Wireframe

LIFTING THE LID ON VIDEO GAMES

JAMES BOND

The ingredients of
a classic 007 game

MAKE A COMPUTER

Code your own
emulator in Python

FAR

CHANGING TIDES

Exclusive hands-on: in deep with Frontier and
Okomotive's unique adventure sequel

The politics of open-world games

Playing *Destiny 2* during this summer's *Season of the Splicer*, the game's latest seasonal content drop, I was pleasantly surprised by the portrayal of the player's character as the ultimate weapon of a dominant, if waning, empire.

The latest storyline features beloved main characters on the side of the player, decrying xenophobia against refugees and apologising for their genocidal attacks against the Fallen, an alien race on the verge of extinction. It's a good example of a game understanding the characters' place in the universe, and their relationships with others who find themselves in a position of material desolation.

Examining *Destiny* as a critique of imperialist and colonial practices, however, I found that very few games share this nuanced understanding of the power a certain few wield against those they see as subordinates. Then, I arrived at the conclusion that in their desire to give freedom of choice to the player, western open-world games such as *Destiny* can often lead to players replicating those relationships of control. This happens once the game hands the sandbox's keys to player bases who are taught about history from the perspective of a western colonial power. Simply put, players will imitate the world around them once they're in the driver's seat.

For example, despite its progressive plot line, the game repeatedly asks players to kill the very same Fallen that the narrative apologises for slaughtering – all to gain access to new weapons, upgrades, and materials, or simply to progress other story quests.

Splinter Cell: Chaos Theory game director and writer Clint Hocking calls this disconnect between what the player does in control of a game's character and the description of the game's linear story "ludonarrative dissonance", and *Destiny 2* is not its only sufferer.

The *Far Cry* series encourages players to dominate their environment through gameplay design and
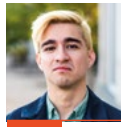
EDDIE VELAZQUEZ

Eddie Velazquez enjoys discussing the potential video game narratives can have as salient social commentary, as well as exploring labour issues in the industry. Find him on Twitter: **@ezvelazquez**

#54

narrative language, regularly asking them to "liberate" enemy camps and harvest exotic flora and fauna. Subsequent entries in the series have shifted some of the more egregious displays of exploitation to the villains, but since the gameplay loop is vastly the same between entries, the resulting narrative is strikingly familiar – the western man with the right tools for the job ventures into uncharted territories and justifies through economics, religion, or political ideology their exertion of control over land and those who inhabit it.

It's no secret that a lot of world powers throughout history have been propelled by their colonial extraction of seemingly unlimited natural resources found in other parts of the world. These notions of expansion and extraction are the by-product of capitalist practices where there is a relationship of control and subordination.

A lot of the criticism levelled at games for upholding outdated colonial values could simply be dismissed with a very chilled "Dude, these are just games". Games are a welcome escape from a world in which we are often beholden to the whims of private markets, and our choices often feel limited. They offer a playground where our decisions have a tangible impact on our environment and we are free to express ourselves within the context of the game world. Should they also need to make politically coherent statements about imperialism and colonial practices to be taken seriously? Perhaps not.
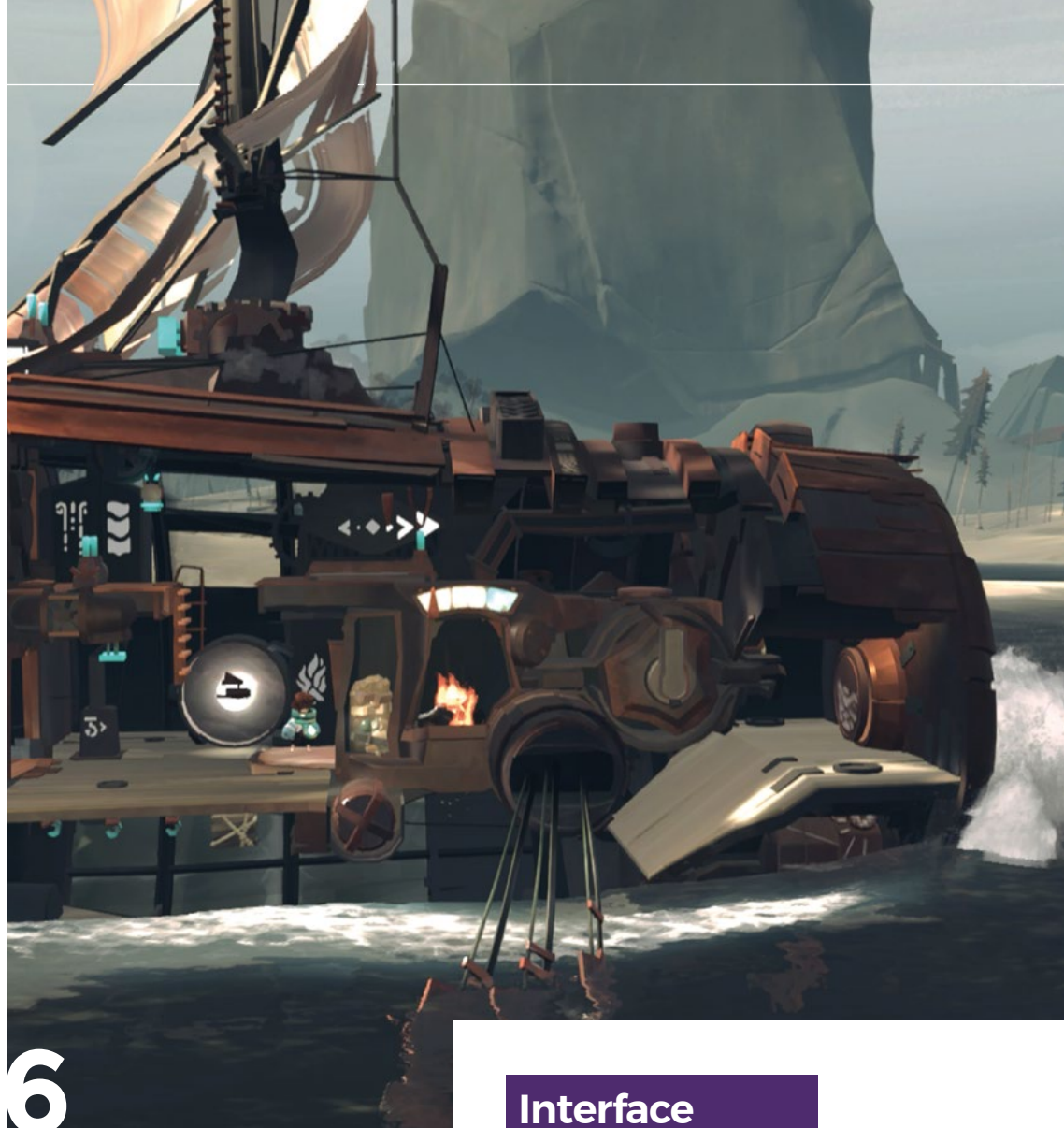
But if the industry seeks to gain more recognition for its storytelling capabilities and unique interactivity, then it would surely be in the interests of game developers to create with a more critical mindset, placing in the spotlight artists, writers, and designers who understand the extraction and exploitation of natural resources in their homeland, or those who have seen at first hand the impact that electoral meddling – caused by world powers with their own economic interests – can have on working-class people. Ⓦ

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WELCOME

Chatting to the developers of *FAR: Changing Tides* got me thinking about smaller, self-contained games that deal in evocative atmosphere rather than explosive bombast. Relatively speaking, quieter, even meditative games are a new thing when compared to the medium's age: it's only in recent years that we've seen such poetic titles as thatgamecompany's *Flower* and *Journey*, or the gently exploratory *Gone Home*. (The minimalist point-and-click adventure *Myst*, from 1993, could, I guess, be considered a distant ancestor to these games.)

Maybe it's taken time for the industry to mature to the point where some developers are brave enough to branch out and experiment with different tones or forms of storytelling in their games. As *Changing Tides* programmer and sound designer Fabio Baumgartner told me this month, "Innovation is always expensive. Making a triple-A game just takes humongous amounts of money, right? And so understandably, triple-A studios are more afraid to take that money and invest into something that's so uncertain."

Fortunately, there's a growing number of indie devs who have the space to create more personal, thought-provoking works. The wider industry may favour vast experiences that can potentially keep us engrossed for years, but here's hoping there'll always be space for shorter games that provide a welcome, soul-nourishing contrast.

Enjoy the new issue!

Ryan Lambie
Editor

FAR

FROM HOME

In a world exclusive, we go hands-on with Okomotive's adventure sequel, *FAR: Changing Tides*

I n a harsh, post-apocalyptic world, your only true friend is a ramshackle craft that clunks and heaves across the desolate landscape. In *FAR: Lone Sails*, that craft took the form of the Okomotive: a wheeled vehicle that had to be fuelled, guided, and repaired as it carried you towards your uncertain destination. In its sequel, *FAR: Changing Tides*, you take to the seas in a bulbous vessel once again powered by wind and fuel; you can hoist a sail to catch the breeze, or start up a furnace and use the craft's engine to barrel your way through the waves. As you variously jump on bellows to fan flames, adjust the angle of your sails to match the direction of the wind, or occasionally dive out of a hatch to gather fuel and solve puzzles, a quiet affection for your craft slowly builds in the mind: or at least, this was our experience when we spent an hour or two with an early version of *FAR: Changing Tides* in late July.

"We wanted to create the journey as a kind of relationship"

Even in the short time we had with the game, we found ourselves quickly forming an attachment to this heaving, rickety craft, with its rotund belly and fragile sail. As we wrestled the craft through a storm, and realised with a lurch that we'd left it too late to lower the mast and avoid a huge chunk of rusting architecture hanging down from the sky, we felt a genuine sense of regret as the sail came crashing down onto the deck. It was an easy fix, but we realised in that moment just how attached we'd become to our vessel.

For lead game and level designer Philipp Stern, the interplay between the protagonist and the ship lies at the heart of *FAR: Changing Tides* – indeed, he sees the entire game as a metaphor for how real human relationships evolve over time. "We wanted to create the journey of *Changing Tides* as a kind of relationship," Stern explains. "So getting to know someone and uncovering different parts of that person is like uncovering different parts on the ship as you unlock them. ➡

SPEED OF SOUND

For both *FAR: Lone Sails* and *Changing Tides*, Okomotive have used FMOD to help create the dynamic soundtrack – a piece of middleware that allows a relatively tiny indie studio to create music that responds to the player's movements. "It's super-approachable for anyone who's worked with audio tools before because the user interface is basically built the same way," Fabio Baumgartner explains. "But the tool allows you to establish logical structures, which can then be parameterised. And those parameters can be accessed from the game engine side. So FMOD is a really powerful tool which allows us to do these things quite easily. For example, switching between two parts of the track precisely on the beat is something that wouldn't otherwise be possible so easily, without an audio engineer or programmer having to take care of it. So it's really a godsend."

If you break something, afterwards, you know more about the ship – and I think that's the essence of how relationships work. Because the more you know about another person, the more you care for them, you're taking care of something that also takes care of you. It's having this symbiosis of interaction."

Roughly six years ago, *FAR: Lone Sails* began as a Bachelor's thesis project for the fledgling Zurich-based studio, Okomotive. Although *Lone Sails* was set in a fairly linear 2D environment, it created the illusion of exploring a much larger world, partly thanks to the responsiveness designed into the game's fabric: you could trundle through the wasteland as quickly or as slowly as you liked, depending on how efficiently you piloted your ship. Meanwhile, Joel Schoch's lush score would dynamically rise and fall, positively urging you to keep moving forward and uncover more of the bleak landscape.

FAR: Lone Sails was released in 2018 to critical acclaim, but that unexpected success left its creators in a quandary: what to do next? Go their separate ways? Come

up with an entirely new game, or attempt to continue *Lone Sails*' story? It was on a sabbatical in the Swiss mountains – taken as a recovery period from crunching to get *Lone Sails* finished – that talk first turned to making *FAR: Changing Tides*.

"We started throwing ideas for new games around – discussing whether we wanted to continue as a studio at all, and in what direction we wanted to go," recalls programmer and sound designer Fabio Baumgartner. "After a weekend in the mountains together, we decided to further delve into the universe of *FAR: Lone Sails*, and the genre of the vehicular adventure game. We felt we'd built a lot of expertise during *Lone Sails*, and still had ideas for things we wanted to do and challenges we wanted to approach."

"We had a good look at *Lone Sails*, and what appealed to us is that it feels to a lot of people explorative – a lot of people felt they could explore, and we wanted to expand on that," Stern continues. "In *Lone Sails*, you were very constrained, so even though it felt explorative, it actually wasn't."

This led to one of *FAR: Changing Tides*' new concepts: where you could only move your craft forwards in the previous game, your craft in the sequel can, once it's sufficiently upgraded, sink down into the briny depths. This not only opens up the

▲ *FAR: Changing Tides* introduces a new story and a new protagonist, named Toe. Here he is on the prow of the ship.

▲ The craft in *Changing Tides* is much larger and more complex than the one in *Lone Sails*, with a design that takes cues from whales and trains.

HEADS-UP

Like *Shadow of the Colossus* and *Journey*, *FAR: Changing Tides'* interface is pleasingly minimal: with little in the way of visual prompts to clutter up the screen, you're instead left to gradually figure out how the ship functions by yourself. "It comes from the idea that you have to learn the mechanics [of your ship], and it's not just the game telling you things," creative lead Don Schmocker tells us. "So you see that the engine's overheating and you have to react to that. In a lot of situations, the player has to use their real-life knowledge, I would say – how things work instead of relying on game logic. It helps to make the mechanics more intuitive and makes it possible for the player to figure out how things work by themselves. And that's also true with the story – we wanted to tell the story through the environment – through really big elements like ruins or statues, but also small ones, like plans or maps that you can find as the game plays out. To tell the story via the objects in the game was really important for us."

game for more exploration, but also adds to the way you approach and solve puzzles. In *FAR: Lone Sails*, you'd repeatedly encounter roadblocks that had to be cleared in some way before you could progress. In *Changing Tides*, the new-found verticality leads to more complex puzzles to overcome. Some obstacles, like a giant sea-wall, can be navigated around by simply submerging your ship and sailing underneath them. But others might ask you to grab a rope and grappling-hook, swim to the ocean floor, and use your ship's bulk to tear open a corroded old hatch, revealing a vital switch underneath. Still others require you to head onto dry land, where you'll find ancient bits of machinery that function similarly to the engine on your ship. "One of the pieces of feedback that was given to us after the first game was that people wanted more from it in terms of length, and that the puzzles and mechanics of the vehicle were simpler than they were used to from other, comparable games," Baumgartner tells us. "So we really talked a lot about how we can add depth to the game without making it less approachable for people... it was important for us to come up with game mechanics that allowed people a stronger sense of mastery over the game."

"In *Lone Sails*, even though it felt explorative, it actually wasn't"

To this end, Okomotive designed a bigger, more complex vessel that gradually reveals more of itself to the player over time. And as the player learns more about their ship's mechanics and how they operate, they'll find their skills tested further by the puzzles they'll find in the wider landscape.

"We want the player to learn organically," explains Stern. "One way to do that is for us to trap the player in a small space, where they have to figure out one part of how to do something. And having these base conceptions of what we wanted the player to do in the ship – like grabbing a rope and hooking it in – we split that up into different, small puzzles, which are interesting to solve at the beginning of the game on their own, and put them one after the other."

FAR: Changing Tides is a larger, more complex game than its predecessor, then, but Okomotive have been careful not to take the game too far down the survival route. You'll need to find fuel to keep your engines running, but you won't be punished too harshly if you run out; instead, the game rewards you for skilfully operating and manoeuvring your ship rather than, say, sending you back to the beginning of the campaign if you make a mistake. "We had the whole discussion about adding survival ➡

SHIP'S LOG

You'll find a careful balance of busyness and calm in *Changing Tides*, whether you're operating the sail, stoking the engine, carrying out repairs, or simply watching the waves swell and the landscape drift by. On occasions, the hazy sky will darken, clouds will gather, and you'll find yourself in the midst of a roiling storm. It's all wonderfully poetic.

For the occasions where wind-power won't cut it, we headed below decks to fire up the ship's engine. Again, there's a mix of intricacy and simplicity: hopping on one switch gets the engine running, while hitting another feeds fuel into the furnace. Fuel takes the form of flotsam you'll find outside the ship, and needs to be stowed on hooks in the belly of your craft. You'll have to nip down to the bottom of the ship at times, pick up a few items from your reserves, and cue it up ready to be fed into the engine. You can watch the pulley system feeding these morsels of fuel into the furnace, so you can see how much you're using.

With the engine fired up and fuelled, it's a case of jumping on a set of bellows to keep the engine burning; in most instances, you want the engine turning over, but not too hot – if you're overzealous and cause the engine to overheat, you'll have to grab a hose and dowse the engine to cool it back down.

Obsessing over mechanics, however, means you'll miss just how lovely the game's environmental design is. *Changing Tides*' ruined world is rich with mystery – vast statues stretch up to the sky among the rusting remains of steampunk tech. It's a place that feels at once familiar and refreshingly different. We left the demo itching to see more.

mechanics a lot during early development," says Don Schmocker, *Changing Tides*' creative lead and art director. "And it's always difficult to balance, to not go too far in that direction, but also still have some stakes or give some tension to the player. So it's definitely something that came up a lot and that we try to balance. It's not a survival game, but it's not just, 'You can do whatever you want' – you'll find yourself in dangerous situations. You can get better at the game and then get rewarded for it."

"With the new sail mechanic," adds Baumgartner, "[players can] adjust the sail depending on the wind direction. And if they catch the wind from the correct side, the sail's going to further expand and make the vehicle go even faster. So we have a mechanic which allows players who are willing to put in the effort to really adjust

> **"If it was open world, we wouldn't be able to put the same quality into it"**

the sail, to get an advantage and a reward for what they're doing, without punishing players that just open the sails, chill on top of their vehicle, and just enjoy the view."

One of the other ideas floated early in *Changing Tides*' development was to build the game around a much larger, procedurally generated landscape. As Baumgartner explains, though, this was soon dropped in favour of a more authored, handcrafted experience. "In the very first iterations of the concept, we were discussing more procedural approaches to the whole game – to completely put the player out in the wild. But when you start to think about what this really means for the gameplay, and how much work you have to put into it to achieve this freedom, without compromising the quality of the experience... it would have been so much effort to make this work. We would have lost a lot of narrative and atmospheric control over the game."

"If it was open world, we wouldn't be able to put the same quality and love into it, or craft it how we imagined it," Schmocker agrees. "With the underwater areas, we found a good solution, where it's linear, but it also gives the player the option to explore a bit and dive down whenever they want, so there's a certain freedom."

As in *FAR: Lone Sails*, sound and music are key to underlining the sense of freedom – and the illusion that you're at the helm of a hulking, powerful ship. For composer Joel Schoch, *FAR: Changing Tides* has given him the chance to expand the range of instruments he's using even further: the guitars and violins of the first game are joined here by "30 to 40 new instruments", including a vibraphone Schoch found in his uncle's house, a type of upright piano called a Celestia, and, perhaps most unusually, a bicycle. "We basically took a bicycle and scratched every little sound out of it that we could, like turning it around and putting some wooden sticks into it, and 'How does it sound if you use the brake?'" Schoch explains. "So we get these mechanical sounds – in this case, using a bicycle – but we try to manipulate those sounds to bring a more lively kind of feeling to them."

Having the score react dynamically to the player's actions was something the team sought to push further this time, too. "A funny anecdote here is that we used [a dynamic score] quite heavily in the beginning of [*Lone Sails*], yet the music was actually less dynamic in the later parts of the game," Baumgartner says. "But people still perceived the music to be hyper-dynamic, because it actually reacted to the player in a very dynamic way in the first part of the game. But of course, some of the strongest moments in the first game were when players realised that the music was

really responding to their actions, so this is definitely something that players are going to experience again."

"I think the biggest goal of the soundtrack is to keep the bond between the player and the vehicle," Schoch adds. "The music reacts to the state of the vehicle, and in the second game, it drives the player forward and strengthens the relationship you have with your vehicle."

