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FLASHBACK

ROGUELIKE ACTION AND PROCEDURAL PUNKS IN BLACK FUTURE '88

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Google Stadia: the first ad-funded game platform?

On 19 March, Google finally put to rest all the rumours about entering the console world by not announcing a console at all, but rather a game streaming service called Stadia.

The name's an interesting one, and gives us a clue about their ambitions for the service. Ironically, I turned to Google to find a definition, and the first entry that comes up is 'an athletic or sports ground with tiers of seats for spectators'. Google isn't just taking on the PC and console world with this service; YouTube used to be the venue for watching people play games before the crown passed to Twitch – and now Google wants it back.

The presentation at the Game Developers Conference was slick and impressive. As somebody who's powered up his PS4 to play a game, only to have to wait up to an hour for the system to update, followed by another wait as the game itself updates, the whole 'getting straight into the game' concept has an appeal.

Even more impressive is the ability to post a link to the current state of the game, either to pick up later or share with others. Discovery is tough enough with games, but the ability to send players straight to an awesome part of your game with a link is mind-blowing.

As impressive as the presentation was, though, it left rather a lot of questions unanswered, some of them very surprising given the location and timing. For me, the largest omission was how we as game developers benefit from this service – and by benefit, I mean, how do we make money from it?

As soon as the Stadia announcement was over, social media launched into speculation mode, and one of the theories was that Stadia would be gated with a subscription business model. I can see why some might jump to that conclusion, but I'm less convinced



**BYRON
ATKINSON-
JONES**

Byron has been in the games industry for over 21 years, so making games is in his blood. Follow him on Twitter: [@xiotex](#).

that this will be the way. My take on this centres on the 'spectators' aspect of the definition. Imagine watching a game being played and wanting to just dive into it. If the prospective player has to first pass through a registration process and then supply credit card details, then that presents a number of hurdles that could cause the player to simply give up on the process. It just doesn't make sense to have the spectators subscribe in order to watch.

What, then, if Stadia takes the YouTube approach? No subscription needed, just click on a link, watch the game for a while, and then play it. Minimum barriers, less choke points for players to bail, but also no clear route to how developers make money. Or is there? Google is really a very large-scale advertising platform. Any content they produce or enable has one true purpose: to funnel people towards adverts. Given that stadia (or stadiums) are where people go to spectate, that the service allows you to play games is secondary to its ability to allow you to watch them.

Developers are likely to see earnings coming from advertising impressions and clicks rather than from a subscription gateway. This is fine, except in order to see large enough earnings to make this a viable business model, those impressions need to be in the hundreds of thousands. My YouTube channel has 64,000 minutes of viewing time which, to date, has earned a meagre \$12 – just enough for a small meal for two at McDonald's if we stretch it. For small developers like myself, Stadia is unlikely to be somewhere we can go to earn a living with our games.

Despite this, Stadia still feels like an impressive idea. Questions may linger around the details of how it'll all work, both technically and financially, but all the same, I can't wait to see whether Google can pull it off. 🤖

#11



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WELCOME

Predictably, the release of *Sekiro: Shadows Die Twice* has sparked another debate about the level of difficulty in FromSoftware's games. As was the case with the studio's earlier titles – including *Dark Souls* and *Bloodborne* – *Sekiro* demands persistence and precision. Mastering its combat and defeating its bosses requires hours of practice, and for FromSoft's fans, that's what makes them special.

All of which might explain why, when asked whether the developer ought to have included an easy mode in *Sekiro* – as writer Dave Thier recently did – those fans respond with a certain level of annoyance, to put it mildly. The argument goes that easy modes would ruin the games' design; that FromSoft's output isn't for 'casual gamers'; that players should simply practice more. None of these arguments really stands up to much scrutiny. Suggesting that a game shouldn't have an easy mode because it's for hardcore gamers is like saying James Joyce's *Ulysses* shouldn't be available as an audiobook because it's meant to be a challenging read. The original novel still exists in print; all the existence of an audiobook means is that the visually impaired or the permanently busy have a means of enjoying *Ulysses*, too. Simply put, when games provide more accessibility options to players, everybody wins.

Ryan Lambie
Editor



ART ATTACK

The sky's not worth bothering with:
Black Future '88 says top floor's the limit

In the distant future – the year 1988, where the clock has stood since the nuclear fire hit – society has crumbled. Naturally, it's up to you, and maybe a friend, to climb a tower, shoot or slice everything in your way, take out the wardens defending different zones en route, and stop the architect running the show. He's called Duncan. And if you don't hurry up, your heart will explode. How's that for narrative?

Black Future '88 takes the best of the world of roguelikes, blends it with the *Contras* and other scrolling shooters of gaming's great history, then throws it all together in this procedurally generated hellscape of a synth-punk retrofuture. It is frenzied in the best sense, and mixes its visual and aural aesthetics with great success, imbuing every failed attempt with a dynamism that keeps pushing you on to try more, faster, harder, again.

In case you can't tell, we're already big fans of the game. And so we caught up with Don Bellenger, *Black Future '88*'s creator, to find out just how something so manic – and impressive – came to be. Oh, and to ask that battle royale question we keep on asking, even though it isn't funny anymore.

How did development of *Black Future '88* come about?

All games start as prototypes, but this one was special to me because I was using it to flirt with the idea of coming back into the games industry after burning out a few years prior. The people that work in games will always have a special place in my heart, and despite some bad practices from triple-A publishers, I think that the people who make games their living are the most inspired and passionate people I've ever worked with, and I wanted to return to that after taking a break for a few years.

Also, I had really just played the shit out of *Nuclear Throne* and *Enter the Gungeon* and I wanted to make a cool game with a lot of screenshake, but saw that the top-down roguelike was already completely saturated and that I needed to find ways to really stand out from a crowded field.



> Shades are optional, but thumping great weapons are a must.

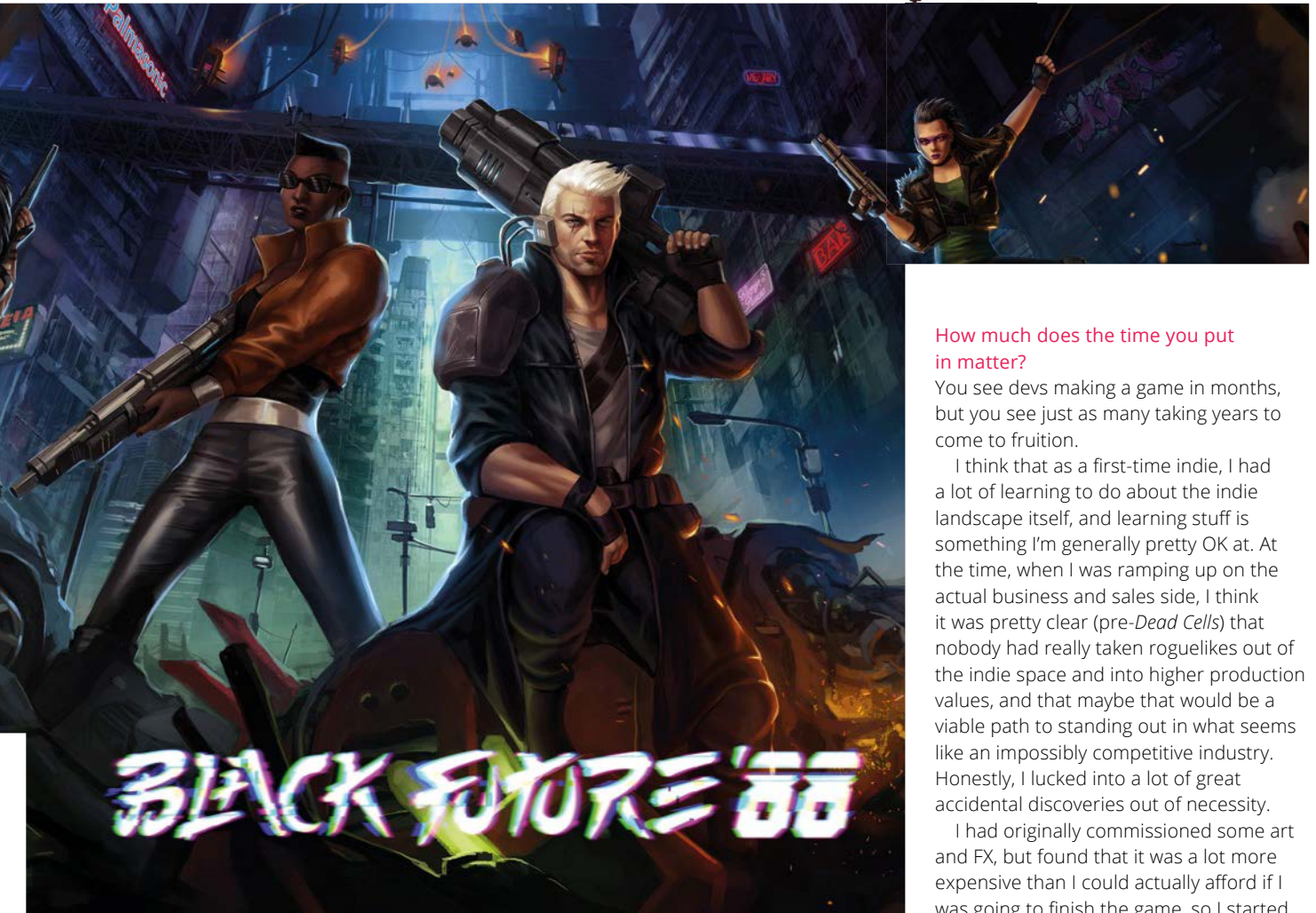


> Don Bellenger in full rock god mode.



> Given the number of enemies lurking in the game, this isn't bad advice.

"I needed to find ways to really stand out from a crowded field"



How much does the time you put in matter?

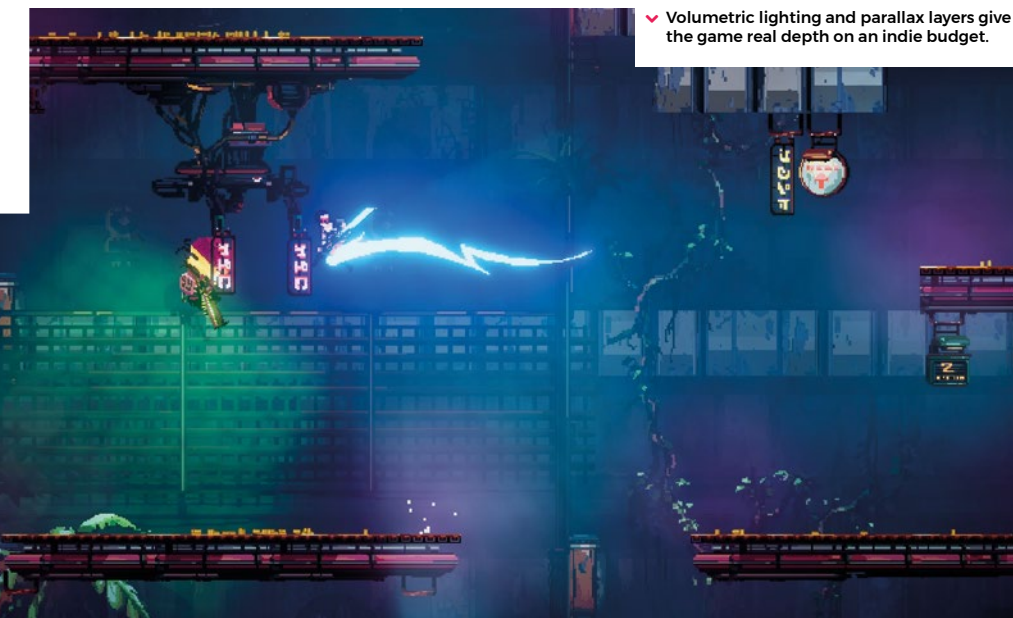
You see devs making a game in months, but you see just as many taking years to come to fruition.

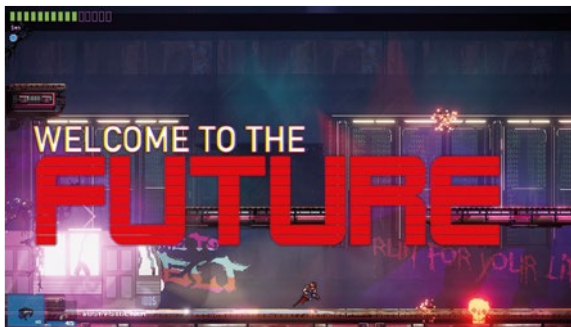
I think that as a first-time indie, I had a lot of learning to do about the indie landscape itself, and learning stuff is something I'm generally pretty OK at. At the time, when I was ramping up on the actual business and sales side, I think it was pretty clear (pre-*Dead Cells*) that nobody had really taken roguelikes out of the indie space and into higher production values, and that maybe that would be a viable path to standing out in what seems like an impossibly competitive industry. Honestly, I lucked into a lot of great accidental discoveries out of necessity.

I had originally commissioned some art and FX, but found that it was a lot more expensive than I could actually afford if I was going to finish the game, so I started trying to do a lot of juicing and FX work programmatically with things like fluid sims and volumetric lighting, and using an absurd amount of parallax layers to trick the eyes into seeing more artwork than is actually there. The fact that the team size of the game is so tiny is kind of a mixed blessing. It means that development is completely single-threaded and sometimes really hard to speed up, but it also is a better fit for what is at times a very 'organic' development process.

How much does *Black Future '88*'s aesthetic inform the action? Are they intrinsically linked, or is it more a case of a 'game bit' with a cool wrapper around it?

I think they're linked at a very conceptual level. The aesthetic is madness, but so is the gameplay and story, and they both evolve over the course of a run as well, and they continue to evolve throughout ➔





the metagame. A run starts simply enough, and I think people could honestly mistake it for a hi-def *Contra*, but I think as the gameplay gets more and more intense and the player dies and unlocks even more stuff every time, they see that everything about the game is designed to overwhelm you.

The player needs to make choices about what they will succeed at and what they will not bother with. The aesthetic of the game matches this, and I think by the time players really get into the experience, they'll see *Black Future '88's* combat as its own unique creature that doesn't put a lot of limits on the player.

Similarly with the soundtrack – there's a musical background to your career, so how much does your work in musical composition inform the game, and how?

I think the real answer to that question is that as a long-time indie musician, I'm just a lot less afraid of creative risks than I used to be, and I think that the *Black Future '88* score is a *great* sandbox for playing around with some really aggressive ideas. The soundtrack really functions more as an instrumental concept album about the game, and it doesn't have 'tracks' so much as it has 'songs' in that way. At the end of the day, that's just something I'm much better at.

I really wanted SKYMELT (the tower the player is trying to climb and destroy) to have its own voice, even though it doesn't speak. So in the game, the music is meant to be the voice of the tower, it's alternately cruel and rapturous. I think that when players view the game through that lens, it's going to raise a lot of really interesting story questions about who the main actors are in the game, and what SKYMELT represents.



^ You're in SKYMELT until you're dead. Which is quite often.

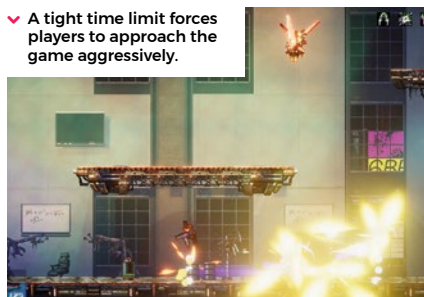
Procedural generation was a bit of a buzzwordy concept a few years ago, but it tapered off in popularity. Why go down that route?

That's a great question, and I think that at the end of the day, if a game is going to be highly replayable, then it needs to feel unique each time. In the same way that a really good *Hearthstone* match can have its own story (I did this... but then they did this, but *then* I did this...) using procedural generation adds an extra layer of micro-storytelling to each run.

What unique challenges has it presented? And, conversely, what unique positives does it unlock?

My friend pointed out that what he loved most about *Spelunky* was that each time he played, he knew that this run could be his very best run ever – that statement really stuck with me, I think it informed both the progression system and how procedural generation should work in *Black Future '88*.

v A tight time limit forces players to approach the game aggressively.



This meant that the procedural system needed to have a certain amount of chaos (easy) but also certain guarantees (hard!). For example, the game couldn't make every room of a zone a room or shop, and that while each run needed to be unique, defining the rules and building a system that could make that fun was actually really hard.

I've always insisted that *Black Future '88* does not have any more loading screens than necessary, and that once you're in SKYMELT, you're there until you're dead. So having a procedural system that understands not just what a zone of the tower should look like, but also the entire shape of the tower, how zones might be linked by shortcuts and how it should build the zones like a layer cake – and also instance the whole thing as fast as possible – was a really big technical challenge.

Why 1988? Was it a vibe, a specific has-to-be-that-year thing, something else?

There's literally no good reason for this except that another game was using the name *Black Future* at the time – I still wanted to use it and I thought if I put a number at the end of the name, that would be good enough to make that

BLACK FUTURE '88

other person happy. 1988 seemed like an especially precarious time to be alive in the world, and I think that 2019, unfortunately, has the same feeling, so I wanted to really emphasise the precariousness of the whole world that the game is built in.

There is however an unfortunate association with the number 88, as it's a coded term for hate groups. I felt that no shitheads get to have dominion over something as basic as a number, and that there was a certain strength to flying in the face of reason and trying to take it from them. That to me, is one of those incredibly punk/indie moments of working on this game.

It seems like the formula to make a run-and-gunner should be simple – the *Contras* and *Midnight Resistances* of the past hold such fond memories – but is it actually easy to make a game of this genre?

I think the first thing I realised is that my goals of having a lot of bullets on the screen and also having a gritty game with realistic-ish gravity were really at odds with each other. Once the prototype was stood up, I saw that no matter how well a player did, they'll still fall on bullets accidentally and take damage, and since roguelikes are always stingy on health, this felt like a design for a really unfair and un-fun game.

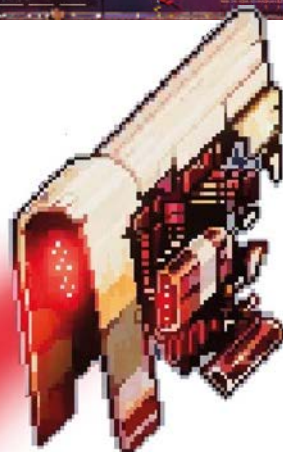
This led to a series of organic decisions that have really become hallmarks of *Black Future '88*. So the first one is that the player has a lot more health than they normally would, but now they have a straight-up time limit to encourage them to play more aggressively. The second decision is that the player has many mobility options at their disposal, so that at the end of the day, when they fall on a bullet and die, they know that it was their fault and hopefully they were paying enough attention that they know what they'll do differently. It's a really weird thing to take what's basically a bad game design, and prop it up with enough 'stuff' to make it tenable, but I think those are the kinds of risks that I'm good at taking, and it also happens to be in line with *Black Future '88's* maximalist aesthetic.



▲ A game designed from the ground up to be overwhelming.

“I think by the time players really get into the experience, they’ll see *Black Future '88's* combat as its own unique creature that doesn’t put a lot of limits on the player”

▼ Bullets come at you a lot in *Black Future '88*, but this is balanced by nimble player movement.



How has the experience of developing for multiple formats varied?

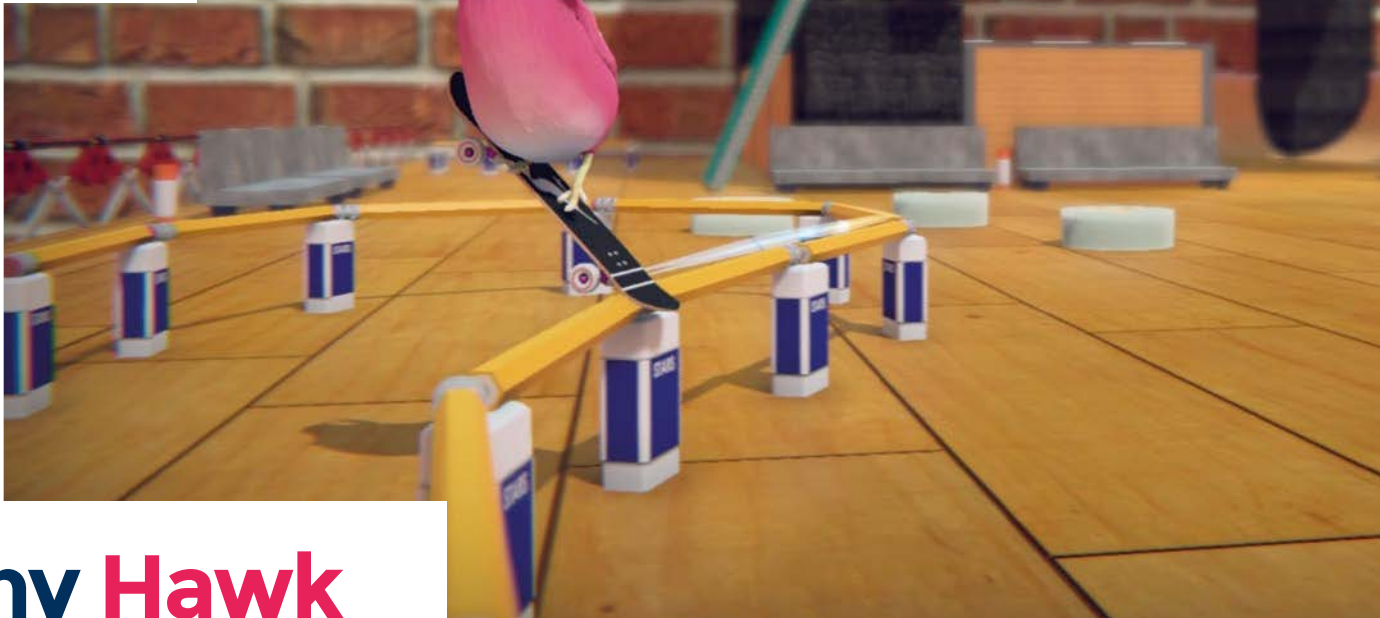
Oh my god, I cannot believe that in 2019 making a game that gracefully handles multiple input types is still a really difficult task, even while fully utilising great tools like the Unity Engine and InControl.

I have jumping tuned to within half a millisecond of where I'd like it, and this feels great for gamepads, but keyboards just have a different feel, pressing the space bar with your thumb just *needs* different tuning than the 'A' button on an Xbox controller. After making a two-millisecond change to jump timings that improved the feel for keyboard players, I found that it just made jumping on gamepads feel gummy and lugubrious. It's one thing to put up an intro title that says 'gamepad recommended' or something, but it's another thing entirely to really care about the PC build and that you still have to make keyboard play feel good.

We usually ask this as a joke, but a battle royale mode in *Black Future '88* wouldn't seem that far off the mark. Any plans?

Well, I think it would have to be called *Black Future '88:99*, and it's actually something I think could be really fun. It would need some significant twists on the battle royale genre, but I'm sure I could think of something fun. There are no plans for this and adding 100 person competitive multiplayer to the codebase would probably ruin it and drive me insane... so look forward to it in 2030, I guess. 🤖

***Black Future '88* releases soon on PC and Switch.**



Tiny Hawk

It's a mini homage to Tony Hawk's Pro Skater – with feathers. Creator Megan Fox tells us more about SkateBIRD

Info

GENRE
Sports

FORMAT
PC

DEVELOPER
Glass Bottom Games

PUBLISHER
Glass Bottom Games

RELEASE
TBC 2019

For developer Megan Fox, it all began with a single GIF: a seven-second clip of a blue budgerigar hopping on a tiny skateboard and bravely rolling down a ramp. It was, Fox says, “One of those lightbulb moments” – and in that instant, the seed of *SkateBIRD* was planted.

As you've probably gathered, *SkateBIRD* is a skating game with an avian twist; borne out of its creator's affection for *Tony Hawk's Pro Skater* series and EA Black Box's *Skate*, it sees a feathered skater cheerfully rolling, grinding, and kickflipping its way around a miniature park of cardboard, marker pens, and sticky tape. According to Fox, the game will immediately feel familiar to fans of the *Tony Hawk's* series, with simple controls underlining the easy-to-grasp, arcade feel.

“There's an ollie button, a flip trick button, a grind button, and a grab button – and that's mostly it,” Fox explains. “You do flip or grab tricks based on the left stick's direction when you push the button, and grinds just depend on where

the board is relative to a rail when you press the button. There's not much to memorise here – it's simple, which was the point: making a skate game that's fun for non-skaters and skate fans. You don't have to be an expert, and you don't have to practice for hours to pull off a simple kickflip, you just do it. If you've played *Tony Hawk's* games, that'll all sound pretty familiar.”

SkateBIRD is the latest title from Glass Bottom Games, the Washington-based indie studio that specialises in games with a cute edge: it previously brought us the side-scrolling detective game *Hot Tin Roof: The Cat That Wore A Fedora* and the violent (yet still oddly adorable) first-person brawler, *Spartan Fist*.

There's a vivacity to Glass Bottom's games, in fact, that belies the sad story of its formation: before founding Glass Bottom, Fox was a senior graphics coder on the ill-fated MMO, *Lego Universe*. When *Lego Universe* developer NetDevil began to falter in 2011, Fox was one of dozens of employees who lost their jobs.

“*Lego [Universe]* closing was a horrible moment for almost everyone in the studio, but for me, it was a perfectly timed kick in the pants to go off and do what I really wanted to do,” Fox tells us. “They treated us really well with severance and pay and such, so I had the financing to pull it off. Mind you, I still had a billion false starts, and had to let my only employee go a few months in – all the usual startup stories of stress and worry. I still don't think many get the opportunity I did there, timed as well as that was for me.”

Founded in October 2011, Glass Bottom Games specialises in “absurdly cosy games



▲ *SkateBIRD* runs on Unity “with a bunch of post-processing layered on”, while the characters were modelled in Maya.



