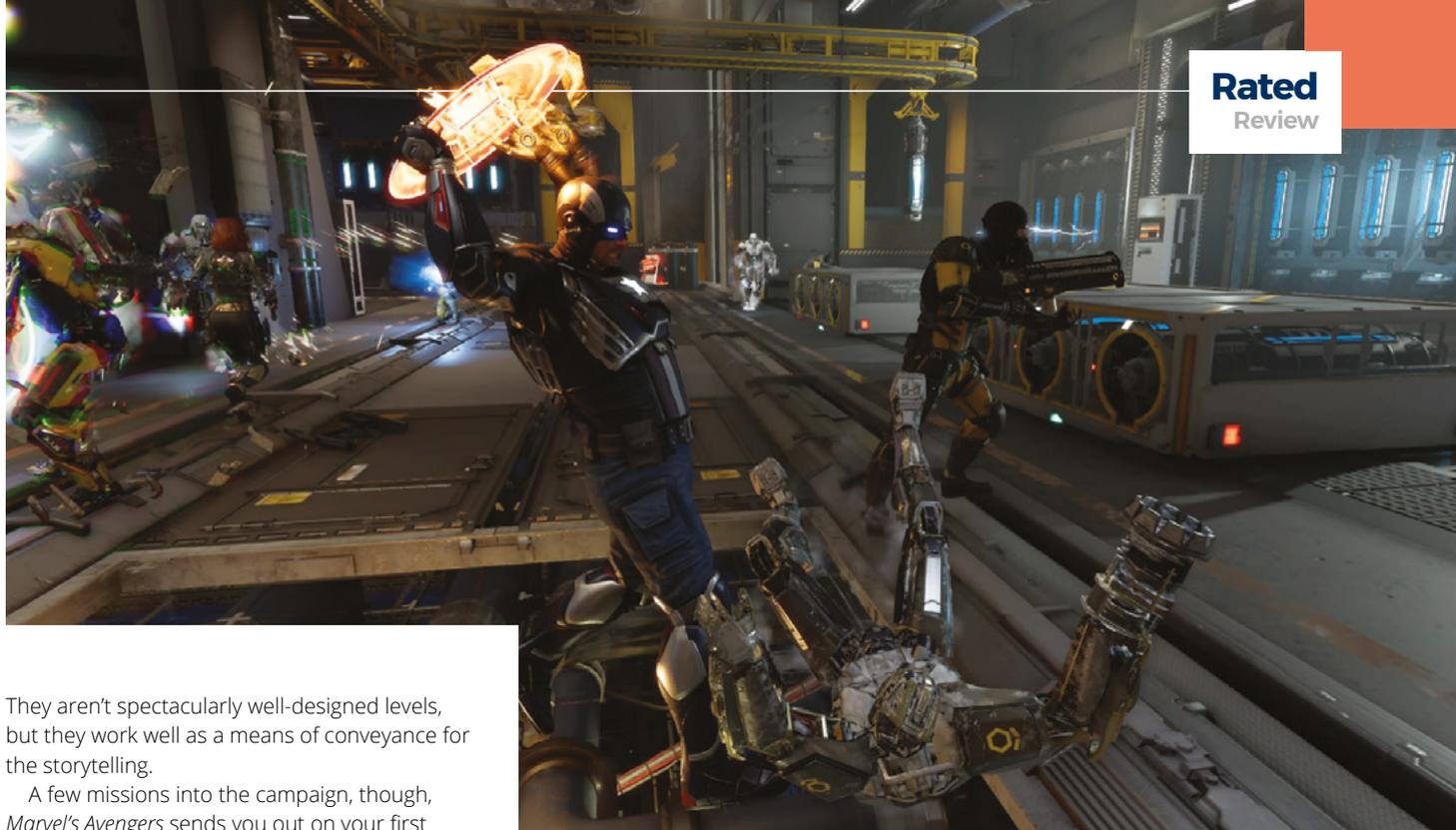
They aren't spectacularly well-designed levels, but they work well as a means of conveyance for the storytelling.

A few missions into the campaign, though, *Marvel's Avengers* sends you out on your first approximation of a multiplayer mission. The tightly designed corridors which facilitated *Uncharted*-style platforming widen out to expansive fields. Your objectives become waypoints for you to chase, hundreds of metres away. Every few minutes, J.A.R.V.I.S. – Tony Stark's AI butler – will alert you to the presence of gear nearby, and you can take the brief diversion to beat up a few bad guys or solve a simple puzzle to get it. These missions aren't bad, but they do mess up the pace. Prior to this, each campaign mission felt like it was advancing Kamala's story. Once these quests arrive, it becomes clear that much of the game will consist of running errands.

Now that I've finished the campaign, this is what the game is: I select missions, which mostly play out in the same few levels in the same few biomes. I can complete them on higher

> **"*Marvel's Avengers* starts off on a remarkably strong foot"**

difficulties to earn XP and gear. It's sustained by some decent combat, which changes slightly depending on who you're playing as. Each character has a standard moveset. Captain America may throw his shield, and the Hulk may throw rubble, but the results are basically the same. The≈primary difference among characters is how they traverse a level. Thor can fly, Black Widow can chuck a grappling-hook, and Captain America can double-jump. It's genuinely surprising how different each feels from the other. The moment-to-moment action didn't click until I unlocked Captain America – that double-jump really made the game sing for me.

The problem is, you don't unlock Captain America until near the end of the game. Ditto Thor, and Black Widow is also a fairly late addition. As a result, there's a good chance that you may not be thrilled by the combat for much of the campaign. And that's really the issue with *Marvel's Avengers* as a whole: just when it's starting to heat up, the campaign is over.

In the weeks since I finished the campaign, my experience has been kicking back for an hour or two in the morning to run some missions. It has been cosy. The post-game is a nice, comforting thing to play, and alongside the campaign, there's plenty of entertainment on offer. But both elements of *Marvel's Avengers* tend to step on one another's toes; the post-game washing over the main campaign like a wave crashing into an unfinished sandcastle. ⓦ

⌃ *Marvel's Avengers* has a pretty good photo mode.

⌄ With her special ability, Kamala Khan can embiggen and mop the floor with enemies.

VERDICT

Marvel's Avengers offers a pretty good single-player campaign and a pretty good post-game, but those flavours don't taste great together.

68%

The Nosferatwo!!

The heaviest band in Mayo.

The clouds broke as we passed onto the bog road. When I heard the stream I knew we were close.

⌃ Longer scenes are carried by slight changes to the shading and positions on screen.

Info

GENRE
Visual novel

FORMAT
PC

DEVELOPER
DREAMFEEL

PUBLISHER
Annapurna Interactive

PRICE
£10.29

RELEASE
Out now

REVIEWED BY
Anthony McGlynn

VERDICT

A compelling and beautifully illustrated narrative, as moving as it is memorable.

92%

⌃ Developed by Irish indie studio DREAMFEEL, the story never shies away from celebrating its locality.

Review

If Found...

From the stars above to the waves of Keem Bay

Burning rituals are a common therapeutic exercise in which you write down something you wish to escape, then burn it, and watch as the pain, given physical form, turns to ash. *If Found...* is a burning ritual in virtual form, making you erase diary pages. And as they become cinders of the past, it's as cathartic and emotionally fulfilling as any real-life practice.

Kasio is a transgender woman returning to Achill Island, off the west coast of Ireland, in December 1993. Living and going to university in Dublin – and escaping the confines of the rural west – has done wonders for her sense of identity, but has created friction among her decidedly conservative family members. Luckily, she has a small group of friends to find solace with, and squats with them in their band practice space during what becomes a life-shattering three-week stay that players gradually scrub and draw their way through.

This is done via Kasio's diary, a yellow-paged notebook full of profiles of everyone she meets, doodles, scribbles, memorable events, and observations. Using the mouse as an eraser, you wipe away the lines and images on each page, gradually peeling back the layers of Kasio's life. The pages often give way to vividly drawn scenes and vignettes that change the action to a simple click, still leaving you in full control of the overall pacing. Sometimes it's both narration and action, cluttered by attempts to cross something out and offhand sketches. Such is the way the animations on these pages deftly capture her

winding emotional state that Kasio's elation on the dance-floor of her friends' local gig carries the same buzz as an actual concert, the flashing neon delivering much-needed emotional shelter.

An early argument with her mother, for instance, starts as an easy back-and-forth, then degrades as Kasio learns she isn't going to be safe and welcome in the family house. The background shifts to repeating patterns as composer 2 Mello's cheery electronica is overcome by sadness, and eventually Kasio storms out to a friend's doorstep. But the tale *If Found...* tells is broader than one woman's life.

While all of this is happening, astronaut Cassiopeia is jumping through space and time to find an anomaly before our solar system collapses. She and an accountant named Mac eventually triangulate steady coordinates, which intertwines the two disparate threads. Cassiopeia's cosmic quest is more abstract, with the colours and shapes bending across the screen contrasting the loosely etched village houses and trails of Kasio's tale in Achill. These breaks from the initial narrative give time to ruminate on each chapter and further break up all the diary-scrubbing.

It's in the way these stories mirror each other that *If Found...* leaves a lasting impression. Kasio isn't bouncing around the cosmos like Cassiopeia, but she is still floating, searching for anything resembling terra firma on which she can truly grow. It's a personal victory she seeks to achieve, and one as important as that of any threat to the universe being averted. ⓦ

HIGHLIGHT

If video games have been getting you down about the violence you regularly consume – *cough* Naughty Dog – well, *Carrion* sticks that into a vent and then devours it with bloodthirsty glee. This is the most guilt-free you'll ever feel about killing swathes of poor humans. Recommended for anyone with a misanthropic streak.

Review

Carrion

^ The pixel art works in *Carrion*'s favour, making the gory visuals bearable yet still leaving the repulsive detail to your imagination.

Why talk to the monsters when you can be one

'Who is the real monster?' some higher-minded games may ask. For *Carrion*, you can spare me the intellectual metaphors, because *you* are the monster. You're quite unlike any other monster as the thing you control doesn't have a defined form, all bloody tentacles and mouths growing out of its... well, as I say, it doesn't have a top or bottom – it's a terrifying alien biomass from the moment it breaks out of its specimen tank with two simple objectives: escape, and feed.