Put all this together, and you have the makings of an atmospheric and soulful experience, one that artfully builds on the themes established in its predecessor. Its world is so seemingly expansive and immersive, in fact, that it's easy to forget that *FAR: Changing Tides* is the product of a young and relatively small indie team. "We're really happy that we're able to show the game off," Schmocker says. "With working from home, we worked on the

project together and talked to each other, but now it's a relief to see the reactions [from players] – to see if all the things we did have gone in the right direction. Sometimes we doubt ourselves a bit, or we're uncertain how things will pan out, so it's always good to get a reality check – how a first-time player experiences the game."

"We have certain emotions in mind," Baumgartner says, when we ask him about the themes behind the game. "There's still a feeling of loneliness and solitude... but there's also a new component to the story, which we really hope will excite players and bring some new emotion and passion into the whole thing." Ⓦ

> ⌄ **Many puzzles actively encourage you to leave the comfort of your ship and explore the depths.**
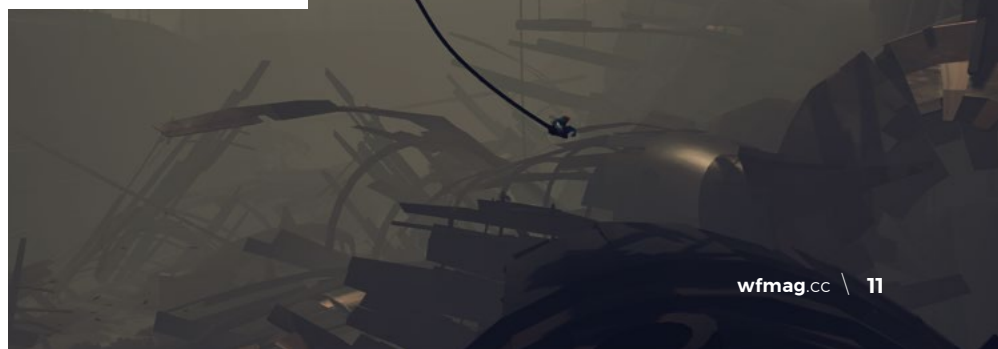
No more room in hell, you say?

You thought they'd been left for dead; instead, they're Back 4 Blood

Info

GENRE
Whack-a-zombie

FORMAT
PC / PS5 / XB S/X
/ PS4 / XBO

DEVELOPER
Turtle Rock Studios

PUBLISHER
Warner Bros.
Interactive
Entertainment

RELEASE
12 October

SOCIAL
@Back4Blood

Y ou enter into the first of four maps on a chained run to achieve an overall goal. There are four of you in your team. You acquire weapons and aid as you go, either from shops in areas of shelter or procuring them in the thick of things. And all the while, a malevolent, invisible AI 'director' is pulling the strings and throwing an army of parasite-infected zombies... sorry, 'Ridden' at you in vast, overwhelming numbers. When someone talks about *Back 4 Blood*, well, it's not even like Turtle Rock is trying to hide the fact this is the spiritual successor to *Left 4 Dead*, the dormant series by this very development team, featuring pretty much everything just written above. And this, friends, is no bad thing – Turtle Rock makes excellent co-operative multiplayer shooters (yes, even *Evolve*, the unfairly decried

monster-versus-hunters-'em-up), and from our time with *Back 4 Blood*'s beta, the team hasn't lost a single step.

It won't win many awards for originality, and it could never honestly be described as unique. But even at an early stage, it's clear that *Back 4 Blood* offers an exciting, tense, and balanced series of co-operative missions pitting your squad of four against hundreds of onrushing zombies. Sorry, 'Ridden'.

New mechanics are thrown in, like the card system (see box, opposite), and your team of survivors is, this time around, less about running for their lives and more about taking on missions to help what's left of humanity get the upper hand. Of course, visually, it's a huge step up from 2009's *Left 4 Dead 2*, but then that's mostly because *time happened*.

All the same, *Back 4 Blood* enjoys a moody, muted palette that helps the brief flashes of colour – blood coating your gun, the flash of a Ridden's eyes – pop all the more. It's effectively stylish in its presentation.

But probably best of all, what we gathered from playing *Back 4 Blood*'s beta is that your team of misfit horde-blasters is nowhere near as riddled with verbal diarrhoea as they appeared to be in trailers when the game was first released. Legitimately, it was a concern

▲ **Always good when your objective is a) to survive, and b) takes place in a gauntlet. Sigh.**

▶ **Actually staying behind and manning the minigun is brave, and not cowardly like my teammates thought.**
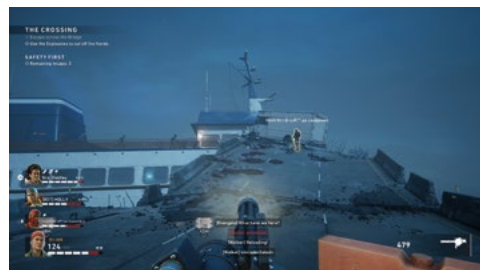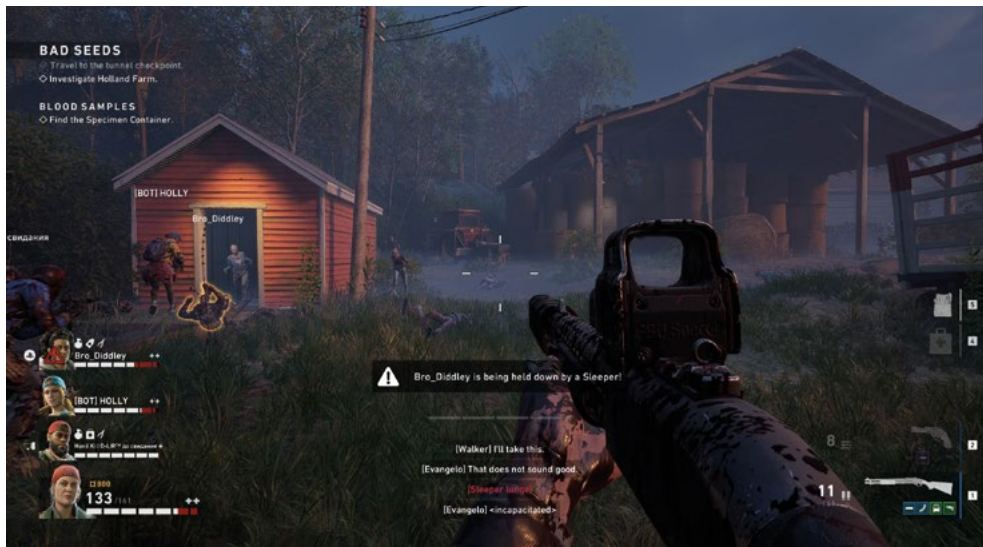
that Turtle Rock would have opted to make your squad a bunch of quippy quipsters, full of unnecessary anti-comedy lines and the sort of 'cool' writing that actively sets the cause of cool back 35 years. Instead, what we have is a group of four people – selected from a roster of eight – working as 'cleaners' through a series of levels, nattering away, hitting us with walls of exposition as you reach lulls in the action and – or 'but', if you will – being easy to ignore and not really annoying with it. Bliss.

It helps that the moment-to-moment action is the right side of great fun – that really does help take the emphasis off any quips and puts it squarely on focus, reactions, and situational awareness. Wherever you go, you will meet zombies – sorry, 'Ridden' – so it's rare, outside of safe houses, to have anything more than a few seconds without seeing the shambling gits moving. As such, this creates a distinct ebb and flow to the action; you move into a level and start picking off one or two enemies, which becomes a dozen or so, a teammate activates an objective before you're actually ready and, suddenly, you're swarmed by dozens of the blighters. But you're OK – you're picking them off, and you're working through it. The Ridden keep coming, though, and you start getting backed into a corner. Then the bigger ones turn up – enemies that can poison you, or hold you stuck in place until a teammate rescues you, or ones that just have giant hands with which to batter you to death. Before you know

it, you're on the verge of being overwhelmed, shots are firing non-stop both from you and your team, ammunition is starting to run low, and there's a hint of desperation on the horizon. It's intense. And, from what we've played, it's well-balanced too, with the action threatening to overwhelm you – even doing so at times – but never feeling like it's constantly too much, or like it's being unfair. If you work together, if you pick your shots, if you're in any way smart about it, you have a fighting chance. And that's the sign of very good design.

How *Back 4 Blood* holds up across its whole package, well that's up to the gods now. Well, the gods and the developers, at least. There's every chance the experience will be dulled over an extended campaign, that the cards system will operate as nothing more than a gimmick, or that, actually, the Witty Banter between teammates will become a big focus and ruin everything for anyone who can hear or read the dialogue. It's up in the air; this is based on a beta version of a game.

At the same time, though, *Back 4 Blood* is out not very long at all after you'll be reading this – it may have been pushed as an early, unfinished beta, but really the sly pooches at Warner were pushing out a pre-release demo; a version of the game much closer to the final released game than they're likely to let on. And as such, it's hard not to be excited.

Left 4 Dead is *Back 4 Blood*. ⓦ

> **"It's a huge step up from 2009's *Left 4 Dead 2*, because *time happened*"**

CARD-CARRYING

Cards make themselves known throughout *Back 4 Blood*, as players enter each run with a hand of up to 15 to choose from, after they're randomly drawn at the start of each new round. They can improve reload speed, buff your squad in some way, make cash drops more plentiful, and much more besides. On the flip side, the AI director is able to use corruption cards to hinder your progress, perhaps by adding a thick layer of fog to the upcoming map, or by making Ridden more aggressive. It's a decent-enough system, but we really need to play about with it more to see how *good* it actually is.

ANNO: Mutationem

Beijing-based studio ThinkingStars tells us about their heady brew of cyberpunk, 2D and 3D action, and zombie lizards

Sometimes, all it takes is a slight shift in perspective to make the familiar look fresh and new. *ANNO: Mutationem* deals in the sort of familiar cyberpunk staples we've all seen plenty of in recent months: the benighted city bathed in queasy neon, the collision of high technology, and urban malaise. But what separates this outing from other cyberpunk odysseys of its ilk is its almost seamless mix of 3D polygonal world and 2D, anime-style sprites.

As high-kicking mercenary Ann, you roam a high-tech city in pursuit of your missing brother, a quest that sees the tempo constantly shift from free-roaming adventure to side-scrolling brawler action. Armed with a gun, laser sword, and an array of combat moves, Ann makes for a formidable protagonist – and more than up to the task of fighting off the hordes of henchmen and what appear to be zombie lizards lined up in her path.

Keen to find out more about this unique-looking hybrid of 2D, 3D, cerebral adventuring, and reflex-testing combat, we caught up with lead producer Zhang Pingwen, lead artist Zhang Jian, and community manager Martho Ghariani to chat about their work-in-progress.

All told, there are 24 developers working on *ANNO: Mutationem*, with a few extra contractors handling sound and music.

Can you talk a bit about how the project got started? Did it begin as a cyberpunk game, or has its backstory/setting changed over time?
Zhang Pingwen: When we started out, we had this idea for a pixel-style, roguelike game inspired by titles like *Dead Cells.* Cyberpunk is a style most of us really dig, so while working on prototypes, the idea of 2D pixels and 3D gameplay came together and we decided to change the course to a plot-rich action-adventure game.
Zhang Jian: [Zhang Pingwen], a colleague of mine who I'd worked with years back called me and asked, 'Hey, do you want to make a pixel

Like last month's *Demon Turf*, *ANNO: Mutationem* uses Unity to blend 2D sprites and 3D environments.

game together?' I was super-thrilled, and that's how it started. Starting out, we wanted to make an action game similar to games like *Dead Cells*, or older stuff like *Castlevania*. But when our first prototype was done, we didn't really take to it as we had hoped.

This started a long process of reconsidering what we should do. About this time, the new *Blade Runner* movie came out, and I was like, 'That's it!' We took a world of cyberpunk and used some inspiration from the awesome SCP [an online collaborative fiction project] to infuse it all with a sense of the uncanny and the eerie.

> **"I cannot express the hours of experimenting we did on this"**

The cityscapes look amazing. Are these based on research into real locations?

ZJ: As you may have seen, our game features different cities, and all these have their own style. Noctis is your more recognisable Forever-Night-Mega-Towers-Dark-Alleyways cyberpunk trope – gotta have it – whereas the other towns, for example, the one where the main character lives, is more based on a European style. Also, the sun actually shines there!

To get back to your question, it's more like a mix of places I've been to, combined with stuff we made up alongside creating the cityscapes. We're aiming for a mix of different styles in one world.

The mix of 2D and 3D assets creates a unique feel of old and new – how did this come about? Did a lot of experimentation go into that?

ZJ: I cannot express the hours of experimenting we did on this in a numerical value! A lot. When we decided to adopt cyberpunk for our game world, we found out that pure cyberpunk is actually pretty hardcore, and while there's obviously a big market for this, we wanted to go in a direction that would be a bit broader, and so I decided to use the style of Japanese anime, which you can see clearly in the looks and the interactions between the main character and her friend. Because I love that style, but also because we think players will like this.

The 2D part really adds to the 'retro' feel of the game – a lot of our core members are roughly the same age, in their 30s, and so have grown up with these types of games, whether on the PC, NES, SNES, or what have you, and so it's cool to make use of this while at the same time doing new stuff with it. ➡

▲ The game's campaign can be completed in about eight hours if you blast through it, but will be closer to twelve hours if you take on side quests.

Adding the Z axis, which makes 3D movement possible in adventure mode, is something that looks real cool, [and] that people seem to like, but at the same time also created a whole world of challenges. That's mostly because you're working with 2D sprites in a 3D world, so the camera usage always needs to be in the back of your head because it leads to certain design limitations that you wouldn't have in full 3D. For example: 'OK, that character just disappeared from sight since the angle is wrong – let's try that again,' or 'I'd like to change the camera, but we didn't prepare for that angle.'

One fun thing is that you can really be creative: we added some cutscenes and interactions where you switch to a first-person view for a short time, which is kind of a surprise because that's not the first thing you associate with pixels.

How would you describe the plot, and how do the zombie lizards we see in the game fit into it?
Martho Ghariani: Our plot revolves around our main character, Ann, who's working as a kind of mercenary together with her hacker friend, Ayane. You start out in your apartment but get a call to check out your sister's bar in another part of town. When she gets there, she realises her brother Ryan has gone missing and sets out to

> **"One of the strengths of our game is also the biggest challenge"**

go and find him. In no time, you'll find yourself chased by this criminal organisation, watched by a mysterious character that keeps popping up. Trying to find where Ryan went pulls Ann and her friend deeper and deeper into a dark and inexplicable world.

The zombie lizard: I can't say too much about that, but what I can say is these types of bosses and enemies will be a common sight in the game, and they'll tie together with a central part of the plot. And they'll hurt you.

It's refreshing to see a female protagonist in a cyberpunk game like this – what sort of work went into designing her?
ZJ: I'm a big fan of female characters in games. A [couple] of my favourites are Claire from *Resident Evil,* and [Bayonetta], the protagonist of *Bayonetta* – I have a feeling I'm not alone! Ann had tons of versions before we reached the final one. The same goes for Ayane, although you don't control her, she'll pop up through a hologram several times. One of the things we're spending a lot of time on is the animations, as well as the different clothes for Ann, which you'll see pretty quickly in the game. Although resources are limited with pixel art – you can't just swap one costume on the model for
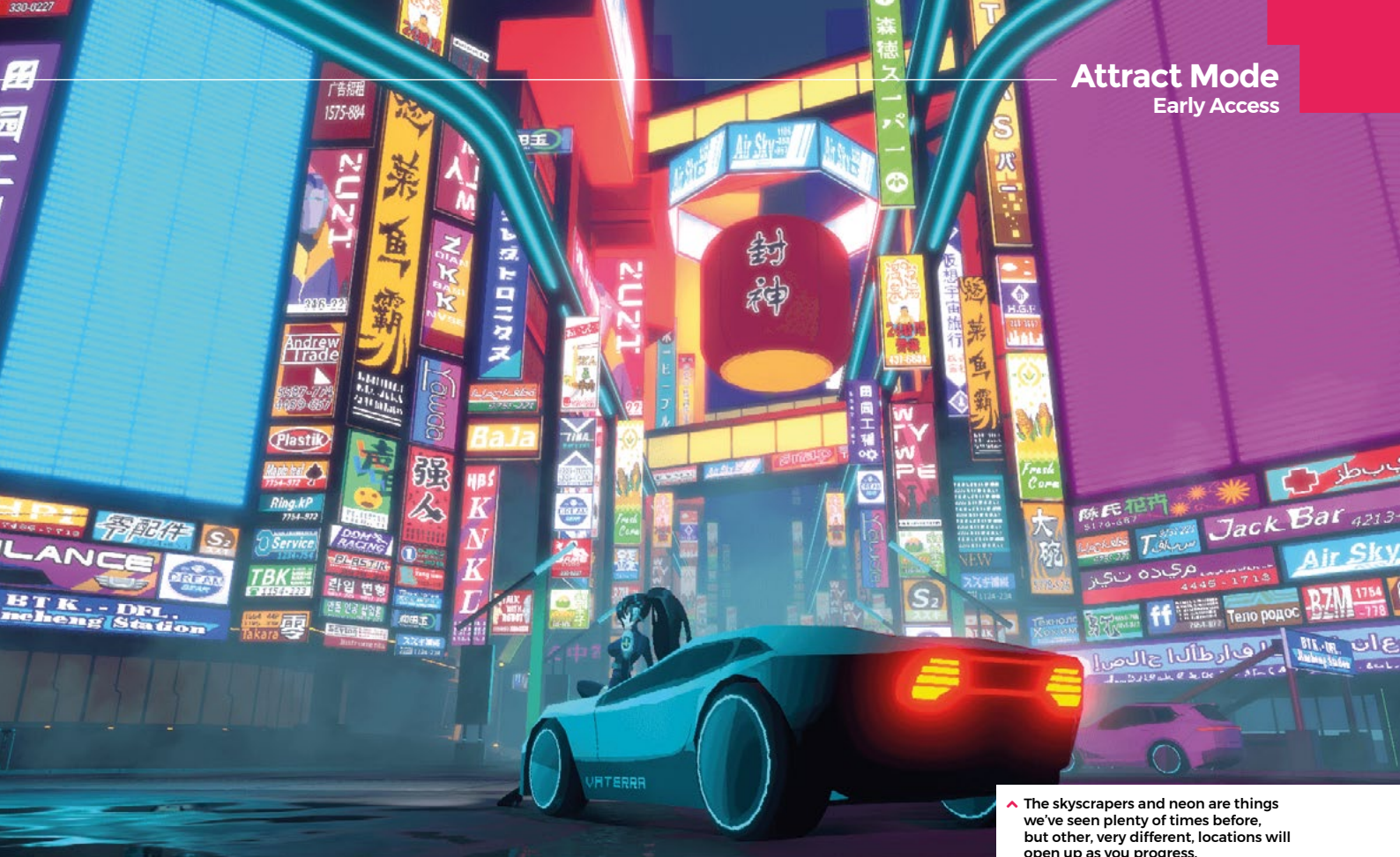
▲ The skyscrapers and neon are things we've seen plenty of times before, but other, very different, locations will open up as you progress.

another, but have to redo basically the whole thing – we had to add this in both for the story and also just because it's fun.

Ann has a lot of cool moves in the game. Are these things we'll be able to add to and upgrade over time, RPG-style?

MG: Yes! We have a full-blown Talent System where you can use your experience points to acquire new skills or get better stats. Apart from that, we have a weapon system in place as well, so you can buy different types of weapons – both cosmetically different as well as functionally different weapons, sword/double swords and guns – which you can upgrade. Then there's your wide array of buffs through items and grenades you can use in battle with different elements: ice for freezing enemies or fire to burn them.

What sort of scale and scope can we expect from the game? It looks as though 2.5D action segments are joined by more open areas in places. Is that the case?

MG: Correct! The game's divided into 3D sections where you can explore and roam freely, as well as 2D sections where you'll do the hacking, shooting, jumping, and overall ass-kicking. At the start, these are divided kind of clearly – sometimes you have an encounter in a city and you'll switch to combat mode – but as you progress, you'll find areas that swap

between the two, combining exploring with action, or you can see them as a break after some intense combat. You can then see if you can find items, clues, or what have you.

What's been the most challenging element you've faced in *ANNO: Mutationem* so far?

ZP: One of the strengths of our game is also the biggest challenge: combining a lot of different elements together into a whole, and by whole, we mean a *fun* unity of different elements that tell a compelling story in a rich world that players like to hang around in. That's what we're working hard to achieve with our first title, and hopefully, we won't disappoint our players.