▲ Fox has considered adding a construction mode, but it's far from confirmed. "Tony Hawk's American Wasteland tried that," Fox says, "and it didn't quite work. So we're being pretty cautious."

about animals doing people things," and there's certainly a cosiness to *SkateBIRD* that sets it apart from other sports titles of its ilk.

"There will be different birds, and you'll be able to customise them with hats and fluffy little vests and scarves and such," Fox says. "None of that influences the centre of gravity or physical size, though, as we don't want player expression interfering with their ability to play the game."

In fact, getting the physics of *SkateBIRD* just right has been one of the biggest challenges so far; according to Fox, this aspect alone took "months" to tweak. "Trying to keep the board as physical-sim as possible, while also giving the player controls that feel arcade-like in their precision, has been an incredibly difficult line to walk," Fox tells us. "Skate physics are weird to dial the feel in on. If you get it wrong, it isn't a skate game, it's a weird-looking race car game."

While it doesn't quite have the budget that a publisher such as Activision would have thrown at a *Tony Hawk's* game in its prime, Fox still has some imaginative and fun-sounding ideas in store for *SkateBIRD*. Players will be able to find hidden objectives among the game's dinky stages, and organise skate events for other birds to attend.

"You'll be able to customise them with hats and fluffy little vests and scarves"

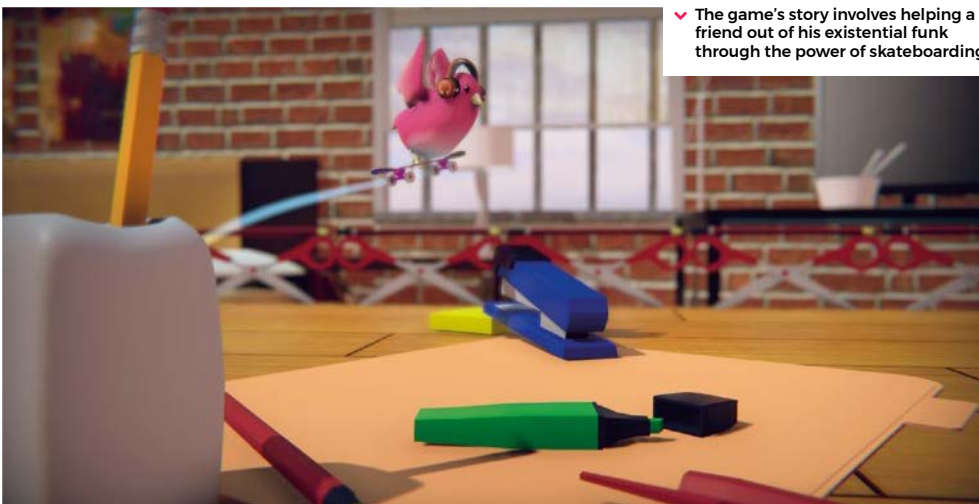
And while it's being developed as a single-player game, there are also tentative plans for a multiplayer mode ("It'll be down the road a bit," Fox cautions).

Mostly, though, we're looking forward to finding out more about the game's feathered

protagonist and where his hobby takes him – Glass Bottom Games are creating a disarming world of skate parks built on office desks, birds stuck in depressing nine-to-five jobs, and other birds becoming skating gods on social media.

And in case you're wondering: yes, there is a hawk called Tony in *SkateBIRD*. "There's a tiny hawk," Fox confirms. "His name is Anthony, and he's a *SkateBIRD* legend." Perfect. 🐦

▼ The game's story involves helping a friend out of his existential funk through the power of skateboarding.



▲ The miniature courses immediately reminded us of the old *Micro Machines* series of top-down racers, though Fox says her major influence here was Pixar's *Toy Story*.

MELLOW BIRDS

In line with its whimsical approach to the extreme sports genre, *SkateBIRD* replaces the aggressive tones of, say, *Tony Hawk's Pro Skater 3's* Ramones or Red Hot Chili Peppers with something far more laid-back. Composed by Austin, Texas-based musician Nathan Madsen, *SkateBIRD's* soundtrack is described as "lo-fi hip-hop crossed with birdsong". Its mellow beats are the perfect accompaniment for a game that's less about looking cool and hip, and more about enjoying the freedom of flitting about on tiny half-pipes. You can hear *SkateBIRD's* title track at wfmag.cc/skatebird.



Speaking my Language

Japan-set Judgment gets English dubbing, and we have no objections

Info

GENRE
Action / Adventure

FORMAT
PS4

DEVELOPER
Ryu ga Gotoku
Studio

PUBLISHER
Sega

RELEASE
25 June 2019

▲ Kyohei Hamura's voice-and-likeness actor Pierre Taki was arrested in March for possession of cocaine, initially throwing Judgment's Western release into doubt.

▼ Kaito is an associate at Yagami's detective agency. He's also ex-Tojo, which explains how he's better at solving problems with his fists.



After over 14 years of the *Yakuza* series, Toshihiro Nagoshi and his team have decided to do something new, even if at first glance it doesn't seem to fall far from the tree. Inspired by Japanese television legal detective dramas, *Judgment* is still set in the same fictionalised Tokyo red light district of Kamurocho, and you'll still find yourself getting into brawls on its streets with brutally over-the-top panache. So the initial surprise comes from what you can hear. This distinctly Japanese cast in a very Japanese location are speaking in English.

It's not the first time English has been spoken on the streets of Kamurocho – that would be the very first *Yakuza* on PS2. However, Sega opted to leave subsequent entries in its original audio with subtitles, and for good reason. When a series is focused on giving a realistic depiction of modern Japanese society, English audio doesn't just jar with the experience but at worst can

remind you of the unintentionally funny bad dubs in old foreign films, or *Shenmue* ("I see...").

But with the bar of voice-acting in games rising in intervening decades, perhaps it's time to cast aside prejudices against an English dub. "This was literally the perfect time to do it," says Scott Strichart, localisation producer for *Judgment*. "After spending over 10 years with Kiryu's story arc in *Yakuza*, tacking on English to the end in *Yakuza 6: The Song of Life*, or in the middle of it with *Yakuza Kiwami 2*, wouldn't have been the right call. *Judgment* introduces an entirely new cast, which is what was really the impetus for us to give this a shot."

There's still an initial awkwardness seeing these Japanese faces speaking in English, and in the case of protagonist, disgraced lawyer turned low-rent detective Takayuki Yagami, that face is Takuya Kimura, a hugely popular television and film actor (and pop singer to boot) in his native country. Yet, after a couple of hours with the English build, it feels as natural as ever, whether you're exchanging banter with your partner Kaito or interrogating local Yakuza boss, Hamura.

The cast consists of voice-acting veterans, including alumni of past Sega and Atlus' anime titles, such as Matt Mercer, Yuri Lowenthal, and Cherami Leigh, while Greg Chun takes the lead role of Yagami, although Strichart is keen to point out a difference between voicing for anime and a more realistic game. "We established early on that this wasn't an anime game, and that being the case, none of the characters should fall into traditional anime trope voices," he explains. "I think every cast member was pretty excited to be involved on a project that asked

them to bring a more grounded acting style to the table."

Even when exercising some restraint, voice actors still have an advantage over casting celebrity talent, as in the original *Yakuza*, which featured the likes of Mark Hamill, Michael Madsen, and Eliza Dushku. "You can put an on-camera actor behind a mic and get a great performance out of them," says Strichart. "But what happens when they also need to match Japanese lip flap, or say a line like, "Higashi-san just cruised past some Kansai thugs on Tenkaichi Street," or finish their line within less than a second's tolerance of the Japanese actor? These are the skills that voice actors have been cultivating since anime in the West became a thing, and I would take that skill set every day over talent that has generally not had to work with those caveats."

As with the *Yakuza* series, *Judgment* also likes to indulge in some lengthy but well-acted cutscenes with close-ups to emphasise character's emotions, which means those lip flaps are especially noticeable if the voice doesn't match.

"Judgment likes to indulge in some lengthy but well-acted cutscenes"

Save for one line early on where a character's delivery sounds deliberately slow in order to match, the initial hours are proof that the localisation team's hard work is paying off.

What's peculiar is that the team has made a conscious decision not to translate everything entirely. During this demo, I'm surprised that the thugs I fight still taunt me in Japanese, and when I walk into the local Poppo convenience store the clerk still greets me with "Irasshaimase" – ironically, several of these clerks are actually foreigners.

"No matter what language you play this game in, it's still set in a modern-day depiction of a shady Tokyo suburb. It's probably going to be jarring to some people, and I totally accept that," Strichart admits. "Going to Japan without an understanding of the language would be jarring too, and that's where our game takes you, so there should be a sense of something being kind of foreign for the majority out there. Players will never forget where this game takes place, and that's working as intended."

The good news for any die-hard otaku reading this who just wants to experience everything in



▲ For *Yakuza* fans, there's a comfort in exploring the familiar streets of Kamurocho. The Club Sega arcade remains a highlight.

its original form is that that choice is there, too. *Judgment* includes dual audio options, which has become much more standardised with Japanese releases, either in the final product or as free DLC. But going beyond the call, the game has actually been localised in English twice.

Addressing the often glaring issue of 'dubtitles', there's English subtitles for the English audio and another track that accurately translates the words and tempo of the Japanese audio.

With a focus on cutscenes, brawls, and archaic mechanics like QTEs, it's too early in these opening hours to say whether *Judgment* will be a meaningful break from the *Yakuza* series – though who can say no to the latest/classic distractions at the local arcade? But from a localisation standpoint that can attract a wider mainstream audience while remaining faithful to its core fanbase, the verdict is one of unanimous approval.

Judgment's Western release will be edited to remove actor Pierre Taki's voicework and likeness following his arrest for cocaine possession. The release date hasn't changed. 🗨

▼ *Yagami* is voiced and modelled after actor Takuya Kimura, a huge star in Japan. Whether he'll gain new fans in the West remains to be seen.



Headlines

from the virtual front



01. Misdirection

Gearbox chief Randy 'Pitchfork' Pitchford failed to live up to the standards of the Magician's Circle, with his and the team's misdirection over the past few months failing miserably. We all knew *Borderlands 3* was going to be announced, basically, and then it was, and nobody was surprised.

What people were – and are – though, is excited. It's been four years since the last new entry in the series, and this will mark *Borderlands'* first time being made solely for the current generation of consoles. This time around we're looking at a setting that takes in multiple worlds, and a 'best-of' line-up with characters old and new joining the fray. Oh, and guns that can walk, obviously.

No release date confirmed at the time of writing; rumours point to the autumn. We'll keep 'em peeled.

02. Unexpected contender in streaming area

It seems everyone's getting in on the whole 'computer and video games' thing, with Walmart – yes, that Walmart – rumoured to be tapping up developers for involvement in its own game streaming service.

This comes from sources speaking to USgamer, which says the massive chain of superstores has been speaking with developers for a number of months now. It's not the daftest of claims either, with Walmart's steps into the world of digital media always pootling along at a pace – albeit a tentative one – with a Silicon Valley presence and (ultimately shelved) plans to run a streaming video service of its own.

We look forward to the UK spin-off: SPARStream, where everything's Happy Shopper-branded.

03. Arcade perfect

Apple has announced its own plans for the future of gaming, though they're not quite as (would-be) revolutionary as Google's Stadia. Apple Arcade is a service coming later in 2019 that will bring hundreds of games exclusively to the platform (exclusive on mobile formats, at least), all without in-game purchases and all focusing on deep, rewarding fun. At least that's what Apple says.

The likes of Bossa Studios, ustwo, Will Wright, Konami, Mistwalker, and more have signed up to plop their games on the Arcade, and Apple itself is contributing its time and – one would assume – money to help development along. Titles will be playable on iPhone, iPad, Mac, and Apple TV, with progress synchronised across all devices.

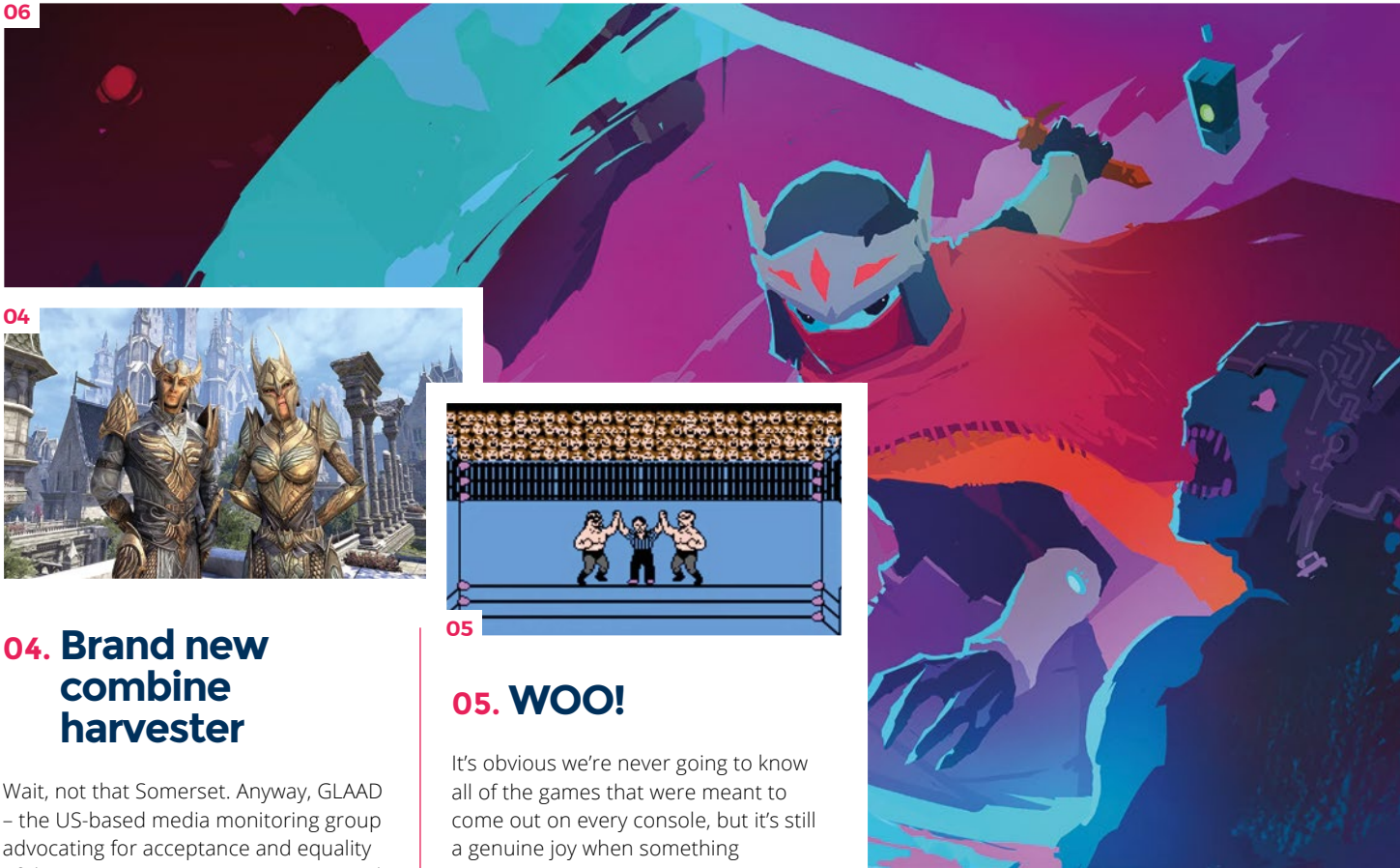
Games-wise, there's the likes of *Oceanhorn 2*, Klei's *Hot Lava*, *The Pathless*, and newly announced *Beyond a Steel Sky* – *Beneath's* long-awaited sequel – coming to Apple Arcade. We're keeping a close eye on this one.



PSVR sells over 4.2 million units (in reality, not virtually)

WayForward announces *Shantae 5*; Twitter feed plunged into fan art frenzy

06



04



04. Brand new combine harvester

Wait, not that Somerset. Anyway, GLAAD – the US-based media monitoring group advocating for acceptance and equality of the LGBTQ+ community – announced the inaugural winner of its Outstanding Video Game award: *The Elder Scrolls Online: Summerset*. So not the West Country. Apologies for that.

The award was announced during the organisation’s 30th annual GLAAD Media Awards and recognised Bethesda’s MMO for its fair and accurate representation of LGBTQ+ issues and experiences, with specific focus on the Manor of Masques questline. Said missions involve reuniting a transgender woman with her estranged twin sister in a way that, as GLAAD states, “reflects the lived reality of many transgender people today.”

The nominees missing out on this first-ever award were *Assassin’s Creed Odyssey*, *Guild Wars 2: Path of Fire*, *Pillars of Eternity II: Deadfire*, and *The Sims Mobile*.

05. WOO!

It’s obvious we’re never going to know all of the games that were meant to come out on every console, but it’s still a genuine joy when something unknown is discovered. A previously unheard-of NES wrestling game, *UWC*, was purchased from an ex-Nintendo employee by YouTuber Stephan ‘Archon 1981’ Reese, and... well, it’s pretty much a full, finished game.

So why did it never get released, or even announced? It’s conjecture, but the name tells a lot – *UWC* stands for Universal Wrestling Corporation, effectively a placeholder name for Ted Turner’s wrestlefolk company before it adopted the World Championship Wrestling (WCW) moniker. Japanese studio SETA may well have seen its project dropped purely because of the naming/branding, which is really quite sad for them.

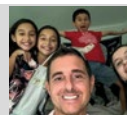
Anyway, I’ll stop talking about wrestling now before management gets angry. Unreleased games: magic!

06. Drifting through the channels

Hyper Light Drifter is set to get its own TV show spin-off, with an animated series based on the beautiful and brilliant title currently being worked on. The game’s creator, Alx Preston, has teamed up with one Adi Shankar, producer behind the likes of the animated *Castlevania* series and the upcoming *Devil May Cry* TV tie-in.

While very early on in development – Preston and Shankar are still looking for writers to work on it – the game’s creator did have one promise for the audience at Polygon’s SXSW panel: “We’re going to make it cool,” Preston said. Good enough for us.

Peaky Blinders is getting a game from Velocity’s FuturLab. Why not, eh?



Take-Two founder Ryan Brant passes away, aged 49

Attract Mode



Rad ↗

Having brought us such delights as *Psychonauts*, *Grim Fandango*, and *Broken Age*, Double Fine is one of those studios whose games are reliably full of style and personality. All the more reason to look forward to *Rad*, then: it's the latest game from Lee Petty, who previously brought us the platform adventure *Headlander*, and the sentient doll puzzler, *Stacking*. Such pedigree aside, *Rad* looks like familiar stuff at first: it's a top-down roguelite set in a post-apocalyptic world, and there's an eighties neon look that recalls *Far Cry 3: Blood Dragon*. Double Fine's impish humour is easy to spot, though: *Rad's* protagonist is a baseball bat-wielding boy whose limbs can mutate in outlandish ways. One minute his head's morphed into that of a giant snake; the next his left arm's gone purple and grown to the size of a family hatchback. These mutations come in handy, because the world is seething with giant frogs, angry bats, and other foul beasts. *Rad* doesn't look groundbreaking, necessarily, but its teen hero can batter enemies into oblivion with his snake head, and also give birth to what look like giant, friendly spiders. What more do you need?

Recompile ↘

Although described as a Metroidvania, there's a bit more going on in *Recompile* than 2D platforming. Taking place inside a vast, spooky-looking computer mainframe, *Recompile* takes in hacking mini-games, combat, boss battles, and yes, a fair bit of agile hopping across vertiginous chasms. Created by Manchester-based studio PhiGames, *Recompile* is due out in 2020, and well worth a closer look.



↙ Unrailed!

In years to come, academics will probably start writing essays about the rise of games like *Overcooked*: experiences where players get together and, fighting their own sense of blind panic, cooperate to get out of a crisis. And so *Unrailed!* does for rail freight what *Overcooked* did for the food industry: turns it into a co-op game guaranteed to spoil friendships in less than one hour – or your money back. Players will team up to craft tracks from raw materials, keep the lines clear of animals and other nuisances, and generally keep a train running on time against almost certain failure. Sound like fun? Of course it does.



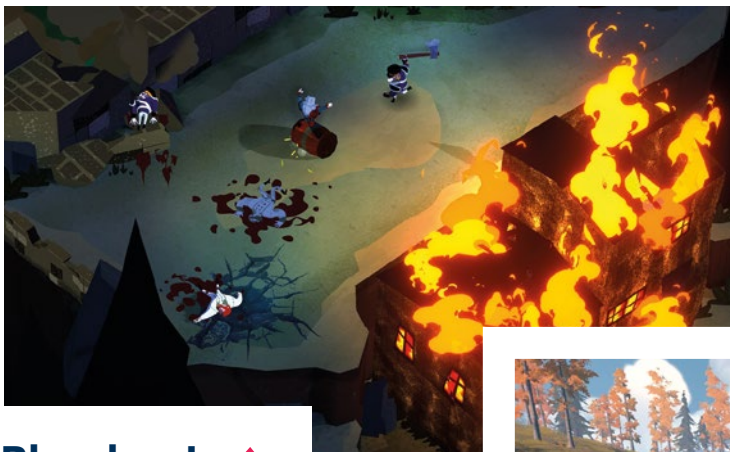
El Hijo ↗

Honig Studios mixes up genres and ideas in the most delightful way here: we don't commonly see six-year-old kids play the leading role in a spaghetti western, and we wouldn't expect either of them to make up the theme of a sneak-'em-up. But that's exactly what we get in *El Hijo*: the hand-painted story

of a boy looking for his mother, a journey that takes him across desert plains and complex mazes of prowling outlaws and bandits. A stealth game that cuts right back to the heart of what Hideo Kojima pioneered with the original *Metal Gear* back in 1987, *El Hijo* has all the makings of an indie gem.

Through the Darkest of Times ↘

We're told this inevitably sombre adventure is akin to *This Is the Police* crossed with *Papers, Please*, which, given how good those earlier games were, has immediately caught our attention. Set in 1933, it's a strategy game that takes place during the rise of the Third Reich, and something of a passion project for developer Paintbucket Games – before founding their indie studio, its founder members worked on *Spec Ops: The Line*.



Bloodroots ↗

Remember the old Amiga and DOS game, *Moonstone*? It was an action-RPG infused with lashings of gratuitous gore, and immediately came to mind when we saw footage of *Bloodroots* – a similarly claret-soaked fantasy title coming out this year from developer Paper Cult. *Bloodroots*' pace is more in line with the caffeine-infused mayhem of *Hotline Miami*, though, with the player able to kill enemies with everything from axes to boulders to carrots. Brace yourself for one wild, very weird ride.

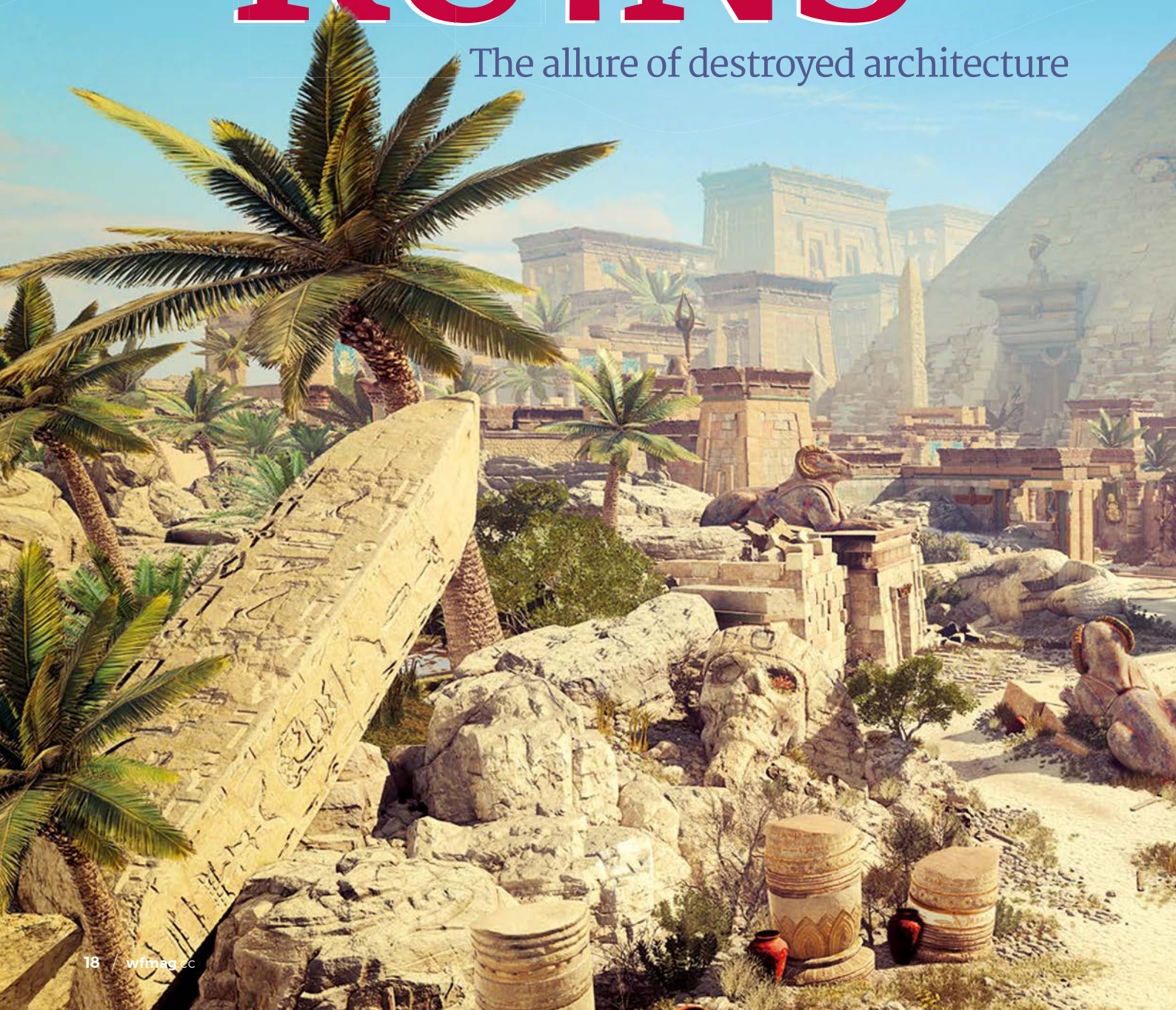
Pine ↘

Out on Switch and PC this August, *Pine* is an open-world adventure with plenty of crafting, foraging for food, and other survival activities. What we're intrigued by is the promise of its simulated world: developer Twirlbound claims to have made an environment where multiple species coexist, and will be directly impacted by the player's hunting and eating habits.