Carrion is essentially a Metroidvania: you navigate through a frankly huge and labyrinthine underground facility, while your monster evolves over time as you interact with other specimen tanks but crucially, devour everything in your path as an unstoppable and abominable force of destruction. Scientists cower, while security forces fight back with increasingly stronger firepower, but they all succumb, screaming horribly, as you smash them into a bloody pulp, rip them in half, then snack on them. One of your later powers channels *The Thing* as

v Adding to the gross factor is a fixation with squeezing into orifices to make progress, or also save progress, in this case.

you possess other humans to turn their weapons on each other. While this somewhat dilutes the 100% monster movie marathon I was promised – similarly so with a few flashback sequences that has you controlling a human character – changing back also results in one hell of a body horror transformation for the unlucky host.

There are drawbacks to a monster as amorphous as *Carrion's*, namely that it becomes increasingly unwieldy to control, especially when you're trying to aim your tentacles or make tight turns. You'll also find yourself having to switch between biomass sizes to solve puzzles as your abilities are tied to specific forms. It doesn't always make sense – why is a lever only reachable if I shoot a web at it in my first form, but not by tentacle in my second form, when I'm perfectly capable of reaching it?

Being an especially gooey chunk of matter, your monster lacks map-reading skills. It's not as confusing as it sounds, since this is quite a linear Metroidvania, with many pipes and paths designed to funnel you through in one direction. But there are still occasional blind spots where you end up lost and cursing its rigid design. At worst, I was unable to return to one area I accidentally skipped and was completely stuck, with the only solution being to restart the game. That such a setback hasn't soured the entire experience is indicative of how much fun *Carrion* is when it does let you unleash hell. If you've been feeling loathsome about humanity of late – honestly, who hasn't – this feels like the perfect form of revenge. W

> **"The thing you control doesn't have a defined form"**

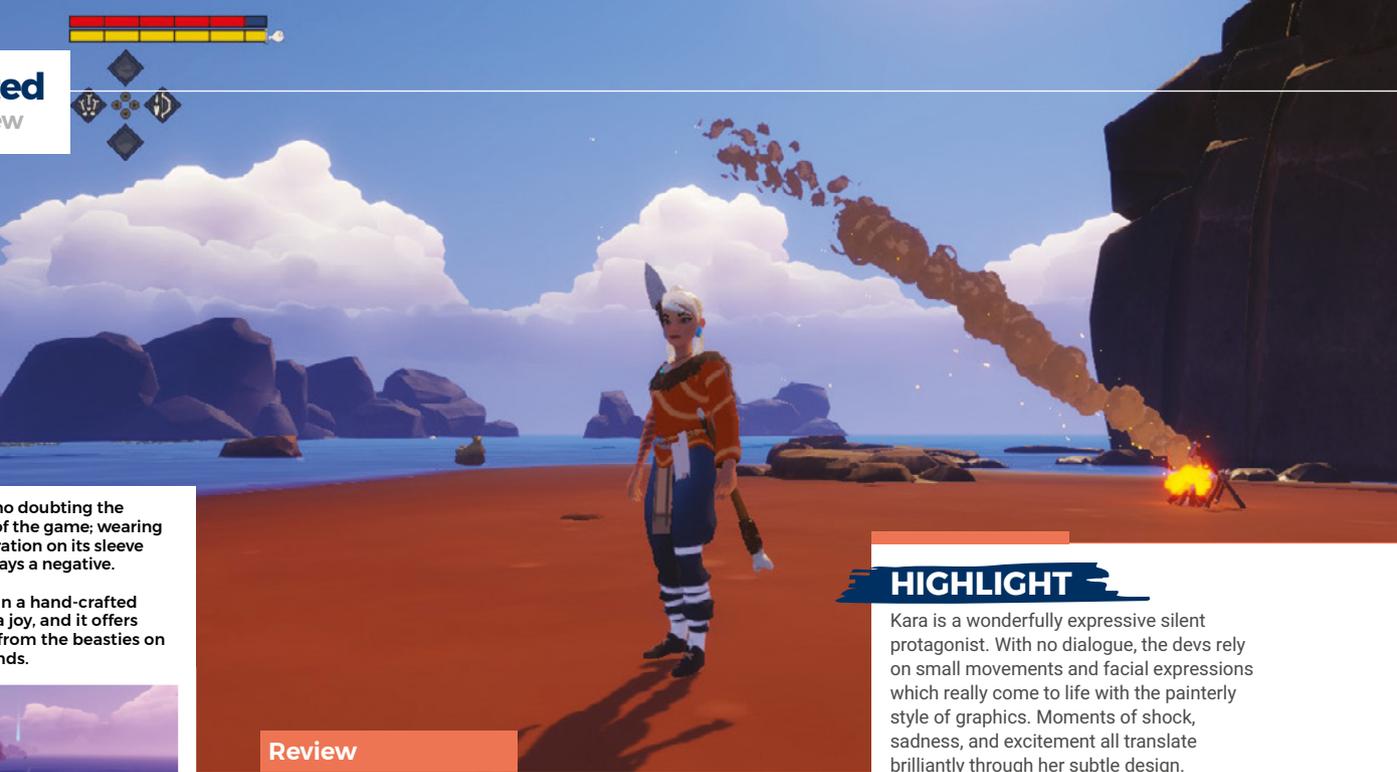## VERDICT

A disgustingly good monster-munching sim, even if its originality results in some unwieldy design.

73%

> There's no doubting the beauty of the game; wearing its inspiration on its sleeve isn't always a negative.

> Sailing in a hand-crafted boat is a joy, and it offers respite from the beasties on the islands.

REVIEWED BY
Daniel Lipscombe

VERDICT

Striking visuals and wonderful creature design can't distract from repetition and lack of innovation.

56%

HIGHLIGHT

Kara is a wonderfully expressive silent protagonist. With no dialogue, the devs rely on small movements and facial expressions which really come to life with the painterly style of graphics. Moments of shock, sadness, and excitement all translate brilliantly through her subtle design.

Review

Windbound

Survival isn't ever smooth sailing in this gusty adventure

There's no doubting the beauty of *Windbound*. Wherever you look, there are luscious greens or white-capped cerulean blue waves. Even bobbing along in the middle of an expansive ocean, wind trails flow and effervesce, creating a sense of wonder and magic, or smoke billows from an on-board campfire capturing a charming essence seen in the obvious inspiration, *Breath of the Wild*. It's a good job everything is so pretty, because when we scratch beneath the veneer, the concept of survival and story is stretched thin and oftentimes repetitive.

Playing as Kara, we find ourselves shipwrecked after an attack by a sea monster. The task: survive and rediscover Kara's home and family. Following a grand tradition of survival games, we start off by looking for wood and things to eat, while avoiding creatures who want to nibble on *us*. *Windbound* takes place within an archipelago and Kara moves from island to island, crafting weapons, boats, and equipment. Many of the islands feature shrines which must be lit in order to open a gate, allowing progress through the game's chapters.

In the basics of survival, *Windbound* doesn't offer anything particularly new. However, the addition of creating your own ocean craft from scratch is a lovely addition. It creates a sense of ownership, knowing you collected all the materials yourself. The crafting itself is rudimentary, and the game holds your hand through each new recipe – experimentation is off the table.

The inventory itself is also limited, even with a bag expansion; I often found myself having to drop items to free up space for creating tools. Away from crafting, there's combat, because everything either wants to kill you, or you it. Fighting indigenous creatures feels smooth and exciting, until your spear breaks and you need to craft a new one, thus fulfilling the 'rinse and repeat' nature of the survival genre which, despite quibbles, still feels satisfying.

This mantra applies itself squarely at the centre of the adventure as *Windbound* takes on a rogue-lite spin. If you find yourself dead, you won't just respawn back where you left off or at an assigned checkpoint; when playing in 'survival mode', you'll start right back at the beginning of chapter one, whereas if you chose 'story mode', you'll start from the chapter in which you died, along with everything you had in your inventory. This wouldn't be an issue if *Windbound*'s core mechanic of stripping materials, lighting beacons, and then magical sea gates, weren't so reliant on repeating actions, or if there was a clearer path to where the next island may be – too often I was left squinting to try and find my next destination. Add in some frustrating platforming movement, and the charm *Windbound* creates through visuals, character animation, and flavour text is soon left washed up on the shore. ⓦ

"Creating your own craft from scratch is a lovely addition"

Stop fishing for compliments.

Midway through, *Welcome to Elk* briefly transitions into a loving homage to another recent Danish hit—Triband's brilliant *What the Golf?*. It might seem back-handed to say that the game's best scene is when it borrows from a different game, but it really is a wonderful tribute.

∧ **It's worth interacting with everything – including this sassy fish head.**

Review

Welcome to Elk

A pint of the good stuff

The heart and soul of Elk, the titular island that *Welcome to Elk* is set on, is The Hermit. It's a bar set among the islanders' homes, the one where everyone gathers to hang out, to drink, and – most importantly – share stories. This is a game about the kind of stories you might hear in a pub like The Hermit, when drinks have loosened tongues and the man who recognised you as an outsider the moment you walked in has revealed himself to be harmless. But it's also about the dodgy deals that might happen at that corner table with the bad vibes, or when a long-simmering feud sparks up, and the island's peaceful façade slips.

You play as Frigg, a young woman who has travelled to Elk to serve as a woodworker's assistant, but who fast becomes wrapped up in the lives of the residents there. There are no puzzles to solve or mysteries to untangle here – you move Frigg through each day of her stay on the island, meeting everyone and watching as she involves herself in their lives. Any element you can't interact with is drained of colour, which makes a certain sense – Elk is a cold, snowy island, made warm only by the locals and their tales.

The game's stories are conveyed by conservations, by written accounts you're given, and even through live-action video, tales told by the people who lived through the experiences the game is based on. *Welcome to Elk* blurs fact and fiction, reality and non-reality, faintly tapping at the fourth wall until Frigg can hear it. Game writer Astrid Refstrup's shadow looms large, as even the game's achievements casually refer to her as though she was a character in the story. The game is partly about the process of making a game, on top of everything else. It blends storytelling methods to interesting and inventive effect, although, amidst it all, Frigg can sometimes feel relegated to the role of passenger rather than protagonist, and the same few stories are retold multiple times from different perspectives.

Peppered throughout Welcome to Elk are minigames that tie everything together and let you put some personal stamp on your experience. Like the rest of the game, they're mechanically simple while also being creative and, sometimes, quite beautiful: I found myself unable to step away from a 'build a pub with blocks' challenge until I had my pub looking just so. There's not a lot of them, but there's not a lot of *Welcome to Elk* in general – it's a two-hour passthrough rather than an extended stay. But perhaps *Welcome to Elk* works best not as a game you make your home in, but instead as one you once visited – a place that you now have your own stories about. ⓦ

∨ **A nice night at the pub ends in a search for a body more than once.**

Let's spread out and look.