Finally, what's left to do before the game's release? Do you have any post-launch plans you can talk about?

MG: Still quite a bunch [of things]. We just finished recording the Chinese voice-overs, and we're now preparing for the localisation process, including the English and Japanese voice-overs. Apart from languages, we have tons of polishing to do, which will take up most of autumn. It's a lot of long hours, but it's cool to see our game improving almost per week.

Hopefully, in the end, we'll manage to not disappoint everybody who's looking forward to the game – and perhaps interest some newcomers in the world of *ANNO: Mutationem*. Ⓦ

DEMO-GRAPHIC

ThinkingStars have released a number of *ANNO: Mutationem* demos over the past few months, which have been useful for gathering feedback and making improvements, Ghariani tells us. "A lot of players really love what we're working on so far, and we got some mentions by bigger game sites, which is awesome and very humbling," he says. "At the same time, those things that people liked less and I hope we can improve on – combat, the lack of voiceover – is something we were already planning on changing even before the demo, so it was cool to see we were on the same page as a lot of our players. Then there were tons of things we had never thought of until players said, 'Why is that like this? It doesn't work', or 'Why don't you change this into something else?'. Which was a help, because unfortunately, you develop blind spots when you're staring at the same stuff for days in a row."

That was the month that was

03

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02

01. Dotty

Dotemu, the retro specialist behind the likes of *Streets of Rage 4* and *Windjammers 2*, has been bought by Focus Home Interactive for £32.8m, it has been announced. The acquisition of the French studio also includes publishing label The Arcade Crew and could see an additional £12.8m paid out if revenue targets are met in the next two years. "This new collaboration will allow Dotemu to benefit from the incontestable expertise of Focus Home Interactive's teams for the production of AA titles, and thus launch the production of future remakes or sequels on licences of first-generation 3D consoles," said Dotemu CEO Cyrille Imbert.

02. Slippy

What do you get when you mix *Portal* and *Halo*? Broken servers, apparently. At least that's what 1047 Games, developer of *Splitgate*, found when it tried to push its mix of Chief and Chell to the masses. The game was overwhelmed owing to its incredible popularity, resulting in the developer opting to turn things off and regroup rather than try to wade through the problems as they arose. Since then, the team has turned things on with a strict queuing system in place and has secured further funding to polish things up. From bad comes good.

03. Trash panda

Typhoon Studios lives again, just with a different name: Raccoon Logic. The new-ish studio was formed after Google – which had gobbled up the *Journey to the Savage Planet* developer when it still had aspirations of being a company that made video games – gave up on its gaming aspirations. Raccoon Logic sees Reid Schneider and Alex Hutchinson continue their partnership, and the Savage Planet IP has been retained by the new studio. So that's a decent ending for what must have been a frustrating, albeit brief, period under Google's control.

Modder creates pocket PS2. It's incredible: **wfmag.cc/pocketoo**

GTA remastered trilogy rumoured to release in 2021 (or 2022)
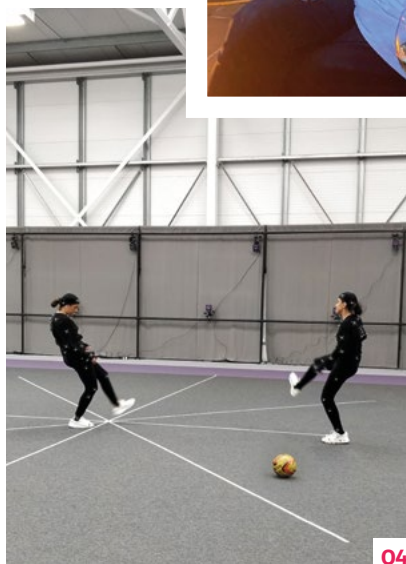
04. Football Womanager

Sports Interactive announced it will be introducing women's football to the long-running *Football Manager* series at some point in the future. While a specific time frame hasn't been established, studio head Miles Jacobson has gone into some detail on what it involves – a bespoke database, real-world scouting, motion capture with female footballers, financial structures, pronoun use in in-game text, and much more. "We know that adding women's football to *Football Manager* is going to cost millions and that the short-term return it delivers will be minimal," Jacobson wrote, "but that's not the point."

05. Mini Amiga

Retro Games Ltd announced its next retro games (limited) project: the A500 Mini – a shrunken clone of Commodore's Amiga 500 with its guts stuffed with emulation-y bits and pieces and coming with 25 games at launch. Said games include the likes of *Another World*, *Speedball 2*, and *The Chaos Engine*, as well as AGA titles like *Alien Breed 3D*. It comes with a mouse and joypad, and you can tweak a bunch of settings to make it your perfect Amiga-like experience – and you'll be able to side-load your own games on the system too, so no limits there. The A500 Mini will launch in 2022, priced at £119.99.

06. RIP Ian Richardson

Sumo Digital business development director Ian Richardson died suddenly in July, aged 53. The industry veteran had previously held positions at the likes of Ocean, Rage, and Gremlin. A statement released by Sumo read: "Sumo has lost one of its brightest stars. Gone suddenly and far too early, our thoughts are with his family and all that loved him at this time… So many of you knew him, he was a wonderful, caring, gentle person, and much-loved industry-wide.

"The loss of Ian leaves a hole in Sumo, in the industry, and in all of us who were lucky enough to call him our friend. He will be greatly missed."

Google considered buying Epic Games during *Fortnite* spat, according to court docs
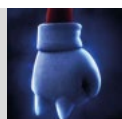
Idris Elba to play Knuckles in *Sonic* movie sequel

07. **ActiBlizz**

The fallout from the allegations coming out against Activision Blizzard has continued, with Blizzard president J. Allen Brack announcing he was stepping down, as well as a number of other staff including the company's head of HR, the lead designer and game director of *Diablo 4*, and a *World of Warcraft* designer – among others. Honestly, there's way too much gone on – and going on – to do justice here, so it's recommended you head to this Reddit megathread for all the updates as they happen: **wfmag.cc/blizzard**.

08. **Apex lead gone**

Apex Legends' lead game designer has left the project following the resurfacing of racist and sexist comments made in 2007. Daniel Z Klein admitted screenshots of blog posts in which he referred to women and people of colour in derogatory terms had indeed been written by him, and it was announced he had left Respawn not too long afterwards. Klein penned an extended apology on Twitter, stating: "I have poured so much energy into becoming a better person since then, and right now I'm just very depressed because it feels I'll never be able to make up for who I was."
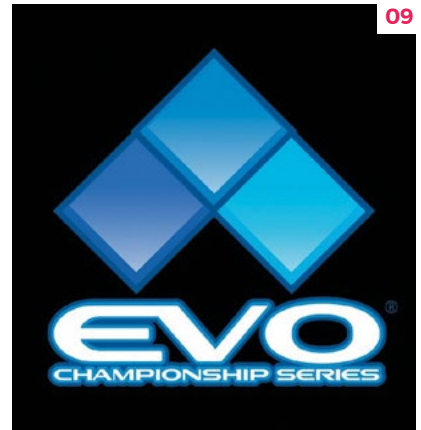
09. **Evolving**

Evolution Championship Series – commonly known as Evo – will be returning to the physical realm for its 2022 edition, it has been announced. The largest fighting game tournament in the world has run digitally recently for obvious reasons, but announced its return to Las Vegas, running from 5–7 August in 2022. This will be the first in-person Evo since it was taken over by Sony and eSports venture RTS, though even with PlayStations slapped all over next year's event, Sony has assured us things will remain open to all platforms.

Half-Life 2: Remastered Collection coming – it's a modder's project

**My.Games and Google running $30m mobile game investment Game Drive 2.0 program**

11

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10. **No more gamers**

Elle McCarthy, VP of brand at EA, either doesn't care if they stir up the hornet's nest, or they are genuinely on to something, telling Adweek "there's no such thing as gamers". Brilliant. The logic behind it tracks – plenty more people play games than identify as gamers, especially given certain… undesirable associations with the term (not McCarthy's words), and handling branding for EA means looking at the bigger picture to make more delicious money. "Did you know that only 14% of players self-identify as gamers, and that is as low as 6% for women?" No Elle, we did not. Gamers are dead.

11. **Card killer**

Amazon's *New World* brought some of its closed beta players into a new world of pain after reports emerged the game was killing RTX 3090 graphics cards. They're the ones that go for just shy of two grand on eBay right now. The problem was very limited and (in that limited batch) only seemed to impact EVGA-manufactured cards, *and* EVGA then went on to say it would replace all the cards that had died, *and* Amazon patched the game to (hopefully) remove any potential issues. So it should all be good again. But *still*.
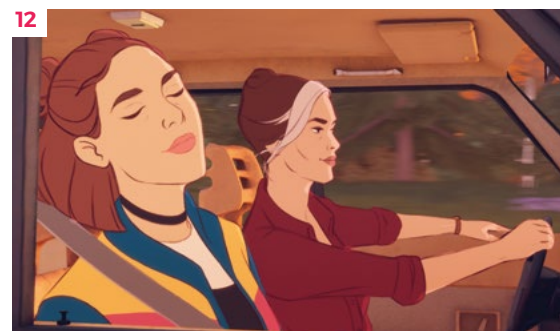
12. **Fullbright management**

Fullbright co-founder and part of the team behind *Gone Home*, Steve Gaynor, has stepped back from lead development duties on the studio's upcoming *Open Roads* following complaints around his management techniques and, in particular, attitude towards female employees. The move came earlier this year but was acknowledged by Gaynor on Twitter in August, alongside an apology. Former Fullbright employees described Gaynor's behaviour as "controlling" and referred to him as a "demeaning presence" who regularly engaged in microaggressions towards female colleagues and attempted to micromanage their contributions to projects. "My leadership style was hurtful to people that worked at Fullbright, and for that, I truly apologise," Gaynor wrote.

Neill Blomkamp gets into gaming as Gunzilla Games' 'chief visionary officer'

Amplitude remove Denuvo DRM from *Humankind* – before the game is out

Post Apocalypse

Pie charts, dodgy game controls, and obscure Amiga games: it's this month's letters

Issue #53

Flying solo

Back in the days of the Amiga, there was a really strange adventure game where you could get eaten by a giant lawn-mower, and I think there was even a giant, angry wasp floating in the sky at one stage. Can anyone remember what the game was called? I swear I didn't imagine it – I'm pretty sure it even appeared on Saturday morning television. Any help would be gratefully received as plugging 'strange Amiga game' into Google hasn't yielded much fruit so far.
J Hopkins

Ryan writes:
I do believe that's *Weird Dreams*, which is a game I haven't thought about in absolutely years. Like you say, it was really strange: basically a series of individual scenes and minigames set inside the slumbering mind of a hospital patient. Looking back, I think the game was probably more memorable for its graphics than its actual gameplay (some of the minigames were unfairly punishing), but it was certainly one of the braver leaps of imagination from the 16-bit computer era.

The Saturday morning TV show it appeared on, I've learned, was *Motormouth*, which ran on ITV from 1988 to 1992. In one segment, viewers called the show and attempted to play a game by shouting instructions down their phone line – *Weird Dreams* was the chosen game for a while, and was later replaced by The Bitmap Brothers' *Magic Pockets*. Now there's a weird thing we don't see on TV anymore.

Missing Missives

Hi Wireframe – what happened to the letters pages last month? I always look forward to reading people's rants, and also perusing your spurious pie charts. Don't tell me you're getting rid of all this?
Wayne Mills

Ryan writes:
Sorry about that. The letters pages are alive and well – we had to give them a break last month because we ran out of space. But look! They're back, and so are our scientific and not at all spurious pie charts.

Lara, Lara Laughs

I very much enjoyed Craig Grannell's opinion piece about 3D platformers last month. It's easy to look back at the mid-1990s/PSone era through rose-tinted spectacles, but some of those early polygon-based games really don't hold up. I replayed the original *Tomb Raider* recently and I was surprised to note how much ropier the controls were than I'd remembered. Perhaps there's a market for a *Tomb Raider* remaster that makes Lara Croft move less like a tank?
Andrea White

Ryan writes:
Time's a funny thing: I remember thinking, back in the nineties, how impressive it was that Lara had so many moves available to her. Now I play *Tomb Raider* and wonder how we ever coped with the old 'rotate left/rotate right' controls without throwing our gamepads (or keyboards) out of the window. Still, *Tomb Raider* did have a 'hop back' button, which I think is due a revival in modern games.

Hello Neighbour

Hello. And Bye.
RobertJab

Ryan writes:
Hel... oh, he's gone.

Erratum

In issue 52, we listed one of the winners of our FUZE retro coding competition as Develius. It should have been spelled Devieus. Apologies!

Shortcuts

To tie in with the wealth of recommendations you'll find on page 70, we asked our readers on Twitter: what sports game would you recommend to a friend who hates sport? Here are a few of our favourite suggestions...

The old Epyx *Summer Games* titles and the others in the series. So many damaged joysticks. We used to pack ten people in my uncle's office and take turns playing on his C64.
@crushbugdf

Wii Sports is good as it's easy to pick up but hard to put down.
@femtosonic

Tony Hawk's Pro Skater 1 + 2. The sports games that everyone played, especially if they didn't like sports but wanted to enjoy something extremely cool!
@solidkostas

Behold the Kickmen. It's a total send-up of football and its most hardcore fans, but still hides a decent game behind all the ridiculousness.
@TheGamerScot

Rocket League. Like football with cars, but needs no knowledge of or affection for sport whatsoever.
**@bazzacollins**

Sensible Soccer. The computer isn't so good that you don't stand a chance. Simple controls. Just a lot of fun.
@dazfuller

The burning question

Continuing the sports theme again, this month's reader poll pondered: which of these video game mega stars most deserves their own sporting spin-off? Keeping fit with those hapless Kerbals, it seems, is a potential hit in the making.
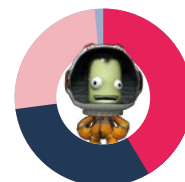
- **Kerbal Fitness Program** – **41**%
- **Solid Snake Table Tennis** – **25**%
- **Lara Croft Archery** – **32**%
- **Ellie Williams' Golf** – **2**%

Incoming

The Outer Worlds 2

Nothing to see here yet, as the gleefully honest first trailer for *The Outer Worlds 2* revealed not too long ago. Still, we're keen – the original game was a hoot, and with foundational aspects established, it's going to be exciting to see where Obsidian takes things with, you would expect, slightly looser reins.

Mechajammer

Cyberpunk as a style might be a bit flavour of the month/year, but it doesn't stop us from getting excited when something pops up that puts ticks in the *Syndicate*, *Shadowrun*, and who knows what else boxes. *Mechajammer* is a grim CRPG mixing tactical turn-based (pseudo-real-time) combat with open-world exploration and a hell of a lot of grime. You can get a demo right now, so go and do that and see if this particular brand of grimness is for you.


Farming Simulator 22

Are we at the point where we can get into this without the thinly veiled derision? Because the Giants' sim games have been solid timesinks for a number of years now, and *Farming Simulator 22* is sure to be no different. The headline addition this year is seasonal cycles, which forces you to mix things up and not just rely on endless, everlasting wheat fields. It's not going to be a huge step into the unknown for the series, sure, but they're always nice, relaxing fun. What more do you need?

Final Fantasy XVI

Arguably this is news, but what the hey, we can put stuff where we want, being renegades and all. Still, a *Final Fantasy XVI* update: the game's cutscenes are being recorded in British English, both audio and performance capture. What this means is for the first time in the series, it's being made in English first and translated to other languages after the fact. It tells you a lot about how hard Square Enix continues to push to keep the series relevant outside of its home nation, though it still doesn't explain why the main character's name is Clive.
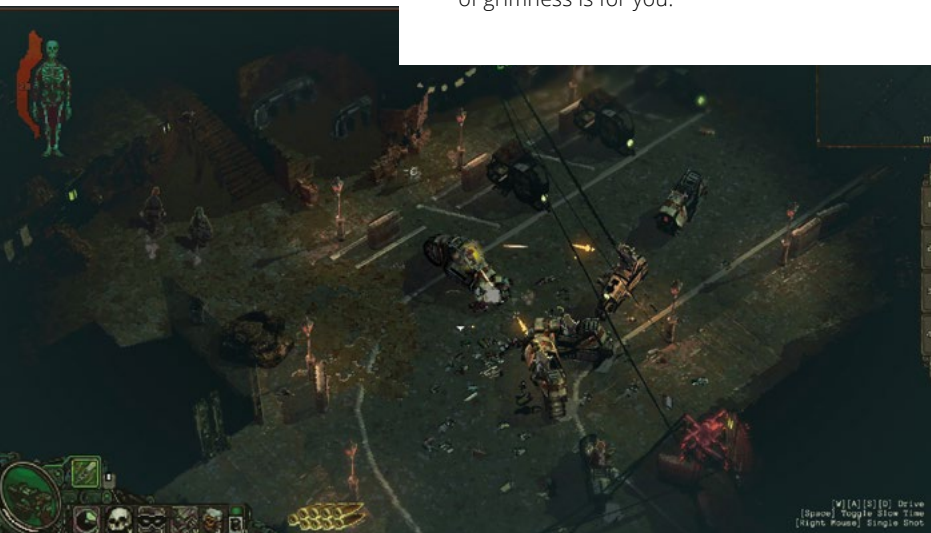
Dead Space ⬆

We had a quick peek at *The Callisto Protocol* back in issue 47, that being the upcoming game from *Dead Space* creator Glen Schofield. Fast forward just a few months and we're here to talk briefly about… *Dead Space*. Without Schofield's involvement. Hmm. Yes, EA has made it official: it's a remake, in the vein of something like *Resident Evil 2*, rather than a simpler/more boring remaster. Developed by Motive Studios, the EA subsidiary behind *Star Wars: Squadrons*, the new *Dead Space* will both bring back elements from the original game that were dropped owing to time or technology constraints, and bundle everything up neatly into the Frostbite engine so it looks all natty and modern. Just to be clear, the screens here are from the original game.

   Dead Space was a superb, unexpected release from EA even back in 2008 – very original for gaming and utterly terrifying, it rewrote not just the survival horror genre in many ways, it also made designers think twice (and thrice) about their own game's HUD elements – or lack thereof. It'll be hard for a remake to have anything like the impact that was achieved first time around, but we're still looking forward to a bloody terrifying, stomp-filled time.
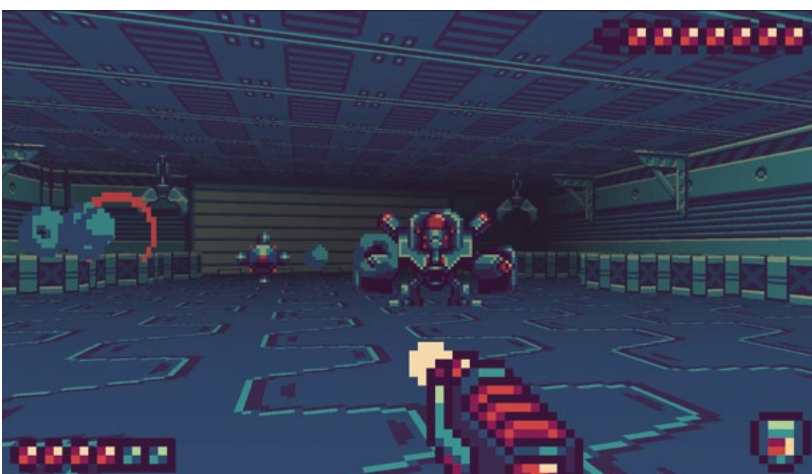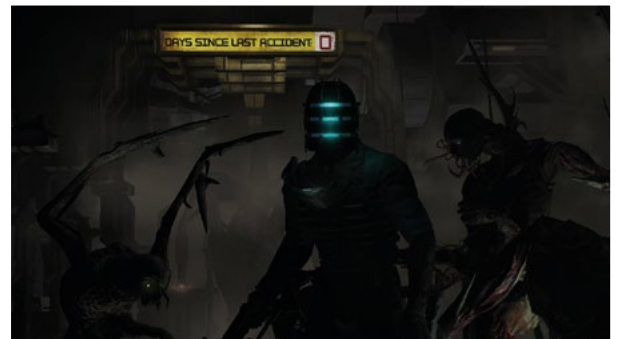
Exophobia ⬅

Skipping around, sliding under incoming fire, popping off a few (dozen) shots into incoming pixelated alien bad'uns – yes, *Exophobia* is very much a retro-flavoured FPS. And guess what sort of game we're partial to here at Wireframe? Hardcore historical 4X simulators, obviously. But also: retro-flavoured FPSes. *Exophobia* looks to mix the straightforward pacey running and gunning with exploration, and even a Metroidvania-like theme of upgrades leading to new routes opening up, so it sounds like there's going to be a lot in there to keep us busy. Look for this one some time in October, or hunt down the demo version right now.