PLAYING IN RUINS

The allure of destroyed architecture



How creative ambitions and resource constraints inform the shattered worlds of video games

Written by Kyle Hoekstra

From the grottos which slump into the bogs of *The Witcher* to the post-apocalyptic worlds of *Fallout* and *The Division* – not to mention the plundered crypts of *Tomb Raider* – the landscapes of video games are littered with ruins. Scope out some of last year's biggest titles, which include *Assassin's Creed Odyssey* and *God of War*, and consider the hugely anticipated archaeological adventure *In the Valley of Gods*, and it's hard to dispel the idea that ruinous environments harbour a particular fascination for the people who play and make these games. So why do ruins make such compelling settings for players and game designers?

To learn more about the multitude of artistic, design, and technological motivations which lie behind ruins in video games, let's begin by talking to Fabian Denter, creator of the gorgeously enigmatic *The World Begins With You*. ➔

▼ Nikolai Bartsch, lead designer of *Memorrha*.



AZ-TECH

The world of *Memorrha* was partly inspired by ancient European and Mesoamerican civilisations, “crazy theories” around which have informed some of its sci-fi premise. “We really liked the idea of marrying old stone structures with parts that are more technologically advanced,” says lead designer Nikolai Bartsch. “There is a certain allure to juxtaposing the stone elements that are kind of ‘what you see is what you get’, with foreign elements that don’t seem to fit and leave you wondering. This idea was very influential for the visual direction and sparked a lot of ideas for puzzle designs.”



▲ Lead designer Nikolai Bartsch says *Memorrha*’s story is “mainly told through the environment.”



▲ “Those moments where you’ve just got a crosshair between you and a marching wall of enemies can be exhilarating,” says *Strange Brigade*’s Steve Bristow.

For Denter, the mystery associated with ruins was perfect for the type of game he wanted to make – and the conditions in which he made it. It is “a small adventure game,” Denter tells us, “where players wake up in an ancient prison and wander through a mysterious world, solving puzzles and overcoming simple challenges along the way.” Its environmental design is characterised by monumental architecture and spectacular light. “I tried to tie both together, so that the light works as some sort of metaphorical guide for the player through this ancient and broken world.”

Originally created for a game jam where time is a “finite resource”, Denter explains that *The World Begins With You*’s “simple, low-poly style” was influenced by games like *Journey* and *Monument Valley*, both of which “create a strong atmosphere without a triple-A in their environment design.”



Ruins were also a deliberate way of suggesting atmosphere. “I mostly dislike stories and endings that explain it all,” says Denter. “Ruins by themselves invoke questions. Why are they there? What was there before? When did it all go down? And why? What is my role as a character in this world? These are questions that I definitely want the player to ask, but giving the answers to them would spoil the whole thing, in my opinion. There is value in not knowing things that you want to know. It enables your imagination to go wild.”

LICENCE TO PLAY

Denter’s comments allude to the idea that ruins are themselves inherently conducive to creative play. In the real world, when we visit ruins we imagine what might have created them; in the virtual world, the absence similarly invites an act of imagination. In this way, they act as a narrative hook – a reliable way of suggesting depth to the game world and a way of keeping the player moving forwards. “There’s a lot of walking in games like mine,” says Denter. “Ruins are a good way to give the player a reason to explore.”

For Nikolai Bartsch, lead designer and modeller of *Memorrha*, by “conjuring the image of something incomplete,” ruins challenge us to unravel the “promise that there is something to learn and know.”

Developed by StickyStoneStudio and set for release this year, *Memorrha* tasks you with finding strange, antique machines and solving puzzles amongst the detritus of a forgotten civilisation. Because there is no direct narration in the game, “the environment needs to spark



▲ The simplified style saved modelling time in *The World Begins With You*. The same five rocks in different formations and sizes are used across the game.

enough interest and curiosity to motivate the player interacting with it," he says. The ruins facilitate the game's "sense of loneliness and decay but also forgotten beauty."

Spec Ops: The Line and *BioShock 2* are set in the sand-swept ruins of Dubai and the underwater dystopia of Rapture, respectively. "The ruinous worlds are key to creating

the atmosphere of desperation and oppression," says writer Walt Williams, who worked on both. "Civilisation has broken down. The destructive forces of nature are just outside the door or window or air lock. The ruins leave you feeling uneasy, unsure."

Devastated Dubai in *Spec Ops: The Line* was intended to make the player feel "as if they never knew exactly what they were seeing or where they stood in this world," says Williams. "A great example of this is The Gorge, which starts with players walking across sandy dunes, seemingly on normal ground, before coming to the edge of a canyon and looking down. What they realise is they're standing atop skyscrapers. The sand has risen so high that what looks like ground level is actually 40 or so storeys in the air."

Ruins enjoin the player to explore, but for Williams they also "let players know that morality has gone out the window." They signal an "implicit invitation to explore and to kill. Laws and social order no longer exist. You can do whatever is necessary in order to accomplish your goal."

OTHER PLACES

A sense of place with a deep-rootedness in history informs the decaying manor house at the centre of time-travelling, English folk horror game *Winter Hall*, which was selected by Epic Games and the Wellcome Trust as a finalist in the Developing Beyond competition.

"I wanted players to feel like they were walking on layers of bones and bodies stretching back thousands of years," says its Sussex-based designer, Rob McLachlan. The game is inspired by "this idea of us existing as a thin layer of living people on a deep strata of history."

Its ghost story, which stretches over 650 years, takes place "in and around a ruined Sussex manor house called Winter Hall."

As you uncover the story, you leap

back centuries into the bodies of people who experienced it to make new choices which affect the present. You learn how the nearby village was abandoned after the Black Death, whereupon it became a cursed place, home to a malevolent force.

The hall is the centrepiece of the game's landscape and important to the sinister atmosphere and mystery which cloak the experience. "My background is in level design," says McLachlan, who worked on the *Silent Hill* games and *Alien: Isolation*, "and my objective as a level designer was always about creating a sense of place – a reality and solidity to environments which transport players into an 'Other Place'."

The ghosts which haunt *Winter Hall* are also a vehicle for McLachlan's ambition to "bring a voice to people who disappear from history without any record," such as a village healer and a suspected witch. ➔

“I wanted players to feel like they were walking on layers of bones stretching back thousands of years”

BROKEN ECONOMY

While *The World Begins With You* creator Fabian Denter explains that making 'broken' things "is actually more time-consuming than building something that isn't broken," ruins can be economical in surprising ways. "Turns out doing ruins is quite convenient when I create the lighting for a scene," says Denter. "If I want a light to hit a certain spot, but it's blocked by a wall or something, I can just create a wall with a hole where the light can pass through."



▲ "For *Strange Brigade*," says Bristow, "we wanted to create thrills, a sense of discovery and adventure, but with a smile."

▼ Ruins require extra work, says Bartsch: "First there's the pure rock texture, and then a layer of dirt or moss is painted on top."



▼ Rob McLachlan,
designer of *Winter Hall*.



SUSSEX GOTHIC

Winter Hall is strongly influenced by its designer Rob McLachlan's upbringing in Sussex, in particular being "marooned in the windswept neo-Gothic edifice" of Lancing College on winter nights. Additionally, "anyone who has walked up into the darkness among the roaring beech trees of Chanctonbury Ring or walked the heat-baked white tracks which cross the Downs in summer will know how isolated they can feel." McLachlan has extensively researched *Winter Hall's* environments, incorporating historically appropriate building practices and visiting resources like the Weald and Downland Open Air Museum near Chichester for insight on correct scales and interiors.

McLachlan has paused work on *Winter Hall* for now while he works as lead designer at The Chinese Room (the studio behind *Dear Esther* and *Everybody's Gone to the Rapture*). "Until emerging from a long hibernation," McLachlan jokes, *Winter Hall* is something of "a half-finished ruin itself."

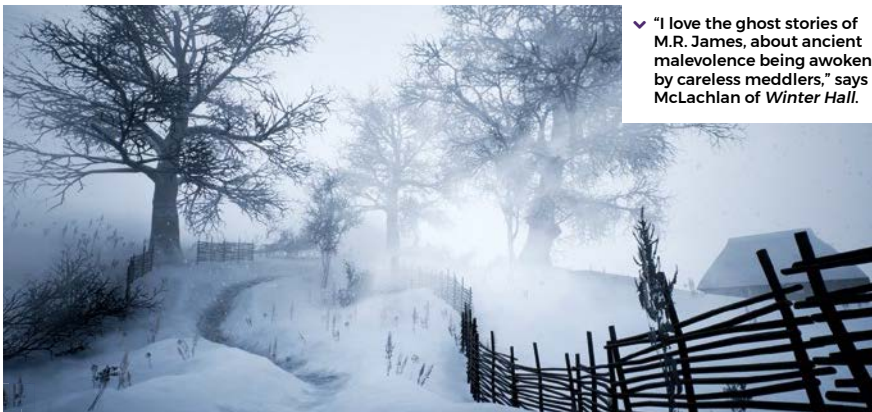
LONELY PLANET

For designers facing technological and financial constraints and who want to imbue their game world with a sense of depth, deploying ruins can be a measure of expedience. "It's far easier to create a believable ruin than it is to create a populated, functional location," says Williams.

Bartsch agrees: "Simulating 'life' and creating highly populated worlds in games is very resource-intensive," he says. "Convincing animations are a big time sink to create," he adds, "and depending on the game, the type of animations you need can balloon out of control, especially for smaller teams. An abandoned, derelict ruin environment is one logical solution to bypass that problem, and enables smaller teams to focus on creating compelling places."

Bartsch explains how resource constraints informed *Memorria's* own ruinous world: "For the art direction, we needed a style that would enable our small team to create a large, visually appealing environment in a reasonable time." He recalls *Journey*, *Firewatch*, and *Rime*, "which create striking sceneries through their use of colour and clearly defined shapes."

▼ "I love the ghost stories of M.R. James, about ancient malevolence being awoken by careless meddlers," says McLachlan of *Winter Hall*.



Any technological advantage from using ruins shouldn't be overstated, of course. While modelling simplistic assets can be achieved relatively quickly, making 'broken' things is often more time-consuming. McLachlan explains that creating *Winter Hall's* manor is "the trickiest part of the game to get right."

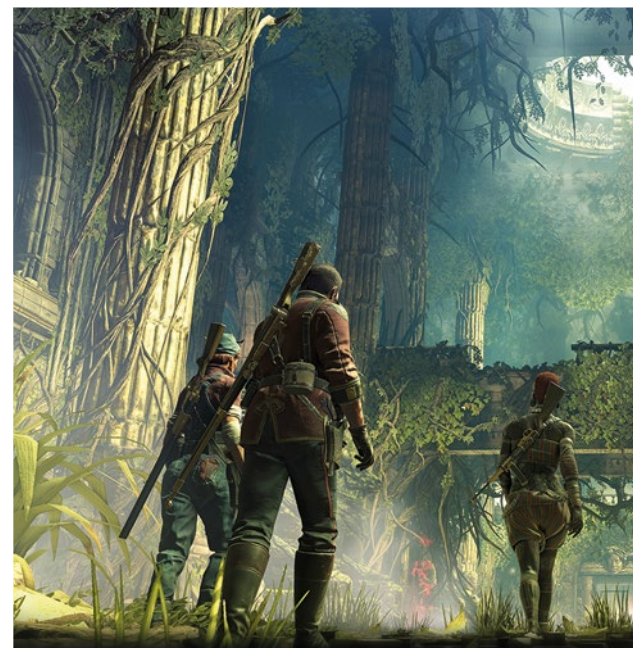
"I've rebuilt the whole hall twice now and it needs to be rebuilt again," he says. "The best way to build the hall is to create the original 1348 version and then demolish it into ruins,

but that still requires careful work for all the different chapters to work properly! There's nothing like designing a time-travelling game to make you feel like a complete idiot."

— — — — —
"It's far easier to create a believable ruin than it is to create a populated, functional location"

WEIRD MECHANISMS

Ruins can give designers opportunities for interesting gameplay mechanics within a plausible environment. In *Memorria*, says Bartsch, "the setting of an isolated ruined place gives some freedom regarding weird mechanisms, because you can explain that they are part of the culture's technology."



Though StickyStoneStudio didn't aim for realism, the organic composition of ruins worked for their intended experience.

"They contain the possibility of unknown treasures, wonders, and of course dangers," Bartsch continues, "which offer a rich catalogue for possible game mechanics."

Strange Brigade, by British developer Rebellion, is a co-operative action game whose vivid ruins of forgotten civilisations foster "a sense of discovery and adventure," says lead designer Steve Bristow, whose telling influences include *Raiders of the Lost Ark*. As manufactured yet organic spaces, the ruinous settings also create "pretty unlimited options for gameplay." The sprawling environments which take in grand edifices and caverns facilitate *Strange Brigade's* gameplay, where players defeat supernatural enemies, solve puzzles, and acquire treasure in the UNESCO-defying manner of Lara Croft.

"The levels are structured to alternate between areas focused on combat and areas that give the player a bit of space to explore and solve puzzles," says Bristow. "The exploration areas are where most of the environmental narrative, split paths, beauty spots and player-guiding architecture happen."

Here, the puzzles introduce variation and reward the player for venturing off the beaten track, while combat areas host a range of environmental obstacles and traps – like swinging blades operated with pressure pads.

"There are other significant collectables," explains Bristow. "The relics, of which there

are six on every level, are hidden in their own chambers, usually defended by puzzles, perilous booby traps, or platoons of determined guards – sometimes all of the above."

ARCHAEOGAMING

Andrew Reinhard is an archaeologist at the University of York and the author of *Archaeogaming: An Introduction to Archaeology in and of Video Games*, published in 2018 by Berghahn Books. We decided to ask him: how does physically visiting a ruin differ from visiting one in a video game?

"One major difference is that when I visit a site in person, I'm there specifically to tour the site," Reinhard explains. This is very different from a video game, where ruins are a space for action or exist to advance the narrative. Yet ruins, Reinhard says, "give us that patina of age and add mystery and urge exploration, a trait that I consider to be universally human." In games, players can "touch" and interact with realistic representations of ruins in ways they cannot in person, as in *Assassin's Creed*.

Reinhard notes with regret that gameplay in ruins is often predicated on "looting and destruction and the occult," rather than about protecting sites and repatriating artefacts. Perhaps this is related to both the imperatives of action-oriented gameplay and how ruins tend to be visualised as vacant sites of little importance to living people, for which there is no culpability in rummaging around and blowing up. Nevertheless, Reinhard looks forward to *Heaven's Vault*, *The Forgotten City*, and Valve's *In the Valley of Gods* as sound examples of games where exploration is rewarding, and doesn't rely on familiar tropes.

How and why game designers create and employ ruins clearly has diverse explanations. But our fascination with ruins, both real and virtual, is grounded in how they ask us to connect with stories and use our imagination. 🗣️



▲ Exteriors in *The World Begins With You* use real-time directional light to spectacular effect.



▲ "In *Winter Hall*, you'll meet ghosts across the site," says McLachlan, "echoes of past lives which provide some of the folk horror elements we're so keen on."

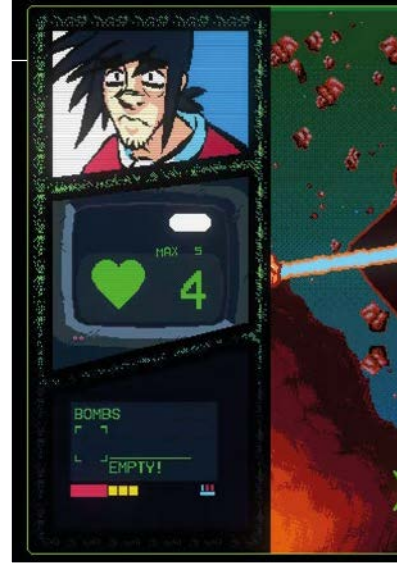
▼ Steve Bristow, lead designer of *Strange Brigade*.



▲ Bristow says *Strange Brigade's* world is "a great opportunity for us, to let our imaginations go and set reality aside."

PC BRIGADE

According to lead designer Steve Bristow, *Strange Brigade's* pulpy feel emerged from a conversation with Rebellion CEO Jason Kingsley. "We were in conversation [with Kingsley] trying to identify the ingredient that we felt was missing at that point, and he referenced the trailers for those old black and white, Saturday matinee serials," says Bristow. "Lots of spinning white text and, in particular, a hyped-up, fast-talking narrator exhorting the viewer to 'tune in next week for more adventures of...'. The narrator was born from that moment, and became the tonal centre of the game."



Interactive

^ "I plan to have them talk and react to all kinds of situations," Gonano says of his pilots, which appear on the left of the screen.

Project Starship X

We chat to Matteo Gonano, the Italian solo developer making the hectic shoot-'em-up, Project Starship X

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



Shoot-'em-up may be pretty much as old as the video game medium itself, but that doesn't mean it hasn't evolved and reinvented itself over the past four decades or so. The fixed-screen shooters of the seventies evolved into the scrolling shooters of the eighties, which in turn morphed into the bullet hell sub-genre in the nineties and noughties.

Developed by Italy's Matteo Gonano, *Project Starship X* offers its own subtle evolution on the genre: although its colourful barrages of enemy fire are straight out of a bullet hell title like *DoDonPachi*, it's also inspired by Edmund McMillen's indie darling *The Binding of Isaac*, both in its use of procedural generation to create new stages

each time the game is restarted, and also its darkly comic visual style. Then there's what Gonano calls the 'X Maneuver' – a mechanic that renders the player's ship invincible for a fraction of a second, and allows them to zip through deadly barriers or smash into waves of enemies. (It's a little like the dash mechanic in FuturLab's *Velocity*, but without

the need to move an aiming reticule before you trigger it.)

For Gonano, the seed for *Project Starship X* was planted about a decade ago, when, inspired by his childhood affection for shoot-'em-ups, he began creating one of his own in GameMaker. "I made this one-level experience, with a blue spaceship, blue bullets, blue enemies, and [nineties pop song] *Blue* by Eiffel 65 playing in the background," Gonano says. "The game was called *Blue*."

Things got a bit more colourful in 2016 when Gonano made *Project Starship*, the forerunner to his current game, and his first commercial release; although flawed ("The graphics were terrible, and let's not talk about the menu navigation," Gonano

confides), it still spurred him on to make a more polished, fully featured shooter. "I felt I could have done better," says Gonano. "Something more memorable."

AIMING HIGH

With a few released games under his belt, and having spent numerous hours studying tutorials on game design, coding, and pixel art,

"The Binding of Isaac gave me the kickstart to work on Project Starship, even if it's not strictly a shooter"



Gonano began work on *Project Starship X* in September 2018.

"With *Project Starship X*, I'm using Unity," Gonano explains. "It's the perfect fit for what I'm doing. The Animator component is amazing for moving enemies around the screen, and the Prefab System is the way to go when you have to create multiple patterns and 'rooms' for the procedural generation."

Like many indie developers we've spoken to over the past few months, Gonano uses Aseprite for drawing and animating pixel graphics, and he recommends it for its speed and ease of use when creating sprites. "It's optimised for multi-layer sprites animations. Just set a few shortcuts on your keyboard, and your workflow will be faster than ever."

Project Starship X's graphics are a key part of its appeal: bold, colourful, and laced with a streak of warped humour (one recurring image on the user interface is of an octopus-like creature emerging from a toilet), they're influenced by a broad range of artists, including *Tank Girl* and *Gorillaz* co-creator Jamie Hewlett, *Alien* designer HR Giger, and *Dungeons & Dragons* illustrator Wayne Reynolds. "I dream of being able to draw like that," Gonano says. "Maybe in 100 years from now."

In terms of mechanics, *Project Starship X* draws on nineties games like *R-Type Leo* and the aforementioned *DoDonPachi*, as well as more modern genre entries like *Monolith* and *Rym 9000* – Gonano says that the latter's developer, Sonoshee, has provided him with a few tips to improve his work-in-progress, while *Monolith* also made use of procedural generation to create its random chambers of enemies and ruined architecture. "Most of the shooters have repetitive patterns," Gonano says, "but I find it boring after a while. Personally, I like a new fresh experience every time I start a match – I love roguelike games. *The Binding of Isaac* gave me the kickstart to work on the *Project Starship* games, even if it's not strictly a shooter."



▲ *Metal Slug*, *R-Type Leo*, and *The Binding of Isaac* are all games that have inspired *Project Starship X*.

AHEAD OF THE CURVE

The main goal when designing a shoot-'em-up, Gonano adds, is to provide the right balance between challenge for experts and ease of entry for new players. "A shooter needs to have a good difficulty curve," Gonano explains. "Easy at the start, with the right amount of blasting to satisfy the newcomer, and then you can start increasing the challenge. You have to let the player feel powerful first. I think a lot of bullet-hell games fail at that, but maybe that's just because they target people that want extreme challenges. What I want is to make a title that engages you and lets you feel good about your growing skill. The challenge must be fair: all the dangerous stuff should be well telegraphed."

Gonano currently plans to release *Project Starship X* in 2020, so in the meantime, he's busy working on the procedural systems and assets that will go into the finished game's levels.

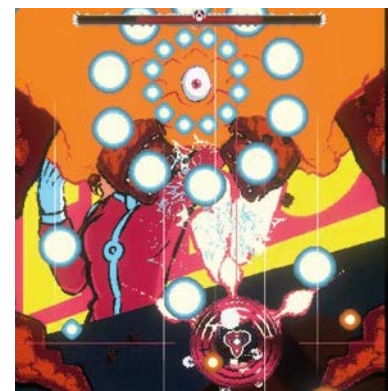
For anyone who really likes a stern challenge from their traditional shooters, meanwhile, Gonano has something rather unusual planned for the game's 'Ultra Hardcore Mode': its cartoon pilots – which you can see on the HUD, Starfox style – will react to the bosses and waves of bullets coming at them. In the easier game modes, these reactions are cosmetic; in Ultra Hardcore Mode, the pilots' stress levels will increase as you take damage. If the pilots get too stressed, they will, Gonano reveals, suffer from a heart attack. "It's unfair, it's ultra-hardcore, and you'll have to defibrillate the pilot if you want to come back."

Difficulty levels, we'd argue, don't get much harsher than that. 🗿



BUILDING BETTER BOSS BATTLES

A shoot-'em-up wouldn't be the same without boss battles, and *Project Starship X* has some imaginative end-of-stage encounters that challenge the player's skill at both shooting and using the game's X Maneuver. "As all the levels and the patterns are a way for the developer to express a certain game mechanic," Gonano explains, "a level's boss is sort of a final test on that system, to see if the player has learned the rules and is ready for the next wave. If they are, they'll get their reward, which might be a bonus or a victory screen. A boss is also a 'purpose' – a goal. We as humans work well with goals, but we also like challenges that we can win. That's why the difficulty of a boss shouldn't be too extreme compared to the rest of the level. It's OK to have the player die at it a few times. But not too much."



▲ Bosses fire complicated patterns of bullets, and will require mastery of the X Maneuver to defeat.

Discoverability in 2019



HALEY UYRUS

Haley Uyrus is the Marketing and Communications Manager at Mediatonic. Before joining their ranks she worked at Failbetter Games on titles such as *Sunless Skies*, *Sunless Sea*, and *Fallen London*.

“With no safe marketing pillar left, what’s an indie to do to gain that sweet visibility?”

For indies, discoverability is at least half the battle when it comes to games marketing. But what does that even consist of in 2019, when over 200 games release each week on Steam alone?

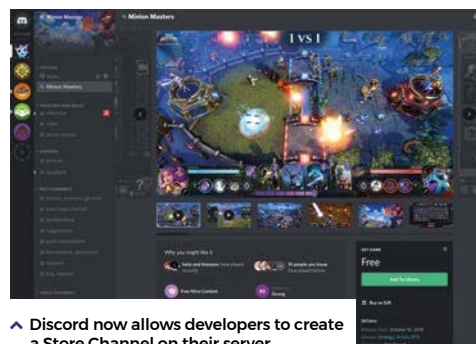
Each year brings with it a new question about the validity of current discoverability tactics. First it was whether the games press packed the same punch it did in the 1990s–2000s; as the marketplace has become more crowded and more digital, it’s become increasingly difficult for indies to improve sales from press coverage. Plus, we’ve all seen games achieve stellar accolades, but still struggle to sell enough copies to keep their studio afloat.

Then came the rise of streamers, whose reach and recommendations became a useful way for developers to accelerate their discoverability. As these platforms have matured and became mainstream, though, they’ve filled up with triple-A titles, such as battle royales, leaving indies with little space on streamers’ schedules.

Social platforms change all the time as channels rise and fall. Discord has managed to disrupt the space significantly in the past two years by carving out a new community for gamers; and with the recent addition of the subscription service Discord Nitro, they’ve given devs the availability to create a store channel to sell games directly to their players.

Then there are the storefronts themselves, which are the most recent instability. Storefronts were once a straightforward area of discoverability in marketing. For years, there were relatively few platforms for PC games, and little agency within them to charm algorithms to developers’ favour. Instead, developers relied on outside marketing efforts to increase their discoverability rank within the system, or instead grew communities large enough in other channels to attract attention from platform reps for features and better store placement.