Info

GENRE
Adventure

FORMAT
Xbox One
(tested) / PC

DEVELOPER
Triple Topping

PUBLISHER
Triple Topping

PRICE
£12.49

RELEASE
Out now
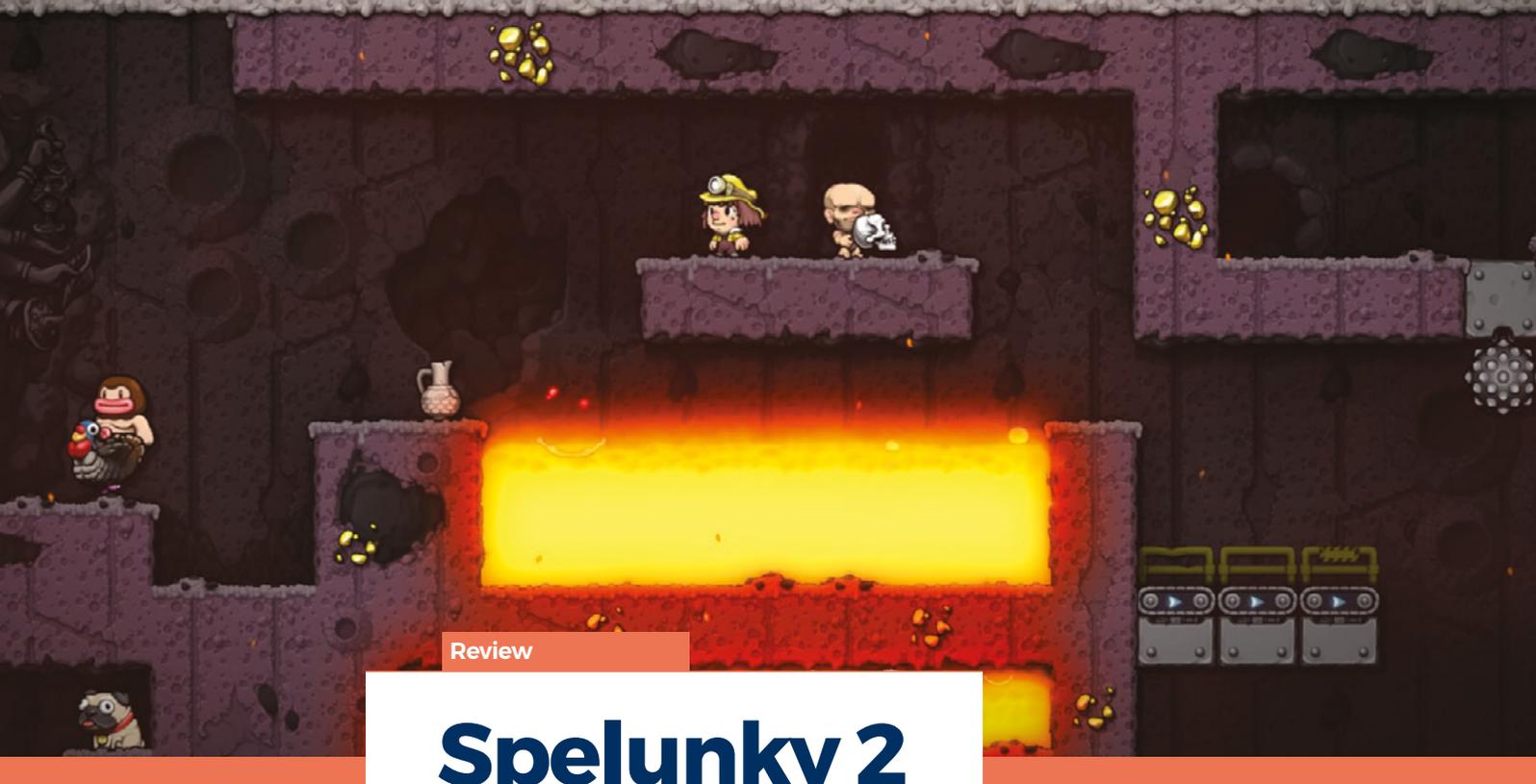
REVIEWED BY
James O'Connor

VERDICT

A compelling ode to both storytelling in all its forms and the power of a dingy pub.

76%

Review

Spelunky 2

Get rich or die tryin' (you'll die tryin')

⌄ **Your home base expands and develops as you rescue allies trapped within the levels.**

Spelunky 2 is a series of life lessons taught by someone who views the world as a Hobbesian state of nature: a war of all against all where existence is nasty, brutish, and short. Derek Yu's long-gestated sequel is a rebuke to the smooth civility of today's roguelike. It seeks to punish us for enjoying the likes of *Rogue Legacy* and *Dead Cells* as much as reassert its orthodox methodology. Like an elderly relative griping about the youth of today, it decries the fads of build choices and progression systems to lecture on the value of hard knocks and making the most of what little you're given.

You don't master *Spelunky 2* so much as learn to survive it, as fairness and narrative payoff fall prey to the law of the jungle. You're not the protagonist; you're an element in an ecosystem. Yes, the creatures and environs interact with scientific consistency, but so do the subjects of an Attenborough documentary. If there's an instant-kill snap-trap obscured behind a burst of grass? Tough. A giant spider poised next to a pit of spikes? Deal with it. Or die. Whatever. Your life has no more meaning than that of the last bat you bullwhipped to mush.

Even *Spelunky* veterans will struggle to find their feet. Where once the denizens of the opening area loitered in loose strings, they now cluster menacingly, ready to shuttlecock you from one calamity to another the moment you poke a toe in their pool of influence. The snakes, bats, spiders, and arrow traps have multiplied, and share their dwelling with vicious rolling lizards and burrowing moles.

What differentiates you, of course, is that with each demise and rebirth you accrue the genetic memories of your misadventures. That and a mastery of tools, from rocks to hand-held teleporters, when they don't backfire in your stupid face. Like the first humans who began to communicate their experiences and capitalise on their opposable thumbs, you can grow. Until the fleeting day that you become this world's apex predator.

It's as beguiling as it is brutal. Other roguelikes cushion their randomness to ensure softer landings, at their worst becoming flabby pandas, grinding listlessly through piles of bamboo to an inevitable end. *Spelunky 2*'s honed purity rejects this evolutionary cul-de-sac. More even than its predecessor, its scorpion-laced sandboxes produce endless nuggets of concentrated agency. It's not about builds and synergies. It's about the organic pros and cons of each micro-situation. Every route taken, every coin spent, every enemy engaged, every resource consumed is of import.

Often it's a rigged gamble, in which you repeatedly put your house on the line in the hope of landing a new piece of furniture. But with the

> Expect altered versions of each level to appear randomly. At least the infamous darkness stages are a little more forgiving this time.

> Shopkeepers are still all too quick to anger, especially against shoplifters.

caveats that the more you roll the dice, the more you understand how they fall, and every time you lose your home, you can swiftly build another one. As before, short sharp runs help offset strings of miserable failure against an occasional minor winning streak, while early success is measured in tiny gains – simply learning how something works, and lodging it in the memory bank.

And there is still plenty to learn. Although many area themes and side distractions are familiar, most are subtly remixed or tentatively expanded to wrong-foot the complacent. Most explicitly, *Spelunky 2* branches its main route at key points, starting from the end of the first area, where two exits lead to completely different biomes. The paths later converge only to split again, with further secret trails for those with sufficient skill.

New additions within locations, alongside the usual keys, hidden shops, and sacrificial altars, maintain the tradition of being as potentially deadly as they are useful. Steeds such as turkeys can be ridden for extra jump power and protection, yet can be tricky to tame and can't navigate ropes or ladders. A haunted urn in each stage contains a valuable gem, but unleashes a vengeful ghost when smashed. Can you carry this fragile cargo to the exit, then prise the treasure free just before leaving?

With all the hazards and temptations, there's dizzying scope for creative horseplay. But more stuff means less space; more moving parts equals greater chaos. Events trigger with little input. You spend more time juggling items, which only gets increasingly fiddly when mounted. Flowing liquid physics aren't so impressive when lava pours

"It's about the organic pros and cons of each micro-situation"

from its containment bath to block your escape. With so many tripwires in play, it's easy to become gun-shy. Worse, it's less funny. Death now often induces a sigh, rather than a chuckle at your implausible misfortune.

Hardcore Spelunkers will no doubt tame these fractious nuances. Once again, there are hundreds of hours here for the patient, inventive, and skilful. But could Mossmouth have spread its good word upwards to welcome newcomers as well as deeper down to hell and beyond? Adventuring with a partner is one answer (although the new online multiplayer mode has initially proved unreliable) – with good co-ordination, it's a less punishing way to unveil the game's idiosyncrasies. Yet the overall design is bloody-minded in its refusal to allow just anyone to enjoy it.

Spelunky 2 demands daredevil feats, but won't risk its own legendary reputation. The ageing alpha silverback even overcompensates to reprove its strength. Still, its grizzled bravado has much to teach young upstarts about ingenuity and reward. If it doesn't quite inspire the awe of old, it remains a magnificent beast. ⓦ

HIGHLIGHT

There's nothing as cathartic in *Spelunky* as blowing things up – forgoing tip-toe progress for a second to noisily punch a hole in the wretched scenery, regardless of consequence. This is ably illustrated in the sequel by the new robot enemies, with a head-mounted button that triggers a timed self-destruct. Just try and resist jumping on one.

VERDICT

*Spelunky 2* is a bullish, uncompromising love letter to its masochistic fan base.

83%

Review

> Roll back the map to discover a pleasingly exaggerated Hellenic landscape.

⌄ Town improvement remains essential, but it could be more automated.

The definitive pleasure of *Total War* is the sense of mastery as you increase your mass. In Troy, where the AI is more helpful and you have more ways to exploit your allies, joy is swinging your Achaean vassals like a mace at the Anatolian shore.
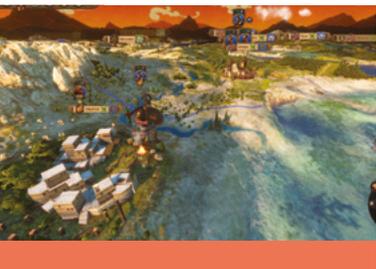
A Total War Saga: Troy

Gain the favour of Ares and scheme your way to the walls of Troy

Info

GENRE
Strategy

FORMAT
PC (tested) / Mac

DEVELOPER
Creative Assembly

PUBLISHER
Sega

PRICE
£34.99

RELEASE
Out now

REVIEWED BY
Kyle Hoekstra

VERDICT

Troy's experimental mechanics and narrative approach make it noteworthy, though its deeds fall short of excellence.