Company of Heroes 3 ⬆

And suddenly, one of those series we'd almost forgotten about – just as the last embers of hope fizzled for an actual sequel, a new game is coming. *Company of Heroes 3* will be out in 2022, and it's being developed by the RTS maestros at Relic Entertainment. It's not going to be a massive surprise to a few lucky folks out there, mind, as the studio has been showing early versions of the game off to a cadre of 70 dedicated players for some years now, letting them play the game and taking on their input and advice along the way.

Metal Slug Tactics ⬅

DotEmu is publishing with SNK in partnership, while development duty will be handled by Leikir Studio. But on what? Well, on *Metal Slug Tactics*, of course – it's *Metal Slug*, but also tactical. Think *Advance Wars* by way of Neo Geo and you're on the right path. Maintaining the look and general feel of the classic Neo Geo shooter, *Tactics* relies on strategy, positioning, and roguelike touches to mix things up and keep you playing more than you might expect.

There's not too much more info of the whys and hows out there at the time of writing, but it does already look the part and – unsurprisingly – looks to suit the format nicely.

RoboCop: Rogue City ⬆

On page 110, you'll find one of the bigger surprises of the year in the shape of *Terminator: Resistance*. A 6/10 game with a 9/10 heart. So it is we're suddenly keen on *RoboCop: Rogue City* – a tie-in with the original Verhoeven version of Alex "Stompy" Murphy made by Teyon, the very same team behind the *Terminator* game. And honestly, we'd accept another 6/10–9/10 split.

GRID Legends ⬆

What could well be the first release from a Codemasters wrapped in the suffocating embrace of EA, *GRID Legends* looks to blend the kind of classic motor racing action you'd expect from the series with... well, *drama*. Yes, there's an involved story mode accompanying things, backed up by FMV sequences filmed with tech similar to that employed in *The Mandalorian* – so mainly digital, but looking pretty swish, then. EA Sports saw some success with its *FIFA* story mode, and *Fight Night* games previously employed a narrative structure to good effect. Hopefully Codies can strike the right balance here, too.

eFootball (PES 2022) ⬇

Here's a brain-breaker: this one should be out by the time you're reading this. But such is the reinvention of *eFootball* – formerly known as *PES 2022* – that it deserves a brief mention here. Basically the stripped back core of the game is ("should be") out now, but Konami has plenty of other features planned to roll out with this service-based, free-to-play soccerball title. Cross-platform multiplayer, additional DLC-based modes, more teams, and everything else along those lines – it's an interesting experiment for the genre. Be fun to find out if it works.

Beyond Good & Evil 2 ⬆

We were told *Beyond Good and Evil 2* didn't exist and so would never arrive. Then we were told it *did* exist and would arrive at some point. Then it disappeared and we all wondered if it had ever existed to begin with. *Then* it comes out that it's still coming, but Ubisoft doesn't know when. Management's probably busy shuffling executives around to dull the impact of misconduct allegations, to be fair. Ah well, we'll just have to wait some more.

SHAKEN & STIRRED

THE INGREDIENTS OF A GREAT JAMES BOND GAME

WRITTEN BY
OWEN WILLIAMS

Shooting, driving, tuxedos… just what goes into a decent 007 experience?

∧ Setpiece action in Activision's original story, *Blood Stone*.

James Bond drank his first Martini in Ian Fleming's *Casino Royale* novel in 1953, while the first movie emerged nine years later. *Dr. No*, starring Sean Connery as the British secret agent with a licence to kill – usually in glamorous locations unreachable by a depressed post-war British population – turned the already famous literary creation into a cultural phenomenon that endures to this day.

Video games were in on that action from their earliest years. Broadly speaking, there are three 'eras' of Bond games: Domark had the 8-bit and 16-bit decade (towards the end of Roger Moore's incumbency on screen and all of Timothy Dalton's); EA had the Pierce Brosnan years, and Activision had Daniel Craig. But there are a few odd exceptions, like text adventures, an Atari 2600 title, and the mould-breaking *GoldenEye*. That epochal shooter notwithstanding, arguably the most successful games are the ones that have creatively shaken up the Bondian ingredients. But what *are* the elements essential to a Bond game? Now pay attention, 007…

VOICES & LIKENESSES
Generally, Bond games try to be cinematic, with such fixtures as the movies' famous gun-barrel intro, Monty Norman's Bond theme, the exotic locations, and, when budget and tech allow, actors who starred in the original films. The visual shorthand of a man in a tux holding a pistol was, in the early years, an easy way to sketch Bond as a low-tech sprite. 1985's *A View to a Kill* even had rudimentary synthesised speech, bellowing, "My name's Bond, James Bond," and – presumably M – this one: "Dammit, you've failed, Bond."

Once the technology matured, Bond games started to present likenesses but with soundalike voices. Caron Pascoe stood in for Judi Dench's M in four games, for example, while Brosnan's Bond was at various points voiced by Kevin Bayliss, Adam Blackwood, and Maxwell Caulfield. The only exception to the ersatz rule was John Cleese, who showed up as gadget-man R in *The World Is Not Enough* and *007 Racing*.

The game-changer was *Everything or Nothing*, an original story from EA presenting itself as an authentic new movie experience and casting the voices and likenesses of Dench, Cleese, Willem Dafoe, Heidi Klum, Shannon Elizabeth, and crucially, Pierce Brosnan himself. The game was developed with Caulfield voicing Bond (as he had on the previous *Nightfire*), until a late decision was made, at eye-watering expense, to bring in Brosnan for two four-hour voice sessions and a head scan.

"It was the right thing to do commercially," writer, performance director, and then-EA ➡

> "A decision was made to bring in Brosnan for two four-hour voice sessions"

<table>
<tr><td>1982</td><td>1983</td><td>1985</td><td>1985</td><td>1986</td></tr>
<tr>
<td>**SHAKEN BUT NOT STIRRED**

Independent, unauthorised / ZX Spectrum</td>
<td>**JAMES BOND 007**

Parker Brothers / Atari 2600, Atari 5200, Atari 8-bit, ColecoVision, Commodore 64, SG-1000</td>
<td>**A VIEW TO A KILL**
(ACTION GAME)

Domark / Amstrad CPC, Commodore 64, MSX, Oric, ZX Spectrum</td>
<td>**JAMES BOND 007: A VIEW TO A KILL**
(TEXT ADVENTURE)

Mindscape, Angelsoft / Apple II, Macintosh, MS-DOS</td>
<td>**JAMES BOND 007: GOLDFINGER**

Mindscape, Angelsoft / Apple II, Macintosh, MS-DOS</td>
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Stepping back into third-person for a full view of Brosnan in *Everything or Nothing.*

Chances to drive the famous Aston Martin are rare in the games, but *007 Racing* made it happen.

for *007 Legends*' title sequence. It adds to a movie-like experience, but whether it really *matters* in terms of actual gameplay is a moot point. Regardless of whose face was on the box, Bilson says, "on the typewriter side, I was always writing Connery anyway!"

SHOOTING

The growth of video gaming in the mid-eighties sadly coincided with, arguably, a low period for Bond movies: the last days of Roger Moore, followed by the not-particularly-popular Timothy Dalton films. After *Licence to Kill*, there was an unprecedented six-year hiatus between films, and by 1995, Bond was pretty moribund as an IP. And then *GoldenEye* happened. On film it was a gamble: a visibly cheap make-or-break film that, happily, was a hit. But it was possibly the tie-in game that really relaunched the franchise for an entire generation.

Rare's *GoldenEye 007* practically launched the FPS on consoles, and for many, locked in the idea that a first-person shooter was the only way to approach a Bond game. Part of *GoldenEye*'s charm was its humour, stemming from the small team of British programmers who'd grown up with Bond movies on television and were practically lashing the game together with tape. Unable to use real firearm brand names, the infamously useless Klobb gun was named after developer Ken Lobb because it was "loud and inaccurate".

"There was no paradigm for what games would be in 3D," developer David Doak told Kotaku in 2018. "Everything was coded from scratch, particularly making a 3D game on a

executive Danny Bilson tells us, "but I'm not sure Pierce really had much patience for it. It was more than him just coming in and reading lines; he's a great actor and extremely professional. But he could have crushed it, and for whatever reason, it's only fine, not great."

EA pulled off the casting coup of getting Sean Connery for its *From Russia With Love* tie-in two years later. It yielded similarly flat results, although Connery looks cheery enough in the making-of footage. Audibly more engaged was Daniel Craig, who played Bond three times for Activision (including, oddly, in a remake of *GoldenEye*), although not for *007 Legends*, in which Tim Watson stepped into the booth to voice Bond and Auric Goldfinger.

The games even brought in filmmakers behind the scenes, like *GoldenEye* screenwriter Bruce Feirstein and production designer Ken Adam. And *Nightfire*, *Everything or Nothing*, and *Blood Stone* went all-out for lavish original theme songs, respectively performed by Esthero, Mýa, and Joss Stone. Film composer David Arnold provided a new version of the *Goldfinger* theme

> "He could have crushed it, but for whatever reason, it's only fine, not great"

completely new piece of hardware [like] the N64. Literally, the engine was built by sitting down with graphics textbooks and figuring out every step of the way."

Nintendo was also an influence, with *The Legend of Zelda: A Link to the Past* and *Super Mario 64* inspiring the idea of multiple objectives within levels. "The game became much more open as a result of us studiously learning what Nintendo was," game director Martin Hollis remembered in 2015. Nintendo's unease at the game's violence was offset by the programming team adding a jokey roll-call of all the characters at the end, like cast credits in a film. "It underlined that this was artifice," Hollis explained. "The sequence told people that this was not real killing."

EA picked up the Bond licence for the next film, 1997's *Tomorrow Never Dies*, but the average third-person adventure disappointed just about anyone hoping for a *GoldenEye* follow-up. By the time of *The World Is Not Enough* in 1999, it was clear that the tie-in game *had* to be an FPS. That trend continued into the next generation, with EA's PS2 and Xbox originals *Agent Under Fire*, *Nightfire*, and *Rogue Agent*, and Activision's *Quantum of Solace*, *GoldenEye 007 Reloaded*, and *007 Legends*. Only *Everything or Nothing*, *From Russia With Love*, and *Bloodstone* bucked the trend, stepping back to third-person to capitalise on the voice-and-likeness presences of, respectively, Brosnan, Connery and Craig. There wasn't much point shelling out for a star and then not having them appear on-screen, after all.

DRIVING

Car chases and vehicular mayhem are a big part of the Bond movies, yet in the games, driving often takes a back seat to shooting. Some games did have players occasionally hurtling around in expensive cars, however: in fact, the first officially licensed Bond game,

Parker Brothers' 1983 side-scrolling shooter *James Bond 007*, could just about be described as a driving game, since you control a "specially modified vehicle" that could, if you squint, be the Lotus Esprit from *The Spy Who Loved Me*.

Through the rest of the eighties, the *A View to a Kill* and *Licence To Kill* games both provided driving sections interspersed with on-foot sections; the latter more successfully with fun helicopter and plane sequences and some oil tanker smashing in the final level. Domark, rather sneakily, retrofitted a Bond licence onto an unrelated boat-racing shooter called *Aquablast*, and renamed it *Live and Let Die* with that film's centrepiece bayou chase in mind. *The Spy Who Loved Me*, meanwhile, was a top-down driving/shooting frenzy very much "inspired" by the coin-op hit, *Spy Hunter*. Again, that one put you in a Lotus. There wasn't much Aston Martin action in those days.

Driving became more scarce post-*GoldenEye*. *Agent Under Fire*, *Nightfire*, *Everything or Nothing*, *From Russia With Love*, *Bloodstone*, and *007 Legends* all gave you vehicles to career around in as a palate cleanser (including a tank in ➡

▲ The unmistakable face of Pierce Brosnan in *GoldenEye 007*. But not his voice...

⌄ Connery flies a jetpack round the Houses of Parliament in *From Russia With Love*. Not quite sure we remember that in the film...

1993	1997	1998	1999	2000
JAMES BOND 007: THE DUEL	**GOLDENEYE 007**	**JAMES BOND 007**	**TOMORROW NEVER DIES**	**THE WORLD IS NOT ENOUGH**
Domark, The Kremlin / Sega Mega Drive/ Genesis, Master System, Game Gear	*Nintendo, Rare* / N64	*Nintendo, Saffire* / Game Boy	*EA, Black Ops* / PSone	*EA, Black Ops (PSone), Eurocom (N64)* / PSone, N64

▲ Bond faces evil milkman Necros in *The Living Daylights*.

▼ *The Stealth Affair* was only a Bond game in the US. 'Don't move, Mr Glames' doesn't have quite the same ring.

the case of *AUF*), and those latter three gave you the Aston Martin DB5 – although it's a pig to handle. The driving sections in the FPS games were handled separately from the rest of the programming by EA Canada, using the bones of the *Need for Speed* engine – although none of the Bond driving sections reach the standard of *Need for Speed* or *Burnout*.

Only *007 Racing*, released for the PSone in 2000, attempted the seemingly obvious idea of basing an entire game around Bond's iconic cars. Put together for EA by the small team at Eutechnyx, the game used the studio's own game engine, heavily modified from its previous outing, *Le Mans 24 Hours*. "Given the huge differences in the game style, it was a massive overhaul," recalls lead programmer Peter Davies, "but some core components like the physics engine, renderer, and build tools were retained." It was, he remembers, an immense coup for Eutechnyx to be handling the licence for EA, and a great excuse to rewatch the films – although rather than simply providing separate

levels based on individual cars and movies, *007 Racing* opted to connect each sequence with an original story.

"My favourite level involved driving the Aston Martin DB5 around a warehouse by 'remote control' through fixed security camera views," Davies recalls of *Tomorrow Never Dies'* similar BMW sequence. "That was something I'd never seen before in a driving game."

ESPIONAGE

For a franchise about a spy, there's little in the way of espionage in the Bond games to date. Shooting has largely taken precedence over adventure elements, but there have been a few exceptions to that rule. The first-ever Bond game – an unlicensed parody – was a text adventure. *Shaken But Not Stirred,* self-released in 1982 by bedroom programmer Richard Shepherd, was a yarn about stopping the evil Dr. Death from nuking London, using text inputs and, in its final stage, replacing the adventure format with a maze section.

A brace of officially licensed games from Angelsoft were more respectful to the franchise. The company released *A View to a Kill* in 1985, followed by *Goldfinger* in 1986, both written by respected author Raymond Benson, who'd penned a Bond companion book and would go on to write several original Bond novels in the 1990s. Both games follow their sources reasonably closely, and cram a lot into their short campaigns. *A View to a Kill* takes in Siberia, London, Paris, and San Francisco, and while the puzzles are largely about wires and microchips, you at least get to fight Grace Jones – using the command "Flip May Day".

"There was a producer, me, and two programmers – and that was it!" Benson tells us. "Since there were no graphics – all text – we didn't need artists or sound technicians, or the huge teams that later games required."

2000	2001	2002	2003	2004
007 RACING	**007: AGENT UNDER FIRE**	**007: NIGHTFIRE**	**007: EVERYTHING OR NOTHING**	**GOLDENEYE: ROGUE AGENT**
EA, Eutechnyx / PSone	*EA* / PS2, GameCube, Xbox	*EA, Eurocom* / GameCube, PS2, Xbox, PC, GBA, MacOS	*EA* / GBA, GameCube, PS2, Xbox	*EA* / GameCube, PS2, Xbox, DS

The middle section of Domark's action-game version of *A View to a Kill* was also puzzle-based. A spindly Bond must clip-clop around San Francisco's burning City Hall, finding items he can use to escape; the trick being that rooms with items you need disappear as the fire spreads, meaning there's a crucial element of timing too. The best – and to date, the last – 007 adventure was Delphine's *Operation Stealth*: a fun 16-bit adventure in the vein of LucasArts' irreverent point-and-clicking. It was only officially licensed in the US though, where it was released as *James Bond 007: The Stealth Affair*. The rest of the world got "John Glames" as their secret agent and "Dr Why" as his antagonist.

ON-FOOT ACTION
In the eighties and early nineties, studios like Ocean were infamous for grabbing film licences and turning them into platform games. This happened to Bond surprisingly rarely: the third section of Domark's *A View to a Kill*, and the entirety of *The Living Daylights*, though, were all about running and jumping. The former saw Bond in a mine, attempting to defuse villain Max Zorin's bomb. The game was impossible to complete without a poke to patch it.

The Living Daylights, meanwhile, benefited from the decision to design a fun game and then retrofit the Bond elements onto it. "I came up with the idea of a man walking along, shooting in front of a scrolling background," designer Richard Naylor told C&VG at the time. "It was then a matter of tying the background and characters from the film to the game." The result was a scrolling shooter with the design wrinkle that, in order to shoot, you had to stop running and pull up a target (this lent itself to the game's later remix as a lightgun game).

Domark's final Bond game, *The Duel*, returned to side-on running and jumping. Released for Sega consoles, it used Dalton on the cover

^ *Rogue Agent* was about the villains. The *GoldenEye* name was a brand cash-in that didn't fool anyone.

and the intro screens, but was otherwise a standalone story throwing in villains like Jaws, Baron Samedi, and Oddjob. *The Duel* shows how a mundane *Rolling Thunder* clone can be elevated to *feel* Bondian by simply adding exotic-looking locales and sprites in bow-ties and bowler hats.

MULTIPLAYER
As well as dragging the FPS genre onto consoles, *GoldenEye*'s second gaming revolution was its legendary multiplayer mode. Immediately suggested by the N64's four controller ports, the split-screen battling was essentially an afterthought: a wish-list item for the Rare team that came to life simply because there was time to play around with it. Nintendo wasn't even aware the mode existed until it was presented to them, fairly late in the day.

That four friends could sit around one television and shoot each other turned out to be *GoldenEye*'s pièce de résistance. The quality of the single-player campaign was obvious, but multiplayer death matches hugely increased the game's lifespan, making it a staple of parties and all-night sessions for years.

While none have matched that first flush of genius, almost every subsequent Bond ➡

^ Roger Moore-era villain Jaws returns in *The Duel*.

> "The rest of the world got 'John Glames' as their secret agent and 'Dr Why' as his antagonist"

> ### "The most important thing for another Bond game is a great studio making it"

game contains a multiplayer mode, whether first-person, third-person, or in the case of *007 Racing*, on wheels. That *GoldenEye* experience simply became an indelible part of Bond gaming. "You can't help but include the four-player split-screen," laughs Dino Verano, associate producer of the final Bond game to date, *007 Legends*. "There's nothing quite like being able to throw a handful of chips in someone's face while they're trying to shoot at you. I'll never forget playing the original *GoldenEye* with my friends. Console shooters were still unheard of at the time, and there weren't many games that took advantage of the N64's four controller ports. There were definitely multiple arguments on whether being Oddjob [who was short and often below the eyeline of other players] was cheating or not. We finally settled on the rule that only my friend's eight-year-old brother could be him!"

THE FUTURE

As the 25th film, *No Time To Die*, finally arrives in cinemas, it's jarring to note that it's been nine years since the last Bond game was released. *007 Legends*, marking Bond's 40th anniversary with levels representing every Bond era (with Craig's likeness dropped into all of them), felt somewhat valedictory, and its dismal critical reception and sales seemed to indicate that Bond games were no longer a going concern.

The N64 *GoldenEye* was a blessing and a curse for the series, a zeitgeisty cultural high

⌃ Boat-racing game *Aquablast* had the Bond licence slapped onto it and became *Live and Let Die*.

point that subsequent games could never replicate. Bond-as-shooter became indelible, shutting off other avenues that might have been equally – or even more – creatively satisfying. The games have always looked to the films, for example, and never to Ian Fleming's original novels – even when Benson was writing text adventures. In 2014, Telltale Games' then-head honcho Kevin Bruner revealed that Bond was a "dream IP" for the studio. "I'm a giant James Bond fan," he told Official Xbox Magazine, "and I'm always frustrated by games that make him a mass murderer. He's a super-spy, and that's a different skillset... there's not much killing in the books – more intrigue."