But Steam’s algorithm has had some shake-ups in the past year, whether due to bugs or because it now caters to triple-A titles.



▲ Discord now allows developers to create a Store Channel on their server.

In the meantime, other storefronts have finally appeared; in direct response to Steam’s December changes to its revenue splits, which began to favour larger games, Epic opened its storefront, which allows devs to keep 88 percent of their revenue.

Even release date schedules have become jumbled, with *Red Dead Redemption 2* among the triple-A titles that have begun to shoulder into the quiet months like January and August that indies previously relied on. Is this the dreaded ‘indie apocalypse’ everyone’s been talking about?

With no safe marketing pillar left, what’s an indie to do to gain that sweet visibility? Amongst so much disruption, it’s vital to cover as many marketing bases as you’re able. Interrogate the path your audience takes from hearing about your game to purchasing it, and fortify any weaknesses. Don’t waste your efforts – now more than ever, make sure that a clear strategy is behind every single marketing decision. Find partnerships that can extend your reach into adjacent communities.

A lot of the standout successes involve no small amount of luck and planetary alignment, but since you can’t plan for that, focusing on a sturdy foundation is sound. Sorry, but it seems the answer is: more marketing! If that’s not your thing, hire someone who’ll be happy to guide your game through the tumultuous and capricious current that is the games marketplace. It’s going to be a wild ride. 🎡

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Find out how you can use paper and card to test out game ideas on page 34.



Looking at towns and cities of the past can help you create your own fantasy settlements. See page 30.

The principles of game design

The difference between theme and design, and how it can affect the way a game looks and plays



AUTHOR
HOWARD SCOTT WARSHAW

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

Hey there, I'd like to interrupt you for a moment, if I may. Did you know psychotherapy and game design have a lot in common? This is not to say that game developers are insane. Of course, I'm not not saying that either. What I am saying is this: since becoming *The Silicon Valley Therapist*, I've realised that both therapy and game development are all about the breaks: breakdowns and breakthroughs. Interestingly, being on the verge of either one can lead you into the other.

What does this have to do with theme versus design? An excellent question. I believe design and theme are also about breakdowns and breakthroughs. When examining games, we tend to merge them together, but I'd like to explore them separately.

Though design and theme are two different facets of a game, their interaction will influence the overall game feel, to be sure. However, whereas design is necessary, theme is merely optional. You needn't go farther than *Pong* to find a game with a design and no theme. You can't have a game without a design. Adding a

theme doesn't change the design, but it may significantly impact the player's perceived experience... for better or worse. How does it do that? Like this.

Take a simple *Pong*-like game. Here's the design: objects fall from the top of the screen and you must touch them with your paddle on the bottom of the screen. The player is rewarded for touches and penalised for misses. That's the entire game design. Issues of speed, timing, number of lives, and so on, are relegated to tuning. There is no theme or backstory. You can play this game without any additional information or graphic enhancement. Your motivation is increasing skill level in this abstract task.

Now let's try on two different themes.

Theme one: someone is throwing babies off the roof of a burning building and you must save them by catching them on the pillow you're holding, before returning them to their families. Same game, different motivation. Now you're a hero!

Theme two: someone is throwing babies off the roof of a building you set on fire. The families are waiting below, hoping to catch the falling babies. You are just above the families, catching the babies in your gaping mouth, eating and digesting them, then pooping on the families below (bonus points for this). Same game, different motivation. Now you're a monster!

One design yields three different play experiences, different judgments and probably different ratings as well. But the gameplay is the same in all three.



> *Pong*: a game with design but no theme. Back in 1972, nobody minded too much.

VARIATIONS ON A THEME

Now let's discuss one of the all-time great examples of theme, design, and their interplay by examining a game that innovated significantly in both areas: *Grand Theft Auto III* (a game that can definitely keep a psychotherapist occupied).

GTA III is a significant turning point in video game history. Many think this is due to its storyline, but I disagree. The theming is loud, but it's the game design in *GTA III* that's incredibly innovative. Sadly, these breakthroughs are all too frequently overshadowed by the perceptual breakdowns generated by the game's theme. Interestingly, I still hear about *GTA III* all the time. Not in my capacity as a game developer, but rather in my work as a therapist.

The topic of parenting and video games comes up frequently in training seminars, and when it does, *GTA III* is never far behind (even though it is far behind the times – teaching materials haven't been updated in quite a while, apparently). When this happens, I try to shed light where there is currently darkness, but the topic of where therapists miss the mark in terms of video game issues is the stuff another column is made of.

For now, I want to explore the aspects of *GTA III*'s design which set it apart. This is a game which truly began blazing the trail from 2D to 3D to VR. It created a thoroughly immersive experience and did it through design principles. Unparalleled world consistency is maintained.

By this I mean weapons that work anywhere, work everywhere. I hate it when there are 15 guns in a game but only one works for my current task. Giving the player more ways to accomplish a mission creates meta-play, where players can share and compare approaches to the game. Smart design.

They reuse the level for many missions rather than expanding the world for each new challenge. This lets the player learn things in one mission that end up paying off in other missions. It's like an open architecture approach to level creation. Smart design.

Allowing players to choose which missions and when (from several mission sources) lets players engage the game as they please, not merely as the designer dictates. Smart design.

In game development, there are two primary ways to innovate: technology and design.

“It is easier to innovate in technology than design”



▲ *Grand Theft Auto III*'s violent theme hogged a lot of the media attention, but its intelligent design was what made it a landmark.



Know this: it is easier to innovate in technology than design. Here's why: there are many more technologists in the world than creative geniuses. Increasing poly count or photorealism is not trivial, but it is *reliably* doable. Creating a profoundly new approach is another thing entirely. It's very hard to plan a conceptual breakthrough, but *GTA III* is loaded with them.

It's an amazing step forward in maximising the experience of the player in several distinct dimensions. In a world of narrowcasting, *GTA III* came along and truly broke new ground in both design and approach. It still stands as one of the most important and controversial games in history.

The fact that most of its notoriety (and to be honest, infamy) stems from *GTA III*'s theme rather than the remarkable choices made by the Rockstar designers is, if you'll excuse the expression in this case, criminal. To me, the story of *GTA III* is one of brilliant design breakthroughs hidden behind a salacious and gawk-worthy window dressing. This is a most unfortunate breakdown in my eyes.

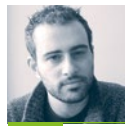
I now return you to your regularly scheduled dysfunction. 🗣️

Revenge Plot

Yars' Revenge was the first game with a major theme or backstory. If you've been following this column, you know how the *Yars* theme was an afterthought – it made no contribution whatsoever to the original design of the game. In other games, the thematic concept is integral to the design. The *Yars* design hit early breakdowns that led to breakthroughs, but the breakdowns and the breakthroughs were all in the design. With *GTA3*, the breakdowns and the breakthroughs were the difference between the theme and design.

CityCraft: Fantasy in medieval settlements

By looking back at medieval cities, we can find inspiration for our own fantasy video game settings



AUTHOR
KONSTANTINOS DIMOPOULOS

Konstantinos Dimopoulos is a game urbanist and designer, currently working on the *Virtual Cities* atlas, and consulting on several games. game-cities.com

Being an urban historian with a specialisation in the Middle Ages won't guarantee that you'll come up with a city as imaginative and awe-inspiring as Tolkien's Gondor.

Such feats of the imagination are rare, but they're also based on knowledge, understanding, and research; on using the rich history of cities as a foundation for intriguing world building.

Medieval urbanism, in particular, has been a constant and defining influence in fantasy literature, and can suggest an abundance of ideas and solutions for video game designers, too. Sometimes, simply abstracting the era's evocative urban imagery, and adding a few dwarven blacksmiths or magical elf cemeteries, can actually be enough.

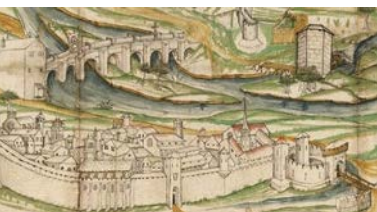
MEDIEVAL URBANISM

Studying medieval towns, understanding the era's geography, values, and structures is not always required (though it is suggested). We can hide supernatural beasts in the crevices of dark, dirty roads, or just copy architectural

elements, and still come up with something new. We can even add buildings like a wizard's tower, or maybe an underground halfling community, to add an exotic touch to a historical city while still keeping its functionality intact. We can also change things up by combining districts, landmarks, and structures from other pre-existing towns.

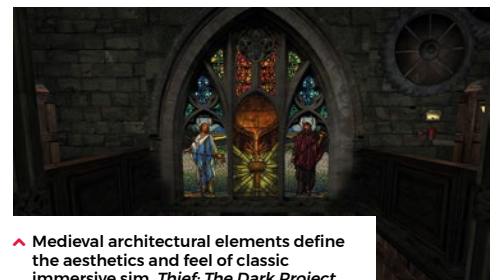
By making more extensive adaptations to a medieval city and its hinterland, you can create an entirely new fantasy setting. To achieve this, you'll have to come up with new civic functions or modify existing ones. If, for example, Catholicism – a religion that influenced the central functions of medieval cities – were to be replaced by the worship of a demon or a god of war, the changes to cathedrals, the institutions built around them, and thus everyday life would be profound. Similarly, a city at constant war with hordes of goblins would force guilds to realign their productive efforts, while new, stronger ramparts might have to be constructed by golems, which would, in turn, require magical places for their maintenance.

▼ The fortified city Carcassonne, depicted here in a drawing from 1462, wouldn't feel out of place in the world of *The Witcher*.



On Architectural Styles

Most medieval architecture has been lost to us, as so much of it was made of wood, even if builders did occasionally resort to using brick and stone. From the structures that have survived, we know that early medieval architecture was in love with Carolingian crypts, rich ornamentations, basilicas, and was heavily influenced by Byzantine and Roman styles. Eventually, taller and mostly axial Romanesque architecture became dominant. It reached its apex during the 12th century, only to be superseded by the Gothic style, with its pointed arches, vaulted ceilings, and flying buttresses.



▲ Medieval architectural elements define the aesthetics and feel of classic immersive sim, *Thief: The Dark Project*.

Then there's the option of creating a fantasy city from scratch, provided you're willing to put in the effort. A central idea for such an attempt could be anything from 'a mountain city where vampires and humans coexist' to a 'town built around the ancient loom of the cosmos'.

LABYRINTHINE REALITIES

The writer Lewis Mumford summed up the essence of medieval urbanism as "Secrecy and [...] surprise, the sudden opening and the lift upwards, the richness of the carved detail." It's this essence, along with the mysteries fantasy has constructed within it, that makes such towns great environments to play in.

Of course, there isn't just one type of medieval city. Regional and functional variations created a wide typology of settlements (agrarian, market, coastal, mining, and so on) and vast differences in size. What most strongly unified medieval cities was their role as both magnet and container: they attracted and protected populations, and used their walls to maintain freedom within. These political and defensive barriers were usually made of stone, and featured gates, toll-collectors, towers, and intricate fortifications.

Within each city's walls, trade was a core function, as was cultural and technical innovation, and the production of local specialities. Trade allowed for the expansion of proto-industrial production, transportation, and finance, and in turn supported a growing industry of textiles and eventually metalware, and, crucially, beer brewing.

Lords and guilds regulated the economy, and its diverse urban surroundings. Late medieval cities favoured geometric plans, while those built on Roman ruins gravitated towards functionalism. Irregularities in layout were mostly due to felled trees, covered over streams, ownership boundaries, or topography, and were always planned, and often aimed for the creation of spectacle. As for a city's overall form, it could be circular, ovoid, perpendicular, and anything in between, with unusual sites producing unusual cities; Venice is a prime example.

The city centre, reserved for the elites, and a religious, economic and administrative focal point, was organised around a cathedral, castle, monastery, or town hall. It wasn't uncommon

"Cities were densely populated, dirty, and claustrophobic"

for towns to grow around multiple, functionally distinct nuclei, often resulting in an oval shape with radial street patterns branching off to public buildings and squares. The poor were generally pushed towards the periphery, and often lived outside the walls.

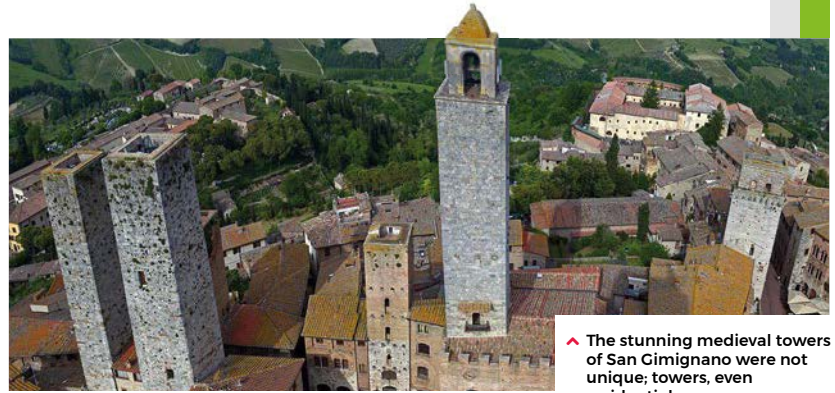
Chief among the characteristics of the medieval city were neighbouring private and public buildings, and a unified public space formed by roads and squares. Tall buildings and palaces were common throughout the urban tissue, as were open-air markets, gardens, agricultural land, hospitals, guild houses, workshops, and monastic schools. Cities were densely populated, dirty, and claustrophobic. As property taxes were based on street

frontage, houses were often narrow, and expanded their living space with a wider second storey jutting out over the street. It was common (but not a rule) that residential areas were clustered by occupation; religious ghettos were also a familiar sight in medieval cities.

RE: CIVIC LIFE

Life in the city was radically different from its rural counterpart. A citizen wasn't personally bound to a lord, even though the city might have collectively owed allegiance to a bishop or king. 'Town air makes free,' went the saying, and this freedom was a right supported by civic armies. A citizen belonged to the city, yet the city also partly belonged to each citizen, even if urban societies were far from egalitarian communities.

Although they laid the groundwork for early democratic institutions, medieval cities were intensely xenophobic places, ravaged by internal wars, and usually ruled by a single lord. Those were dark times. Dangerous and superstitious enough to attribute ancient bridges to the devil, and to consider famine and war simple facts of everyday life. 🗺



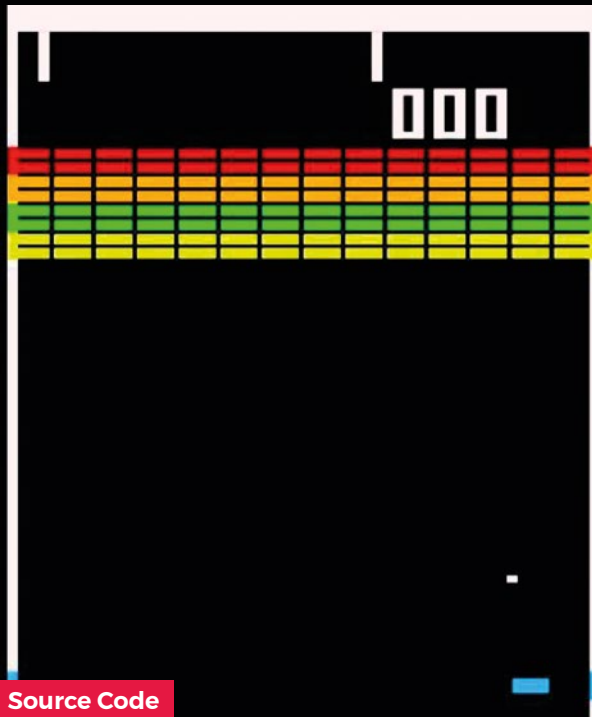
▲ The stunning medieval towers of San Gimignano were not unique; towers, even residential ones, were common throughout Europe. (Photo by ВВласенко.)

Medieval Grids

The road plans of medieval settlements are often thought of as chaotic – as mazes of unending twisting passages. Though this is often the case, many towns of the era were organised along grids. These settlements followed what is often called the grid or gridiron plan, in which streets intersect at right angles to form rectangular, similarly sized blocks. This plan was passed on from the Romans, was prominent in the settlements that survived the collapse of the empire, and continued to evolve over time.

▼ Urbanistic, architectural, geographic, and even sociological influences from Europe's medieval period are evident throughout *Skyrim*.





▲ The original *Breakout*, designed by Nolan Bushnell and Steve Bristow, and famously built by a young Steve Wozniak.

Source Code

Breakout's brick-breaking action

Atari's *Breakout* was one of the earliest video game blockbusters. Here's how to recreate it in Python



AUTHOR
RYAN LAMBIE

The games industry owes a lot to the humble bat and ball. Designed by Allan Alcorn in 1972, *Pong* was a simplified version of table tennis, where the player moved a bat and scored points by ricocheting a ball past their opponent. About four years later, Atari's Nolan Bushnell and Steve Bristow figured out a way of making *Pong* into a single-player game. The result was 1976's *Breakout*, which rotated *Pong*'s action through 90 degrees and replaced the second player with a wall of bricks. Points were scored by deflecting the ball off the bat and destroying the bricks; and, as in *Pong*, the player would lose the game if the ball left the play area. *Breakout* was a hit for Atari, and remains one of those game ideas that has never quite faded from view; in the 1980s, Taito's *Arkanoid* updated the action with collectible power-ups, multiple stages with different layouts of bricks, and additional enemies that

disrupted the trajectory of the player's ball. *Breakout* had an impact on other genres, too; game designer Tomohiro Nishikado came up with the idea for *Space Invaders* by switching *Breakout*'s bat with a base that shot bullets, while its bricks became aliens that moved and fired back at the player.

"Breakout replaced Pong's second player with a wall of bricks"

The code on the right, written by Daniel Pope, shows you just how easy it is to get a basic version of *Breakout* up and running in Python, using the Pygame Zero library. Like Atari's original, it draws a wall of blocks on the screen, sets a ball bouncing around, and gives the player a paddle, which can be controlled by moving the mouse left and right. The ball physics are relatively simple to grasp, too. The ball has a velocity, vel –

which is a vector, or a pair of numbers: vx for the x direction and vy for the y direction. The program loop checks the position of the ball and whether it's collided with a brick or the edge of the play area. If the ball hits the left side of the play area, the ball's x velocity vx is set to positive, thus sending it bouncing to the right. If it hits the right side, it's set to a negative number, so it moves left. Likewise when the ball hits the top or bottom of a brick, we set the sign of the y velocity vy , and so on for the collisions with the bat, and the top of the play area and the sides of bricks. Collisions set the sign of vx and vy but never change the magnitude. This is called a perfectly elastic collision.

To this basic framework, you could add all kinds of additional features: a 2012 talk by developers Martin Jonasson and Petri Purho, which you can watch on YouTube ([wfmag-cc/breakout](https://www.youtube.com/watch?v=wfmag-cc/breakout)), shows how the *Breakout* concept can be given new life with the addition of a few modern design ideas. 🗣️



Download
the code
from GitHub:
[wfmag.cc/
wfmag11](https://wfmag.cc/wfmag11)

Bricks and balls in Python

Courtesy of Daniel Pope, here's a simple *Breakout* game written in Python. To get it running on your system, you'll first need to install Pygame Zero – you can find full instructions at wfmag.cc/pgzero

```
import random
import colorsys
from math import copysign

WIDTH = 600
HEIGHT = 800
BALL_SIZE = 10
MARGIN = 50

BRICKS_X = 10
BRICKS_Y = 5
BRICK_W = (WIDTH - 2 * MARGIN) //
BRICKS_X
BRICK_H = 25

ball = ZRect(WIDTH / 2, HEIGHT / 2,
BALL_SIZE, BALL_SIZE)
bat = ZRect(WIDTH / 2, HEIGHT - 50, 80,
12)

bricks = []

def hsv_color(h, s, v):
    """Return an RGB color from HSV."""
    r, g, b = colorsys.hsv_to_rgb(h, s,
v)
    return r * 255, g * 255, b * 255

def reset():
    """Reset bricks and ball."""
    # First, let's do bricks
    del bricks[:]
    for x in range(BRICKS_X):
        for y in range(BRICKS_Y):
            brick = ZRect(
                (x * BRICK_W + MARGIN, y
* BRICK_H + MARGIN),
                (BRICK_W - 1, BRICK_H
- 1)
            )
            hue = (x + y) / BRICKS_X
            saturation = (y / BRICKS_Y)
* 0.5 + 0.5
            brick.highlight = hsv_
color(hue, saturation * 0.7, 1.0)
            brick.color = hsv_color(hue,
saturation, 0.8)
            bricks.append(brick)

# Now reset the ball
ball.center = (WIDTH / 2, HEIGHT /
2)
ball.vel = (random.uniform(-200,
200), 400)

# Reset bricks and ball at start
reset()

def draw():
    screen.clear()
    for brick in bricks:
        screen.draw.filled_rect(brick,
brick.color)
        screen.draw.line(brick.
bottomleft, brick.topleft, brick.
highlight)
        screen.draw.line(brick.topleft,
brick.topright, brick.highlight)

        screen.draw.filled_rect(bat, 'pink')
        screen.draw.filled_circle(ball.
center, BALL_SIZE // 2, 'white')

def update():
    # When you have fast moving objects,
like the ball, a good trick
    # is to run the update step several
times per frame with tiny time steps.
    # This makes it more likely that
collisions will be handled correctly.
    for _ in range(3):
        update_step(1 / 180)

def update_step(dt):
    x, y = ball.center
    vx, vy = ball.vel

    if ball.top > HEIGHT:
        reset()
        return

    # Update ball based on previous
velocity
    x += vx * dt
    y += vy * dt
    ball.center = (x, y)

# Check for and resolve collisions
if ball.left < 0:
    vx = abs(vx)
    ball.left = -ball.left
elif ball.right > WIDTH:
    vx = -abs(vx)
    ball.right -= 2 * (ball.right -
WIDTH)

    if ball.top < 0:
        vy = abs(vy)
        ball.top *= -1

    if ball.colliderect(bat):
        vy = -abs(vy)
        # randomise the x velocity but
keep the sign
        vx = copysign(random.uniform(50,
300), vx)
    else:
        # Find first collision
        idx = ball.collidelist(bricks)
        if idx != -1:
            brick = bricks[idx]
            # Work out what side we
collided on
            dx = (ball.centerx - brick.
centerx) / BRICK_W
            dy = (ball.centery - brick.
centery) / BRICK_H
            if abs(dx) > abs(dy):
                vx = copysign(abs(vx), dx)
            else:
                vy = copysign(abs(vy), dy)
            del bricks[idx]

    # Write back updated position and
velocity
    ball.center = (x, y)
    ball.vel = (vx, vy)

def on_mouse_move(pos):
    x, y = pos
    bat.centerx = x
    if bat.left < 0:
        bat.left = 0
    elif bat.right > WIDTH:
        bat.right = WIDTH
```

Paper prototyping

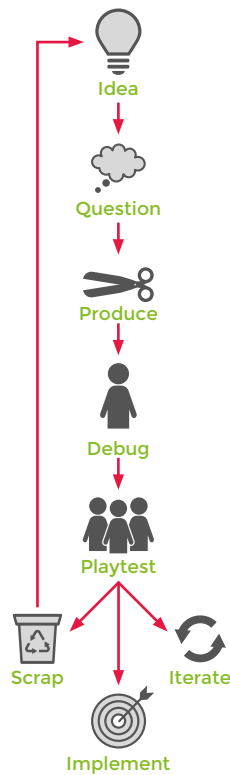
WHAT, HOW, AND WHY

If you have an idea for a game or how a feature within it is going to work, prototyping allows you to explore and test your ideas. Stuart explains all



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*.



▲ This guide will help you run through the prototyping process as quickly as possible.

Design can be a hard-to-define discipline in the games industry, because it encompasses so many different areas. Exploring everything those devilishly good-looking and witty designers get up to is beyond the scope of this article, but one of the key areas is coming up with ideas. More specifically, with good ideas.

And it's the word 'good' which is the problem here, because thinking of ideas is easy, but proving to yourself and the rest of your team that an idea is the right one is the real skill.

Paper prototyping is all about taking an idea and proving it out as quickly as possible, allowing you to iterate and improve or ditch it and move on. This guide will take you through

some techniques and pitfalls of the process, and hopefully will demonstrate that almost any gameplay can be prototyped – if you ask the right question.

ANALOGUE, NOT DIGITAL

First, let's clarify what we mean by 'paper prototyping', because to be honest, the paper part is optional. What we're referring to is 'using the fastest possible tool to prove your idea'. It's about:

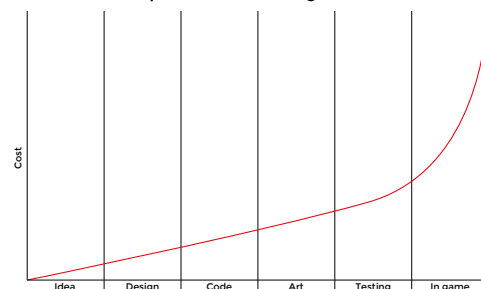
- Working out what the key question you're looking to answer is.
- Mocking up a simple game around that question.
- Getting other people to playtest that game.
- Being happy with the idea and moving on, iterating it and testing again, or abandoning it.

Which sounds fine, but why use something as old-fashioned as paper? Surely using an existing game engine, such as Unity, to mock up your idea is the fastest approach?

For some types of gameplay (which we'll get to later) I'd agree, but on the whole, using an engine has a higher overhead than you think. You need to set it up, define your camera, controls, gameplay rules, graphics, environment, and so on.

But perhaps more importantly, using a computer means that anyone testing your

✓ The further through the development process a feature is, the more expensive it is to change it.



prototype will have preconceptions which will colour their opinion. If your Unity prototype looks and plays like a platform game, then players already know how platform games ‘work’ and will think accordingly. Paper prototypes force your testers to come in as a blank slate, without preconceptions.

WHAT SHOULD YOU TEST?