70%

With lavish art direction and some novel ideas drawn from Greek mythology, *A Total War Saga: Troy's* new bronze age aesthetic freshens the 20-year-old-series' turn-based strategy, even if its real-time battles lack gravitas.

Commanding one of eight Greek or Trojan powers, you must unite your friends before deploying your thousand ships to capture Troy or defend it. Across a campaign map embracing the Aegean Sea, there are deals to broker, cities to build, and heroes to assuage. The Homeric setting of covetous men at odds with one another feels appropriate. *Total War* makes hay from your hubris: hidden armies and countervailing mechanics are always waiting in the tall grass.

Small changes to the levers you pull to keep your armies moving are enjoyable getting to grips with. Following *Thrones of Britannia*, the availability of food is the chief moderator on your martial power. Food should be carefully governed until you're well in ascendance, because in Troy it's also traded for divine buffs. All factions can pray to Aphrodite for growth or to Poseidon to smooth the seas. The gods here are not inscrutable: you get what you pay for. Resource management is similarly intuitive. Bartering replaces generic relationships, which means you can ensure supplies of one kind if

> **"The gods here are not inscrutable: you get what you pay for"**

you have another in abundance. Not much fun, but it's a nice trick to maintain development.

Troy's most interesting mechanics are informed by Homer. The Lion's Share mechanic lets Agamemnon demand tribute, though risks upsetting vassals. Menelaus of Sparta can recruit from his allies' rosters and settle ruined cities. And Hector and Paris, the sons of Troy, can compete for their father's favour to acquire his power. Each faction's prerogatives are compelling invitations to repeat the campaign, though they're inessential.

The battles themselves are a bit flat, sieges particularly so. Creative Assembly have compensated for an infantry-heavy roster by making light units act like cavalry and introducing muddy terrain. Dramatic maps and bulked-up heroes add colour, yet with no myth units or artillery, you'll largely be fielding assorted spearmen. On the campaign map, heroes act as generals and can be specialised, while their loyalty can fluctuate. Like other aspects, it's easy but a bit of a chore.

The campaign experience maintains a fair balance between empowerment and obstacle. The impression of depth fades, while a sprawling web of units, resources, and treaties can render the warpath a convoluted slog. This is a shame, when *Troy's* innovations might have delivered a more elegant experience. Nonetheless, those imaginative concepts result in a memorable and formidable addition to the *Total War* armoury. ⓦ

⌃ The characters are amusingly grumpy, even when surrounded by the threat of water.

Review

Skully

Keep rollin', rollin', rollin'...

In *Skully*, water is not your friend. And on this tropical island of rocky beaches, dripping caverns, and gloopy swamps, water is everywhere. One slip and you're right back to the last checkpoint.

Disintegrating in water does at least make sense, considering you're playing as a rolling skull made of mud and clay. Yet the constant fear of instant death is just one of many cardinal platforming sins that *Skully* commits, turning an intriguing idea into a lesson in frustration.

Control is the most important part of any platformer, but here you're mostly controlling a rolling ball that's in constant motion, tasked with jumping across irregular sloping structures and spinning around precarious paths. It's like controlling *Metroid Prime*'s Samus in Morph Ball form – *Skully* is fast and responsive to inputs, but the organic – and often linear – level design with water frothing around you makes slip-ups an annoyingly regular occurrence.

Puzzle elements are based on Skully's ability to morph into different creatures at pools of mud. In ball form, Skully is fast and can roll up mossy walls, but is vulnerable with no method of attack. The opposite is the hulking golem form who's slow but packs a shockwave punch. Then there's a stocky little guy who can run at speed and move certain platforms horizontally telepathically. Another sprightly twiggy fella can do the same vertically, as well as double-jump.

With the ability to morph into multiple creatures at once, the puzzles gradually rise in complexity, though they're never quite taxing enough on the brain. Later, you're given the ability to record the movement of floating platforms to reach new areas, but the implementation is poorly explained. Worse, the solution to most puzzles is often clearly evident, but due to the need to return to checkpoints to summon each creature, plus some finicky controls, puzzle-solving is a chore. Throw in some inconsistently placed checkpoints and *Skully* becomes a gruelling task to play, with an ambient score that does nothing to calm your nerves.

Poor camera control is another committed sin. It's mostly freely manoeuvrable which works well enough, but in certain climactic escape moments, the camera is fixed as you race towards the screen with waves of water or lava at your heels. That means a cocktail of awkward movement across perilous platforms and not being able to see your route, all with the threat of instant death and a time limit. It's enough to put the controller down permanently.

Yet there's a certain grubby, whimsical charm to *Skully*. Its world is more washed out than colourful fantasy, but the character design has awkwardly cute appeal – especially the way the creatures regurgitate Skully from their mouths. And though it's told cheaply through mostly static scenes, the story of bickering elemental siblings does have a nice message by the end. It's just a shame the game doesn't make the most of its inventive ideas. Among all the platforming sins, the developer's creativity dissolves like mud in water. ⓦ

> **"Puzzles are never quite taxing enough on the brain"**

Info

GENRE
Platformer

FORMAT
PS4 (tested) / PC / XBO / Switch

DEVELOPER
Finish Line Games

PUBLISHER
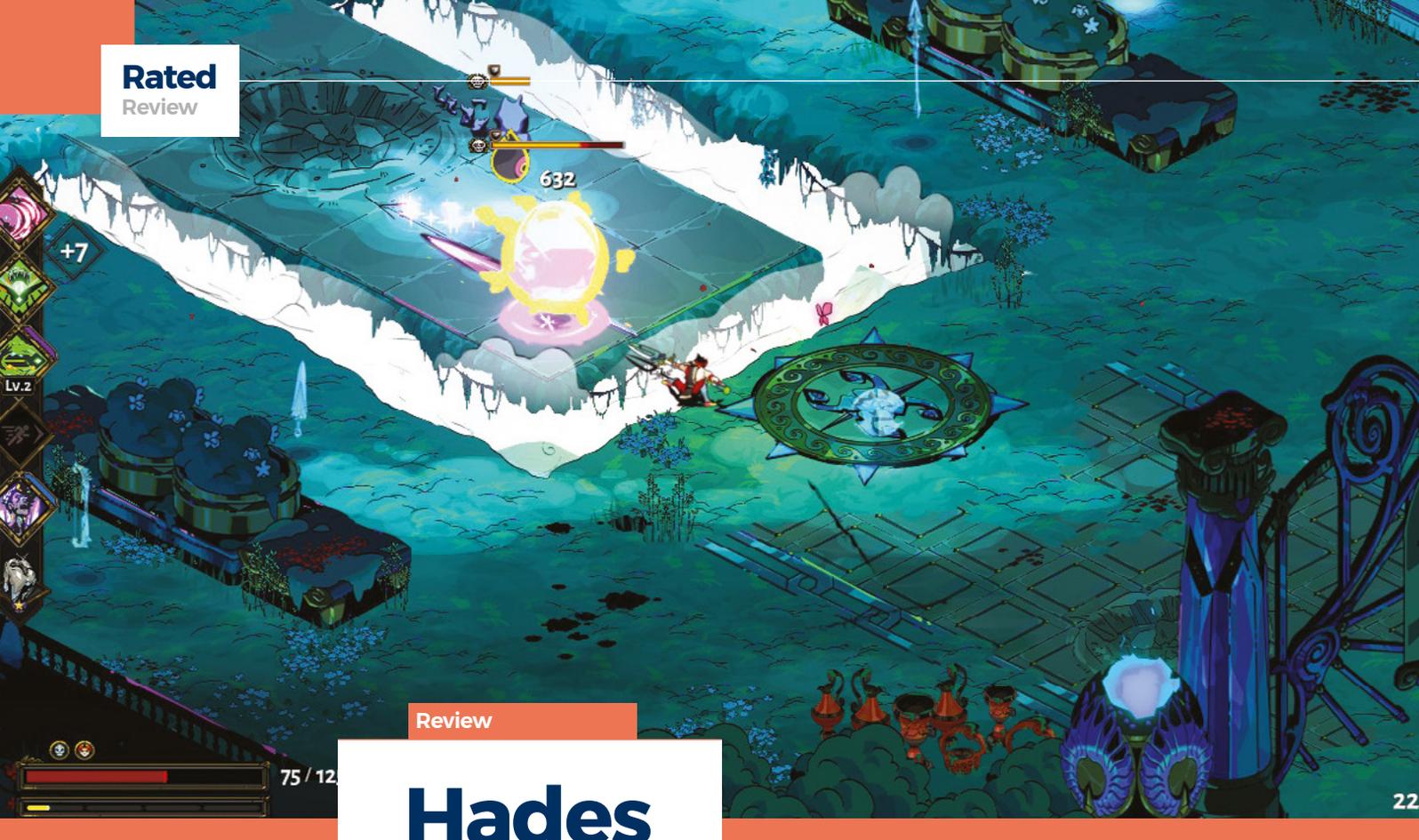Modus Games

PRICE
£24.99

RELEASE
Out now

REVIEWED BY
Ed Nightingale

VERDICT

Skully is stuck in the mud, its best ideas lost in a sea of basic platforming errors.