Rumours persisted of a game in Telltale's adventure format until at least 2017, but nothing came of them. Bilson, meanwhile, says he pitched an MMO to EA 20 years ago "where the different 'lands' were the different films".

"I'm not sure the IP even helps anybody," Bilson says. "It's not going to make it a big hit. Kids don't [recognise] Sean Connery. That's grandpa's thing! I'd love a *GTA*-style Bond game, where the mission is one thing and it's branching off and you have all the classic villains. But I think the most important thing for another Bond game is a great studio making it."

There was never a Bond game for the PS4 or the Xbox One. An entire console generation has gone Bondless. But after that long silence, the studio currently swinging for MI6's fence is IO Interactive, of *Hitman* fame. Announced at the end of 2020 under the placeholder title *Project 007*, it promises the opportunity to "earn your 00 status in the very first Bond origin story".

"It's true that once in a while, the stars do align in our industry," IO boss Hakan Abrak said. "Creating an original Bond game is a monumental undertaking, and our passionate team is excited to craft the most ambitious game in the history of our studio." James Bond will return... ⓦ

⌄ The *Hitman* studio's teaser logo for the as-yet-untitled *Project 007*. No projected release date yet.

PROJECT
007

GAME
ANNO: Mutationem

ARTIST
ThinkingStars

RELEASE
TBA 2021

WEBSITE
anno-m.com

ANNO: Mutationem

When it comes to great sprite design and generally stunning pixel art, we've seen so much of it in recent years that it's easy to take for granted. The upcoming *ANNO: Mutationem*, on the other hand, mixes 2D and 3D to such a striking degree that it's well worth a closer look. The game takes place in a 3D cyberpunk world, yet the characters are 2D sprites – it's an effect that captures all the character you'd want from a conventional pixel art game, but with the immersive depth and lighting of a polygon-based environment. As *ANNO: Mutationem*'s lead artist Zhang Jian told us on page 14, the game's unique look came about during early prototyping: "Starting out, we wanted to make a game similar to *Dead Cells*, or older stuff like *Castlevania*," he told us. "But when our first prototype was done, we didn't really take to it as we had hoped."

It was when the developers at ThinkingStars pivoted to a cyberpunk theme for the story that the idea of 2D sprites roaming a 3D landscape came about – though getting the style just right took countless hours of experimenting, according to Jian. Still, the results speak for themselves. *ANNO: Mutationem* draws on the usual genre staples – *Blade Runner*, *Ghost in the Shell*, that sort of thing – but ThinkingStars have managed to take that inspiration and forge it into something strikingly different.

C R A Z Y
GOLF

Meet the indie developers intent on bringing a bit of levity onto the fairway

WRITTEN BY **AARON POTTER**

^ *What the Golf?* shakes up gameplay and perspective drastically from course to course.

D espite the funny little cars and fussy trousers, golf is often depicted with deathly seriousness in video games. Cautiously weighing up the green, needing absolute silence before you take a swing... the simple act of whacking a ball in a hole in as few strokes as possible can be enjoyable if done well, true, but it's still commonly portrayed as a rather tense and stressful affair.

Every so often, though, a golf game comes along with more arcade-like sensibilities and a willingness to poke fun at the sport; it's a concept the indie scene has grown especially fond of in the past few years, as more and more studios have tried to fuse golf with comedy – to often wonderful effect.

As outlandish as its title implies, *100ft Robot Golf* dishes up enough playful anarchy to attract

"More and more studios have tried to fuse golf with comedy"

players who otherwise wouldn't so much as pick up a set of clubs. Set in a future universe where golf is attempting to make a TV comeback, indie developer No Goblin's kaiju-sized golfer stomps across cities, moons, and mountains in its effort to get under par. The result is a bit like if Guillermo del Toro's giant robot movie *Pacific Rim* had a crossover with Adam Sandler's comedy golf vehicle, *Happy Gilmore*. It may come as a surprise, then, to learn that such an imaginative premise was born out of the studio's attempt to make an existing golf game more exciting. "Our co-founder [Panzer] does Let's Plays in her spare time, and was asked to guest-commentate on a video of an incredibly boring golf game," explains Dan Teasdale, No Goblin's other co-founder and one of the chief creatives behind *100ft Robot Golf*. "They spent the entire time making jokes to keep it from being a total drag, and ended up riffing on the idea of how much better it would be if you were playing golf in a giant stupid mech smashing everything to pieces."

Following the recording, Teasdale and Panzer couldn't stop thinking about how fun it would be if someone were to actually make the game they'd just invented in their minds. A few days of pestering later, and the duo had set out to create the "big robot golf game for real" – one that would parody the sport's typical seriousness, and where destroying annoying obstacles would be just as important as putting the ball as quickly as possible. The team looked at other popular ➜

‹ Many of the avatars featured in *100ft Robot Golf* are heavily styled after anime mechs.

CRASH MODE

Although they're veterans of arcade racers, the newly formed team at Three Fields Entertainment – made up of ex-Criterion staff – sought to give golf the bombastic treatment it deserved in the aptly named *Dangerous Golf*. Best described as a mixture of *Angry Birds* and the *Burnout* franchise's crash mode, it challenged players to cause the maximum amount of damage possible in and around gas stations, burger bars, and luxury mansions. Causing enough chaos with ricochets and trick shots right off the tee saw your ball catch fire, engaging a SmashBreaker to make climbing each level's scoreboard even easier.

^ Dan Teasdale, No Goblin's co-founder.

^ Seemingly no location is off limits in *100ft Robot Golf*'s far-flung future setting.

WORLD OF SPORT

Golf Story from Sidebar Games was a big success on Nintendo Switch, and the upcoming sequel will aim to expand its horizons to include other sports. Whereas the 2017 original followed a golfer's comic path through eight courses, *Sports Story* will offer up unique spins on tennis, basketball, cricket, and more, with the odd dungeon to explore and recreational pastime thrown in. Don't worry, though: golf's still very much at the sequel's heart.

arcade golf games like *Everybody's Golf* and Microsoft's *Powerstar Golf* for inspiration. These were then used as a basis in which No Goblin could deliver its own mechanised spin.

Much of the comedy in *100ft Robot Golf* comes from just how absurd it is that humans have built these colossal machines purely for the purposes of wielding oversized wedges and nine irons. Rather than solely rely on this idea, though, Teasdale and the rest of the No Goblin team wanted to squeeze even more laughs out of players. They did this by encouraging groups to block each other's shots in real time, leaning into the game's purposefully lo-fi presentation, and of course parodying the hushed commentary given in most golf tournaments. They just needed someone whose deadpan delivery would do the concept justice.

"The idea of having calm golf commentary always seemed like the perfect contrast to four robots knocking down skyscrapers to clear shots as if it was normal," Teasdale points out. "For the longest time, internally, we pitched our vision of these commentators as 'McElroy Brothers-types', until we realised that we could just reach out to our pal Justin McElroy and see if he and his brothers (and eventually father, too!) were interested."

With the internet superstars on board, the stage was set for groups of players to enjoy a different type of arcade golf game. But as well as offering a feast of giggles through chaotic course designs, wry commentary, and buildings to stomp on, Teasdale and his team thought another factor was vital: community. "Throwing people you have

v Twelve players putting at once often leads to outright chaos in *Golf With Your Friends*.

existing relationships with into a world filled with comedy mechanics that thrive on exploiting and potentially damaging those relationships is a big part of why the real-time golf mode works so well," he suggests. "Obviously, we have a funny game in terms of narrative and setting, but one of the things we really try to hit as a studio is humour through mechanics."

COMEDY OF ERRORS

As outlandish as *100ft Robot Golf*'s world is, it was always No Goblin's aim to have the game's golf mechanics be fun and reliable – the developer didn't want to risk irritating players with untrustworthy physics. This is in stark contrast to some other comedy golf games, which consciously choose to play with the sport's physics to humorous effect. But how do you strike a balance between comedy and frustration?

This wasn't a concern with Triband's *What the Golf?*, a lo-fi title the developer describes as "a game made for people who hate golf, by people with no clues or respect for the game". In it, players work their way through a series of courses that start out familiarly, before quickly descending into a gauntlet of physics-based puzzles which happen to take place on a fairway. The idea of what a golf game can be is repeatedly challenged, and the results are hilarious.

Like *100ft Robot Golf*, it's all about tapping into the sport's potential for chaos, except here, the rules have been bent much further than in most other golf games – even those featured in this article. One course may have you trying to putt a porcelain vase instead of a ball, all while trying to avoid obstacles that might smash it. Another will swap the view to a 2D plane, asking you to avoid barrels as you land shots in the hole on the other side of the screen. In *What the Golf?*, no idea is too outlandish.

As well as taking imaginative leaps, comedy golf games can also span a wide gamut of genres.

SUPERHOT is just one of the many games
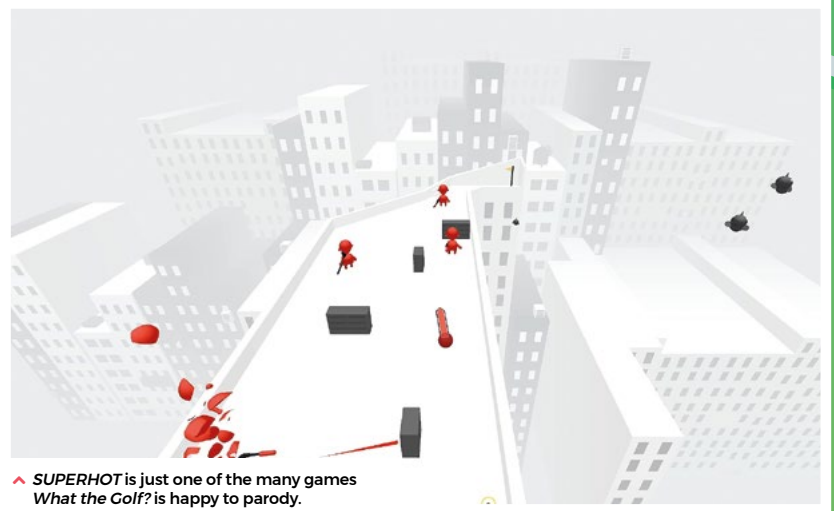*What the Golf?* is happy to parody.

Golf Story proved this in 2017: it's a top-down RPG in the style of *Pokémon*, *Dragon Quest*, and *Final Fantasy* – but who wants to engage in turn-based battles when you can beat your opponent in a game of golf? In some instances, the need for a character to hit the ball can be completely done away with. It's more about getting players into the erratic action quickly – and again, infusing it with a strong social aspect.

Blacklightinteractive's *Golf With Your Friends* offers a similarly social experience. Officially launched during lockdown in May 2020, *Golf With Your Friends* was already a hit on Steam four years prior, allowing up to twelve friends to compete on a series of crazy courses at once. "I think the enjoyment and humour of the game has a lot to do with the people you play it with," says Kailan Clark, CEO and programmer. "The competitive nature and rivalry that you have with your closest pals naturally brings the hilarity."

Watching multiple balls fly around the course alongside eleven other players might be entertaining by itself, but it wouldn't be as memorable were it not for the deviously laid-out courses. Styled around the type of minigolf courses you'd find in your local town centre as opposed to long stretches of green, *Golf With Your Friends* has you putting through castles, haunted forests, volcanoes, and even on the Moon. Almost all these courses are designed to throw you off your game to a certain degree, as you and friends try to work out the quickest path to the hole. Luckily, physics remain realistic for the most part.

Building such devilish courses can be a rigorous process. "Designing 18 holes that keep the game fun and the users engaged is difficult," says Clark. "We have to think of a theme that will be fun, interesting, and something different from the rest." Once Blacklight has a simple layout, it's a matter of playing each hole repeatedly, making tweaks, or redesigning entire courses if they don't work. "Before partnering with [publisher] Team17, a map would take anywhere from three to five months," he reveals.

The race to keep up with player demand was so important, Clark and his team opted to embrace the *Golf With Your Friends* community by introducing a level editor and other tools. "Both ball and game mode customisations are especially important to us, letting users play for rewards and customise their hats and trails gives players an extra goal and gives variety amongst friends," he adds. "The variety of game modes adds spice to the standard game of minigolf and gives the user a different experience each time. Select a Mode, don your favourite hat, and you're set to go!" Turns out playing as large bouncy eggs rather than balls offers a whole different experience.

Humour in games is, of course, subjective. This explains why the indies marrying comedy and golf approach the idea differently, but in ways that are seldom par for the course. Golf's rules, meanwhile, are much more adaptable compared to most other sports, meaning common elements like outlandish course designs, gravity-defying physics, and a strong focus on social rivalries often pop up. But might we see Blacklight parody a sport like football next? "I don't think the fan base for *FIFA* or *Madden* would appreciate an acorn-shaped ball being knocked around a candy-themed, low gravity field," Clark says. "Or maybe they would! Interesting…" ⓦ

"A map would take anywhere from three to five months"

Kailan Clark (middle) created
Golf With Your Friends with
his two brothers.

Toolbox

The art, theory, and production of video games

44
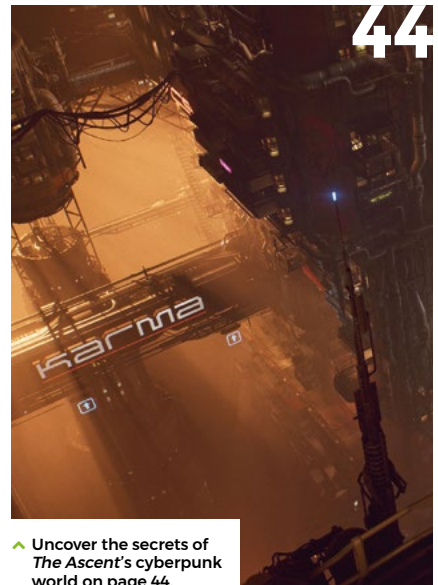
^ Uncover the secrets of
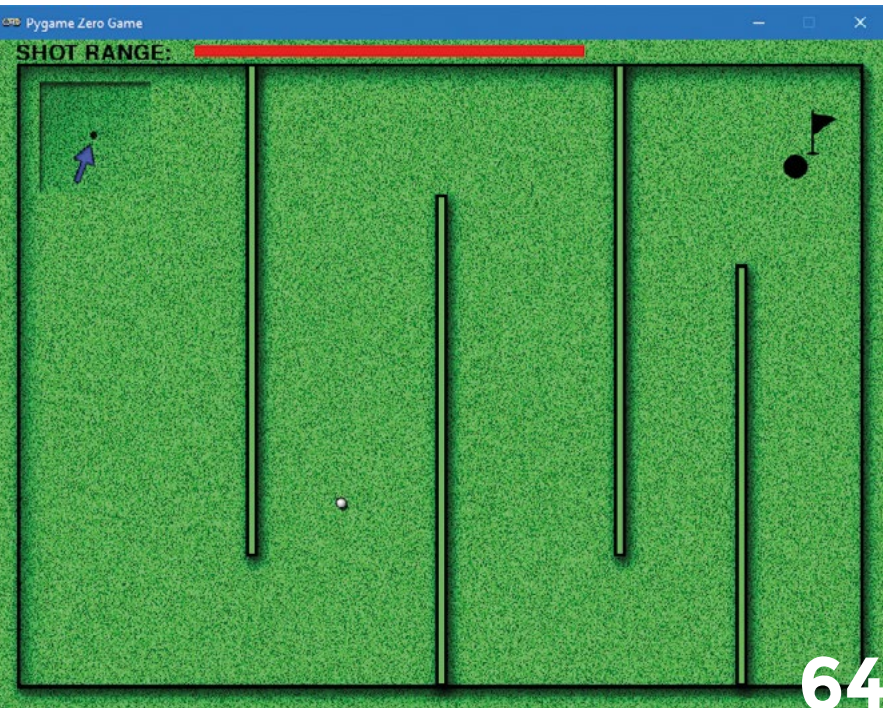*The Ascent*'s cyberpunk
world on page 44.

^ Can video games truly depict true
events? Antony finds out on page 62.

62

58

^ Hoping to get your indie game on Switch one day? Then check out the handy hints on page 58.

64

48

^ Find out how to make your own virtual machine on page 48. And yes, it plays games!

< Code your own crazy golf game in Python. See page 64.

The arcologies of The Ascent

A behind-the-scenes look at the decisions that shaped the urban world of Neon Giant's action RPG
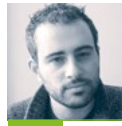
AUTHOR
KONSTANTINOS DIMOPOULOS

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

S pend a few hours with *The Ascent*, and you'll realise its cyberpunk setting is more than merely a beautiful background for a fast-paced action RPG; it informs every aspect of the experience, and feels simultaneously exotic and grounded, detailed and legible.

Taking place in the densely populated world of Veles in the far future, *The Ascent* focuses on a gargantuan arcology (a portmanteau of 'architecture' and 'ecology' – see box) surrounded by an endless megacity. Here, indentured workers slave away for the profits of corporations, and carry weapons to work. It's a hard, dangerous place to live in, albeit one filled with technological wonders and expensive pleasures for the rich; and as the ruling mega-corp crumbles, things are about to get more chaotic.

Tor Frick, Neon Giant's co-founder and creative director, kindly agreed to shed some light on said chaos, and the workings of the game's urbanism.

A cyberpunk metropolis with an arcology at its heart is a bold design choice. Care to describe the city's overall structure?
Tor Frick: I don't know if it's bold, but we absolutely wanted to put a bit of a spin on the city itself. The planet and its infrastructure are focused on corporate arcologies. These are the focal points of commerce, and life on Veles. Each arcology is a city in its own right, and owned by different corporations. Interstellar travel is expensive, and people indenture themselves to afford the cost of passage. Those who can live in the arcologies, but many are forced into the endless slums that have

emerged between them, forming one giant city. Life is short and brutal in this sprawl.

The game takes place in Ascent Group's arcology, one of the major corporations on Veles. It stretches from beneath the city, where automated machines and robots [work] in vast machine halls and endless pipe networks, all the way up to the cloud layer where the rich live in luxury. As an indentured handyman, you spend most of your time repairing waste systems, or in your dwellings in the slums.

What's the wider city called?
The city itself doesn't have a name. It's a vast metropolis spanning much of the planet's surface, so we're only referring to it with the planet's name: Veles. How many live there is unknown; a vast amount, hundreds of millions at the very least.

What were your inspirations?
Books, comics, movies, games, you name it. If there's sci-fi or cyberpunk in it, there's a big chance we consumed it in one way or another. *The Ascent* is a love letter to those genres, with a myriad of references. Of course one has to mention the greats, such as *Blade Runner*, *Akira*, *Ghost in the Shell*, and *Neuromancer*. We're trying to stand on the shoulders of giants and add our own take to the genre.

The population's fascinating. We have oppressed workers, essentially slaves, working for corporations, but also aliens?
It's absolutely aliens! It's not exactly standard fare in cyberpunk, but we wanted a unique take on it.

⌄ Most scenes in *The Ascent* have several layers of depth.

It's also partially because of our camera angle; the camera is more zoomed out than normal, so we need to use bigger brush-strokes. Having an array of alien races of various sizes allowed us to also have a much more varied world, and more stories to tell. Everything needed to be quite exaggerated to read well and be visible. It's a lot more fun to fight three-metre tall, lumbering space thugs instead of guys in slacks!

Oppression exists, but the world isn't drowned in sadness. We wanted to bring as much life to it as we could, and that included bars, clubs, restaurants, and people living their lives, sometimes in a hedonistic way.

> **"Verticality was key in showcasing the vastness of the city"**

How did world-building and level design influence each other? Why did you emphasise the sci-fi aspect of cyberpunk?

For us, it was always important for the game to feel unified. The setting and gameplay can easily go on a collision course when you try to force themes or mechanics that don't play well together.

We knew the game would feature a lot of explosions and general mayhem, so from the beginning, we knew that the setting needed to facilitate that.

The world needed to be chaotic, violent, run-down. Being run-down, the world also gave us the tools and context for including variety and density in it; from spaceship scrapyards to run-down slums and mob-run casinos.

Going for a more high-tech vibe was intentional. Partially because we love sci-fi, but also because it gives us more toys to play with, both narratively and in terms of world-building and gameplay. We wanted to bring in more fantastical and technical elements. Spaceship freighters slowly drive in the distance, hovering robots zip past overhead, and lumbering maintenance robots endlessly work on keeping the city running. This also allowed the setting to facilitate whatever crazy gameplay we came up with.