Let’s look at some reasons why you should paper prototype:

- Obviously, you can test a specific piece of gameplay to find out if it’s fun and engaging, and whether players understand it. This might be testing a mechanic your whole game revolves around, or just a small feature within it. For example, we made a combat/racing board game for a *Transformers* game, letting us prove out when you’d want to transform from vehicle to robot.
- You can prototype how players interact with an area of the game, so you can get an idea of how you might need to present and explain it to them.
- Prototypes are great for explaining an idea you have to your teammates. It’s an immutable truth that no-one likes to read long design documents, so letting people actually play your idea means you know they’ve ‘got’ it. Plus, you can gather ideas and feedback from the team here, too. For example, to demonstrate to a team that collecting things is fun, we ran a week-long prototype with players competing to make the best sets. This got so competitive it led to accusations of cheating – idea proved!
- Finally, paper prototyping builds excitement. I guarantee that if you start cutting paper and gathering dice, people will want to know what you’re doing. This is much more inclusive and interesting than just typing away at a document, then telling everyone to read it.

ASKING THE RIGHT QUESTION

This is probably the most important line from this entire guide: before you begin a prototype, make sure you understand which question you’re trying to answer. This is key because the best prototypes test one thing – a single idea or one part of a larger game. Your goal isn’t to build



◀ Creating a 1:1 scale, A4-size template of nine blank cards to cut out will save a lot of time when you’re making prototypes.

“The best prototypes test a single idea or one part of a larger game”

a great board game, with multiple interlocking and balanced systems; the prototype is to help you work out whether this specific thing does what you think it will once it’s in players’ hands.

If you do want to test multiple game elements then you can always prototype them one at a time then merge them together. For example,

to give us an idea of how a procedurally built, combat-free exploration game might work, I:

- Created a prototype which simulated a procedural map generator by laying out tiles. This let us work out if it was fun to explore, how much randomness was needed, a rough scale, and so on.
- A second prototype then tested if players could recognise and overcome procedurally generated hazards.
- After multiple playtests and iterations of both, we were happy to merge them together, letting the team get an idea of how the game might feel.

Once you start merging prototypes you can keep adding detail until you have the whole game in a testable state, but trying to jump straight to the end will make it difficult to understand which bits are or aren’t working.

So, choose a single question and, in the words of that guy from *Star Wars*, remember to “stay on target.”

MAKING PROTOTYPES

Now you know what you’re trying to test, it’s time to make the prototype. Before we look at some specific examples, let’s talk about playing cards. I’ve found these to be the single most useful prototyping tool, because they’re so flexible and quick to change. ➔

USEFUL ITEMS

To make it easy to create quick prototypes, I recommend having a toolbox of:

- Dice – some fun ones, such as 20-sided, but mostly lots and lots of six-sided.
- Wooden tokens of various shapes to track things.
- Paper, pens, scissors, and blank stickers you can write on.
- But most importantly, playing cards in plastic sleeves. You’ll see why shortly, but if you only have one tool, make it these.

This can all be cheaply sourced from eBay, Amazon, or old board games.



▲ A selection of the prototyping dice, tokens, cards and random ‘stuff’ that we use.

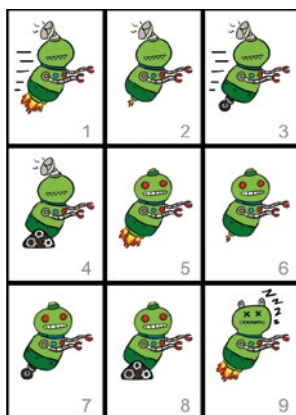
GLADIATORS READY

As in the example, you should test your prototypes alone first, allowing you to rapidly work out fundamental problems before you get someone else involved. You might find that your idea is too simple or repetitive, or spot a dominant strategy. Maybe the difficulty needs adjusting, or progression is too slow. Often, you'll realise you need a rule to cover something unexpected. A few runs of your prototype will knock it into a shape that's worth showing to someone else, rather than waste their time when you realise there's a critical flaw in the middle of a test.

Monster: Shunned Zombie Power: 6 1st +4 2nd +4 3rd +4	Monster: Sleepy Wolf Power: 9 1st +8 2nd +6 3rd +4	Monster: Upset Gryphon Power: 15 1st +16 2nd +10 3rd +4
Monster: Pack of Wolves Power: 21 1st +20 2nd +12 3rd +10	Monster: Drunk Giant Power: 24 1st +30 2nd +12 3rd +6	Monster: Army of Goblins Power: 30 1st +30 2nd +20 3rd +20
Monster: Army of Zombies Power: 36 1st +24 2nd +24 3rd +24	Monster: Angry giant on fire Power: 39 1st +48 2nd +30 3rd +0	Monster: Hungry Dragon Power: 45 1st +60 2nd +20 3rd +10

▲ **Nine monster cards. Note the use of text, not images. During prototyping, speed is more important than prettiness.**

▼ **Players had to spot visual clues about each robot, then choose the best tactic to defeat them.**



▲ **Ten combat rounds, each decided by a dice roll-off. Technically, the 'round' cards aren't needed, but it helps testers easily grasp the goal.**

- Get hold of some playing cards – you can buy a pack or just ask anyone who plays Magic: The Gathering, and they'll be extremely pleased to offload a stack of 'Basic Land' cards onto you.
- Then slide each card into a card sleeve. These are little plastic wallets used by Serious Players to protect cards from shuffling damage and greasy fingerprints. I recommend the cheap, completely transparent ones, not sleeves with a coloured back (you want to be able to see both sides of the card through the sleeve).
- Now cut a piece of paper into card-sized pieces – you'll get nine from an A4 sheet – and slide two pieces into each sleeve, one on each side of the card. You now have a blank playing card which you can write on (by sliding the paper out), edit (by scribbling out text and writing again) or make big changes to (by throwing the paper away and putting another piece in).

EXAMPLE PROTOTYPE - GLADIATORS

Let's run through an example of the whole process. Say I want to test a game where players control a gladiator, fighting one-on-one battles against enemies, and upgrading their gladiator between fights. This prototype is going to look at the upgrading part, and a later prototype will simulate the battles (which I could join together if I want to demonstrate the complete game).



▲ **Stacks of upgrade cards to choose from. Note the addition of a 'character sheet', letting me experiment with things like upgrade limits.**



▲ **A stack of enemies for players to battle, plus different ways the prototype could be expanded if it's looking like it has potential.**

Therefore, the question I want to answer is: Is it fun and satisfying to choose upgrades for my gladiator? Because if not, I could save a lot of time by making the process automatic.

As this prototype is about upgrading, I'm going to abstract away the actual fighting. To do that I decide that each battle will take the form of a simple dice roll, with the person who rolls highest winning the battle.

After each roll-off, the player can choose their upgrade, then we both roll the second die for battle two, and so on, until – I arbitrarily decide, because you have to start somewhere – ten battles have been fought. The player's goal in this prototype is to win more battles than I do.

The first test of the prototype I do by myself, lining up ten dice for the player and ten for the enemies. By rolling them in pairs, I simulate each battle. I immediately realise I need a rule for when we both roll the same number – for now, let's say you roll again.

Of course, just rolling ten dice is pretty boring and offers no real challenge. For starters, I can

<p>You are the Genius Scientist</p> <p>Work out who the Buyer is and convince them to trust you</p> <p>You win if at the end of the game, you choose the Buyer and the Buyer chooses you</p>	<p>You are the Fake Scientist</p> <p>Work out who the Buyer is and convince them to trust you</p> <p>You win if at the end of the game, the Buyer chooses you, not the Genius Scientist</p>	<p>You are the Buyer</p> <p>Work out who the Genius Scientist is and convince them to trust you</p> <p>You win if at the end of the game, you choose the Genius Scientist and the Genius Scientist chooses you</p>
<p>You are the Agent</p> <p>Work out who the Genius Scientist is and convince them to trust you</p> <p>You win if at the end of the game, the Genius Scientist chooses you, not the buyer</p>	<p>Agent</p> <p>While describing your invention, make sure you give a thumbs up</p>	<p>Genius Scientist</p> <p>The buyer is looking for your signal</p> <p>Say: 'My plan is coming together' at some point during the game</p>
<p>Fake Scientist</p> <p>The Buyer is looking for this signal</p> <p>Say: 'Things are boiling up!' at some point during the game</p>	<p>Buyer</p> <p>The Genius Scientist is looking for your signal</p> <p>Say: 'Well this is awkward' at some point during the game</p>	<p>Agent</p> <p>Pretend to be the Buyer, using this signal</p> <p>Say: 'I know exactly what I'm doing' at some point during the game</p>

▲ In multiplayer prototypes, you can produce a stack of 'instruction cards' per player, giving them each different - and secret - information.

make it less dull by describing what the dice rolls indicate, almost like a Games Master in a role-playing game. For instance, a roll of a six and one means a fighter was totally overwhelmed, whereas a five and six means it was a close-fought duel.

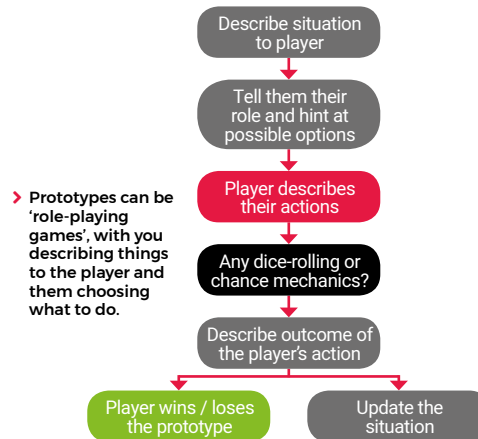
But the other problem is that there are no interesting decisions to make. That's the prototype's job - to make something so basic and random fun to play. How much depth to add will depend on your game's intended audience, but for now, it's time to add some decisions.

MEANINGFUL DECISIONS

I take a stack of my blank cards, slide out one piece of paper from each, and write 'Upgrades' on them. Now I have a deck of upgrade cards for players to choose from (if you're wondering why you label them, you'll thank me once your prototypes get more complicated and you have multiple stacks of cards on the table).

On the other piece of paper in each of those cards, I write some upgrades players can choose from, and give each a little 'flavour text'. As our gameplay revolves around dice rolls, I have upgrades like:

- Feint! Reroll your die.
- Lunge! +1 to your die.
- Parry! -1 to opponent's die.
- Lunge! Roll an 8-sided die instead of 6-sided.
- Disarm! Roll two dice and pick the highest.



▶ Prototypes can be 'role-playing games', with you describing things to the player and them choosing what to do.

For now, I don't worry that some of the options are clearly more powerful than others. I lay out all my upgrades and after each dice roll-off, I let the player (still me for now) choose any one, making their fighter more powerful before the next battle.

This immediately shows there are too many options at once, so instead, I deal out three for me to choose from, replacing each as I take it. This is more interesting, so I decide to take it further. Flipping the cards back over, I change the 'Upgrades' text to say 'Cost 1 Upgrades' and 'Cost 2 Upgrades', sorting them by how powerful their effect is. Now players have to choose between taking a small improvement after each battle or saving for better ones every two fights. I could take this further by awarding 'XP' to players each battle and letting them spend that on upgrades.

It's obvious that the opponent's flat dice roll can't match upgraded players, so I make a second stack of cards, labelled 'Opponents'. On the other side of these, I write a name for each enemy fighter, and give them a special bonus (much like the player upgrades). Now I can try randomising which you fight each round, or sort them into increasing difficulty.

PLAYTEST WITH OTHERS

The point of playing your own prototype is to find and fix the obvious problems, getting it to a state that's actually worth playtesting with volunteers (and of course, some prototypes will be abandoned, never reaching that stage).

This step is important, because each volunteer can only come to your prototype with no knowledge about it exactly once. You can get them to play it again once you've made improvements or changes, but only to get their feedback on the differences. The first playtest ➔



▶ Prototypes are great for testing minigames, letting you try a string of ideas for potential almost immediately.

TESTING TIME

If you want to test players using a controller to do something, then you should probably just make a digital prototype. However, you can paper prototype physical skills, such as reaction speed and hand-eye coordination.

For example, to test a competitive Sony Vita game, I printed pictures of a maze, put them on hardback books and had two players race to roll a ball through the maze. Other players acted as 'the game' to watch for cheating, and we demonstrated that this was fun (if quite stressful).



▲ A complex prototype which could randomly generate environments, with a 'fixed-random' distribution of resources and hazards in them.

Character 1		Inventory:	
Move: 6	Health: 9	?	?
Active: Store a bad robot in his pocket	Passive: Carry two objects at once	?	?
Crafting Recipes:			
Battery: BFI	Trap: ME	?	?
Torch: EJI	Lure 1 Trap: A	?	?
Hammock: AFG	Lure 2 Trap: IH	?	?
Microwave: CDH	Lure 3 Trap: JDE	?	?

▲ A 'character sheet' from the same prototype. Note the crafting resources are just letters - no details yet.

is the only time they'll be able to approach it as a blank slate.

As a result, I recommend playtests are just yourself (acting as the 'computer') and as few players as you need. Running the playtest away from anyone else also means future testers can't overhear and lose the element of surprise, plus I find that testers feel freer to give honest feedback when there's no audience.

Some things I've learned for running playtests:

- Thank the testers for their time and opinions, even (especially!) if their feedback isn't positive.
- Restart playtests mid-run if you need to, usually because it's clearly going wrong (in which case, apologise, remind them that this is part of the process, and restart with a tweak).
- Give the tester some context by briefly explaining the background of the game you're prototyping, such as on page 36: "You control a Roman gladiator, battling for your life in the arena".
- Then explain how they 'win' this prototype. "We'll take your gladiator through a series of fights. Your goal in this prototype is to win more of those fights than me."
- Give the tester some idea of what you're looking for. "In this prototype, the battles will be really simple, but what I'm looking for is how you choose to upgrade your gladiator each time."
- However, you still need to be watching out for other things, such as 'are pauses due to players enjoying a difficult decision, or do they have no idea what to do?'
- You may find it useful to video the table during playtests, so you can study what's happening later.
- Having biscuits for your testers never hurts!

“Watch what your players are doing and how it differs from what they’re saying”

that it only takes a single playtest to realise your prototype is great or terrible, but generally, you'd expect to play it several times, making small changes each time.

Watch what your players are doing and how it differs from what they're saying. I encourage my testers to talk as they play, telling me what they're doing and why. But you might notice that they say "I like this bit" but spend all their time doing something else. Is your prototype forcing them to do that action, or are they enjoying the 'Fiero' (look it up – it's what *Dark Souls* specialises in) of beating a painful problem?

If the idea still has potential, then iterate the prototype and run it again. I'd advise only changing one thing in a prototype between each test, otherwise, you risk not being able to tell which change caused the new version to be better or worse than the old one.

If you find your testers really enjoy a particular aspect, you can adjust the prototype to focus on that. If you really have to over-

explain something, then maybe you need to streamline it.

Get used to 'killing your darlings', which basically means that just because you think an idea is cool, if your playtesters don't understand or like it, then kill it. This is harder than you'd think, and needs to be a balance of sometimes holding on to an idea you think is genius until you can refine it, and when to admit to yourself that something just isn't working. If you do need to go back to the drawing board and start again, ask yourself if the problem is the prototype (so there may be a better way to test your idea), or if the idea itself is bad.

Finally, if you find yourself making the art on the cards fancier, or adding lots of fine detail rules, then it's probably time to stop. Remember, the objective is to test if an idea is going to work or not, then document the final result and build it on a computer. The goal isn't usually to make a super-polished board game.

UNDERSTAND YOUR AUDIENCE

While you may be lucky enough to work on a game where 'you' are the ideal audience, you'll often find yourself needing to design for a completely different market. Rather than saying 'I think these players want X', you can make a

SPEED AND TIME

Another reason for making your prototypes as graphically basic as possible is that the more time you spend on producing them, the more they gain 'weight.' At the early stages, you want to be throwing away and rebuilding elements of your prototype as rapidly as possible, and if you've spent time making things look pretty you'll be reluctant to do that.

CONTINUE OR STOP?

Each time you finish a playtest you should make notes, and think about what's next. It may be

prototype, put it in front of testers from that audience and see if they enjoy it.

Another area where players can skew prototyping is in multiplayer tests. Adding more players to a prototype pretty much guarantees it becomes fun, as players compete or co-operate to win. But you need to keep an eye on whether players are enjoying themselves because of the gameplay or just because it's a social experience.

WHAT NOT TO PROTOTYPE

As you can hopefully tell, I'm a firm believer in this process. But there are definitely areas of gameplay that are difficult to test with paper.

Anything with complicated maths or statistics is going to be slow to do by hand. I suggest finding a way to test the big decisions the player will make and leave the fine details to a later, digital prototype. For example, our current game, *Warhammer Combat Cards*, has cards inflicting varying amounts of damage and applying different status effects to each other. We paper prototyped things like how many attack choices players should have, but left the nitty-gritty of combat detail for later.

Real-time skills can be difficult to test, with paper prototypes better at player decisions over second-by-second gameplay. In this case, a quick Unity mock-up may be a good idea, or maybe there's a board or videogame already out which you can make part of your prototype.



▲ Pages from a report at the end of a long prototyping phase, reminding us what worked and why.

CONCLUSION

Being able to create quick paper prototypes is a great skill to develop, because it allows you to turn 'I think' into 'I know'. It means you can get an idea out of your head and prove to yourself and others that the idea is worth pursuing, before you spend a lot of your team's time and money making a game that turns out to have fundamental problems.

Paper prototypes aren't a magic bullet which guarantee all your games will be excellent, but they let you and your teammates begin development with confidence. 🗨

▼ You can often save time creating map-based prototypes by using components from board games.



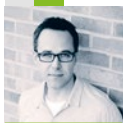
FINISH LINE

One of the signs that you've worked on a prototype for long enough is someone saying 'We should make this into a board game!' While it's possible, remember that there's an incredible amount of work to turn a prototype into a balanced, sellable product.

On the plus side, when someone suggests this you know that they've moved beyond 'Is this idea any good?' and are bought in. Congratulations, your prototype has done exactly what you wanted.



▲ The stylised 2.5D look of our game allowed us to create assets faster, and cheaper, than photorealistically styled 3D assets.



AUTHOR
JEFF SPOONHOWER

Jeff Spoonhower is a developer, artist, and college professor who's been working on triple-A and indie games for over 17 years.
anewthegame.com

Indie reflections: Making Anew Part 3

Developer Jeff Spoonhower discusses approaches to budgeting an indie game

The overall creative vision for your indie game is set, and you've done your best to hammer out the scope of the project. What comes next in the pre-production process? Budgeting. This is a discussion that ties in closely with scope and should be thought of more as a parallel topic to consider, rather than one that follows sequentially. The larger and more complex your game's scope is, the more time and money you'll need to spend to complete it. This article will focus on budgeting concepts, and tips for first-time indie game developers.

BUDGETING BASICS

I wish we lived in the 24th century. In the world of *Star Trek: The Next Generation*, systems of currency no longer exist on Earth. Unfortunately, money is still a bit of a thing in 2019, and we need it to create our games. Before diving into production, consider the following questions:

How much money do I need? To answer this question, you should first create a detailed personal budget. Tally up your monthly living expenses such as rent/mortgage payments,

utilities, groceries, clothing – everything you spend money on regularly. Don't cheat – list it all out. These are base-level expenses that need to be paid in order to survive (literally). Of course, you also need to take into consideration the costs of actually making a game. These include software licences, computers and associated development hardware, accounting and legal advice, conferences and festival travel, marketing costs, the hiring of additional team members, and much more. Some budding developers make the mistake of leasing or buying office space in order to feel like 'a real studio'. Don't fall into this trap. You're still a legitimate developer if you're working from home or in your parents' basement, and your game can be just as good, or better, than ones being produced in swanky offices. Reach out to indie devs on message boards, Twitter, game jams, conferences, and at local IGDA chapters for more specific numbers regarding their production budgets.

Where will the money come from? Any number of sources. You may need to take on a part-time job to help fund production. Maybe your spouse or partner works full-time, allowing

▼ The Anew dev team at the Indie MEGABOOTH @ GDC 2019. Traveling to trade shows is expensive!





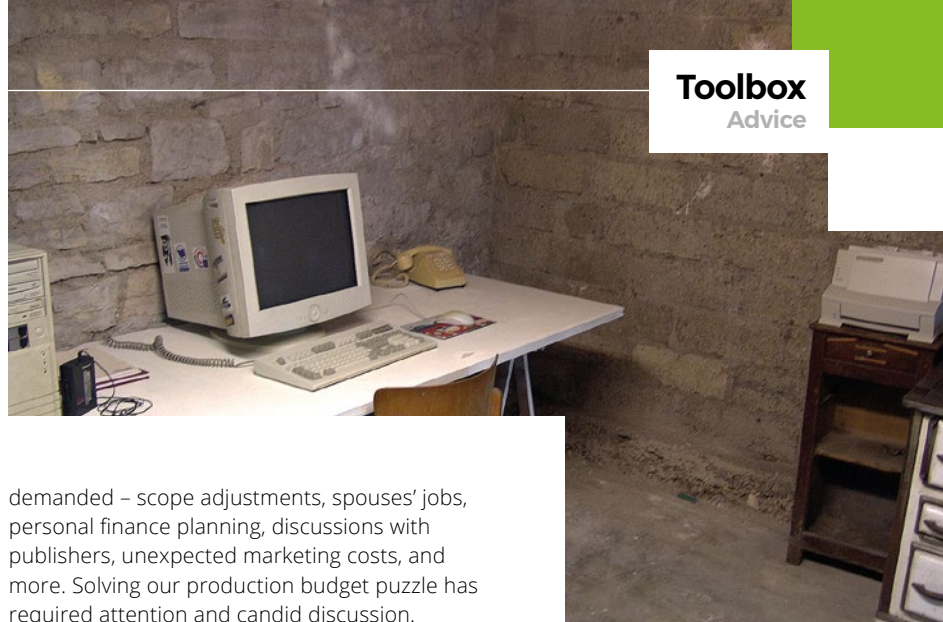
^ Budgeting an indie game can be stressful, not unlike like the predicament our player-character finds himself in here.

you to focus solely on development. Monetary gifts from family members or friends can help sustain you. Running a crowdfunding campaign is a popular source of funding. An approach that takes a bit more patience and discipline involves saving up several years' worth of personal income to finance your production. If you're able to create a polished, fun demo or vertical slice of your game, you may be able to attract the attention of a publisher. Remember though, publisher money isn't free money. Publishers will take a significant share of your game's net revenue (anywhere between 30 to 60 percent) in return for upfront funding, so make sure you *really* need external cash to finish your game. A common funding model in games is called 'advance against royalties' and you should research the concept in more depth if you plan to work with a publisher.

What happens if I run out of money during production? Figure out your financing strategy as early as possible and work within your means to avoid this issue. If you have to course correct (cut scope or add financing), try to do it as early as possible. However, if you do burn through your funds, you will need to find new sources of funding or be forced to delay or shut down your game's production. Nobody wants that! If your game is progressing well and shows promise, but you need a significant cash infusion to take it to the finish line, it may be a good time to consider working with a publisher. If you do end up in rough financial waters, be honest with and respectful towards your team members. Share the news with them, discuss the situation, and work out a plan that makes sense for everyone.

BUDGETING ANEW

Steve Copeland, my development partner, and I discussed each of the issues above before working on *Anew*. We've also revisited them throughout production as circumstances have



demand – scope adjustments, spouses' jobs, personal finance planning, discussions with publishers, unexpected marketing costs, and more. Solving our production budget puzzle has required attention and candid discussion.

Anew has largely been self-financed from personal savings. Working on an indie game was a goal of ours, so we saved accordingly over our careers to enable it to happen. We don't own fancy cars, jet skis, or Hollywood mansions. We work from our home offices and have very few overheads. We've made (and continue to make) sacrifices on many fronts, including passing up lucrative full-time and freelance job opportunities, foregoing vacations to warm

destinations, cutting back on eating out, and so on. These are choices that have allowed us to remain financially independent thus

far in our game's production. My parents used to tell me, "Live below your means." As indie game developers, I would encourage you to follow these words of wisdom.

We also ran a successful Kickstarter campaign in 2017 (more on this topic in a future article). The money we raised has been put towards several costs on our project, including marketing, trade show and conference submissions, travel, software and legal costs, and hiring a world-class composer. The generosity of our Kickstarter backers has allowed us to remain even more focused on our game's development.

BE SMART

When it comes to budgeting your game, take a good hard look at your own financial situation. Be responsible, and don't sacrifice the well-being of your loved ones to make a video game. Keep working your current job, improve your development skills on nights and weekends, and build up your personal savings a bit more before you jump into full-time indie development. Talk to as many current developers as you can about their own budgeting experiences. Remember, you don't need millions of dollars to make an indie game! Just be smart with your money and consider all of your financing options before starting production. ☺

^ Many incredible indie games have been made, inexpensively, in basements like these.

“Figure out your financing strategy as early as possible”

Additional info

If you're interested in learning more about budgeting for independent games, head over to the excellent Gamasutra.com. There, you can search for a variety of articles on the topic written by indie game developers.

^ You'll need several piles of this to make your game.



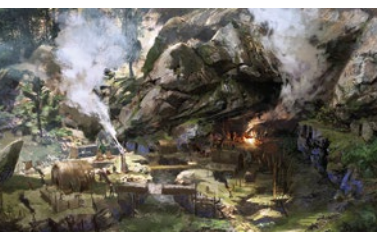
Environment design: online courses

If our ruins feature on page 18 fired your imagination, here are some courses to sharpen your design skills

GET INVOLVED

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

✓ *Far Cry Primal* concept artist Leo Lee shares his knowledge with students in his Udemy illustration course.