56%

Review

Hades

Dashing rogue

⌄ **Meeting all manner of characters from Greek mythology is a) fun, b) useful, and c) surprisingly educational at times.**
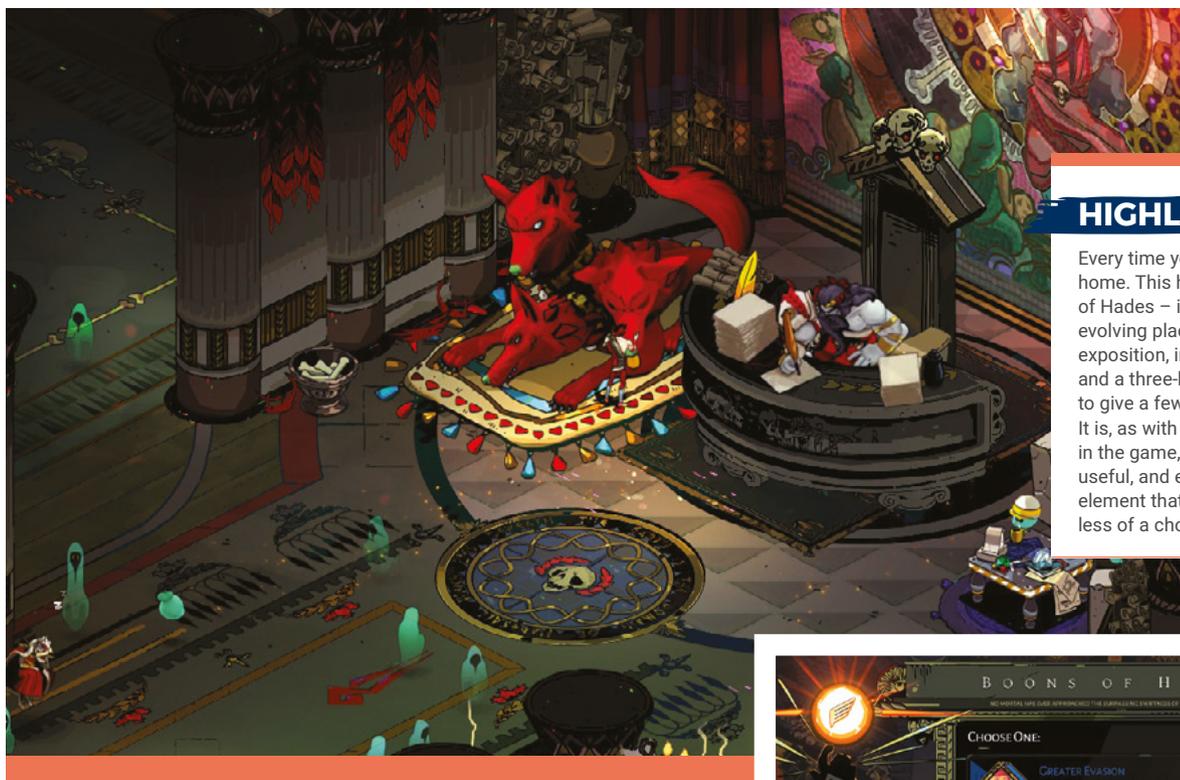

've been trying to find something to dislike about *Hades*, I really have. Some of the voice acting leaves things a bit wanting, that's a tally mark in the cons column. It won't appeal to everyone? Well, that's true of anything, it's not a real con. I wanted to dismiss the character art after seeing Aphrodite presented in a traditional 'nudie lady with hair obscuring the naughty bits' design, but then I remembered almost every character in the game is thoroughly sexy. Dionysus is thirsty in more ways than one, let's say. I just... there's nothing about *Hades* I don't like. *Nothing*.

Your goal is a simple one: playing as Zagreus, son of Hades, escape the *realm* of Hades and reach the surface, where you'll be embraced by Zeus and the other Olympians, all of whom are tempting and helping you along the way. To do this, you flit through dozens of self-enclosed rooms, randomly arranged and with ever-changing spawn pits of demonic (et al) minions to battle. It is, when you zoom out, an absurdly simple premise: fight through to earn your freedom. But the ever-increasing layers ladled on top are what makes *Hades* jump from goodness to greatness.

You're choosing from a selection of different weapons, each with its own pros and cons – a simple sword for your regular combat, maybe, or the Twin Fists of Malphon (aka holy boxing gloves) to get up close and quickly batter things... even a machine gun of sorts. It mixes things up, makes you learn new techniques, and – with each weapon triggering its own unlocks for defeating bosses along the way – also encourages you to actively switch weapons with each run. You'll have plenty of those runs, so there's always the chance to mix it up a bit and just try out something different for a while; it's so easy, it's never a chore, *and* there are potential rewards for doing so. Elegant doesn't begin to cover it.

The plenty of runs are what you'd expect from a roguelike, and *Hades* – again – is utterly sublime in how it handles things. You've one life, but along the way, you can restore health through different means. You can also upgrade

∧ Boons are varied in rarity, and then can be upgraded on a levelling basis after the fact. They're central to *Hades'* replayability.

Zagreus to give him an extra life of sorts, and other boons can pop up to extend your single life bar into multiples. So it's not the most punishing of games in that respect… all the same, you will fail a hell of a lot, and with that comes the chance to be mightily miffed by the whole thing, of having put in half an hour to a run, got seriously far, then not noticed some Elysian spear-wielding *arse* scuttling up behind you to stab you in the back like the cowards that lot are. Except it doesn't get annoying. Death is inevitable, but really it just acts as impetus to start over, push harder, try something new, upgrade yourself, and more. Best of all, dying sets you back to the realm of Hades, and in the house of the Underworld's god, there's plenty of story and character and other fantastic elements to keep your interest and maintain momentum to things. Death is hardly even an inconvenience here, and I never found myself wanting to stop playing *because* of a death, instead, other things like 'real life' tended to come up and demand things be paused a while. Elegant still doesn't begin to cover it.

Every run sees different boons, too – favours from the gods – to augment your weapons, attacks, dashes, and more. Hermes, god of lost packages – sorry, messenger of the gods – might offer an additional dash to your base one or two,

> **"Death is inevitable, but really it just acts as impetus to start over"**

while Athena might make it so that your attacks cause damage *and* deflect incoming attacks at the same time. Zeus can add lightning effects, Dionysus can flirt like the sexy boy he is (and offer boons), Artemis can make it so that arrows shoot out with every strike of your weapon. There are dozens of options for each god, and plenty of gods to share their wealth, so no run is ever the same. One boss fight might seem insurmountable the first time around, only to be drifted through with ease thanks to a handful of different boons picked up on a fresh run – it's Just. So. Elegant.

Supergiant Games pushed *Hades* through a significant Early Access period before its v1.0 release, and it paid off massively. The game has seen the benefit of, effectively, mass-scale user testing before its 'final' release (it will be updated, of course), and the studio has put an incredible amount of effort into tweaking, changing, and perfecting elements big and small throughout the game. *Hades* is a poster child for the good Early Access can do – equally, it's the poster child for what a good game should be. Elegant might not be the word. *Eleganza* is. Ⓦ

REVIEWED BY
Ian Dransfield

VERDICT

Stylish and sublime, *Hades* earns its place among the gods of gaming.

94%

Backwards compatible

WRITTEN BY IAN 'GURU MEDITATION' DRANSFIELD

HDM-why?

Part two in a series of things about making old gaming devices output via HDMI: it's the Amiga! Yes friends, instead of saving money or doing anything sensible at all with my time, I opted to pick up an Indivision AGA MK3, from Individual Computers. What's that? Why, it's a 'flicker fixer' – which is just a (seemingly) Amiga-only way of saying 'a thing that lets you output video signals at a much higher resolution than the original hardware could manage'. While the popular, always sold out, second incarnation of the Indivision offered a VGA output, the MK3 – as you might guess – has upgraded to an HDMI port. Or a VGA one, if you want. I did not want. No, I wanted to move on from SCART and OSSC, into a world where I could just hook up my trusty old A1200, plug in an HDMI lead, and be on my way.

The actual fitting process put a stop to this simplicity, though: one, because the manual includes images to guide you on where stuff goes, but the print quality is atrocious, so there's a lot of squinting and

figuring that goes into it. Two, it's actually really easy to install once you know what goes where, but... I sort of didn't press down hard enough. All you need to do is take the Amiga apart, screw in the HDMI port (or VGA – it's reversible), and press down two bibbly-boos (technical term) on a couple of chips on the Amiga motherboard. That's it. I did this, I booted up, and I got no signal. I did it again, I booted up, and I got a signal – but it was riddled with errors and failures to sync, HDCP warnings, an inability to change to very standard resolutions, and plenty more. It was looking ever-more like the SCART lead would be staying, and my complaints would arrive online with the fury of a thousand suns.

Fortunately, I'm of the mentality that I *am* capable of getting things wrong. So it was that I kept on trying things, kept on faffing with different options and displays, even breaking out the old Amiga power supply (rather than the far better PICO-based one I use these days), and fretting over my inability to play *Syndicate* in glorious, clean detail. Three hours. I spent three hours of a Sunday – a day for me to do as I please, which I could have spent being creative or attentive or in any way useful. Three hours it took me to realise I should open the Amiga up again, reseat the MK3, and

just press down harder. That was all it took. Then, suddenly, with me feeling like the chump of all chumps (and fortunately not yet having posted any complaints online), it worked. Three. Hours.

So what is the point in doing something like this? I don't know, it's just something I feel compelled to do when I can. I now have an Amiga, a Dreamcast, a GameCube, and an N64 all modded to output via HDMI, even though I don't play any machine enough to really justify getting one converted, never mind all of them. It has to go back to the days of rooting these consoles out and trying to get them working on a modern display and all the sadness that caused – at least with their neat little angular ports, they'll all be capable of just working on tellies for a long time to come. I loved you, SCART, but your time is done.

You can find more on the Indivision MK3 – and other Amiga/C64 products – at **icomp.de**. Next month: the PS1Digital. It's finally here. But I can't install it myself. Oh, the joy of these never-ending HDMI travails.

THE WARRIOR DEPARTS FOR THE CITY OF LEGENDS
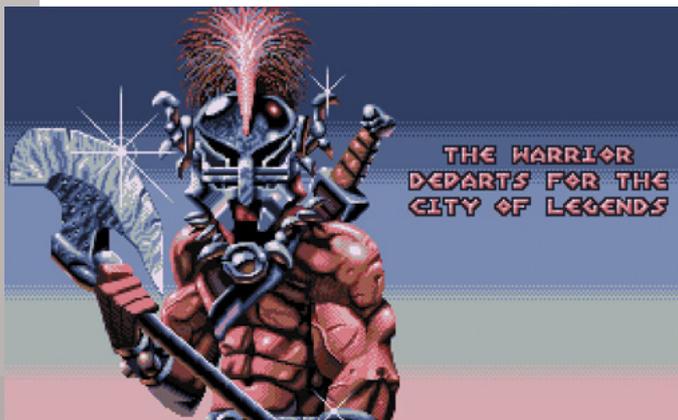
MAKE IT AGAIN III

This was on the list to cover at some point, then IO went and re-released it through GOG, Steam, Epic, and all those other places (they're the only ones). Yep: *Freedom Fighters*. The best squad-based third-person shooter of the PS2 generation, it told a story unlike any other I can think of – at least in mainstream games of the early noughties. Basically, and you need to whisper this, it involved an element of *satire*. The game tells an alternative history story of the US being invaded by Soviet forces; players take on the role of Chris Stone, plumber, as he sets about living the American Dream, raising the Stars and Stripes at the end of levels, and shooting the Red Menace in the face. It's rough around the edges, silly at times, po-faced at others, but a

fundamentally fine experience: the sort of thing that should never have existed in the publisher-led era it was released, and a re-release I'm happy to see. Could IO be testing the waters for a sequel?