How much did the action RPG genre influence level design, and how much did the level design influence the city itself?

In short: a lot. With this kind of perspective, we knew we had to work with different rules than you do in a first- or third-person game. No more interesting buildings on the horizon, no more lights to guide the player. We needed different ways to design the city. To create a dense environment from this angle, with lots of life in it, the only choice was to use depth. This is where the arcology comes in. We were trying to add layers, show more of the world to the player. Verticality was key in showcasing the vastness of the city, as well as how dense and filled with life it is. We also tried to break genre conventions by occasionally changing camera views to frame things in a new way. Sometimes to instil a sense of larger scale, or to make things more intimate, and focus on the nitty-gritty of the city. Ⓦ

ARCOLOGY EXPLAINER

Arcologies are what happens when you combine architecture and ecology. When you fuse architecture with urban planning and design, and try to create self-sufficient, green, super-dense, complex, and often vaguely pyramid-shaped, city-sized buildings. The word itself was first used by utopian architect Paolo Soleri back in 1969, but hit the mainstream following William Gibson's cyberpunk classic, *Neuromancer*. Admittedly though, I ran into my first arcology when playing *SimCity 2000* back in 1996.

The principles of game design

Howard reflects on the calamitous E.T. for the Atari 2600. Could it serve as a useful metaphor for real life?

AUTHOR

HOWARD SCOTT WARSHAW

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

When Julius Caesar ran into Brutus on the Ides of March so many years ago, it changed his life dramatically. I would say the same thing about my life when I ran into the *E.T.* project, though in my case, the change wasn't quite so abrupt... or pointed. People say that my *E.T.* game was ahead of its time, so much so that it didn't work for many players *in* its time. Fair enough. But *E.T.* is more than that. On many levels, that game has served as a metaphor for life, at least for my life. Let me explain, and perhaps it will sound familiar in yours as well.

There was an aura of promise and anticipation on the advent of the *E.T.* project – much like the prospect of graduating from college and entering the working world as a computer programming professional. This was super-exciting to me. Once I began the challenge of delivering this game, however, the bloom left the rose (no matter how many times I healed it). Similarly, on my entry into the working world, my excitement was quashed by the unsatisfying nature and demands of typical corporate computing tasks. This is analogous to the experience of *E.T.* players, having just unwrapped the game. They pop the cartridge in, fire it up, and venture forward with innocent exuberance... only to be crushed by a confusing and unforgiving game world. Perhaps the *E.T.* game was some sort of unconscious impulse on my part. Was I recreating the disappointment of my first foray into corporate life? Highly unlikely, but the therapist in me just had to ask.
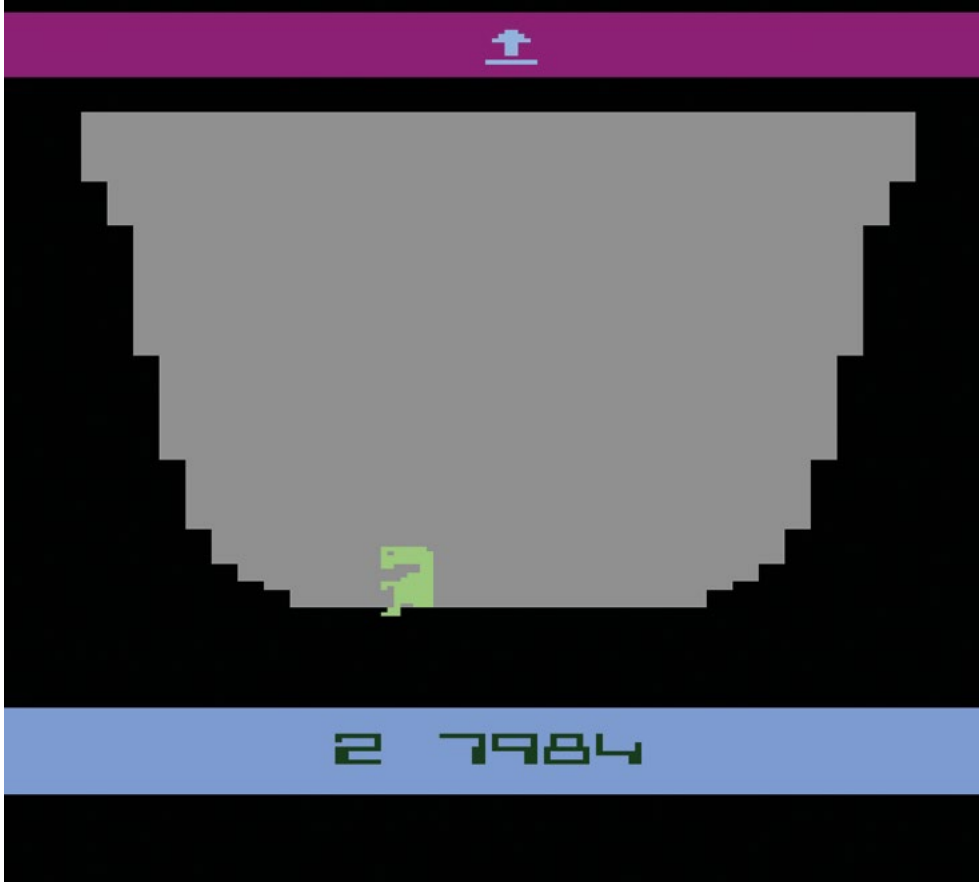
In the *E.T.* game, I spend a lot of time wandering around and falling into pits. Sometimes I find treasure in those pits. Sometimes I'm just stuck in a pit and I need to dig my way out. That costs energy I could have used on more productive endeavours. There's also a power-up in the game you can use to find out if there is something worth diving in for. Sadly, there's no such power-up in life. Figuring out the difference between the treasure and the waste has always been one of my biggest questions, and it's rarely obvious to me.

One of the treasures you find in the game is the flower. The act of healing it brings benefits and occasional delightful surprises. I was at the bottom of a 'pit' in my life when I found the path to becoming a psychotherapist (another act of

> **The *E.T.* game contains plenty of nods to the movie, even if they aren't obvious at a glance: that blob on the left is a bit of Reese's Pieces candy.**

< Some over-zealous collision detection means it's easy to fall into pits (or wells) in *E.T....*

∨ ...especially when you have government agents (played here by Dick Tracy) chasing you all over the map.

healing). It helped me climb out and take some big steps toward winning the bigger game.

E.T. is all about the pits, at least it seems so for many who talk about it. And they do so with such derision. Many times I've heard the phrase, "*E.T.* isn't about the pits. It *is* the pits!" But are pits really so bad? After all, there are situations in which being stuck in a pit can be an advantage – OK, perhaps not so much in the game. But in life, I find it's unwise to judge where I am until I see where it takes me. There have been times where major disappointments ended up saving me from a far worse fate had I been granted my original desire. And in more concrete terms, during a hurricane or tornado, there are far worse outcomes than stumbling into a pit. Sometimes when I trip and fall, I wind up dodging a bullet.

Yes, in the game you can wind up wandering aimlessly around, feeling hopeless and without direction (somehow, they didn't put that on the box). But ultimately, if you persevere (and read the directions), you can create a reasonably satisfying win. After finishing development of the game, there was a long period of waiting before any feedback arrived. Then it came with a vengeance. Of course, that only lasted for decades. My life after Atari seemed a bit of a wasteland for a long time too. Rays of sunlight broke through on occasion, but mostly cloudy skies persisted. Things didn't improve until I

broke free from the world in which I was stuck in order to launch the improbable life I truly wanted.

But it's not like there were no lingering issues from my *E.T.* experience. It turns out that ever since the *E.T.* project, I have a much greater propensity to procrastinate, regularly shorting myself of dev time. I didn't used to do that before *E.T.*, but I've done it quite a bit since. I delay launching a genuine effort, then rush into things and try to do them too quickly. This results in a flurry of motion that doesn't quite realise the potential of the original concept. More flailing and more failing. It doesn't mean my idea was poor; it means it was unrefined and didn't receive sufficient nourishment. On reflection, I see there are both challenges and opportunities at every turn. Pits and treasures. Which of those I emphasise as I move forward is how I construct the life I'm going to have, and I'm doing that all the time.

Pits and treasures, this is much of life. My *E.T.* game has mostly pits. Truth be known, people like to call them 'pits', but I've always thought of them as wells: a place to hide, to take repose and to weather out life's storms. For me, that has been the value of having so many wells. I hope it works for you as well. Try it on. It just might fit like Caesar's toga. And if it doesn't, you can say what Brutus said on that fateful day: "At least I took a stab at it." ⓦ

> ## "Perhaps the *E.T.* game was some sort of unconscious impulse on my part"

Read the instructions

There are two kinds of people who play *E.T.* – those that read the instructions and those that don't. According to all the contacts I've had over the years, those that did had a much more positive experience than the others. My friends say the same of me: those who get to know me (read the instructions) tend to enjoy me quite a bit. But equally, they understand how those that haven't yet had the pleasure have a great deal more trouble finding the pleasure. Apparently, I am an acquired taste.

How to write your own emulator in Python

Ever wanted to create your own computer? Here's how to do just that – and even get it to run some classic games

AUTHOR
EDWIN JONES

A software engineer at video game developer Mediatonic, Edwin Jones has been working in the games industry for around 16 years. Find out more about him here: **edwinjones.me.uk**

How can we make our own computer with Python? Don't computers need lots of physical things like circuit boards and electronics? Normally yes, they do, but we're going to create something known as a 'virtual machine' – a computer defined completely by software, not hardware. You've probably used virtual machines many times without realising it. Many modern games consoles run older, classic games via virtual machines, also known as emulators.

There are many kinds of emulator, but one of the most fun to start with is the CHIP-8. The CHIP-8 was never a real computer, but that's what makes it fascinating: long before most other games systems, it existed as a program for 8-bit computers in the 1970s. This means there's no hardware to attempt to emulate and quite a simple specification to implement. The CHIP-8 only has 35 opcodes, which is low compared to other computers. You still have all the usual problems to solve – loading binary files, parsing opcodes, and then running them on virtual hardware – but not the other baggage that comes with trying to write emulators for other systems. You also get to finish the project by playing some classic games – what's not to like?

We'll be using Python 3 and Pygame for the project because CHIP-8 isn't very demanding and can be easily emulated. This means it's a good fit for Python, as we don't need to worry so much about performance and can use a language that makes solving the problems at hand a bit easier – we don't need to focus as much on smaller details.

A simple way to build such a device in code is with a class representing the CPU, so let's go ahead and create a `Cpu` class. Create a folder called **pychip8** on your machine and save our code below there with the file name **cpu.py**. We'll be using this folder for every module we create.

> All being well, your **pychip8** folder should look like this when you're finished.
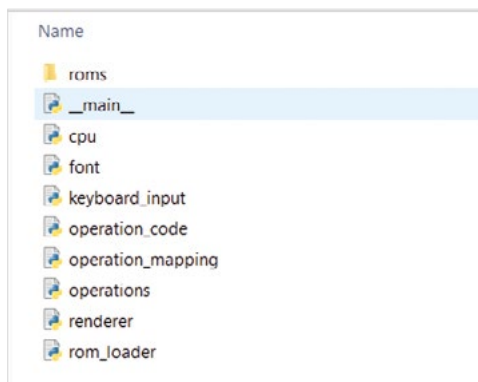
```python
"this module defines the chip 8 cpu"


class Cpu:
    """this class represents the CHIP 8 cpu"""

    # game ram begins at address 0x200 / 512
    PROGRAM_START_ADDRESS = 0x200
    # the chip 8 works with 16 bit/2 byte opcodes
    WORD_SIZE_IN_BYTES = 2
```

```
    # V[15/0xF] is used as a carry/no borrow flag
for certain ops
    ARITHMETIC_FLAG_REGISTER_ADDRESS = 0xF
    FRAME_BUFFER_WIDTH = 64
    FRAME_BUFFER_HEIGHT = 32

    def __init__(self):
        # 4k of RAM
        self.ram = [0] * 4096
        self.program_counter = self.PROGRAM_START_
ADDRESS

        self.index_register = 0
        self.general_purpose_registers = [0] * 16

        self.delay_timer = 0

        self.stack = []
        self.stack_pointer = 0

        self.keys = set()

        self.frame_buffer = [[bool()] * 32 for i
in range(64)]

        self._load_font()

        self._current_word = 0
        self._current_operation = None
```
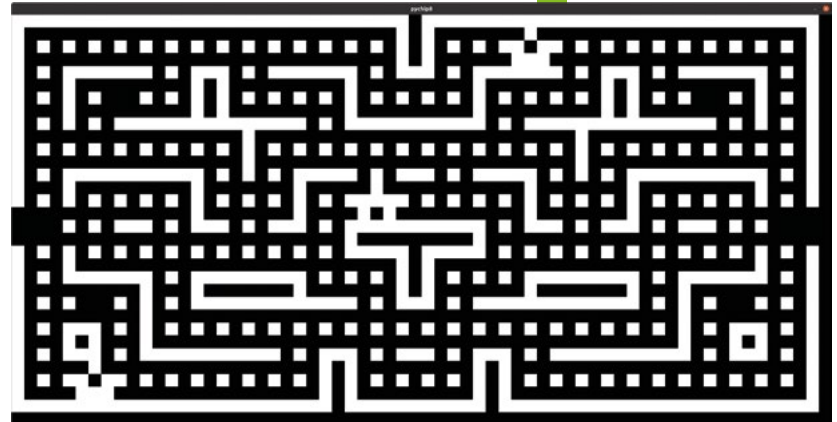

There are all kinds of simple games available for CHIP-8, from puzzlers to dinky *Space Invaders* clones. You'll find a good selection at wfmag.cc/chip-roms.

Can you see how we've defined the registers and buffers from the system's specification into simple Python types and collections? Don't worry about understanding all this code right now, as we'll be plugging in more parts of the computer as we go. This is just the 'heart' of the machine and where our core logic will run.

The CHIP-8, like almost all computers, works by following a sequence of instructions. We're going to load up files representing these instructions in a binary format (called ROMs) and process each instruction one by one in our CPU. The name for such an instruction is sometimes known as – you guessed it – an opcode!

The problem we face now is how can we get the data from a file into memory so our code can work with it? We can do this with a simple 'ROM loader' module that reads all the binary into a list

for us to use later. You can see how this works in the code below – save this into your folder with the file name **rom_loader.py**.

```
import os

def get_rom_bytes(rom_name):
    """This method loads the bytes from a rom from
the roms folder"""
    folder = os.path.dirname(os.path.realpath(__
file__))
    rom_folder = os.path.join(folder, "roms")
    rom_file_path = os.path.join(rom_folder,
rom_name)

    with open(rom_file_path, "rb") as file:
        file_bytes = file.read()
        return file_bytes
```

Here we're opening and reading the file in binary mode with the **"rb"** options string from the given file path and returning it from the **get_rom_bytes** method as a bytes object. This means we can then iterate over each byte in turn to decode each instruction for the CHIP-8.

How can we parse the raw binary from a file and turn that into instructions for the CPU? The CHIP-8 has a strange opcode definition, in that each opcode is a 16 bit/2 byte value that contains the instruction *and* the data for that instruction. This would be simple enough were it not for the fact that apart from the first four bits, each following nibble can be part of an instruction or data – depending on the instruction in question. For instance, the opcode 0x00E0 means 'clear the screen', but opcode 0x1234 means 'jump to memory address 0x234'. A nibble might sound ➡

"There are many emulators, but one of the most fun to start with is CHIP-8"

```
"""
This module defines methods that define the different operations the CHIP-8
CPU could perform.
"""

import random
import font

# V[15] is used as a carry/no borrow flag for certain ops
CARRY_FLAG_ADDRESS = 0xF

def add_to_x(opcode, cpu):
    cpu.general_purpose_registers[opcode.x] += opcode.nn
    cpu.general_purpose_registers[opcode.x] &= 0xFF  # restrict the value to one
byte or less

def add_x_to_i(opcode, cpu):
    cpu.clear_arithmetic_flag()
    original_value = cpu.index_register
    result = cpu.index_register + cpu.general_purpose_registers[opcode.x]
    result &= 0xFFFF  # restrict the value to two bytes or less
```

⌃ **Be sure to get the full CHIP-8 code from wfmag. cc/wfmag54, where you'll find the operations. py module, and more detailed comments that we couldn't fit in here.**

strange, but it's just half a byte. A byte is 8 bits and can be represented with two hex digits so 0xFF means 255. A nibble can be represented with one hex digit (e.g. 0xF for 15). This will come in handy later when we're manipulating our opcode data. One way to solve this problem is to abstract it into a class, which is exactly what we're going to do.

Our next piece of Python code is going to be an **Opcode** class, as shown below. Again, save this into your folder, this time with the file name **operation_code.py**.

```
class Opcode:
    """This class represents the instructions and
data of an opcode"""

    def __init__(self, word):
        """
        This class takes in a 2 byte value/word
and parses the bytes
        to store them in different attributes for
later use

        Args:
            word: a 2 byte/16 bit value that
represents an opcode.
        """

        # We use bitwise AND with a mask to
extract specific nibbles.

        # a word should be no more than 16 bits
```

```
        self.word = word & 0xFFFF

        # we just want the most significant bits/
nibble
        # here so we bitshift right
        self.a = (word & 0xF000) >> 12

        self.nnn = word & 0x0FFF
        self.nn = word & 0x00FF
        self.n = word & 0x000F

        # Where don't use the lower nibbles,
bitshift
        # right to get just the raw value
        self.x = (word & 0x0F00) >> 8

        # Eg. we want 0x4 not 0x40
        self.y = (word & 0x00F0) >> 4
```

Don't worry if you don't understand all this code at once. The important thing to know is that we're parsing a 16-bit value and storing it in different fields of the class. `opcode.a` is the leftmost nibble, x the next one along, y the one after that and n the very last. You can remember this with the hex-like pattern 0xAXYN. `opcode.word`, `opcode.nn`, and `opcode.nnn` are ways of accessing these nibbles in groups. This will come in handy later on.

> ## "Don't worry if you don't understand all this code at once"

Now we have a way to read the ROM and parse the contents of it, but what can we actually do with all this data? The CHIP-8 has 35 opcodes, but we shall only be using 33 of them. For simplicity, we're ignoring sound and any machine code operations. You can find a list of them on Wikipedia at **wfmag.cc/opcode**.

First, let's define a module that turns these opcodes into readable functions we can reference. Hex is fun, but it's not easy to understand what the raw numbers mean at times. The following bit of code is too long to run in full here, but you'll find it on our GitHub at **wfmag.cc/wfmag54**. It's the file named **operations.py** – here's a small snippet:

```
def add_to_x(opcode, cpu):
    pass

def add_x_to_i(opcode, cpu):
    pass
```

```
def add_y_to_x(opcode, cpu):
    pass
```

Don't worry that all these functions contain a **pass** statement at the moment; the important thing is that each one has the same signature and a clear name. Now we need to make another module, called **operation_mapping.py**, that lets us map the raw binary/opcode to one of the functions we've defined above. Modelling code without a full implementation like this is often known as stubbing, and can be a useful approach to working on a problem when you aren't entirely sure what the solution will be, but do need to have some idea of the interface you'll be using to solve it.

```
from operation_code import Opcode
import operations

def find_operation(word):
    opcode = Opcode(word)

    if word == 0x00E0:
        return operations.clear_display

    if word == 0x00EE:
        return operations.return_from_function

    if opcode.a == 0x1:
        return operations.goto

    if opcode.a == 0x2:
        return operations.call_function

    if opcode.a == 0x3:
        return operations.skip_if_equal

    if opcode.a == 0x4:
        return operations.skip_if_not_equal

    if opcode.a == 0x5:
        return operations.skip_if_x_y_equal

    if opcode.a == 0x6:
        return operations.set_x

    if opcode.a == 0x7:
        return operations.add_to_x

    if opcode.a == 0x8:
        if opcode.n == 0x0:
            return operations.set_x_to_y
        if opcode.n == 0x1:
            return operations.bitwise_or
        if opcode.n == 0x2:
            return operations.bitwise_and
        if opcode.n == 0x3:
            return operations.bitwise_xor
        if opcode.n == 0x4:
            return operations.add_y_to_x
        if opcode.n == 0x5:
            return operations.take_y_from_x
        if opcode.n == 0x6:
            return operations.shift_x_right
        if opcode.n == 0x7:
            return operations.take_x_from_y
        if opcode.n == 0xE:
            return operations.shift_x_left

    if opcode.a == 0x9:
        return operations.skip_if_x_y_not_equal

    if opcode.a == 0xA:
        return operations.set_i

    if opcode.a == 0xB:
        return operations.goto_plus

    if opcode.a == 0xC:
        return operations.generate_random

    if opcode.a == 0xD:
        return operations.draw_sprite

    if opcode.a == 0xE:
        if opcode.nn == 0x9E:
            return operations.skip_if_key_pressed
        if opcode.nn == 0xA1:
            return operations.skip_if_key_not_pressed

    if opcode.a == 0xF:                                 ➡
```
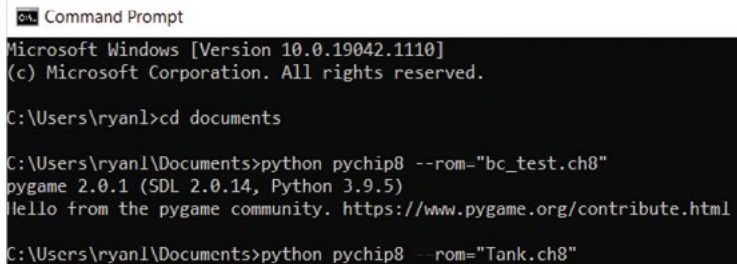
▲ Once it's complete, you can run CHIP-8 straight from your command line, like this.