> Create an apocalyptic 3D environment

Using 3DS Max and Unreal, this tutorial shows you how to make a grimy post-apocalyptic landscape, from modelling and texturing to a final rendered environment.

wfmag.cc/apocalyptic-scene

> Modular dungeon level design Blender to Unity

Learn how to rapidly design and generate modular interior spaces with this 10-hour course, which takes students through the process of creating rooms and hallways with Blender and Unity.

wfmag.cc/dungeon-design

> Realistic snowy environment design

By learning how to make a blizzard-struck landscape, you'll acquire techniques – procedural texturing, light maps, vertex painting – that can be applied to forging all kinds of environments.

wfmag.cc/snowy-env

> Learn how to create environment concept art

Ubisoft concept artist Leo Lee (*Far Cry Primal*, *Watch Dogs 2*) walks students through the process of creating keyframe illustrations for video games.

wfmag.cc/cinematic-illus

> Sci-fi environment design

When it comes to interior spaces, lighting and texture are key; here, 3D artist Manuel Rondon shows you how to create a moody sci-fi chamber in Unity.

wfmag.cc/sf-environment

> Game asset modelling and texturing

By modelling and texturing a futuristic crate, you'll learn how to create believably weathered and scratched assets for your games with Brush, 3DS Max, Substance Painter, and Marmoset.

wfmag.cc/future-crate

> Storytelling through game design

Even simple background details can help generate a compelling video game world. This course shows students how to tell stories through visual cues and environmental design.

wfmag.cc/game-story

> Low-poly scenes in Unity

This beginner's course shows you an efficient process of planning and building a scene in Unity, with a little help from such packages as Maya, Brush, and Photoshop.

wfmag.cc/low-poly

Wireframe

LIFTING THE LID ON VIDEO GAMES

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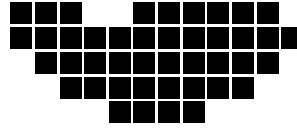
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The LOAD less travelled

In the 1980s, coders came up with ingenious ways to distribute computer programs using radio waves, records, and more

WRITTEN BY
LEWIS PACKWOOD

▼ The show 4 Computer Buffs used a flashing dot to transmit computer programs.

It's tempting to think of downloading games as a modern phenomenon – the rapid rise of digital distribution over the past couple of decades seems to be a thoroughly 21st century trait.

But even back in the 1980s, there were plenty of ways to get hold of games without buying software on physical media.

The most basic method, and the one no doubt familiar to most readers, was what we should probably call 'manual downloading'. In the very early days, before the software market had

become established, one of the only means to get a program onto your new microcomputer was to copy one of the type-in code listings that were ubiquitous in computer magazines (and have made their triumphant return in Wireframe). As many readers are likely to recall, actually getting these programs to work was often a case of trial and error, with one single stray keystroke leading to disaster. Simon N. Goodwin, author of *Beep to Boom*, a book that looks at the development of interactive audio, was a prolific creator of 'type-ins' in the 1980s, and in the boxouts across these pages you can find his recollections on some of the pitfalls of manual downloads (and you can read more of his memories at wfmag.cc/SNGRecall).

But the 1980s also saw far more experimental forms of program distribution – not least the realisation that computer code could be broadcast over the radio.

YOU CAN'T SAY BIT ON THE RADIO

"It was a lightbulb thing, I think," says Joe Tozer, who in 1983 was an engineer at Radio West in Bristol. "I did a lot of work with BBC Micro computers and ZX81s and stuff, and going to a radio station where it was all sound, and loading cassettes into microcomputers, it just sort of went 'ping' at the time." Most microcomputer software came on audio cassettes in the early eighties, and Tozer realised that if you broadcast the sounds from a software cassette, a listener could tape those beeps and wails and then load the recorded program into a computer.





Simon Goodwin developed numerous microcomputer games in the 1980s and later went on to work at Codemasters.

Tozer had just started to present the computer-focused radio show *Datarama* with Tim Lyons at the time, and he found it relatively easy to convince the station head to experiment with broadcasting loading sounds. "We just talked with the head of the programming section, and he was very positive about having innovative stuff on the radio.

The only sticking point was getting permission off the Independent Broadcasting

Authority to actually broadcast this stuff. We just wrote to them, and the first two versions of the programme that went out didn't have any computer content because we were still waiting for authority to do this thing. It came through in the end."

And what's more, it worked. "We got stacks of letters, and people were very positive about it," says Tozer. "People wrote saying how much they enjoyed the programme and downloading the stuff. It was a real novelty at the time." The first program they sent out was a simple graphic showing Cheryl Ladd from *Charlie's Angels*, but Tozer says they also broadcast a lot of educational software: "One that springs to mind is a Morse code tutor program I did for schools. I got a very positive response from the teachers."

As well as beaming out computer programs during the *Datarama* show, Tozer and Lyons sent them out through the small hours. "In those days, TV and radio used to shut down overnight, so they had placeholder recordings saying 'This is Radio West, we'll be back on air at 5 am,'" says Tozer. "So we added a burst of computer code at the end of the loop tape. We'd tend to have short computer programs during the radio programme, because it wasn't particularly pleasant for anyone to listen to, and then put more extended stuff out overnight."

"It was a lightbulb thing, I think"

RADIO FREE EUROPE

Interestingly, Tozer wasn't the only one broadcasting computer programs over the airwaves. All across Europe, and often unbeknownst to one another, DJs and coders independently came up with the idea of sending out software over the radio. Mel Croucher, who was behind the UK's first games software

Advanced Teletext System USER GUIDE



This massive guide explains the arcane art of downloading programs from Teletext.



Code? In a magazine? It'll never work. Ahem.

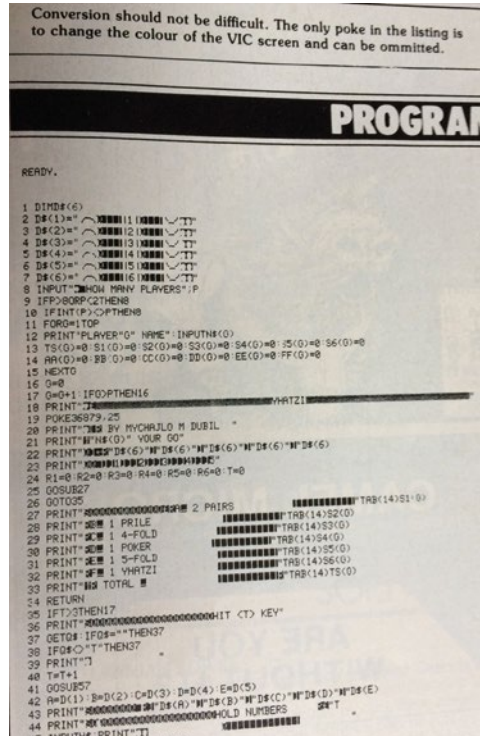
IS THAT A 'B' OR AN '8'?

Simon Goodwin: "In the early days, programs were retyped for publication, risking introducing errors. And to make the page more visually interesting – but much less readable – stock footage graphics were overlaid upon the BASIC listing. In this listing, a frame from the anti-union film *I'm Alright Jack* was plastered over *Shop Steward*, a game I wrote for the Apple II and Sinclair ZX80.

"Confusion between letters and digits was a common cause of error – like line 480 here: 'LET O=0'. In this case, neither machine supported lower-case characters, so at least the confusion of '1' and 'l' was avoided. But typesetting could also make it easier to distinguish 'Bs' and '8s', which often differ in just one matrix point otherwise."

SPLODGE CENTRAL

Simon Goodwin: "Each micro model had a different screen size and different way of positioning text and graphics. On Commodores, like this VIC-20 example, long strings of dark symbols were used to place images on the screen. These were hard to print, hard to read, and hard to type, but unless they were exactly right, the graphics would be misplaced. Similar splodges were used to select colours, brightness, and even flashing text midway through program lines. For instance, a reverse-video (light on black) letter E, typed as **CTRL 2**, selects the colour white on CBM micros, a reversed Q moved down a line, an upward arrow on black made subsequent graphics green, and so on, in many variations."



advanced features that particular computers offered. For games where graphics, sound, and timing are particularly important, BASICODE was always going to be less desirable." Even so, BASICODE became the favoured format for radio downloads. Newman remembers that it was used on Radio 4's nationwide *The Chip Shop* programme for computer enthusiasts, "albeit broadcast in the small hours of Sunday morning so as not to disturb listeners."

company, Automata UK, began broadcasting quiz programs at Radio Victory in the south of England in December 1977 (see *Automata for the people*, Wireframe issue six). This is thought to be the first radio broadcast of a computer program in the UK. And Goodwin was sending out simple programs at Radio Wyvern in Worcester at about the same time as Tozer, although at the time, neither was aware of the other's experiments.

One problem with these broadcasts was the fact that all of the many microcomputers available at the time used slightly different systems. So after Tozer had coded a program to be sent out using his BBC Micro, for example, he had to translate the code for the ZX Spectrum, Oric and so on, and then broadcast each version of the program separately. Coders in the Netherlands working for the radio show *Hobbyscoop* ('Hobbyscope') came up with a way to avoid multiple transmissions in the form of BASICODE. Programs written in BASICODE would work on almost any computer of the time, provided that the user ran a translation program first. But BASICODE had its limitations. James Newman, Professor of Digital Media at Bath Spa University and a curator for the National Videogame Museum, notes that: "BASICODE was effectively a lowest common denominator standard that couldn't take advantage of the

TELETEXT NEXT

Another innovation was the distribution of computer programs through teletext. Teletext-enabled TVs could pick up a signal that was invisibly embedded in TV transmissions to display pages of information – as no doubt you'll be aware if you were an avid reader of *Digitiser* in the 1990s. But that signal could also send out simple computer programs.

A teletext adaptor released in 1983 for the BBC Micro could display teletext pages on the computer screen, but if users tuned to BBC Telesoftware on page 700 of Ceefax, they could also download computer programs. However, as Goodwin notes, it was very slow – much slower than downloading from a cassette. The programs were downloaded a bit at a time as each subpage scrolled around, and "a typical near-1kB subpage would be refreshed every 15 to 20 seconds – so maybe 50 characters a second."

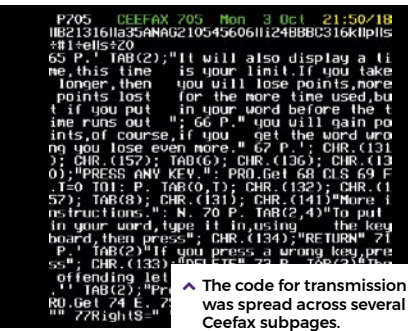
The service ran for six years, eventually closing in 1989. But during that time, another method emerged for downloading programs using television signals.

PRESS YOUR SPACE BAR NOW

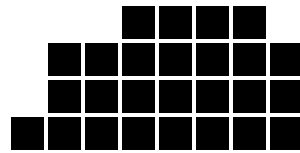
Database, a computer magazine show on Thames TV that began in 1984, used a similar scheme to Tozer's radio broadcasts to send out software. Rather than music playing over the



Page 700 was the home of Telesoftware, and programs were cycled in and out every Friday.

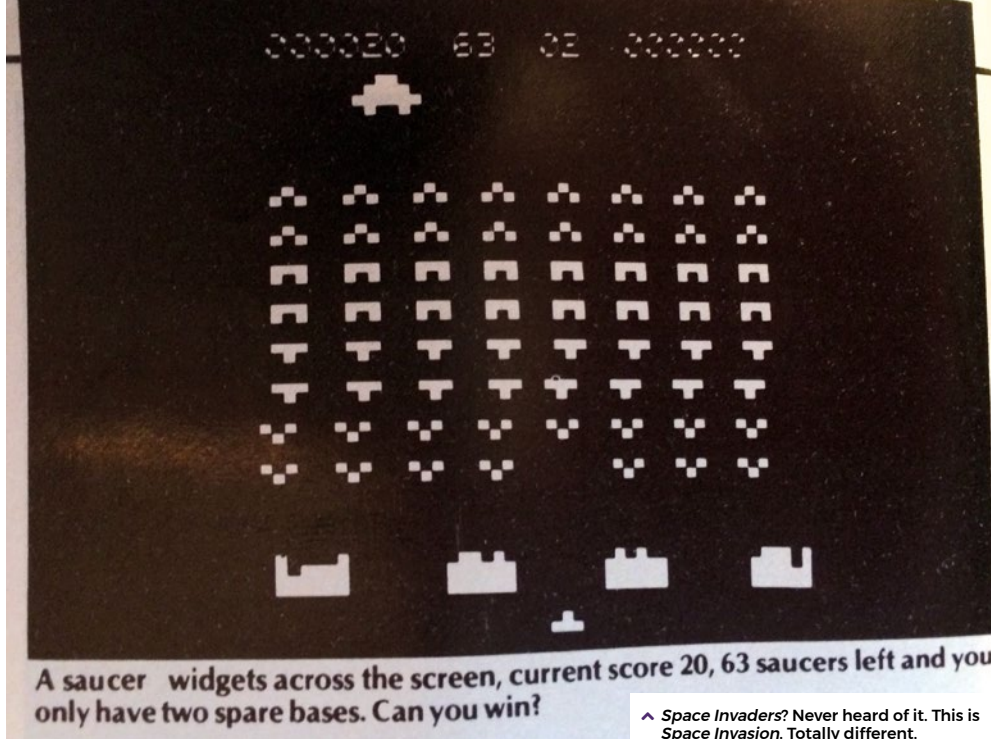


The code for transmission was spread across several Ceefax subpages.



HEXADECIMAL- WHAT?

Simon Goodwin: "The picture shows a 'simple hex dump' that's part of a *Space Invaders* clone for the Tangerine Microtan 65 written by the original system developers. There are over 4000 hexadecimal characters in the full listing, plus three extra columns – byte count, address, and checksum. Having checksums on every line means that only one line needs to be retyped if you miss a character – many such dumps have only a checksum for the whole lot or none at all, so a single mistake is likely to crash the micro with no hint as to why. The full 25-page assembler source was offered on paper by mail order for an extra £3.50, twice the price of the mag (£16 in 2018 money)."



▲ *Space Invaders?* Never heard of it. This is *Space Invasion*. Totally different.

show's end credits, viewers would be treated to a series of shrieks and crackles that could be recorded on cassette and loaded up as a program for their computer.

But in 1985, the show *4 Computer Buffs* on Channel 4 went one step further by using the Visicode system. At a certain point in the show, a black and white flashing dot would appear on the screen alongside the message 'Press your space bar now', with the light and dark flashes corresponding to binary ones and zeros. Viewers who had a light-sensitive adaptor for their computer could attach it over the dot by using a sucker or adhesive pad – or even Blu Tack – and the result was a program you could download from your TV screen.

As Goodwin notes, it wasn't a particularly quick way of sending data, with initial versions transmitting around 50 bits per second. Later versions pushed this up to 400 bits per second, although even that was "about a quarter the speed of ZX Spectrum standard cassettes." Still, it was a clever, novel idea – although nowhere near as ahead of its time as a download service cooked up by the Post Office.

PRESTEL: THE PROTO-INTERNET

"As a nationwide information network, Prestel represents such an interesting chapter in the history of networking and communication in the UK, yet it is very rarely spoken about," says Newman. Developed by the Post Office, which controlled the telephone network at the time, Prestel was launched in 1979 and looked

superficially similar to teletext. But whereas teletext was a passive system, Prestel enabled two-way communication, much like today's internet. Over the years, banking, shopping, and email services were added to the network, which carried around 100,000 pages at launch.

Initially, users accessed the network through expensive Prestel-enabled TVs, but later on, Prestel adaptors were released for home computers. The first one, the Tantal adaptor

from Cambridgeshire-based Tangerine Computer Systems, cost £170 (a whopping £670 adjusted for inflation), but prices gradually came down throughout the 1980s. And the most

exciting destination for computer users on this prototype internet was Micronet 800.

"Micronet 800 was home to many computing and gaming enthusiasts," says Newman. "As well as chat facilities, Micronet hosted *SHADES*, which was one of the first Multi-User Games (or MUGS as they were known at the time), and which is still running today." In his book *Electronic Dreams* on the rise of microcomputers in the 1980s, Tom Lean notes that Micronet's mixture of free and paid-for telesoftware was key to its appeal. In the book, David Babsky, Micronet's founding editor, argues that the service was a clear winner in comparison to type-ins, saying that it was 'blindingly obvious' there'd be a market for computer programs to be sold via phone lines rather than people typing them – and making mistakes – at home.

Prestel wasn't the only online service around, however. In the early 1980s, Commodore UK ➤

"Over the years, banking, shopping, and email services were added to the network, which carried 100,000 pages at launch"



▲ Beaming out code was certainly easier than having users copy it out.



Some users resorted to using Blucable to fix a photoreceptor to their TV in order to grab VisiCode transmissions.

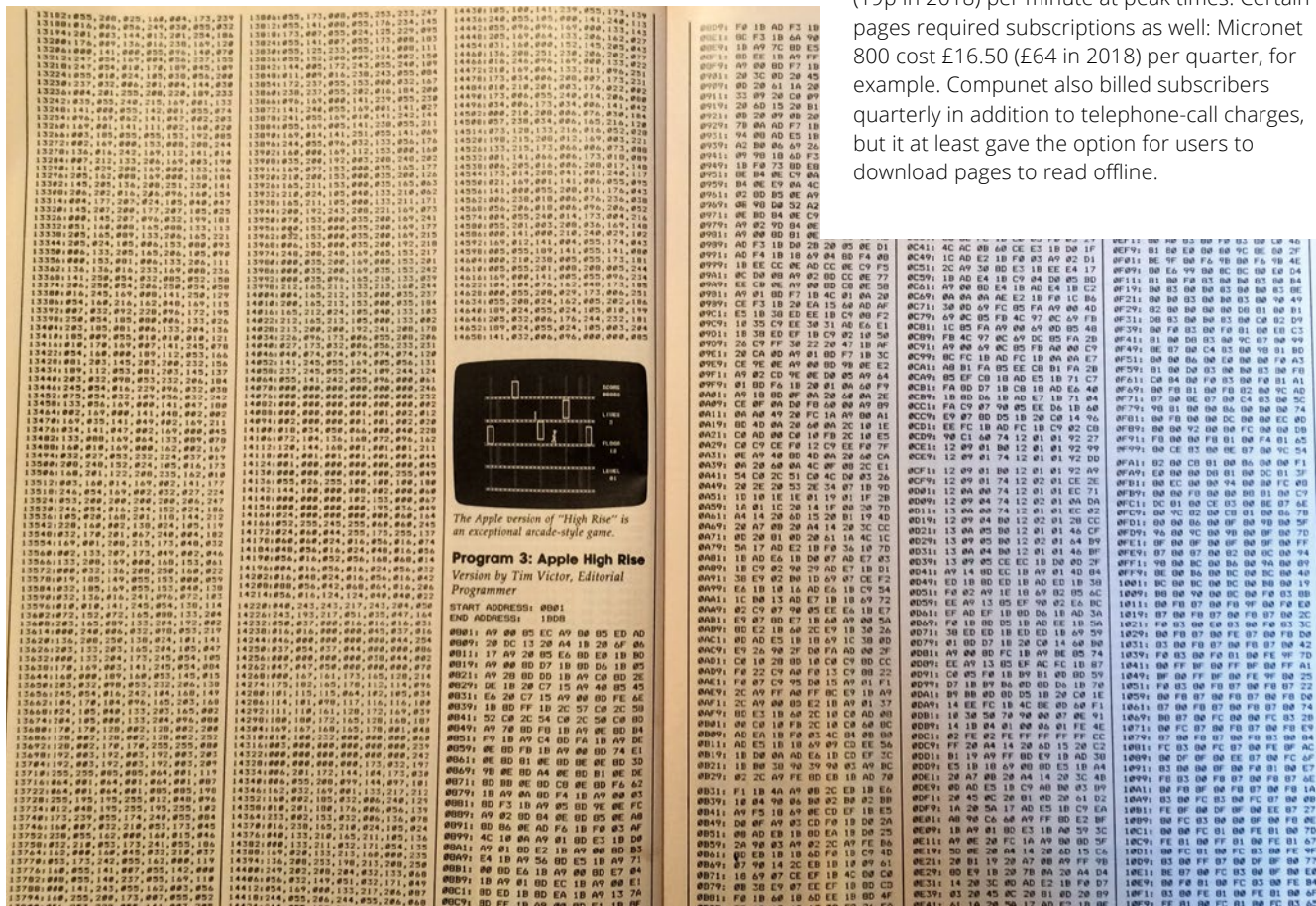
created a computer network for teachers called PETNET, but in 1984 this was relaunched as CompuNet and aimed at Commodore 64 users (indeed, its graphics were specifically tailored to settings of the C64). "CompuNet was ahead of its time," recalls Newman. "With an appropriate modem and a subscription, CompuNet users could browse directories of information about prices of computing equipment, chat, and upload their own pages. They could also play

games like *MUD* and *Federation II*, download software and utilities, and try out demos of upcoming games. Programmers like Jeff Minter and game composer Rob Hubbard were quite active on CompuNet. There was a palpable sense of community."

Prestel and CompuNet may have been ahead of their time, but they never really achieved mainstream popularity – primarily because of their high prices. "The Post Office had hoped for a million Prestel users by the mid-1980s," says Newman, "but things got off to a slow start and estimates put the maximum number of users at around 90,000. It was the cost of Prestel that most commentators found was the real issue. Prestel hardware was comparatively expensive and users had to pay subscriptions and per-minute dial-up charges." Tom Lean notes that Prestel initially cost £5 (around £18 in 2018) per quarter in addition to dial-up fees of five pence (19p in 2018) per minute at peak times. Certain pages required subscriptions as well: Micronet 800 cost £16.50 (£64 in 2018) per quarter, for example. CompuNet also billed subscribers quarterly in addition to telephone-call charges, but it at least gave the option for users to download pages to read offline.

MACHINE GAMES

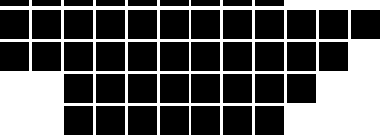
Simon Goodwin: "BASIC games were relatively easy to type in, but machine code, like these examples for Atari (decimal, left) and Apple (hex, right) computers, ran faster. A separate short program, a mix of BASIC and code customised for each system, must be typed in first to allow entry of the actual game code. This was often shared and reusable between several type-ins. Code was hard enough to enter but graphics were far more bulky, though less likely to cause crashes if mistyped, so type-in games favoured simple low-res graphics."



The Apple version of "High Rise" is an exceptional arcade-style game.

This is: Apple High Rise
Version by Tim Vector, Editorial Programmer

START ADDRESS: 0001
END ADDRESS: 110B



Prestel and Compunet were eventually shut down in 1991 and 1993, respectively. But if those systems gave a glimpse of the future, another novel distribution method was a definite step back into the past.

GAMES ON VINYL

"The 1984 game *Thompson Twins Adventure* was distributed on a seven-inch flexi disc in the UK," recalls Newman. "Issue 36 of *Computer and Video Games* magazine came with disc attached, which contained the code for the Spectrum version - Commodore 64 owners had to send off for a copy compatible with their machine." He notes that on the one hand it seemed appropriate to distribute a game featuring a chart-topping band on vinyl, and it certainly had a novelty factor, but on the other hand there was a lot of work involved in getting the game up

"Downloading games from radio waves was only possible because they were so tiny"

and running. Users had to either record the flexi disc onto cassette to load it into their computer or contrive to link their computer directly to a record player, "and the magazine came with some pretty intricate instructions about getting recording levels just right," warns Newman. Goodwin adds that successfully loading the game not only required a good turntable and stylus, but also the unlikely circumstance of receiving a record without any scratches or dirt. "Flexi discs were very lo-fi and prone to damage," he says, "so most were unusable before they left the newsagent."

Furthermore, there was the possibility of causing consternation among the band's fans. "The disc also contained a Thompson Twins music track and a message from the band," says Newman, "and you can't help but wonder how many people ended up listening to the raw game data - and how many confused listeners questioned the experimental, avant-garde turn the band were taking..."

ALL THINGS MUST PASS

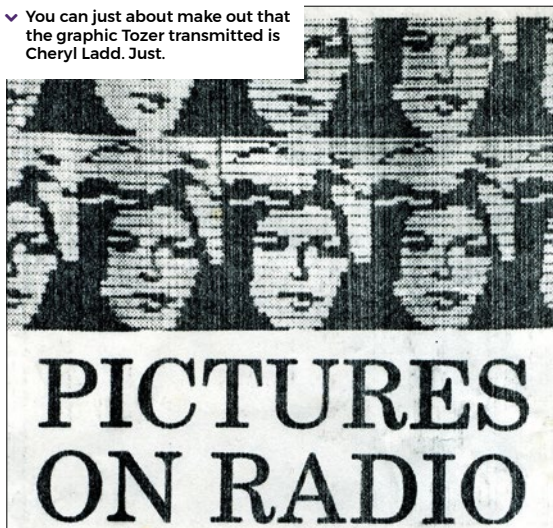
The 1980s computer scene was a hotbed of experimentation as users grappled with the unfamiliar technology, and the range of novel program distribution methods reflects that.



▲ Simon Goodwin developed numerous microcomputer games in the 1980s and later went on to work at Codemasters.

But it's also something that can never be replicated. Downloading games from records or radio waves was only possible because the programs were so tiny, a few kilobytes at most. Broadcasting modern games over the radio would take years because of their sheer size - and it would be a brave station director to allow the airwaves to be taken over by squawks and squeals for months on end. Admittedly, that might offer an improvement on certain radio stations which shall remain nameless. 📻

▼ You can just about make out that the graphic Tozer transmitted is Cheryl Ladd. Just.



▲ James Newman helped to set up the National Videogame Museum in Sheffield.



Developer Profile

The Bitmap Brothers

With such games as *Speedball 2* and *The Chaos Engine*, they lit up the British games scene

At a time when the games industry was still small, The Bitmap Bros seemed big. Their public image was all dark glasses and leather jackets, while their games carried a similar air of detached coolness: mature, fast-paced, and polished to an obsessive degree. The Bitmaps' games were some of the most talked-about of the 16-bit era, at least in the UK; it was easy to imagine the team behind hits like *Xenon 2* and *Speedball 2* as rock stars, writing their code between sips of champagne and trips in helicopters. The reality, of course, was a little more complicated than that.