Here's hoping. And here's hoping that with EA uninvolved in the hypothetical project, it could go even further with lampooning the American action hero aesthetic. And flags. So many flags.

Padprise ('Pad Surprise')

File this under the… filing system, because it was information I didn't previously know and now do, so it should now be filed. Hmm. Anyway, I had no idea the Fukkokuban Sega Saturn Control Pad For PlayStation 2 existed, and now I do, I want one. eBay says no, sadly – well, when I say 'no', I mean 'about £100-plus', which is as good as. It's a proper PS2 pad, made by Sega, emulating the wonderful Sega Saturn controller. It's not actually that useful – no analogue sticks and two fewer buttons (L3 and R3 are missing) – but it is one of the best things a person can suddenly stumble on in the world of retro gaming: a curio. A *controller* curio.

Backwards compatible

WRITTEN BY RYAN LAMBIE

Exploring Konami's whimsy years

It's fair to say that Konami's name no longer carries quite the same weight it once did; these days, the Japanese giant is perhaps better known for its grim mishandling of once-great franchises like *Castlevania* and *Metal Gear*, or the even scarier way it reportedly treats its staff. Rewind the clock 30 or so years, though, and Konami barely put a foot wrong – okay, the scary treatment of staff was still there, but the games were, almost without exception, outstanding. *Castlevania*, *Contra*, *Gradius*, *Metal Gear*, and numerous other franchises all got their start around the same time in the late eighties, and the sheer number of great games that came out of Konami's stable around then was pretty startling.

What's less widely talked about, at least today, was how willing Konami was to make smaller, quirkier games that riffed on its bigger franchises in playful, often strange ways. *Parodius* was one of the few examples that got a wide release in the west; based on the *Gradius* series of side-scrolling shooters, *Parodius* began life on the MSX computer, but received numerous ports and sequels, ranging from *Parodius Da!* for – among other things – arcade, NES, SNES, and PC Engine, to the manic *Sexy Parodius*, which was the Japanese equivalent of a saucy (and not entirely savoury) pier-end postcard. Released from 1988 to 1997, the *Parodius* games freely mixed the space shooter conventions of the *Gradius* series with a surreal mix of penguins, sentient trees, characters from Japanese folklore, and jabs of synth-pop classical music.

Parodius was, however, just a small sliver of Konami's late 20th-century fascination with cartoon-like weirdness. *Castlevania* got a whimsical parody of its own in 1990 with the Japan-only *Akumajō Special: Boku Dracula-kun* on the NES – like its more famous siblings, this was a 2D action platformer with a Gothic horror theme. The difference this time, though, is that you take control of the youthful Dracula-kun, a toothsome vampire whose supernatural powers are initially limited to lobbing fireballs across the screen, but later extend to heat-seeking blasts of energy and the ability to transform into a bat. The graphics are chunky, the theme music is upbeat and playful, and if the game isn't quite as brutal as the early *Castlevania* games, then it at least mimics the infuriating knock-back your main character suffers whenever he's struck by an enemy – being flung into a deadly pit following the lightest brush with a projectile is a common occurrence in *Dracula-kun*.

Still, it's not clear exactly why Konami didn't bring *Dracula-kun* to the west, since *Castlevania* was a popular enough series at the start of the nineties; the fading presence of the NES in Europe and America may have been the reason, since Konami did release a solid version – titled *Kid Dracula* – for the Game Boy in 1993. (If you want to give the NES version of *Dracula-kun* a try on a modern console, it's available as part of the *Castlevania Anniversary Collection*.)

Having spent a fair bit of time with *Dracula-kun* recently, I began delving even deeper into the Konami archives to find some other strange games from this fruitful period – you'll find some of the others I've played elsewhere on these pages.

Yume Penguin Monogatari

Konami's obsession with penguins stretches right back to the days of 1983's *Antarctic Adventure* on the MSX, and this obscurity from the latter years of the NES (released exclusively in Japan in 1991, fact fans) is no exception. It's a fairly typical platformer for the period, distinguished by its odd dieting theme: penguin protagonist Penta's weight gain has become so pronounced that his girlfriend threatens to leave him for a love rival, so Penta embarks on a plan to get back in shape. There's no way a premise like this would fly today (nor would the decidedly sexist portrayal of Penta's girlfriend as shallow and fickle, for that matter), but there are some interesting mechanics going on here, at least. Diet drinks make Penta lose weight and jump more athletically, while junk food items have to be actively avoided, otherwise Penta becomes so heavy he can barely move. The platforming stages are interspersed with side-scrolling shooter sequences and area bosses worthy of *Parodius*, albeit with the difficulty level taken down a couple of pegs. *Yume Penguin Monogatari* – or *Story of the Dream Penguin* – isn't a lost classic, then, but again, it's a fascinating time capsule from Konami's earlier years.

Bio Miracle Bokutte Upa

Now this one is absolutely charming. First released for the Famicom Disk System in 1988, *Bio Miracle Bokutte Upa* is – unlike the other games discussed so far – an entirely original game unrelated to Konami's other works. It's another side-scrolling platformer, this time starring a crawling baby whose main defence is an enchanted rattle – strike an enemy with it, and the enemy will balloon in size and start to float around the screen. Upa can then hop on the stunned enemy and use it as a handy platform to cross gaps, or hit the stricken creature again to kill it. Less frustrating than *Dracula-kun*, *Bio Miracle Bokutte Upa* is also one of the cutest, cuddliest games Konami ever released, which is probably why it remained exclusive to its native country, where kawaii experiences were far more common than in the west. The game's infant hero also made a few cameo appearances in later Konami games, including *Wai Wai World 2* (the second in another strange series of games we didn't find space to include here), and the SNES version of *Parodius*. Now, if only Konami would release a collection of these and other eighties and nineties curios; many of them are getting expensive and hard to find now, but together, they form a small yet fascinating part of the company's long history.

Moai-kun

Proving that Konami was capable of finding inspiration in even the most obscure recesses of its own games, *Moai-kun* (or *Mr Moai*) was based on the laser-spitting stone heads glimpsed on the third stage of *Gradius*, which in turn were inspired by the wonderful statuary on Easter Island in the Pacific Ocean. *Moai-kun* is a simple platform-puzzler which stars a walking, smiling Moai statue who pushes blocks, rescues smaller versions of himself from remote platforms, then heads for the nearest exit. Released for the NES in 1990, it's simplistic even by the genre's standards – HAL Laboratory's vaguely similar *Eggerland / Adventures of Lolo* games have a lot more going on – but it's still a diverting and brain-tickling curio from Konami's heyday.

# Falling endlessly for Manifold Garden

Ryan has his tiny mind blown by William Chyr's Escher–like puzzler

Manifold Garden ingeniously contrasts its vast outdoor areas with intimate – though hardly less complex – interior spaces.


Video games expose the adaptability of the human mind. In their virtual worlds, rules that initially seem counter-intuitive or physically impossible soon become second nature. It's why *Super Mario* players in the eighties quickly adjusted to the idea that bumping into some mushrooms was good while bumping into others was bad. It's why we went from cautiously ripping holes through time and space in *Portal* to cheerfully pulling off complex, physics-bending jumps within a few minutes.

And it's why, despite my initial bafflement at *Manifold Garden*'s kaleidoscopic imagery, I soon felt quite comfortable with the notion of jumping off one ledge and falling through infinitely recurring instances of a location until I reached a second ledge a few feet away.

Manifold Garden is among the eeriest games I've ever played. In terms of its style and atmosphere, it's like elements of several sci-fi movies mashed together; it's the Star Gate sequence from *2001: A Space Odyssey*; it's the Paris-folding bit from *Inception*; it's the four-dimensional Matthew McConaughey scene from *Interstellar*. But *Manifold Garden* is first and foremost a 3D puzzle game about moving blocks, activating switches, and opening doors to access other puzzles. In terms of orthodox game design, this aspect is familiar stuff, which is why the game's opening scenes are relatively welcoming. The game's second layer, however, is its gravity-shifting mechanic, if we can call it that; pressing the right trigger (or the right mouse button) alters the world's gravitational forces so that walls become floors and vice versa; to help keep you oriented, each plane is colour-coded, so one wall might be blue, the floor red, the ceiling yellow, for example, and your cursor will change colour depending on the orientation of the plane it's pointed at. To complicate things, a coloured cube
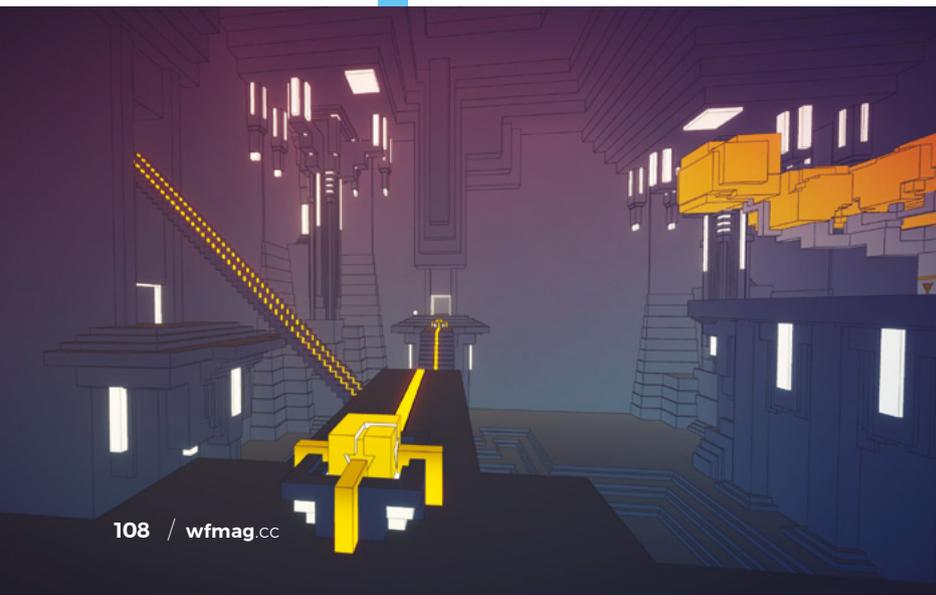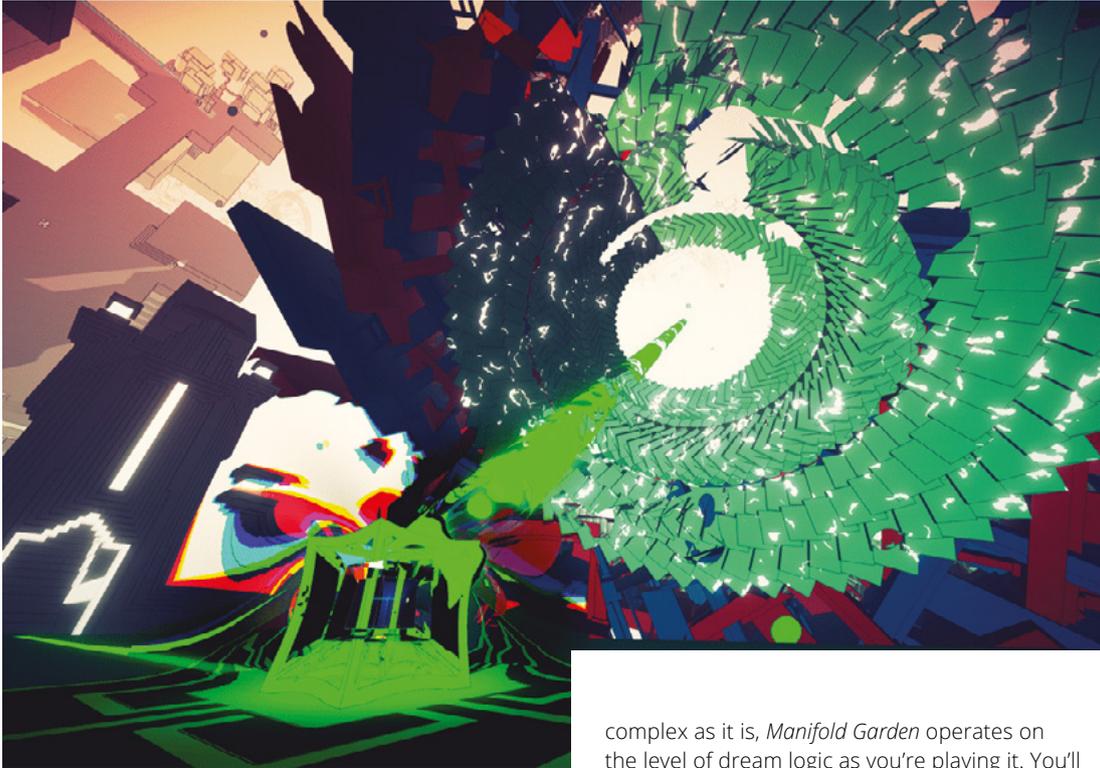
can only be moved if you're walking on the plane that matches its colour, so if you want to move a blue cube, then you'll need to be oriented so that the blue surface is at your feet.