TECH SPECS

The CHIP-8 has the following specifications:

- 4kB of memory
- 16 general-purpose 8-bit registers (the 16th is also used as a special arithmetic flag at times)
- A 64 pixel-wide by 32 pixel-high frame buffer
- A stack that stores return addresses for function calls and nothing else
- Some way to store the pressed state of a 16-button keypad (0–F)
- An 8-bit index register
- An 8-bit program counter
- An 8-bit stack pointer
- An 8-bit delay timer register
- An 8-bit sound timer register (when above zero, a beep is made)

```
        if opcode.nn == 0x07:
            return operations.set_x_to_delay_timer
        if opcode.nn == 0x0A:
            return operations.wait_for_key_press
        if opcode.nn == 0x15:
            return operations.set_delay_timer
        if opcode.nn == 0x18:
            return operations.set_sound_timer
        if opcode.nn == 0x1E:
            return operations.add_x_to_i
        if opcode.nn == 0x29:
            return operations.load_character_
address
        if opcode.nn == 0x33:
            return operations.save_x_as_bcd
        if opcode.nn == 0x55:
            return operations.save_registers_zero_
to_x
        if opcode.nn == 0x65:
            return operations.load_registers_zero_
to_x

    raise KeyError(f"Opcode {word:#06x} not
present in list of valid operations")
```

Now we're cooking! This code will take a block of 16 bits we load from a ROM file, parse this into our custom **Opcode** class and use the properties of that class to figure out what corresponding functionality the opcode is referencing. If you refer to the table on the previous pages, you should be able to see exactly what our functions are going to actually do by looking up the related opcode.

Before we can wire this up further, we're going to need to add some extra functionality. There are a few opcodes that handle drawing to the

screen, loading fonts, and input handling, so we need to define code that can manage this logic for us. Let's start with the internal font of the machine. The CHIP-8 has a single font that is hard-coded into memory, and usually stored in the first 512 bytes of memory (0x000–0x200). The font is basically a pattern of bits that describes the dots that make up each letter. Let's make a module with this pattern as shown below, and save it as **font.py**.

```
"""
Chars are 4x5. Each line must be a byte wide so
each line value is padded with 0x0.
Eg:
    0:
        ####  =  1111  =  F0
        #  #  =  1001  =  90
        #  #  =  1001  =  90
        #  #  =  1001  =  90
        ####  =  1111  =  F0
"""

# each char is 5 bytes long, so to get
# char 'B' you'd use DATA[CHAR_SIZE_IN_BYTES *
0xB]
CHAR_SIZE_IN_BYTES = 5

DATA = [0xF0, 0x90, 0x90, 0x90, 0xF0, # 0
        0x20, 0x60, 0x20, 0x20, 0x70, # 1
        0xF0, 0x10, 0xF0, 0x80, 0xF0, # 2
        0xF0, 0x10, 0xF0, 0x10, 0xF0, # 3
        0x90, 0x90, 0xF0, 0x10, 0x10, # 4
        0xF0, 0x80, 0xF0, 0x10, 0xF0, # 5
        0xF0, 0x80, 0xF0, 0x90, 0xF0, # 6
        0xF0, 0x10, 0x20, 0x40, 0x40, # 7
        0xF0, 0x90, 0xF0, 0x90, 0xF0, # 8
        0xF0, 0x90, 0xF0, 0x10, 0xF0, # 9
        0xF0, 0x90, 0xF0, 0x90, 0x90, # A
        0xE0, 0x90, 0xE0, 0x90, 0xE0, # B
        0xF0, 0x80, 0x80, 0x80, 0xF0, # C
        0xE0, 0x90, 0x90, 0x90, 0xE0, # D
        0xF0, 0x80, 0xF0, 0x80, 0xF0, # E
        0xF0, 0x80, 0xF0, 0x80, 0x80] # F
```

The code above is a layout of a series of nibbles in a list format that we can access, and each 5 bytes represents the raw pixels of a character. Each "1" equals a lit pixel for each character; each character is 4 bits across and consists of 5 rows. As we only use a nibble, only the most significant bits of each byte are used – that is why each value ends with 0.

❯ Yes, it's a bit blocky, but it's a tiny, functioning version of *Space Invaders*. Pretty neat.

Next, we're going to need some way to handle input. The CHIP-8 had a very simple input mechanism – 16 keys from **0**–**F**. This fits exactly into a nibble. Let's define a module to map our keyboard keys to those values. Save the following as **keyboard_input.py**:

```python
"""This module contains the keyboard input
handling logic"""

import sys
import pygame

keys = {}
keys[pygame.K_0] = 0x0
keys[pygame.K_1] = 0x1
keys[pygame.K_2] = 0x2
keys[pygame.K_3] = 0x3
keys[pygame.K_4] = 0x4
keys[pygame.K_5] = 0x5
keys[pygame.K_6] = 0x6
keys[pygame.K_7] = 0x7
keys[pygame.K_8] = 0x8
keys[pygame.K_9] = 0x9
keys[pygame.K_a] = 0xA
keys[pygame.K_b] = 0xB
keys[pygame.K_c] = 0xC
keys[pygame.K_d] = 0xD
keys[pygame.K_e] = 0xE
keys[pygame.K_f] = 0xF

def handle_input(cpu=None):
    """
    This function handles control input for this
program.
    """
    for event in pygame.event.get():

        # quit if user presses exit or closes the
window
        if event.type == pygame.QUIT:
            sys.exit()

        # check cpu registers and inject key input
        if cpu:
            if event.type == pygame.KEYDOWN:
                if event.key == pygame.K_ESCAPE:
                    sys.exit()

                if event.key in keys:
                    cpu.key_down(keys[event.key])

            if event.type == pygame.KEYUP:
```

```python
                if event.key in keys:
                    cpu.key_up(keys[event.key])
```

This code defines a dictionary to map keyboard input into and a function we can use to check which keys are pressed. We then pass that data into our CPU. Handy!

The last missing part of our emulator is the renderer. A renderer is simply some code that can take raw data and instructions and turn those into some form of visible output. We'll use Pygame Zero to draw to our screen and we can define our renderer like so, remembering that the CHIP-8 was limited to a 64×32 resolution with black and white output. The following needs to be saved with the file name **renderer.py**:

```python
"""This module defines the renderer object and
related methods"""

import pygame

WHITE = pygame.Color(255, 255, 255)
BLACK = pygame.Color(0, 0, 0)

SCALE = 10

# The CHIP-8 display ran at only 64 * 32 pixels.
# this value scales the framebuffer
# so it's easier to view the emulator on modern
displays
screen = pygame.display.set_mode((640, 320))

def render(frame_buffer):
    """This method draws everything to the screen"""

    screen.fill(BLACK)

    for x in range(64):
        for y in range(32):
            if frame_buffer[x][y]:                ➡
```

▲ **Figure 1:** If the **bc_test.ch8** ROM shows this message, then congratulations: you have a functioning CHIP-8 emulator, and you're ready to play some games!

```
            pygame.draw.rect(
                screen,
                WHITE,
                (x *  SCALE, y * SCALE, SCALE,
SCALE))

    # Go ahead and update the screen with what
we've drawn.
    # This MUST happen after all the other drawing
commands.
    pygame.display.update()
```

The code above takes the frame buffer of the CPU and iterates through it, drawing a 10×10 white square for every pixel that should be set. This gives us a larger window to see the emulator running, and will be easier to use on a larger, modern display. A frame buffer is just a section of memory that stores things you want to show on a display monitor or TV. In our case, it's just a 2D list of boolean values representing 'on' or 'off' for a pixel that we defined in our `Cpu` class earlier.

We're getting closer to having something work as all the core components of our system are now wired in. There's a bit more code we need to add to our CPU now we've defined all its dependencies. Let's go back and add some extra imports to the top of our CPU module, **cpu.py**:

```
from operation_code import Opcode
import operation_mapping
import font
```

Now append the code below to the end of the CPU module:

```
    def key_down(self, key):
        "This method sets a key as pressed"
        if key not in self.keys:
            self.keys.add(key)

    def key_up(self, key):
```

```
        "This method sets a key as released"
        if key in self.keys:
            self.keys.remove(key)

    def move_to_next_instruction(self):
        self.program_counter += Cpu.WORD_SIZE_IN_
BYTES

    def move_to_previous_instruction(self):
        self.program_counter -= Cpu.WORD_SIZE_IN_
BYTES

    def load_rom(self, rom_bytes):
        for i, byte_value in enumerate(rom_bytes):
            self.ram[Cpu.PROGRAM_START_ADDRESS +
i] = byte_value

    def set_arithmetic_flag(self):
        self.general_purpose_registers[self.
ARITHMETIC_FLAG_REGISTER_ADDRESS] = 1

    def clear_arithmetic_flag(self):
        self.general_purpose_registers[self.
ARITHMETIC_FLAG_REGISTER_ADDRESS] = 0

    def emulate_cycle(self):
        self._current_word = self.fetch_word()

        opcode = Opcode(self._current_word)
        self._current_operation = operation_
mapping.find_operation(self._current_word)

        self.move_to_next_instruction()
        self._current_operation(opcode, self)

    def fetch_word(self):
        word = self.ram[self.program_counter] << 8
| self.ram[self.program_counter + 1]

        return word

    def update_timers(self):
        if self.delay_timer > 0:
            self.delay_timer -= 1

    def _load_font(self):
        offset = 0x0
        for item in font.DATA:
            self.ram[offset] = item
            offset += 1
```

If you read through the code above, you should be able to understand what each method is doing

as there is a comment in each one to help you understand the code. We'll need this for the next step as we're going to revisit our **operation** class and fill in the blanks we left earlier. This is going to be quite a lot of code – as before, it's too much to print here, so download the file **operations.py** from our GitHub at **wfmag.cc/wfmag54**. Don't worry too much about what each method does, focus more on what opcode it relates to and what functionality it achieves for our emulator. There are several comments to help you understand each opcode, if you're interested.

We only need to write one more module to get our emulator working and to see our hard work pay off. We need an entry point to our code that initialises and runs it in the right order. Let's go ahead and create a file called **__main__.py** (NB: there are two underscores either side of the word 'main' that will handle all this for us.)

```
"""This is the main entry point for the program"""


import argparse
import keyboard_input
import renderer
import rom_loader
import pygame


from cpu import Cpu


if __name__ == "__main__":

    parser = argparse.ArgumentParser()
    parser.add_argument("-r", "--rom",
required=True, type=str, help="the name of the rom
to run in the emulator")
    args = parser.parse_args()

    cpu = Cpu()
    clock = pygame.time.Clock()
    rom_bytes = rom_loader.get_rom_bytes(args.rom)
    cpu.load_rom(rom_bytes)

    pygame.display.set_caption("pychip8")
    pygame.init()

    # main loop
    while True:
        keyboard_input.handle_input(cpu)


        # The CHIP-8 is reported to run best at
around 500 hz
        # The update loop runs at 60 fps. 60 * 8 =
```

```
480, which is close enough.
        for _ in range(8):
            cpu.emulate_cycle()

    cpu.update_timers()
    renderer.render(cpu.frame_buffer)


        # delay until next frame.
    clock.tick(60)
```

The code above sets up all the dependencies, loads the ROM data, and runs the core loop of the CHIP-8 CPU, which will read and evaluate instruction by instruction. Don't worry about "running out", as almost every ROM loops; they're not designed to terminate without user input.

The last thing we'll need is a ROM to test this out with. First, let's use a debug ROM – the best I've found is called **bc_test** created by BestCoder. Create a folder called **roms** in your working directory and copy **bc_test.ch8** into it from this repository: **wfmag.cc/chiptest**.

With the ROM in place, open the directory that contains your **pychip8** folder in your terminal of choice and run the command `python pychip8 --rom="bc_test.ch8"`. You should see something like the output in **Figure 1**. If you do, have a round of applause – you have a working emulator! If you see nothing on the screen, the error's likely in the renderer module; if you see a screen like the one in **Figure 2**, then you'll be able to work out what's gone wrong by checking the error codes at **wfmag.cc/error-codes**.

Once you're sure the test passes, it's time for real games! There's plenty of ROMs available for the CHIP-8 – you'll find several at **wfmag.cc/chip-roms**. Just copy the files into your **roms** folder and run the command, replacing the test ROM name with the name of the ROM you want to run, and bingo: you're playing games on a computer that you wrote yourself! Ⓦ

❮ **Figure 2: If running the bc_test.ch8 ROM gets you a message like this, then you can troubleshoot your emulator with the error list at wfmag.cc/error-codes.**

Why you should make games nobody can play

Copyright theft is a great way to boost creativity and improve your skills. Just be sure you never, ever publish the results

AUTHOR
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As a society, we've generally accepted the idea that stealing the property of others is a bad thing. That philosophy extends into the realm of ideas as much as it does the world of knocking over banks and nabbing purses from old ladies: an entire branch of law, copyright, exists to protect the intellectual property rights of people so that their ideas and creations can't be used or exploited – arguably, stolen – without their permission.

You might be wondering, then, why this article is urging you to make games that violate the intellectual property rights of other people. In this case, I've found stealing can actually be very good for your creative process; provided, of course, that you don't publish any of it and get yourself knee-deep in litigation. A very quick

précis before we get into the discussion proper, however: I cannot stress enough how not-legal-advice this is. Don't complain to me if someone sues you for publishing a game based on assets you took without permission.

With this being said, there are two primary reasons why I've found blatantly stealing things in my private work so helpful to becoming a better game developer in personal experience. The first is the sheer wealth of assets available online: 3D models, music, images, artwork, sound effects. The biggest pipeline blockage to making something fast, at least as far as I've experienced, is ingesting all the assets you need, and when you don't need to worry about petty ethics when it comes to sourcing them, that bottleneck is quickly removed.

This comes with the advantage of letting you use any resource you want. Do you think the soundtrack of the *Persona* series is wasted on them and could be put to much better use in the tax filing simulator that only you or your circle of friends can ever play? Then use it! As an example: almost a year ago, I built a game for a friend's birthday. It was a visual novel with him in the lead role, but to finish it on time, given how relatively ambitious the scenario was, I resorted to pilfering the contents of Google Images; "x stock photo" was a reliable way to find backgrounds that fitted my weird aesthetic.

You aren't only limited to stealing assets, either. Is there a gameplay system that you really like in another game, that you think would be a neat fit in a personal project – like the combat system of a game you think does battling well,

▾ Reverse-engineering the mechanics of other games can be a helpful way to learn new programming techniques.
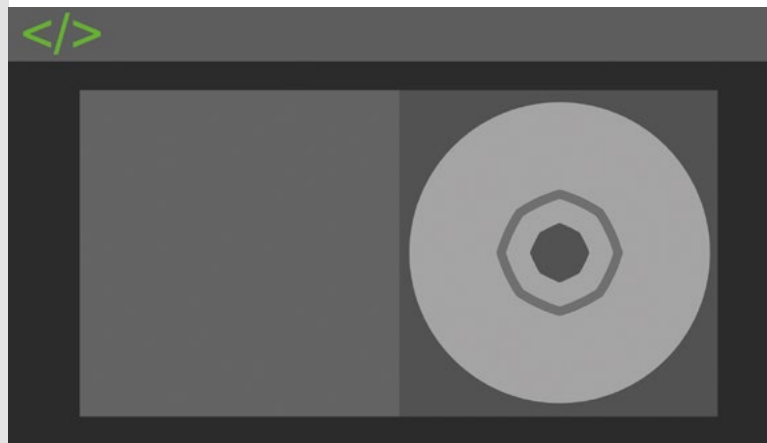
If you're short on placeholder graphics, your search engine of choice is a good starting point.

for instance? Well, through the magic of "never allowing anyone other than you and a group of people who you've sworn to silence to play it", you can lift the mechanics of other games into your work.

This sounds ridiculous and like I'm not taking myself seriously, which is accurate, but there's also a real creative benefit. Learning how to code and design games is a challenge, both in terms of picking up the syntax of whatever language you're developing in, and of conceptualising game mechanics and designing gameplay flow. Faced with this, the decision fatigue that comes with an empty project and no direction can be prohibitively daunting; faced with limitless possibilities, how do you start?

This is why stealing helps. It changes the question: no longer "Where do I start?" but "How do I make *this*?" For the project I mentioned earlier, one of the visual novel's many minigames was the trial system, lifted wholesale, from the *Ace Attorney* series. I'm not the greatest user interface designer in the world, and so getting a ton of independent and often competing systems to play nicely with each other was a compelling challenge, and the experience has taught me to appreciate the complexities of the medium more.

This leads neatly to the second reason you should steal things. It's true that having a specific frame to work within can give you a helpful place to start with creative projects; it's why some people (me) find it easier to write thousands of words of fan fiction rather than a 2000 word critical essay for their (my) actual degree.

It's also true that knowing your work has been at least partially stolen from the works of

others is, despite the self-imposed constraints, surprisingly liberating in a creative sense. Since your creation can never legally enter the stream of commerce, it doesn't matter whether it's buggy or broken or barely functional or even fun – no comment section will ever see it.

I've found trying to replicate existing mechanics is a good way to learn new programming techniques, but your fear it'll turn out broken? You can make your game without worrying about putting it in the hands of others. I can attest to recently trying to build a pathfinding system with an algorithm called A* (that story is a whole separate article, but suffice to say it's going embarrassingly badly for someone who claims to be a bona fide game developer). Fortunately for my dignity, no one other than me and my circle of friends can ever know what a horrible programmer I am, and the relief that comes from that makes it far easier to keep trying.

What I'm trying to say is that, as weird as it sounds, knowing that no one other than yourself can ever legally see your work takes away so much of the pressure – the feeling that in order to be a genuine game designer you have to produce something 'good' or 'functional'. It's OK to make broken things, because everyone has to start somewhere – and for more people, I think, that somewhere should be blatant copyright theft. Ⓦ

> **"I've found stealing can actually be very good for your creative process"**

But seriously, folks…

It's important to remember, as helpful as this process can be to improving your creative cycle as a game developer, that copyright law is deadly serious. You should not publish games you create, even if you aren't making money from it, unless you have a licence to use everything inside it or you have a fair use right to whatever you don't. This article is not legal advice, and corporations are historically defensive of their copyrighted work; seek the assistance of a lawyer or a solicitor if you're unsure about whether something is publishable.

An empty Unity project. Faced with so many different windows, moving parts, and zero creative direction, where do you even begin?

Handy tips for porting your game to consoles

Planning early for console porting can save a lot of pain later in development, Rob writes

AUTHOR
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T he heavily curated stores of consoles generally offer excellent visibility for games compared to mobile and PC platforms, making them an attractive target for many developers. There are numerous hurdles to jump before you can bring your title to PlayStation, Xbox, and Nintendo, not least of which is the porting process itself. Whether you intend to work with a porting partner or to handle console porting in-house, there are several important considerations to plan for.

CHOOSE THE RIGHT VERSION OF YOUR ENGINE

The first thing you need to decide is which version of your chosen game engine you'll be using, and to ensure that it's supported across all the console platforms you want to hit. It's always advisable to pick a version that is *already* supported by all your target platforms unless you have a specific technical reason not to. If one console platform is behind the others in supporting your preferred version, don't make the mistake of assuming support will be introduced by the time you're ready to begin porting. Big companies often move slowly, and it can take a surprising amount of time for one or more consoles to add support for a particular game engine version.