Co-founder Mike Montgomery was a store manager at Woolworths when he bought a Sinclair ZX81, taught himself how to program, and started a new career in the games industry. By 1987, he'd founded The Bitmap Brothers with fellow developers Eric Matthews and Steve Kelly. The team's debut title, 1988's *Xenon*, was a top-down shooter inspired by the arcade games Montgomery and his cohorts were obsessively playing at the time. "I think the influence came from spending too much time in the arcades," Montgomery tells us. "Namco and Sega, stuff like that."

Made on an advance of £25,000, *Xenon* was the Bitmaps' first taste of success. Behind the scenes, though, the team didn't even have an office. "We all worked from home at the time, and it wasn't until a quarter of the way through *Speedball* that we actually had an office in London," Montgomery says. "Our phone bills were

^ *Gods* recently got an HD remaster, released for PC in 2018. Artist Simon Bisley created the sumptuous cover art.



^ *Xenon 2* came with some memorably odd bosses.

quite high. It was a case of sending floppy disks through the post."

By the time they'd moved to their office in Wapping – a far more affordable part of London than it is now – the Bitmaps' style was already set. *Speedball*, a frenetic sports game with an icy sci-fi theme, was thrilling. *Xenon 2: Megablast*, with its bold graphic design and Bomb The Bass soundtrack, certainly looked and sounded cutting edge. Then there was the studio's talent for self-promotion. As Montgomery points out, the Bitmaps weren't content with being anonymous figures: "We wanted recognition, and we wanted the industry to recognise the artists rather than publishers, who were the moneymen to an extent. With the photographs, we wanted to get in the magazines. We wanted to be famous."

MIRROR IMAGE

Ah, the photographs – or one photograph in particular. Depicting the Bitmaps posing moodily on a rooftop next to a helicopter, it helped define the Bitmaps' rock star image. Once again, though, the reality was more complicated: the helicopter didn't belong to the Bitmaps, but publishing baron Robert Maxwell, whose company Mirrorsoft had published several of their early games.

"This was on top of the Mirror building just off Fleet Street," Montgomery says.

Godlike genius

One of the things that distinguished *Gods* from the action platformer pack was the deviously smart programming of its enemies, which was far more aggressive and responsive to the player's movements than other games of its type. "A lot of the time, the AI wasn't an afterthought, but we'd probably have done it as a two-player game, where somebody actually played as the enemies," Montgomery says of his team's approach to AI in games like *Gods* and *Speedball*. "Then we'd see how somebody would do something, and we'd transform that into AI. We weren't mad scientists or engineers; we were just normal guys, and we thought that was a good way of doing it."



^ Some terrific pixel art gave *Cadaver* a likeably grungy atmosphere.

"We were there all day waiting for the helicopter to come in – I believe Maxwell was at Epsom races. It turned out to be a brilliant thing, because he came back just before sunset. We sat on that roof all day waiting, and we had 30 minutes to take the photograph."

Public image aside, Montgomery describes life at the studio as "madness."

"Not too many publishers liked us because we were too big for our boots"

"We were working 24 hours a day sometimes. We wouldn't go home. It was really hard work."

The results spoke for themselves. Through the early nineties, the Bitmaps turned out a string of superb games: isometric adventure *Cadaver*, the classic *Speedball 2*, platformers *Gods* and *Magic Pockets*, and steampunk shooter, *The Chaos Engine*. Spanning multiple genres, the Bitmaps' games were unified by their clean design and attention to detail.

A mix of financial trouble and a changing industry weighed heavily on the studio in the second half of the nineties, however. Pioneering strategy game *Z* took four years to make, as the Bitmaps moved from Amiga to PC and floppy disk to CD-ROM; similarly, *The Chaos Engine 2* proved to be "a nightmare" to develop, and by the time it emerged in 1996, the Amiga was already waning. "We should've switched to a different platform, or

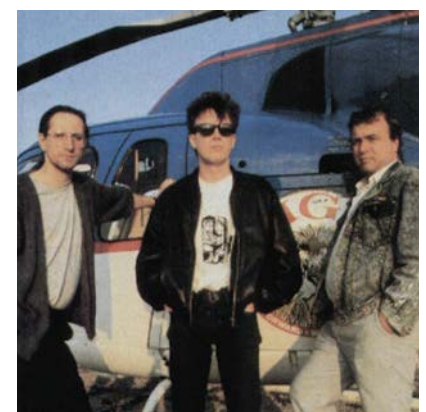


^ *Speedball 2: Brutal Deluxe*. Quite simply one of the greatest games of its era.

canceled it early on," Montgomery says. "By the time it came out, the Amiga market was dead and we sold virtually nothing."

Meanwhile, out came the PlayStation – a console whose trendy marketing faintly resembled the Bitmaps' promo work from a few years earlier. The games industry was now big, and the Bitmaps, who'd long had a fraught relationship with publishers, struggled to find the cash they needed to upgrade. "Not many publishers liked us because we were too big for our boots," Montgomery says. "I think if we'd got onto the PlayStation, we'd have done really well."

The Bitmaps made games into the 2000s (Montgomery still owns the brand), but it was in the late eighties and early nineties that they shone the brightest. They made games that felt better-made than just about anything else available at the time; in those few, glorious years, the Bitmap Brothers showed us a glimpse of the future. ☹



^ It was the image published all over the UK games press at the time. From left to right: Steve Kelly, Eric Matthews, and Mike Montgomery.

Ice cream, ice cream

10 cool Bitmap Brothers cuts

The ice-cold games that defined the studio at its height



01

Xenon

Atari ST / various – 1988

A vertically-scrolling shoot-'em-up akin to *Xenious*, the twist in *Xenon* was that its spaceship could also turn into a tank in certain levels, allowing it to move and shoot in eight directions. Its slick, metallic sprites were also eye-catching enough to be featured on the Saturday morning TV show, *Get Fresh*.

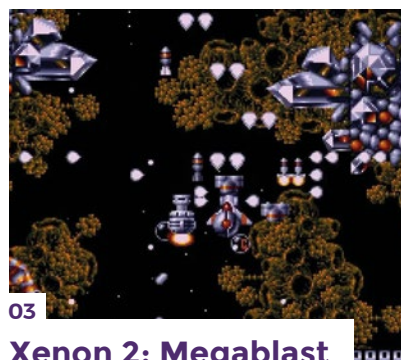


02

Speedball

Amiga / various – 1988

With graphics by Mark Coleman and music by David Whittaker, *Speedball* looked and sounded like something from the next century – at least in 1988. Curiously, this brilliantly fast and violent future sports game was born out of the ashes of a cancelled project based on the rather more genteel pastime of real tennis.

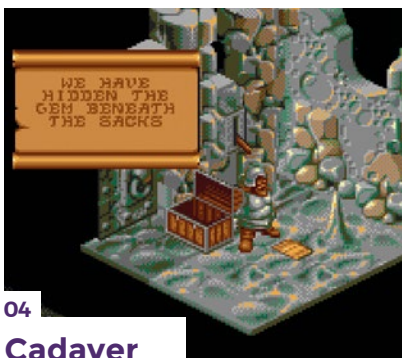


03

Xenon 2: Megablast

Amiga / various – 1989

Although not necessarily better to play than its predecessor, *Xenon 2* certainly felt like a quantum leap technically. The Bomb The Bass hip-hop tune and shiny graphics gave it an air of cool, and the spaceship had a reverse gear, which was a novel addition to the usual formula of shooting some things and collecting others.

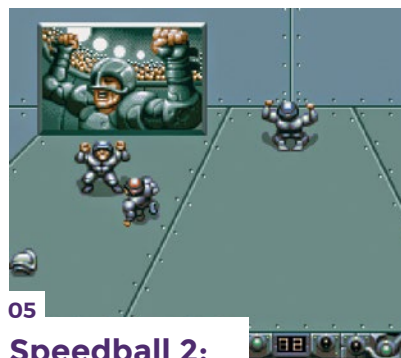


04

Cadaver

Amiga / Atari ST / PC – 1990

An isometric fantasy adventure game with a wonderfully grimy atmosphere, thanks in large part to its captivating pixel artwork. A more slow-paced and cerebral offering from the Bitmaps, *Cadaver* contained some decent environmental puzzles and a lengthy (for the time) quest to complete.

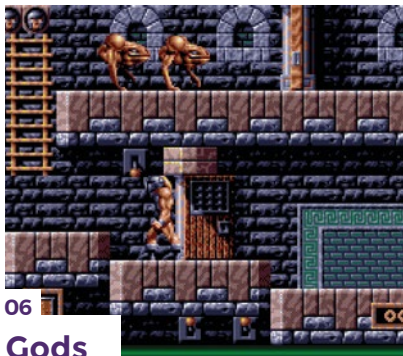


05

Speedball 2: Brutal Deluxe

Amiga / various – 1990

Really, the original *Speedball* was just a dry run for *Brutal Deluxe* – one of the best sports games of its era, and certainly one of the greatest titles the Bitmap Brothers ever produced. The presentation dovetails beautifully with endlessly playable bone-crunching action. Ice cream!

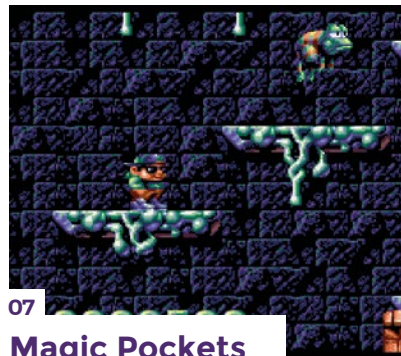


06

Gods

Amiga / various – 1991

The Bitmaps' first attempt at the then-trendy side-scrolling platform genre, with the cartoon mascots of rival games replaced by a muscle-bound, knife-throwing Hercules. With aggressive enemies, a tough difficulty curve, and complex maps to navigate, *Gods* was also a Herculean task to see to the end.

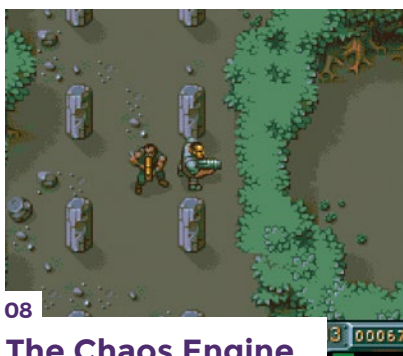


07

Magic Pockets

Amiga/various – 1991

Although hardly the studio's best game, *Magic Pockets* was still a decent enough platformer, even if the attempt to replicate the warmth of a cute Japanese title like *Rainbow Islands* or *Alex Kidd* didn't quite fit with the Bitmaps' trendy and detached house style. Look out for nineties pop sensation Betty Boo on the soundtrack.

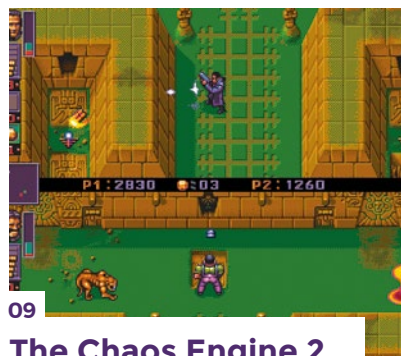


08

The Chaos Engine

Amiga / various – 1993

The Bitmaps spent two long years making this top-down run-and-gun game, but the wait was worth it: with its captivating steampunk plot and accompanying visuals, *The Chaos Engine* was a high point in the Amiga's library. Even today, its *Gauntlet*-esque action feels sharp and absorbing.



09

The Chaos Engine 2

Amiga / Amiga CD32 – 1996

Taking the format of the original and turning it into a competitive split-screen affair felt like a logical evolution, and *The Chaos Engine 2* is particularly fun when played against a human opponent. Perhaps because of its troubled development, the sequel feels a little 'bare bones' when compared to the original.



10

Z

PC / PlayStation / Saturn – 1996

Real-time strategy game *Z* took a long and difficult four years to develop; according to Mike Montgomery, "We were still developing the game the night before it was published." Although eclipsed by *Command & Conquer*, released a year earlier, *Z* is still an accessible and challenging RTS.

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▲ *The Final Season* retains Telltale's affinity for QTEs, but they never feel monotonous.



Review

The Walking Dead

The Final Season

Trying to remain still not bitten for one last outing

Info

GENRE
Episodic
adventure

FORMAT
PC (tested) /
PS4 / XBO /
SWITCH

DEVELOPER
Telltale Games
/ Skybound
Games

PUBLISHER
Telltale Games
/ Skybound
Games

PRICE
£18.99

RELEASE
Out now

REVIEWED BY
Aaron Potter



▲ Each of Ericson's school-age survivors were forced to grow up quickly to survive.

Robert Kirkman's *The Walking Dead* may have found critical and financial success in other mediums, but arguably none have managed to penetrate the cultural zeitgeist quite like the interactive one Telltale has gradually crafted. Yes, the journey of Clementine and her very human story of making tough decisions within a zombie-infested apocalypse has inspired the hearts of many since the first season released back in 2012 – to the extent that it was partially down to the sheer will of players that she was even able to make it this far.

If there was any fear that Telltale's sudden closure in October 2018 would detrimentally impact Clem's closing tale, let it be said that the concluding moments, without doubt, give Clementine her due justice. And even if the team that finished *The Walking Dead: The Final Season* isn't the same one that started it, Skybound and the aptly named Still Not Bitten team have succeeded in creating a small, tightly wound set-up in which to say goodbye to this universe and its beloved characters.

Picking up soon after the events of Javier's story from *The Walking Dead: A New Frontier*, it feels good to be placed back in direct control of Clementine again after a long time away. She's a changed person from the little girl we

first found hiding in a treehouse at the start of the first season, having since stepped up to be a protector to an orphaned young AJ – Clementine's now much like the guardian figure Lee Everett was to her back then. This decision to invert Clem's role helps raise the stakes much higher than what we've seen for Telltale's *The Walking Dead* for some time, with you no longer so much making the harsh choices as simply guiding them.

The Final Season's first episode, *Done Running*, is a good example of this. An early sequence sees Clem and AJ forced to raid a nearby outhouse in search of food and supplies. Circumstances like this would usually be thought of as standard fare for any *Walking Dead* property, yet just before heading in you're asked to reiterate to AJ what the standard protocol is on such matters. Do you tell him, "find a way out", "check the windows" or "find somewhere to hide"? Small moments like this represent your chance to subtly help form the man AJ may eventually become, potentially causing ripple effects in a later episode that could aid or come back to haunt you.

As the narrative progresses, you soon realise that the territory war AJ and Clem find themselves swept up in is a more contained affair than the road trip tenures seen in previous seasons. This is smart, given the slightly shorter

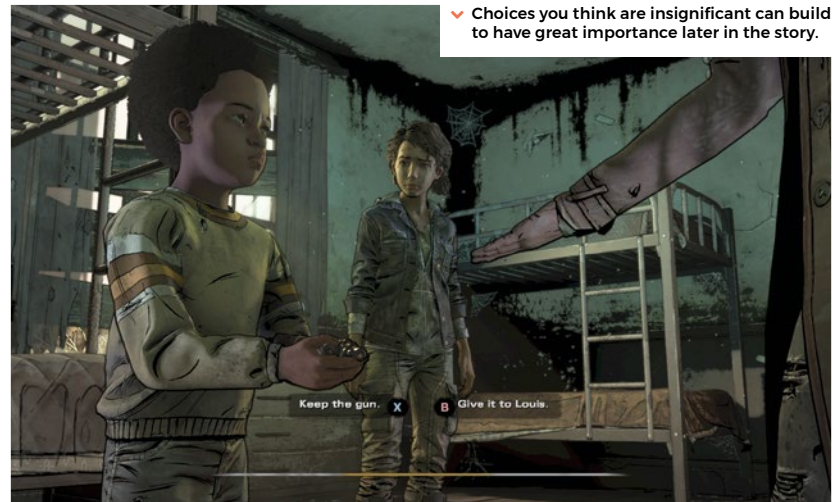


^ Much-loved characters get the send-off they deserve.

episode count, as it allows each member of Ericson's Boarding School for Troubled Youths' ensemble cast to slowly unfurl their character, letting you settle into the best alliances and relationships that make sense for your Clementine. Location plays a bigger role in *The Walking Dead: The Final Season* than ever before, finally giving Clem a home worth fighting for even if the overarching through-line centring on a turf war between camps feels a little trite.

All four episodes offer a healthy amount of interesting dialogue options between characters, unique locations to briefly explore, and a fair few action set pieces that, while engrossing, still haven't solved the classic Telltale formula of having you awkwardly complete QTE tasks in sequence. There's nothing in terms of gameplay that will amaze you in *The Walking Dead: The Final Season*, but where it does surprise is in the discussion it adds to the debate of what it means to be a walker.

“This decision to invert Clem’s role helps raise the stakes much higher”



v Choices you think are insignificant can build to have great importance later in the story.

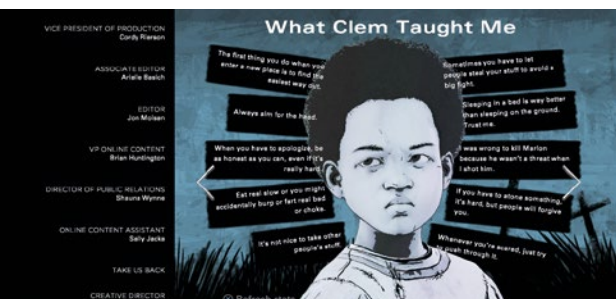
Up until now, the survivors Clem has associated with have killed the undead without question. However, through new character James – an ex-member of a group known only as The Whisperers – this changes. He's someone who chooses to live among walkers and in doing so believes that there's more humanity to the flesh-eaters than most would think. Unless closely following *The Walking Dead* in the comics, you wouldn't know such people exist. It's but a small part of how this final season, in particular, adds colour to this world, coming to a head when Clem is forced to consider it.

The Walking Dead: The Final Season offers up the same bout of moral quandaries Telltale's take has become known for, but twists the knife even further by knowingly mirroring certain scenarios and dilemmas, stretching back all the way to season one. The conclusion of Clementine's story has been a long time coming, and for the most part, sticks the landing without any indication of the outside turmoil it took to get her there. *The Walking Dead: The Final Season* delivers the emotional gut punch we all wanted, and provides a fitting end to one of video gaming's best-loved characters. 🗽

HIGHLIGHT

Every episode sees Clem's relationship with AJ deepen according to the lessons you teach him, and the actions you take. Lash out in an act of ill-judgement and it's quite possible that AJ will notice, resulting in certain unexpected swerves in the narrative that are no longer in your control.

v The end of each episode stylishly presents you with a summary of Clem's impact, showing some of this season's slightly higher production values.



VERDICT

Emotional, thoughtful, and unrelenting, *The Walking Dead's* final season gives Clem an appropriately heartfelt send-off.

81%

Rated
Review

HIGHLIGHT

Though few and far between, each new technology feels like a real advancement for your people. Going through the years and seeing your colony grow from a single hut and a few hunter-gatherers to a sprawling, fortified commune of farmers, builders, miners, and blacksmiths is really satisfying.



Review

Dawn of Man

Welcome to Mesolithimnster, established 15,000 BCE.

An unending struggle with hunger, the elements, and weird AI

Info

GENRE
Strategy

FORMAT
PC (tested) /
Mac

DEVELOPER
Madrug
Works

PUBLISHER
Madrug
Works

PRICE
£19.49

RELEASE
Out now

REVIEWED BY
Joe Parlock

VERDICT

Dawn of Man provides a taste of the prehistoric that we don't often see in games, but it's let down by its lack of control, making for a basic and undercooked experience.

59%

Being a prehistoric person sucked. When you weren't dying at the ripe old age of 35 from eating a bad bit of woolly mammoth, your village (which contained all the people you'd ever know) would be toiling day and night just to survive the cold winter. *Dawn of Man* manages to nail that feeling of unending struggle, although, in some cases, that may not have been the vibe it was going for.

Dawn of Man is a colony builder that shares most of its DNA with *Civilization*. Tasking you with taking a small group of people from the Mesolithic era right the way through to the Iron Age, everything your villagers do, from hunting to building, unlocks knowledge points. These points can then be used to unlock more technologies and pull your community from epoch to epoch, from sticks and wood to forging iron weaponry.

However, death is easy for your muddle of cavepeople. Diseases, hypothermia, dehydration, wild animals, hostile raiders, and, very rarely, old age can all thin your numbers. Even your victories are short-lived, as pushing through to a new era brings its own challenges like technologically advanced raiders bashing down your outdated defences, or extinction events cutting off some previously vital resources.

Advancing through the ages can feel like a massive achievement, but it's also where one of *Dawn of Man's* major flaws rears its ugly head: the pacing is glacial. Even playing at the highest speed settings, getting anything done feels like a test of patience. Knowledge points are slow, and the slim choices when unlocking technology makes every

village play out the same way. Resources take forever to acquire, and there are plenty of times where the only worthwhile action you can take is to wait for something interesting to happen, and that might take a ludicrously long time.

Part of the problem is that *Dawn of Man* prides itself on cutting micromanagement out of the genre by using specific work areas for designating tasks, allowing you to automate the production of goods and necessities. In practice, this means vital, granular control over your people is non-existent. You're constantly at the mercy of an AI who may have very different priorities to you. Some basic controls – like assigning individuals to specific roles, or even bumping an uncompleted job further up the list of ongoing tasks – would go a long way towards keeping you engaged in the slower moments.

Dawn of Man is teeming with cleverness, but in its mission to streamline the colony building experience, it throws out a lot of what makes it such a compelling genre. Shallow, slow, and frustrating, it needs a few thousand years to get up to scratch. 🐻



HIGHLIGHT

The use of sound is truly outstanding. Every time you move through a part of the level you make a sound. You can then press a button to make a sound. Just messing around with this is far more fun than it should be.

Review

Ethereal

Fun – and frustration – comes in pairs

Ethereal is a striking game. The graphics are minimal and brutalist, all sharp lines and geometric shapes. It makes an intelligent use of colour. The sound design is beautiful, with your movements accompanied by different notes as you interact with the world. The puzzles are genuinely intriguing (which is probably for the best, given it's a puzzle game).

Each level in *Ethereal* tasks you with matching pairs of different shapes. The tricky part is that you can only try to match one pair at a time: If you touch an orange square and then go for another orange square, that's good. If, however, on the way you accidentally touch a purple triangle – well then, now you're trying to match that shape instead.

It almost seems easy to begin with, exploring levels to see which pairs make for the easiest match. There's no wrong starting pair, as many of the puzzles can be solved in different orders. It's all about figuring out which one you see as being the obvious one, and then going from there. As such, you rush through the first few puzzles and get to grips with things. Inevitably, you start to feel like a genius. You are not a genius.

The puzzles themselves evolve as you play, with the first few levels seeing you moving across one axis, aside from the vertical shifts here and there.

“Ethereal even takes mechanics you understand and twists them”

Just as this starts to feel natural, you come across a node which allows you to shift the world 90 degrees. It's like walking outside and being able to perceive an extra dimension; everything you know is suddenly infinitely more complex.

It does this time and again. *Ethereal* even takes mechanics you understand and twists them – changing the rules of the puzzles dramatically without ever acknowledging it happens. It makes for a deeply relaxing game which manages to also be intensely frustrating. It is never so bad as to make you want to quit – it takes you just to the edge of

your limits, then drags you back into your comfort zone again for a level or two. Simply put, *Ethereal* is an astounding puzzle game that is aesthetically stunning as well as psychologically challenging. 🎧



^ The further you get, the more moving parts appear.

^ Somebody probably has this as a tattoo.



^ It feels a bit like navigating the London Underground.

Info

GENRE
Puzzle

FORMAT
PC (tested) / Mac

DEVELOPER
Nicolás Recabarren,
Tomás Batista

PUBLISHER
Nonsense Arts

PRICE
£7.19

RELEASE
Out now

REVIEWED BY
Jason Coles

VERDICT

Ethereal is a truly unique puzzle game that thrills the eyes and ears.

77%

Rated
Review

HIGHLIGHT

The daily episodes – if you're able to co-op with a chum, of course – is *Rico* at its best. By chucking you straight into the fray and donating a bevy of half-decent weapons with which to experiment, there's a lot more fun to be had here than grinding through the rinse-and-repeat story missions.

Review

RICO

▲ Bodies flail around with ragdoll effects so exaggerated, they'll be rolling around several seconds after they've snuffed it.

Living proof that you really can have too much of a good thing

Info

GENRE

First-person shooter

FORMAT

XBO (tested) / PC / PS4

DEVELOPER

Ground Shatter

PUBLISHER

Rising Star Games

PRICE

£15.99

RELEASE

Out now

REVIEWED BY
Vikki Blake

VERDICT

While an enjoyable distraction for an hour or two, *Rico* simply lacks polish, poise, and purpose.

44%

There's an ancient proverb I just made up that says: "the greatest ideas come from the simplest seeds." *Rico* is just such an idea – a truly uncomplicated game sprouted from perhaps the simplest seed of all – but somehow it is not remotely great, no matter how many times I replay it or how many ways it tries to distract me with its stylish cel-shading or funky soundtrack.

Technically, it's called *RICO* – all caplocked and shouty and aggressive, as though epitomising the furious, moustachioed men you'll meet in the game – but for both our sakes (no one wants to be shouted at from the pages of a magazine, do they?), I'll proceed by calling it *Rico*. In it, you kick in doors and kill aforementioned furious men – because you're a Good Guy and they are all Bad Guys, of course – and... well, that's it, really. Kick in doors. Kill angry men. Rinse. Repeat. Ad infinitum. End of.