The game's earliest puzzles take place in enclosed spaces, all the better to help you learn the game's rules; but just as you settle into a groove, the game ushers you through a set of doors and out into the wider, faintly terrifying world. It's here that the game begins to show its true complexity, as impossible, geometric architecture stretches recursively off into infinity. In gameplay terms, navigating these landscapes quickly becomes key; the early puzzle alluded to above has you grab a coloured cube, jump off a ledge, fall for what must be at least one real-world kilometre, and land on a surface several yards away where you'll find a pad to place your cube. You can fall as far as you like in *Manifold Garden*, and stepping into an empty space doesn't mean you'll simply drop in a straight line; as though affected by an unseen breeze, you're able to steer yourself as you fall, meaning you can see a bit of architecture you want to land on, and take maybe five or six passes through the looping reality to guide yourself over to it.

It all sounds quite bewildering when typed out in black and white, and as mathematically

> ## "You'll find yourself lost among spires that stretch on forever"

complex as it is, *Manifold Garden* operates on the level of dream logic as you're playing it. You'll find yourself lost among cathedral-like spires that stretch on forever; there are stacked sets of staircases that lead to nowhere, but a quick perspective switch quickly reveals a hidden doorway. Quite how American artist-turned-developer William Chyr even planned all these places, which can theoretically be viewed and explored from any angle, is really anyone's guess. Even after watching Chyr's GDC talk (**wfmag.cc/manifold**), I'm still amazed by the game's sheer complexity.

Faults? Well, some of the trickier puzzles can mean you're left cluelessly wandering around while clutching a box, like a surrealist Hermes delivery driver. The wider geometric vistas also left this writer with a distinct feeling of vertigo after a few hours, so if you're prone to migraines or things of that ilk, *Manifold Garden* is possibly best enjoyed in short bursts. But these are mere niggles in the face of such a fascinating and intricate game. I haven't even touched on the strange trees that grow cubes like fruit, or how the geometric world gradually becomes first organic and slippery, then flat-out psychedelic in its later stretches. Part puzzle game, part art installation, *Manifold Garden* can be traced back through earlier games of its ilk – *Portal*, *The Talos Principle*, and *The Witness* spring to mind – but Chyr's use of perspective, sound, and 3D space create a quite new, captivating experience. ⓦ

Wireframe Recommends

3D Ant Attack
ZX SPECTRUM
William Chyr probably hasn't even heard of this 8-bit gem, but in terms of its geometric architecture, (once) groundbreaking use of 3D, and spooky sense of abandonment, *3D Ant Attack* feels like *Manifold Garden*'s distant ancestor.

FEZ
XBOX 360/VARIOUS
Sure, it's a 2D platformer, but it's also one that plays around with spatial logic, the fourth dimension, and even has a psychedelic freak-out ending that also recalls *2001: A Space Odyssey*. Basically, it's a masterpiece.

The Witness
PC, PS4, XBO, NVIDIA SHIELD, IOS
Jonathan Blow's puzzler shares *Manifold Garden*'s first-person perspective and air of intellectual detachment. If anything, though, *The Witness*, with its 2D puzzles interconnected across a 3D landscape, is an even tougher game than *Manifold Garden*.

Goalscoring superstar hero

Ian's partying like it's 01/02 in Retro Football Management

I have a total of 48 games installed on my phone – from the likes of *Stardew Valley* and *Star Wars: Knights of the Old Republic*, through to smaller experiences like *Florence* and *Hidden Folks*. I've even got microtransaction-heavy wallet-burners like *Plants vs. Zombies 2*. All there, ready to be played at a moment's notice, ready to kill some time when time needs killing. But I don't actually play any of them. Not really. A burst of activity on one or two of them here or there, sure, but I don't *really* play them properly. I'm just not a phone gamer; not someone who wants or needs these distractions on a thing I really do consider to be a tool over anything else.

Except for *Retro Football Management*, that is. Which has been on my phone practically non-stop for a long time now. This is one that's hyper-focused, made specifically to appeal to people

who played *Championship Manager* back before it became too complex and pivoted to *Football Manager*, so I don't expect it to catch on like *Among Us* or *Fall Guys*. But for those of us that it does appeal to: wow.

It's not a carbon copy of *Championship Manager Season 01/02* – the game I most associate *RFM* with – instead, it's a clone of *your memory of the game*. You manage your team, sign and sell players, pick them for matches, and tap-tap-tap through a season in a matter of minutes. Honestly, the number of times I've idly finished an entire season without realising I'd played anything more than five matches is… well, it's happened more than once, basically.

But yeah, it's not in-depth, it's not emulating the mechanics of those games it apes, there really isn't *that* much to it. But still, it's there, being jabbed at periodically, seasons whizzing past, players in and out before you're even used to them being there, every other club being bought out by billionaires to tempt you into spending a bit of real cash for a fake cash boost. It endures.

Now I will admit, *Retro Football Management* is free, and so it has some pay-to-win features in there, but a) they're not necessary, and b) I

Other leagues (and teams) are available, but I stuck with the mighty Toffees.
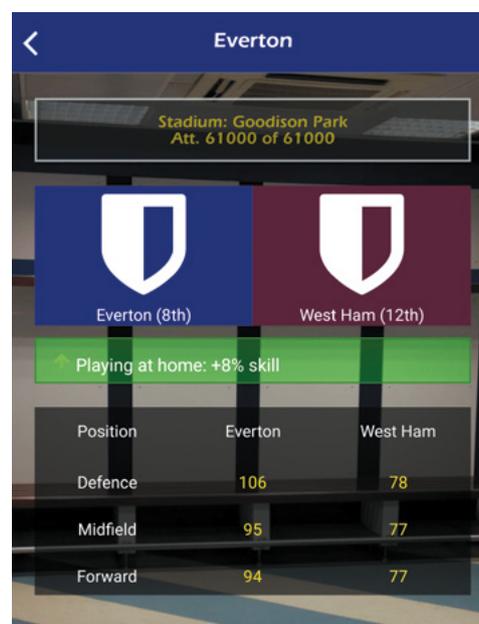
Final Score

Everton **4 0** West Ham

Myles Taylor (9')
Eiður Guðjohnsen (33')
Myles Taylor (44')
Nwankwo Kanu (68')

Injuries
No one was injured

Player status
Newly available   Not available
-    -

Other Results

Everton

Final table

P	Team	P	W	D	L	GD	Pts
1	Arsenal	38	31	3	4	60	96
2	Man United	38	29	5	4	68	92
3	Everton	38	24	9	5	44	81
4	Liverpool	38	23	4	11	22	73
5	Newcastle	38	21	7	10	17	70
6	Sheffield Wednesday	38	17	10	11	10	61
7	Middlesbrough	38	16	7	15	4	55
8	Blackburn Rovers	38	16	6	16	13	54
9	Chelsea	38	16	5	17	-10	53
10	Coventry	38	15	5	18	-18	50
11	Aston Villa	38	14	4	20	0	46
12	Leeds	38	13	7	18	-23	46

Finish season

won't ever use them, I'll just watch ads every now and then to get a million quid in-game money. It's unobtrusive; it doesn't stop you from playing to demand you share with friends, and at no point have I felt like I needed to pay a couple of quid for a windfall of cash to keep up with my free-spending opponents.

The reason being: the game feels so random anyway I don't feel like I'd get an advantage. Stronger teams – and you will be strong in no time, just buy players with high ratings – have an advantage over weaker, of course, but there's some kind of roll of the dice going on behind the scenes that sees your honed squad of Edwin van der Sar in goal, Roberto Ayala at centre back, Marc Overmars on the wing, and Proper Ronaldo up front being beaten 4-0 by Derby at home. It's frustrating. It makes no sense. But before you know it, the tapping has continued, and that match was seven in-game weeks ago. It just keeps rolling on.