In its defence, *Rico* continually refreshes your experience by the procedural generation of its missions, and while that does, in theory, make every episode different, in practice it does nothing, as *Rico* recycles the same handful of props with reckless abandon that inexplicably – almost *mystically* – makes every unique level look exactly the same as the ten that came before it. And while it is a pretty easy premise, the tutorial fails to impart crucial information about how to kick in a door in the first place, which means

you'll spend half of your opening hour fruitlessly mashing buttons, and the other half desperately overcompensating for your gun's aggressively floaty crosshairs.

And this is the real problem with *Rico*, unfortunately. While I have a begrudging affection for the tuneless grunting of the bald, baseball-batted buffoons and the game's unapologetically flamboyant bullet-time effect that unfolds every time – without exception – you kick down a door, the sad fact is *Rico* is an arcade shooter with thoroughly dreadful gunplay. While your

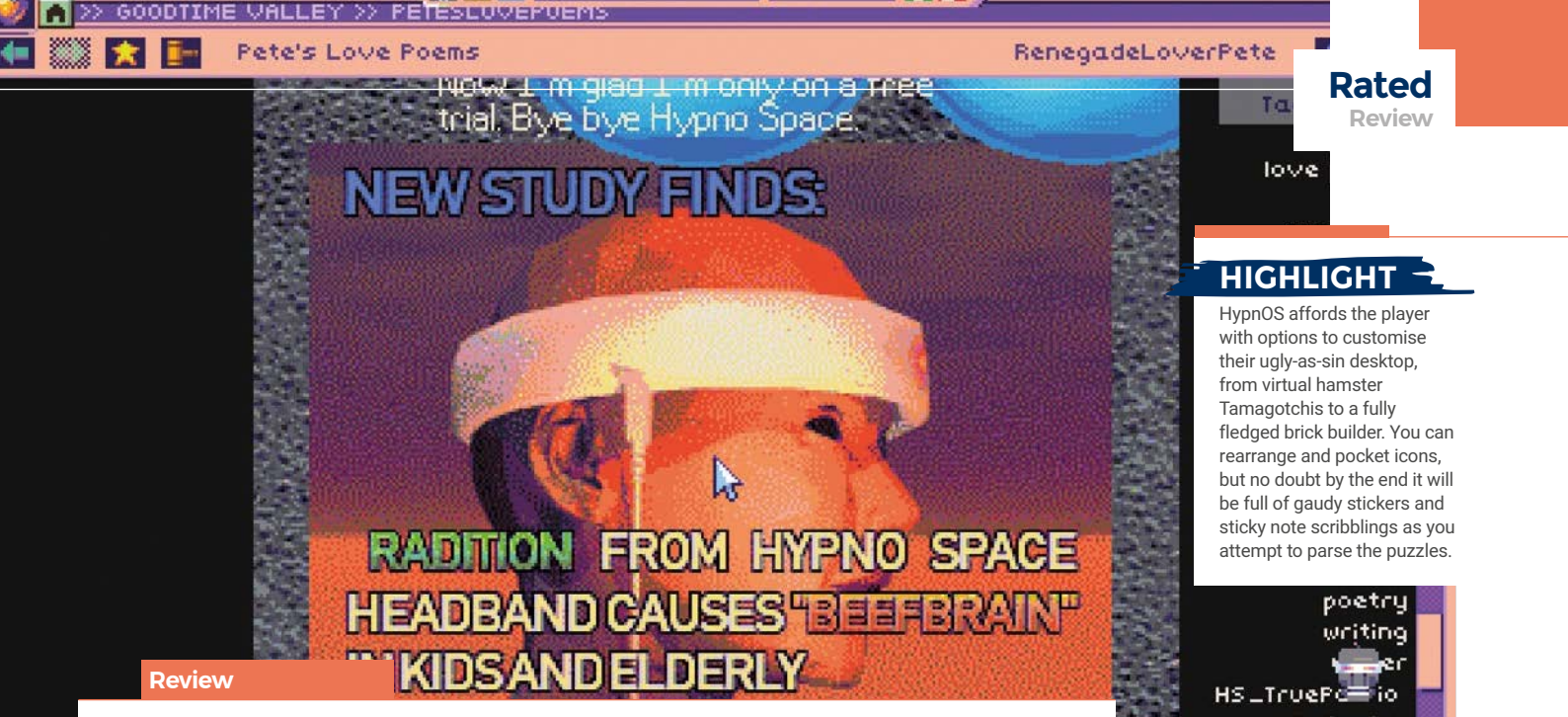
"I have a begrudging affection for the tuneless grunting of the bald, baseball-batted buffoons"

armoury does improve as you unlock better gear, shooting never feels meaty or satisfying enough to properly reel you in, particularly as your cut-and-paste enemies are neither memorable nor particularly intelligent, often impaling

themselves on the furniture, the environment, or occasionally glitching out completely.

There's no doubt that with a pal beside you, *Rico* could be entertaining for an evening or two, but I didn't successfully matchmake with anyone during the several days I spent in the game's company, and playing on your own quickly becomes a repetitious, flat, and thoroughly un-fun affair.

That said, I like *Rico* in the same way I like reality TV: they're both terrible and I probably have something more important to do with my time; yet here I am, kicking in another door and gleefully battering more bald men to death. And in the game. 🙄



Rated
Review

HIGHLIGHT

HypnOS affords the player with options to customise their ugly-as-sin desktop, from virtual hamster Tamagotchis to a fully fledged brick builder. You can rearrange and pocket icons, but no doubt by the end it will be full of gaudy stickers and sticky note scribbles as you attempt to parse the puzzles.

poetry
writing
er
HS_TruePo io

^ Netizens access Hypnospace via a janky-looking headband during the dreaming hours, which naturally leads to hypochondriac speculation.

Hypnospace Outlaw

The information superhighway finally reaches its potential

I was sat at my living room table eating dinner and taking notes when I heard it. "Don't be long, Jordan Oloman." As soon as the mechanical voice hit my ears, I felt a hot flush of fear. Something was calling for me. After a blank contemplative stare that felt like an eternity, I went to check it out, holding my laptop in hand like a pointlessly expensive cudgel.

Alas, this was no home invader, just Hypii, my trusty virtual companion reminding me via text-to-speech that I had to get back to my post. See, I've been on active duty enforcing the internet in *Hypnospace Outlaw*.

A simulacrum of web browsing in the nineties, this nostalgic indie effort turns the player into a dial-up detective at the turn of the millennium. Y2K is fast approaching, and the netizens of this brand new social platform are up to no good, or, at the very least, they're breaking the flimsy moral code set out by the indecisive, supposedly bipartisan overlords who seek to moderate it. Sound familiar?

As you're treated to a mostly broken tutorial where a bug-eyed pseudo-3D mascot floats through a pixelated ether, you quickly realise passion oozes from this game's every web-pore. The user interface receives about as much, if not more care than its tricky puzzles. It's so deeply charming to hear voice clips with harsh cuts at either end once more, as if the subject is speaking through an antique walkie talkie. Regardless of the specifications behind your

modern gaming rig, pages shudder and aberrate as the virtual machine tries with all its might to load them, and dodgy bloatware can flood your workspace with viruses. It's endearing, mostly thanks to the rib-tickling writing adorning each page, fleshing out users and painting a picture of a pixelated Eden, its wide-eyed inhabitants gleefully chomping on the forbidden fruit.

You spend most of your time worming your way into fringe internet communities and unravelling them, from primitive file-sharing networks to virtual spiritual communes. One early case has you seeking out infringing images of a children's cartoon character that netizens are homaging on their domains.

Easily the best part of the game is how it makes you question the particulars of your web policing as you deal with harassment and copyright cases resulting in complex moral quandaries. Any more notes on the incredible story would spoil the great mystery of Hypnospace, which is something that should be approached with as little prior information as possible.

Fiddly at times, *Hypnospace Outlaw* straddles a thin line between authenticity and frustration when you're in the thick of it, but with a belly laugh only ever just a click away, you'll soon start to forgive any minor gripes. Instead, memory allocated for critique will be replaced by the dangerously addictive and authentic webpage jingles. I left Hypnospace begging for a support group for those obsessed with the 'Granny Cream's Hot Butter Ice Cream' rap. 🗨

"Passion oozes from this game's every web-pore"

Info

GENRE
Simulation

FORMAT
PC (tested)

DEVELOPER
Tendershoot /
Michael Lasch /
ThatWhichIs Media

PUBLISHER
No More Robots

PRICE
£15.49

RELEASE
Out now

REVIEWED BY
Jordan Oloman

VERDICT

A satiric treatment of late nineties web culture that deftly unravels the murky politics of internet control, *Hypnospace Outlaw* is a successful simulation of the millennium just begging to be explored.

86%

Info

GENRE
Futility simulator

FORMAT
PS4 (tested) /
XBO / PC

DEVELOPER
FromSoftware

PUBLISHER
Activision

PRICE
£59.99

RELEASE
Out now

REVIEWED BY
Ian Dransfield

HIGHLIGHT

You'll have hundreds of swordfights through the game, but *Sekiro* manages to keep them all thrilling – either they're over in the blink of an eye, or the unrelenting see-saw assault goes back and forth for a few minutes. Whatever the case, they're all brilliant.

Sekiro: Shadows Die Twice

Stand and fight, coward

The number of times I told myself, aloud, to 'stop dodging' while playing the game. The number of times I claimed it was the game being cheap, and 'cheating', when I once again died. The number of times I roared with satisfaction at taking down a particularly challenging (i.e. all of them) sub-boss. *Sekiro: Shadows Die Twice* is an intense experience that's unlikely to be forgotten by anyone who plays it for even a brief stretch. FromSoftware – backed this time by Activision, of all publishers – had a lot to live up to with its previous slate, but by crikey, that studio does not make these things by accident.

You are a nimble shinobi tasked with... well, it's a clear and simple story, but it's not important. What is important is the game brings to mind – along with the *Soulsborne* titles – the likes of

Tenchu. Nimbly navigating the world, using a prosthesis to grapple up to nearby rooftops, you hide in the shadows and strike from cover, thinning out considerable enemy numbers while making your way from one boss encounter to another. Even if you never got into stand-up-and-fight battles, I think there'd be a lot to recommend about *Sekiro*. But you do get into fights. And you do stand toe to toe. And you do, spoiler alert, die a hell of a lot, because this is a game by Hidetaka Miyazaki, and he is a man who dislikes it when players get to be alive all the time.

Sekiro offers up death not just as an inevitability and practical learning tool, but one of tactical advantage too. Your ability to resurrect – a limited number of times – at a moment of the player's choosing offers the chance to wait, to play dead, to rise again and bring judgment down on those

▼ To bring a football analogy in, this is the point you'd describe as 'squeaky bum time'.





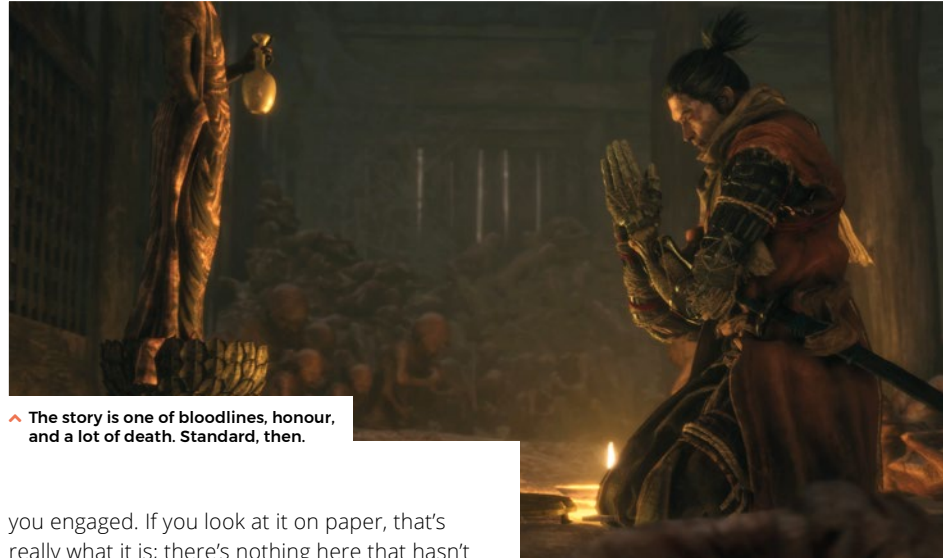
▲ Honestly, it rarely makes you go 'wow', but *Sekiro* has its moments, graphics-wise.

who not long before thought their job was done. It's a straightforward mechanic, but one that highlights the differing approach to death *Sekiro* has when compared to that of the *Souls/Bloodborne* games.

While there it was live, die, try to get back to where you were and pick up where you left off, here it's more about accepting your fate and learning that you can't always win. You can come back, should you have the stored up live-again power, but most of the time it will be a straightforward case of death, dying, and not living any more. The more you die the more afflicted the world around you becomes with a disease linked to your inability to keep living. The more you die the less likely you are to be saved from losing half of your earned money and progress towards new techniques. *Sekiro* doesn't focus on picking up where you left off, on building up and continuing the slog; it instead backs the player into a corner and encourages – forces – them to get their hackles up *and fight back*.

See, that's the trigger here, the eureka moment in something that initially felt to me like a trudge through needless difficulty. *Sekiro* spells it out and puts it there in plain sight – a loading screen literally tells you the shinobi are aggressive combatants. You are a shinobi. You need to be aggressive. Stop dodging. Stop pacing around waiting to strike. Stop letting them come to you and overwhelm you. It can be difficult to come to terms with this, especially coming in direct via From's previous titles, but when it clicks, the click is hard. Death – repeated, incessant, death – might have backed you into a corner, but the learning experience that comes with those deaths has equipped you with all the tools you need to unleash that pure aggression on those who stand in your way.

Really, *Sekiro* is pretty basic stuff – it's a lot of killing, sneaking, swordfights, and a story that manages to lose some of its allure compared to the *Soulsborne* games by being far less obtuse. It's any number of mid-range games from the mid-noughties, balancing its appeal on a few mechanics and hoping that's enough to keep



▲ The story is one of bloodlines, honour, and a lot of death. Standard, then.

you engaged. If you look at it on paper, that's really what it is; there's nothing here that hasn't been done elsewhere before. But there's also a hell of a lot here that hasn't been done as well before. It might be balancing its appeal on the FromSoftware name and a few mechanics, but FromSoftware has earned that name, and those mechanics are often – if not always – flawless.

'Not always'? Of course not. Your failures are your own, and while the game can sometimes feel unfair, it's usually your own fault when you die (for the 800th time). But sometimes, here and there, the fourth wall comes tumbling down – an enemy sees you on the other side of a wall, another spits his poison through a rock, an ogre afraid of fire doesn't react to being set alight because it was in the middle of a recovery animation when lit up. Things do happen that shouldn't, and though they're few and far between, in a game as tough as this, it does prove disproportionately irritating when they pop up. Ruinous though? Of course not.

I came into *Sekiro* not fully knowing what to expect, with a head full of tactics and techniques learned from the games I automatically assumed it would ape. I was ready to tackle the hype, to look for the seams, to point out the ninja's new clothes and publicly sacrifice the ceremonial giant chicken. What an idiotic boob I was, and how this game let me know. *Sekiro: Shadows Die Twice* is an understated masterclass in game design; endlessly inventive while simultaneously recognisable, it offers a challenge in both learning to beat it while re-learning what you think you know about From's titles. It's absolutely infuriating, and I have to apologise in writing for scaring my dog by shouting at the TV so much while playing, but when the sense of reward is so great it's soon forgotten. What a bloody *good* game. 🐕

▼ You'd think it a boon that most bosses can be hit with stealth deathblows. And yet...



VERDICT

A straightforward, difficult joy, *Sekiro* blends refinement with unlimited satisfaction.

87%

Rated
Review



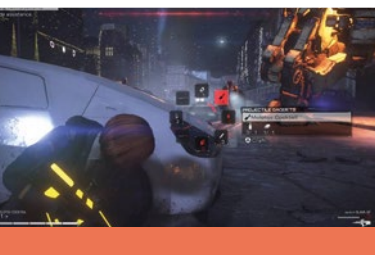
HIGHLIGHT

The premise of the game remains appealing, and there's extra intrigue in the decisions you have to make in each chapter that can change the fates of various NPCs. The main characters are also a decent enough bunch. Sadly, you have to play the game to see what happens to them.

▼ Crafting and gadget selection menus are tiny and fiddly, and the game doesn't pause or slow down when you use them.

Review

▲ Just when you think things can't get any worse, the game introduces escort missions. At least they're optional.



Left Alive

Left alive? If only they'd put it out of its misery

Info

GENRE

Stealth / survival

FORMAT

PS4 (tested) / PC

DEVELOPER

Ilinx

PUBLISHER

Square Enix

PRICE

£49.99

RELEASE

Out now

REVIEWED BY

Jon Bailes

VERDICT

The kind of barely functioning mess that's mercifully rare these days.

20%

There's a lot to get through here, so let's get the formalities out of the way: *Left Alive* is a stealth/survival/cover shooter set in the same universe as mech-based strategy series *Front Mission*. In it, you play three different characters who find themselves trying to escape a city occupied by hostile military forces. OK? Now, here's what's wrong with it:

Left Alive looks like a PS2 game, with basic models and textures, and poor performance. Characters are oddly proportioned and awkwardly animated. Environments appear open, but fences, piles of debris, and invisible walls constantly funnel you down paths you don't want to take. You can't climb onto roofs, take shortcuts through buildings, or crawl through pipes like in any half-decent stealth game ever. There's no mini-map, so you have to keep switching to the map screen to track your position. Staying hidden is almost impossible because enemy soldiers are so numerous, and every option you have seems designed to attract attention: the gadgets you craft cause explosions, you can't go through a door without standing up and dramatically flinging it open, your sneak attacks have the subtlety of a sledge-hammer. Literally. You creep up behind guards and smash them with a sledge-hammer. If you haven't procured such a bludgeoning tool, you can't do melee attacks. Controls in general are imprecise. Aiming guns and projectiles is particularly hit and miss. Literally. You're never sure whether you'll

hit or miss. Headshots are no more effective than body shots. Exploding cans and Molotov cocktails have the impact of indoor fireworks. Given the number of enemies you're forced to fight, and how many bullets they can soak up, resources are ridiculously sparse. You get thrown without warning into lengthy scripted shootouts with insufficient ammo. Dead enemies rarely drop anything. Sometimes soldiers spot you in cover. Other times you think you're running through their line of sight and they don't notice. Sometimes they appear next to you. They have very short attention spans: run around a corner and wait a moment and they usually lose interest. They're all identical. Almost every situation plays out the same way. Your companion AI gadget keeps repeating the phrase, 'Caution, the enemy is approaching', even when the enemy is moving away. The save system is archaic, causing you to repeat whole sections each of the many times you die. In the end, you may as well simply run through each area and hope for the best. The dialogue is utter nonsense.

A few hours into the game, you get to pilot a fully operational mech (or 'wanzer'). Finally, it feels like a well-earned opportunity to turn the tables on the enemy and let off steam. You hop in and begin cathartically blasting away at the soldiers below. Then a few seconds later, as you're still testing out the controls, an enemy mech turns up and rips your machine to shreds. *Left Alive* actively wants to stop you having any fun. Don't give it the opportunity: just avoid it entirely. 🗑️



Less haste, more tank rush

Command & Conquer: Tiberian Sun is a forgotten gem

On watching a recent video in which a developer behind 1999's *Command & Conquer: Tiberian Sun* explained the neat tricks Westwood Studios used to make

its pathfinding AI better (in short: avoid making it look stupid), I was reminded of a time. A time when I played this game religiously. I modded it at home, making vast armies of Terminator rip-offs I could Arnie-rush the good guy GDI base with. I delighted in the ridiculous cutscenes featuring the likes of James Earl Jones and Michael 'I have a sad face' Biehn. I adored *Tiberian Sun*.

But it feels like this is one that's had the short end of the history-stick, being overlooked in favour of the (superb) *Red Alert* titles, out-nostalgia'd by the original game, and thoroughly ignored by those out for EA's blood when complaining about how the series has ended up. And damn it, it's not fair. *Tiberian Sun* is a very good game; a standout in the RTS genre not specifically for its smart, in-depth mechanics (more on those in a second), but because of its superb sense of self and atmosphere. No other RTS title – and few other titles of any genre – have been so positively dripping in such a self-assured sense of place.

It's not the near future of the original game or the alternate history of Yuri's Big Day Out ((not *Red Alert 2*'s working title) – this is a proper sci-fi

superb, awful sci-fi films from the 1980s and 1990s. Rag-tag good guys with questionable leadership; fanatical baddies with a sheen of respectability; mutants with terrible mutant make-up – it's all there. With gorgeous lighting, one of those soundtracks that melts into the back of your mind, and an almost alien landscape-like look to the world around you, *Tiberian Sun* still stands out to this day. Plus, as I mentioned, you can build an army of Terminator rip-offs, complete with robo-voice acknowledgements when you select them.

Mechanically, the series has never been on a par with the likes of *StarCraft*, and its depth of strategy never goes

much further than 'tank rush, win'. But that's ended up being another thing making *Tiberian Sun* more than just something I put on to jog the ol' memory. It's straightforward without being insultingly simple, it's a challenge without making me just want to give up, and if – when – I win a mission, I'm rewarded with Mufasa Vader acting as though he's a man who doesn't know why he has to do this nonsense. It's win-win-win, with tank rushes all around.

Command & Conquer: Tiberian Sun is available in a wonderful package of the original game and its *Firestorm* expansion (both released as freeware in 2010), with plenty of updates to make it run on modern PCs. Check it out totally free from wfmag.cc/tankrush. 🗨

“This is a proper sci-fi future the likes of which we'd seen in so many superb, awful sci-fi B-movies”

Wireframe Recommends



World in Conflict

PC

A more tactical take on the RTS genre that's managed to be all but forgotten on the big stage. Get it from GOG, and love that Cold War-gone-hot goodness.



Grey Goo

PC

Made by Westwood alumni at Petroglyph, *Grey Goo* is a familiar-but-modern take on the RTS genre. It's not without issues, but is definitely worth a bash for genre fans.



RimWorld

PC

A nod to the modern obsession with survival titles, we include *RimWorld* here because it's also an RTS of sorts, and because it's absolutely brilliant. Play it, enjoy it, cry when everybody dies.



Halo / Destiny

If Anthem has taught us anything, it's that Bungie gets making guns fun

BUNGIE / 2001 / 2014 / MAC, PC, PS3, PS4, XBOX, XBOX ONE, XBOX 360

Far be it from me, a decidedly British man with an equally British amount of access to firearms, to say what 'good guns' feel like, but here we are. And I'll ignore the voice in the back of my head wondering endlessly why I'd praise the mechanics behind a device made to kill, because... look, Bungie makes shooting *fun* in its games. It just does. There's a real catharsis to every press of the button and virtual pull of the trigger that just isn't present in most other games – and it was made all the more evident following the release of BioWare's *Destiny*-like, *Anthem*.

They're very similar games on a functional level: small teams of players band together to take on missions dotted about an alien landscape; enemies are unmemorable nothings you point at and press buttons at until they die; it's an intensely shallow experience but at the same time one that can be utterly captivating. They're both *that*. But one held my attention far longer than the other, and weirdly it's because of the shooting.


See, in *Anthem* the combat feels piddly and tiring; there's no *crack* to the firefights and little in the way of satisfaction when landing a well-aimed sniper shot on a distant alien... thingy. Considering dozens of combatants are often involved and thousands of rounds of ammunition light up the (alien)

night sky, it's as dull as watching Formula One on TV. Yes, I went there.

Destiny, meanwhile, offers a real sense of kinetic frenzy to every encounter. Shots whip and smack out, the handling of your weapon is comfortable and functional, but at the same time manages to feel like more than just a few pixels and polygons being pointed at another few of the same thing. You learn to like – even love, if you're a bit odd – your guns, and it's a fundamental aspect of the game that keeps you wanting to get into more firefights (and, thus, play the game for longer).

I've known that Bungie does its gunplay well for a long time, but it's that release of *Anthem*, the time with the game, the disappointment I couldn't

quite put my finger on for a while, that brings it all back to the front of my mind. Without good shooting, would we have cared about *Destiny*? Or anything else Bungie has done?

Because yes, the same applies to *Halo*, an imaginative and groundbreaking (on console, at least) FPS that tied everything together with some of the most balanced and satisfying gunplay around. There's a reason it became the de facto standard on which your in-game weaponry was modelled: Bungie gets its guns, and it gets them *right*. I'm still not applying for an NRA membership any time soon, but at least I know where I stand with these virtual boomsticks. 

“Destiny offers a real sense of kinetic frenzy to every encounter”

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Editorial

Editor

Ryan Lambie

Email ryan.lambie@raspberrypi.org

Features Editor

Ian Dransfield

Email ian.dransfield@raspberrypi.org

Sub Editors

David Higgs and Vel Ilic

Design

criticalmedia.co.uk

Head of Design

Lee Allen

Designer

Harriet Knight

Contributors

Byron Atkinson-Jones, Jon Bailes, Vikki Blake, Jason Coles, Konstantinos Dimopoulos, Kyle Hoekstra, Stuart Maine, Jordan Oloman, Lewis Packwood, Joe Parlock, Aaron Potter, Jeff Spoonhower, Hayley Uyrus, Howard Scott Warshaw, Alan Wen

Publishing

Publishing Director

Russell Barnes

Email russell@raspberrypi.org

Tel +44 (0)7904 766523

Director of Communications

Liz Upton

CEO

Eben Upton

Commercial Manager

Charlotte Milligan

Distribution

Seymour Distribution Ltd

2 East Poultry Ave, London EC1A 9PT

Tel +44 (0)207 429 4000

Subscriptions

Raspberry Pi Press, Mann Enterprises, Unit E, Brocks Business Centre, Haverhill, CB9 8QP

To subscribe

wfmag.cc/subscribe

To get help:

rpipresshelp@raspberrypi.org



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