Those names I just mentioned? Yes, they're old players. You have a choice of different starting seasons and situations, each with era-appropriate teams and players. I opted for the mid-nineties for my main game, bringing the mighty Everton into the halls of the Premier League champions within two seasons (or about

"Jürgen Klinsmann acted as ballast for a teenage Eidur Gudjohnsen up front"

45 minutes in human time). Jürgen Klinsmann acted as ballast for a teenage Eidur Gudjohnsen up front. Neville Southall held the line for a year before his Dutch replacement arrived. Duncan Ferguson got sent off too many times for me to bother keeping him at the club. *Retro Football Management* nails that nostalgia factor.

I will admit the game didn't endure though, because there's nothing to it. It's empty nostalgia; a lack of real challenge, no actual skill involved, and a bunch of names I remember from my youth. It's not much of a game, instead, a trimmed-down version of your memory of those old games, where your brain has rubbed off the sharp edges, and it's just matches, money, and mild management. It's puddle-deep, too random to be a proper challenge, a wee bit gimmicky, and it does demand you watch ads to not go bankrupt after a few seasons. So I stopped. At the same time, *Retro Football Management* is absolutely brilliant. ⓦ

Wireframe Recommends

Football Manager 2020
PC, STADIA, SWITCH
I can tap away on my phone while playing the proper management game, so I don't have to choose between the nostalgic version of history and the reality of the now. *FM 2020* is fantastic.

eFootball PES 2020
PS4, XBO, PC
I've not played the new one yet so can't say, but *PES 2020*'s Master League is still one of my favourite things to play in the realm of management titles. Building from crap-to-good is always a joy, you see.

Metal Gear Solid: Peace Walker
PSP, PS3, X360
There's management in *Peace Walker* (and *MGSV*) that's always reminded me of *Football Manager*. So it always comes up when recommending with management-y games.
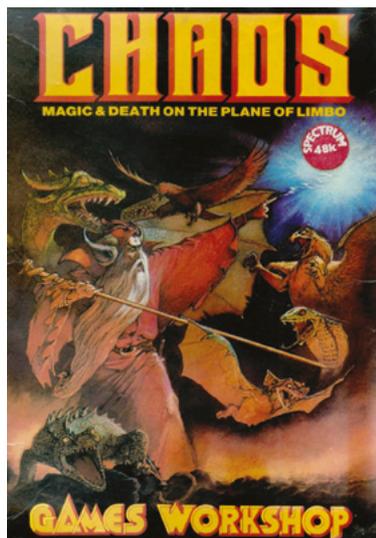
Chaos: The Battle of Wizards

A single spell turned Julian Gollop's 35 year-old strategy
game into a timeless masterpiece, Ryan writes

JULIAN GOLLOP / 1985 / ZX SPECTRUM

With its 3.5MHz 8-bit processor and (relative) paucity of controller ports, the ZX Spectrum wasn't a natural home for multiplayer games – much less experiences that allowed up to eight warlocks to battle one another on one screen. Ambitiously, though, this is exactly what 1985's *Chaos* attempted with its turn-based, fantasy-themed battle royale. Granted, actually playing the seminal game in your typical 1980s bedroom would have been, well, chaotic – imagine eight players crowded around one keyboard, each waiting to take their turn, with rival players asked to avert their gaze while the current player selected their spells.

Chaos was, in essence, a digital board game, loosely based on an early tabletop title by Games Workshop (see box). Programmed by a young Julian Gollop, later of *XCOM* fame, *Chaos* sees players take on the role of duelling necromancers in a turn-based fight to the death. At the start of each bout, players are given a random selection of spells, ranging from creatures, which can be conjured up on the battlefield and sent out to attack enemies, to one-off attacks like lightning bolts and fireballs. Then there are more defensive manoeuvres – you can magic up citadels to hide in, or wings which allow your wizard to move further across the board each turn.

The creature spells are by far the most common, and form the game's tactical backbone; with the wizards themselves

> **"The mechanic gives what could be a simple tactics game the tension of a poker tournament"**

being weak in combat and only able to move one square at a time by default, conjuring an army of more mobile and physically formidable creatures is key to winning a bout of *Chaos*. Lower-ranking, less dangerous creatures such as rats and snakes are easy to cast since they have a high success rate; the more deadly the creature, the more likely the spell-casting is to fail, with dragons and vampires being among the strongest and hardest-to-kill beasts in the entire game. But rather than risk wasting a turn on conjuring up, say, a Golden Dragon, only to watch the spell fail, players could instead opt for a handy alternative: when a creature spell is selected, there's the option to cast it as 'real' or 'illusion'. Choose illusion, and there's suddenly a 100 percent chance that your Golden Dragon will successfully appear on the battlefield. There is, however, a tactical downside to creating illusory creatures: *Chaos* gives players infinite opportunities to cast a spell called Disbelieve. If a player suspects that a rival's manticore is an illusion, they can just zap it with the Disbelieve spell and, if their suspicion is correct, then the creature will disappear in a dramatic flash.

This single mechanic gives what could be a simple tactics game the sweaty tension of a high-stakes poker tournament; on one side, you can have a player moving their Green Dragon around the battlefield, heartlessly slaughtering an enemy wizard's unicorns and dire wolves, but secretly terrified that a single Disbelieve spell could leave their illusory beast

RYAN'S TURN

< I'm battling against three computer-controlled wizards here. I've also taken the risk of casting an entirely illusory army of ghosts. Nobody's cast Disbelieve yet, thankfully.

∨ The enemy wizard, Bog, has cottoned on to my tactic, and has started casting Disbelieve spells on all my creatures. Damn.

BOG DISBELIEVE 20

vanishing in a puff of smoke. In other scenarios, you could be in the midst of a tense battle, with your army of creatures severely depleted, your spellbook running low, and your last hope of winning the game being that the enemy vampire bearing down on you is an illusion. Holding your breath, you cast the Disbelieve spell… only to watch as it rolls off the creature's cape with no effect. The vampire is real, and for you, the game is over.

Julian Gollop revisited his fantasy creation twice; once in 1990 with *Lords of Chaos* – more of a tactical RPG – and again in 2015 with *Chaos Reborn*, which returned the series to its claustrophobic, competitive roots. The latter also added the kind of detailed 3D graphics and online multiplayer functions that eighties kids could only have dreamed about – and the Disbelieve spell was, naturally, entirely present and correct. That such a mechanic was still so effective 30 years later is surely a testament to its timeless brilliance.

Of course, as mentioned in that 1980s bedroom scenario outlined at the start of this piece, casting spells also required everyone crowded around the ZX Spectrum to avert their eyes while the current player selected their spell. When the game offered up its fateful choice – "Illusion? (Press Y or N)" – it was joined by a frisson of anxiety. That single decision could decide the fate of the entire game. And what if one of the other players in the room were to cheat, and sneak a look at which button they pressed? Well, that would surely be breaking some kind of wizardly code of conduct. Nobody playing *Chaos* in the 1980s *ever* did that. ⓦ

Creating Chaos

Long before Julian Gollop programmed *Chaos*, he began establishing its rules by creating a card game. As he explained to Wireframe back in 2018, his duelling wizards scenario was not only inspired by Games Workshop's 1980 tabletop game, Warlock, but was also a response to what he saw as its shortcomings. "The main thing I didn't like about [Warlock] was that it was too abstract," Gollop told us. "There wasn't a sense that you were really battling against enemies, it was much more of a numbers-and-cards type game." Gollop also came up with a concept that simply wouldn't be possible in a traditional board-game: the Disbelieve spell. In a tabletop game, he explained, you wouldn't be able to "tell the other players you're casting Disbelieve, or roll a dice to see if you've succeeded or failed." Instead, he said, Disbelieve "was something I deliberately added to [*Chaos*] because I knew it was something I could do on the computer that I wasn't able to do with the board-game." And thus, a tactical classic was born.

Next Issue

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Baldur's Gate
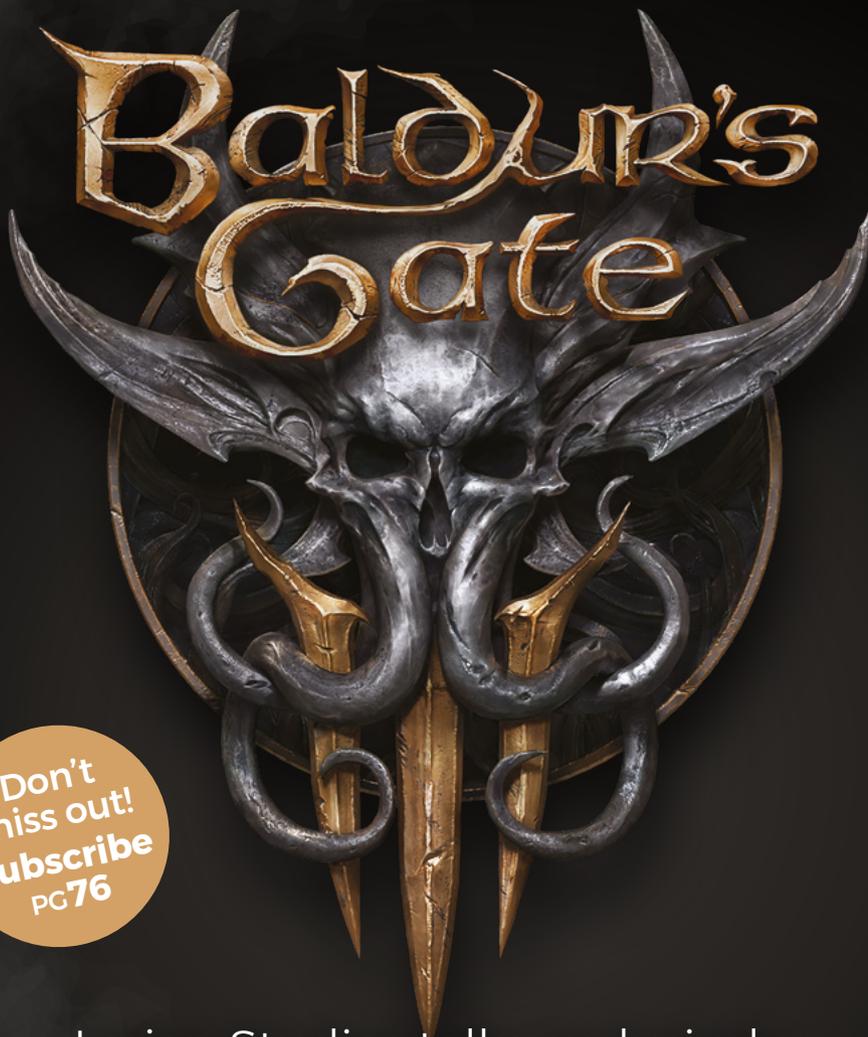
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