PLAN FOR WHAT ISN'T SUPPORTED 'OUT OF THE BOX'

There was a time not so long ago when developers had to either build their own engines from scratch or pay extremely expensive licence fees for somebody else's engine. Today, engines like Unity offer affordability and superb integration across all major platforms. That doesn't mean you simply press a button to compile to a new platform and everything will magically work, though – far from it. You still need to pay attention to what's not supported out of the box and the varying technical features and requirements of each platform. If you're developing in Unity, for example, you'll find that controller integration and your save and load system don't ubiquitously work across consoles
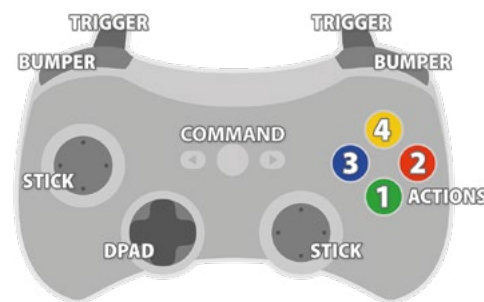
> Plug-ins like Gallant Games' InControl can be a massive help when porting your Unity project, but be prepared to roll your sleeves up for a bit of coding in some instances.
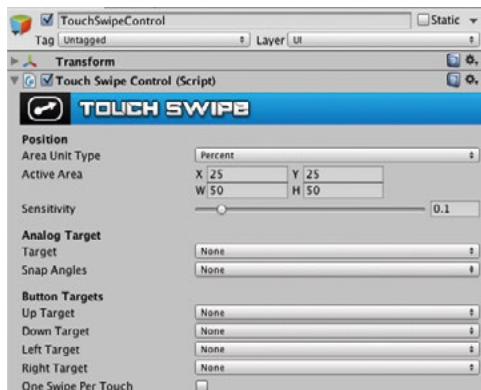
▲ A look at InControl's UI, which is clear and logically laid out.

▲ By researching technical requirements for our first Nintendo Switch port of *Hyper Sentinel*, we were able to plan effectively for optimisation for low-power mode.

when porting from PC, so these are likely to be the first hurdles you encounter.

There are some great Unity plug-ins such as InControl and Rewired which can help to bridge the controller support gap for you. Keep in mind, however, that controller configurations and requirements can be surprisingly complex and varied across console platforms, so you may still need to dive into the code to solve some configuration issues, especially if your game has a more unique controller setup.

Your save-load system, on the other hand, will probably need to be more bespoke because each console has a different method for handling saving and loading.

PLAN FOR BESPOKE FEATURES

Controller support and the save-load system are examples of features which pretty much every console game is going to need to support. But you also need to think about the additional features your game has, where there may not be a catch-all solution within your game engine for supporting those features on consoles.

As with saving and loading, network features like online multiplayer and leaderboards have to be integrated with the particular networking solutions and requirements for each platform, and those can vary quite significantly. There may be some plug-ins and middleware solutions to help with these, but you can expect to spend a lot of time setting them up for each platform if you are building them from scratch.

Achievements and trophies are of course a requirement for PlayStation and Xbox platforms, but not for Steam or Nintendo Switch. The rules for these two platforms are a little bit different from each other, so make sure you design

your achievement system in such a way that both are satisfied to avoid any surprises late in development.

CONSIDER PLATFORM FEATURES

When targeting consoles, it's also worth thinking about their bespoke features well in advance. In particular, think about the implications of the differences found on Nintendo Switch compared to other platforms. Unlike any other console platform or PC, Switch games need to work on both a large and small screen, in the living room and on the go. This could be an important consideration when it comes to your UI design, for example, if everything is to remain easily readable across different screen sizes and resolutions. Other bespoke platform considerations include control options (touchscreen, docked, handheld, single Joy-Con and Pro Controller on Switch, and haptic ➡

TECHNICAL REQUIREMENTS

Each console has a unique set of technical requirements for passing submission, and the sooner you absorb the implications of them, the sooner you can plan your development roadmap. If you're unfamiliar with these requirements, don't be surprised to find yourself adding or rewriting significant portions of code to adhere to them later.

When we ported *Hyper Sentinel*, it was important for the game to hit 60 fps across all platforms, and while we achieved this in normal conditions, we weren't hitting 60 fps in power-saving mode for low battery levels on Nintendo Switch initially, so we had to do further optimisation. This was our first Switch port, but we'd done our homework, first by reading the requirements so we were aware of the power-saving performance issue, and also by using Nintendo's profiling tools so we could account for it in our project plan.

❮ Docked or handheld mode, Joy-Con or Pro Controller? If you're porting to Nintendo Switch, these are the questions you need to ask early on.

> As a console porting and development partner working across multiple projects, Huey Games has invested heavily in building up our Huey Core code base to make porting more efficient.

THREE THINGS TO CONSIDER

Optimisation

If you're bringing your game to console from PC, it's important to think about optimisation right from the outset. Profile early, and profile often using engine profiler tools, and ideally the profiling tools provided by the console platforms, too. That way, you can chart a course to your optimisation targets in a managed way. If you don't do this, you may find yourself suddenly hitting a cliff edge when you try to get your game up and running on consoles for the first time. Don't make the mistake of assuming that just because your PC version is targeting a low minimum, optimisation won't be a concern when you bring it to consoles.

Unity AssetBundles

On Nintendo Switch, which can be played in handheld mode, remember that you're optimising not just for performance, as on the other consoles, but also for battery life, too. If you're developing in Unity, you'll almost certainly want to use Unity AssetBundles for this reason, because they're critical for optimising disc access, which has a significant impact on battery life. AssetBundles also have the advantage of potentially reducing the package size of your game and will help you adhere to any patch size requirements the consoles may have. As such, it's well worth building Unity games with AssetBundles from the outset if you're planning on console ports, particularly if the Switch is a target platform.

Shaders

Engines such as Unity and Unreal do an amazing job of allowing you to get your game up and running quickly on consoles, but you can sometimes encounter shader issues on one or more of the target devices. This is another reason for getting your game running on target platforms as soon as possible, and being prepared to tweak shaders where necessary to fix any platform-specific bugs. This is especially true if you're using any bespoke shaders.

feedback, haptic triggers, microphone, speaker, and touchpad on PS5).

To give an example from our own porting experience, when we did the port of *The Mystery of Woolley Mountain* for Nintendo Switch, which was a point-and-click adventure originally developed by Lightfoot Brothers for PC and Mac, we knew we had to support the touchscreen, as it was likely to be the preferred control method, as well as adding controller support. Neither of these existed in the original PC/Mac game, which was built for mouse control, so rather than rewiring an existing control scheme as we might with other porting projects, we were instead building two new control schemes, which had to be accounted for in the project plan.

BUILDING FOR MULTIPLE PORTING PROJECTS

By thinking about console porting early and planning for all these considerations, you can avoid a lot of development headaches for any individual project, but for most developers, console porting will not be a one-off concern. In the long run, building an abstraction layer for these common porting issues and not-
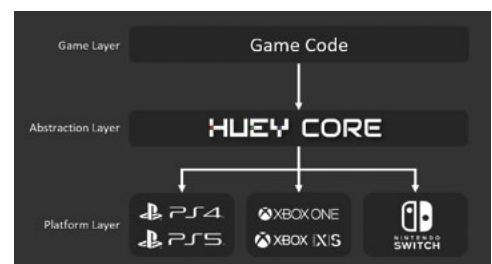
▲ The abstraction layer in Huey Core provides drop-in support across multiple systems to multiple target platforms.

supported-out-of-the-box elements will save you a lot of time across multiple porting projects.

My company Huey Games specialises as a porting and development partner, so we continually invest in building our own internal code library (Huey Core). It handles the abstraction of features that are common to multiple platforms and emulates certain console functions on PC, allowing us to run tests without waiting for console builds to compile. The Huey Core library includes a save-load manager, user manager, awards manager (achievements and trophies), multiplayer manager, and more. Each completed project provides us with an opportunity to further expand the feature set of Huey Core, helping to make porting far more efficient over multiple projects.

Let's consider save-load as an example. Each platform has a unique mechanism for handling player saves. For Xbox you have connected storage, for PlayStation you have either a file-based system or PlayerPrefs, and for Nintendo Switch you have a mounted save area. Each Unity game you port from PC is going to use either PlayerPrefs or File I/O to store game saves and persistent data. Huey Core will override the File I/O and PlayerPrefs

"For most developers, console porting will not be a one-off concern"

namespaces to get drop-in support for saving and loading on each platform, whether the games use PlayerPrefs or File writes. Calls to PlayerPrefs will then be redirected to the appropriate save mechanism for the current platform. On Xbox One, for example, this means serialising PlayerPrefs like a dictionary or a map to Connected Storage.

If you're planning to port multiple games yourself, then building up a code library to handle abstraction could be a good long-term investment for your programming team. If you're only porting a single title, this kind of investment might not make sense for you, but keep in mind there's a significant development overhead involved in building the required systems for console porting from scratch. ⓦ

∧ **Our Nintendo Switch port of** *The Mystery of Woolley Mountain* **required that we developed two new control methods.**

∨ **Be prepared to make adjustments to your shaders on target consoles, especially if they're bespoke.**
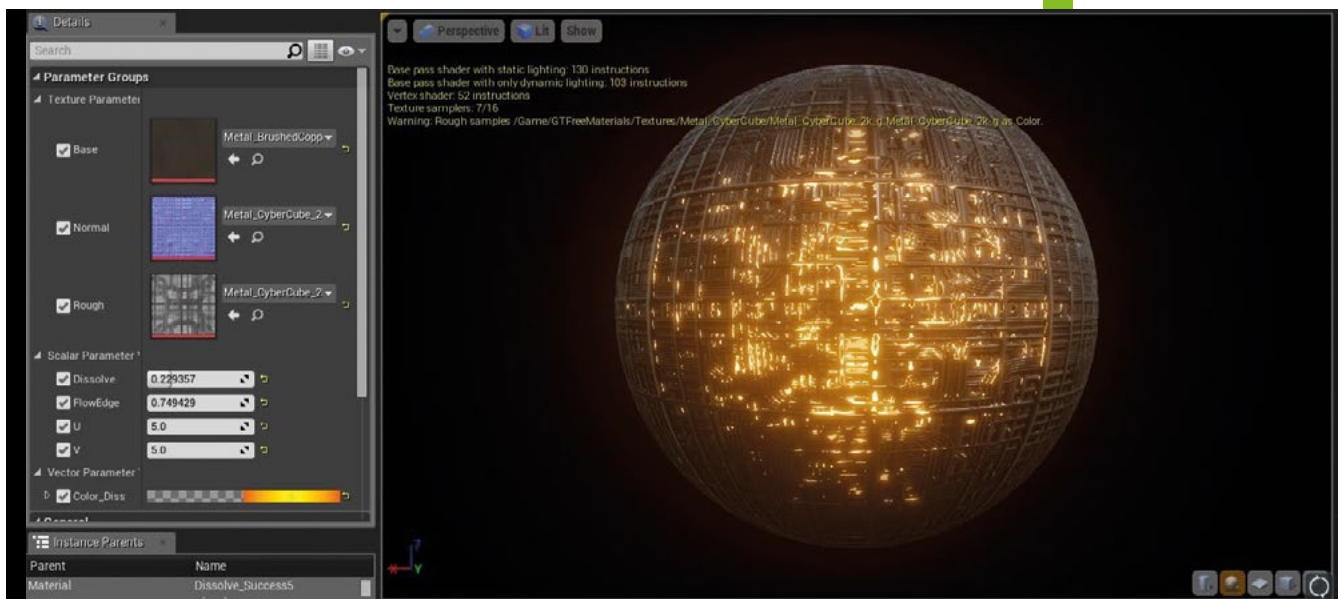
Writing truth in
No Longer Home

No Longer Home creators Cel Davison and Hana Lee discuss
how they pushed the boundaries of non-fiction game making
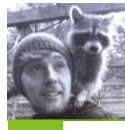
AUTHOR
ANTONY DE FAULT

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

True stories in video games are rare. Compared to other media, where biographical works, either by documentary or dramatisation, are popular and make up a decent portion of what we consume, video games have only a handful of notably successful such entries. But last month, Humble Grove released *No Longer Home*, a game introducing itself as 'semi-autobiographical' in which lead developers Cel and Hana invite players to explore a turning point in their lives. You play as them, choosing their words, and exploring the flat they must soon leave.

ADVANTAGES

We begin by discussing why there are so few games doing what theirs does. Can games even depict true events? It seems especially impossible in interactive media, given that the moment a player is given the hint of choice, they can deviate from what really happened. They can walk into a wall for ten minutes, do things in the wrong order, or fail where a real person succeeded. Cel answers, "I don't think it's possible, full stop." Hana elaborates: "I think, if you do want to make things true to life, you pretty much just have to make a recording of whatever happened, but even that…"

Cel finishes the sentence, in what becomes a flowing back and forth between the pair. "…even that, you have an interpretation of where you put the camera, that kind of thing." So it's impossible? Well, they continue, "drawing from our own experiences, we're *allowed* to put our own interpretation on it. They're my own experiences."

So, there are solutions to what seems like an inherent problem, and Hana segues to biography's advantages: "Mundane things are quite fun to explore, not in a hashtag-relatable way, but there's a lot of character-building that can happen in real events that aren't about revolutions or wars."

"I feel like a level of depth is more accessible in non-fiction," Cel continues, "especially as a writer, because you experienced it, you know exactly what the characters are going through." Writing characters with complex interior lives, then, is easier when you know or are that person in real life. But despite the advantages for character-building, it's still true that games can never literally depict events truthfully. Instead, you produce the *illusion* of non-fiction, something that seems true despite the details being dramatised, misremembered, and shortened.

> ⌄ *No Longer Home* isn't your usual gaming fare. Two graduating university students contemplate their identities and the looming prospect of their geographically separate futures.

Lu
But I've been needing somewhere to stay, after I got kicked out of my last place.

In *No Longer Home*, this collides with the central illusion of interactive fiction: the notion that you are exerting your free will on events even though you very rarely are. Together, these two create a bizarre sense that you're rewriting history with your in-game actions. This bizarreness makes it abundantly apparent to the player that what they're seeing isn't what literally happened, but is nevertheless true to the lived experience.

PHENOMENA

But *No Longer Home* is even more special than that. The game offers me choices to express social and political opinions through the mouths of its characters, and so I choose my opinions, but isn't that odd? I'm expressing myself, through the mouth of a real person, in a seemingly non-fictional account. It reminds me of *Being John Malkovich*, like I'm taking over Cel and Hana's real thoughts and actions. I ask them how this makes them feel. Neither expected this response, both at first laughing nervously and unsure of what to say, until Hana begins; "I've just realised we were doing something quite perverse," she laughs. "[It makes me] feel weird, but not in a bad way, like: sorry I put you through this. [But] all of the dialogue options are things that we felt, whether we vocalised them or not."

"They're all true to character," Cel interjects. Agreeing, Hana continues: "Regardless of what option you choose, they're all true – there's no wrong answer to the dialogue."

This point about a general truth, rather than recreating conversations exactly as they happened, seems to naturally complement the game's 'magical realist' elements. The game's a memoir, but also contains impossible extra-dimensional geometry and housemates depicted as literal monsters. I ask about their use of the magical realist literary genre, and Cel tells me,

"I think there's a lot that happens inside people's heads, and it's easier to show that stuff through something that's magical, rather than this purely mundane narration, so we tried to mix in magical elements to elevate it." With video games being an audio-visual medium and not particularly well-suited to depicting real events, using highly exaggerated sounds and sights to communicate true-to-life meaning seems a no-brainer.

THE WAY FORWARD

It seems to me that magical realism is the perfect fit for video game non-fiction: it's realism, so it says to the player 'this is true', but it's magical, so it also says, 'this is abstracted and shouldn't be taken as literal'. It solves the problem of non-fiction being an odd fit for the art form, while also playing to its strengths: you can use the full potential of the sights and sounds computers can create, while also taking a more accessible route to narrative and thematic depth by tapping into real people and experiences.

As we end the discussion, I tell Cel that I can see a version of the games industry in ten years where a larger, more prominent non-fictional narrative genre exists and is dominated by magical realism, to which he enthuses, "I'd really like to see that! I think there's a growing community of people making things like that, through Bitsy, or bigger games like *Mutazione* or *If Found...* We're starting to see it, and that's very exciting!"

Hana is also hopeful, and offers some advice: "Pick out some bit of your life and try to tell a story from that, no matter how mundane you think it is. It's going to be interesting because you're putting a lot of passion into it. Just trying doing it. Get on with it!" ⓦ

⌃ **True stories alone, right now, aren't game-sellers. Hana thinks they'd have no audience "if it weren't for the eye-catching magical realist or queer elements".**

TRUTH IN TRANSLATION

Hana, who lives in Tokyo, had to translate real people's words and personalities into Japanese for the game's release. She tells me: "There was difficulty in how to represent a non-binary person in Japanese, so I went for a very soft-spoken voice for [Cel]. I just wrote [myself] how I speak in Japanese." She adds that "there's a lot of imagination that's been put into it, especially with our friends. In real life, we all speak with similar speech patterns, so in Japanese, I had to make them more 'tropey' otherwise they'd all sound the same."

SHOT RANGE:
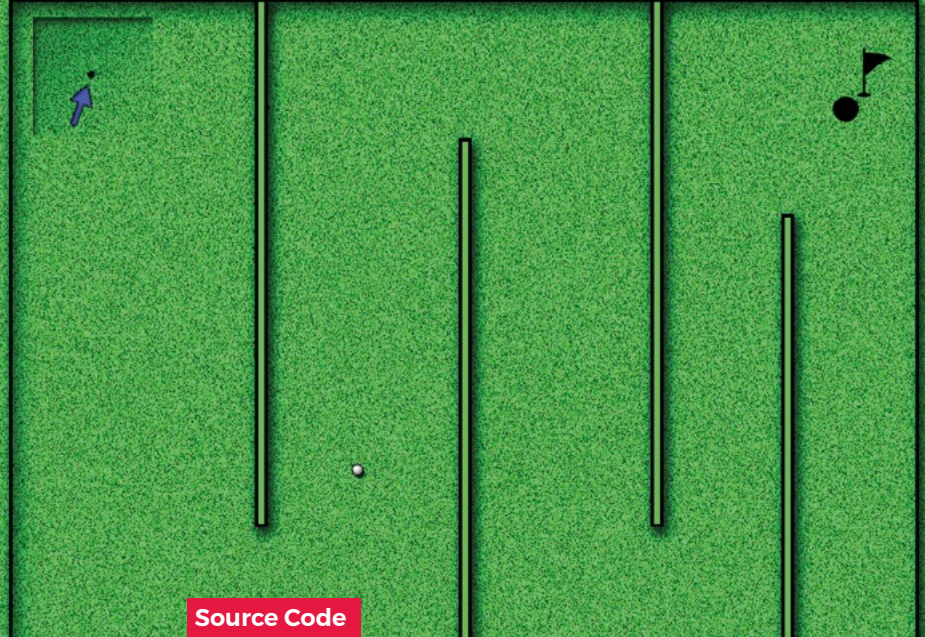
Source Code
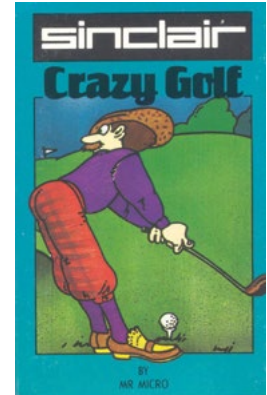
Code a Spectrum-style
Crazy Golf game

Putt the ball around irrational obstacles in our take on golf

AUTHOR
MARK VANSTONE

F irst released by Mr. Micro in 1983 – then under the banner of Sinclair Research – *Krazy Golf* was, confusingly, also called *Crazy Golf*. The loading screen featured the *Krazy* spelling, but on the cover, it was plain old *Crazy Golf*. Designed for the ZX Spectrum, the game provided nine holes and a variety of obstacles to putt the ball around. *Crazy Golf* was released at a time when dozens of other games were hitting the Spectrum market, and although it was released under the Sinclair name and reviewed in magazines such as Crash, it didn't make much impact. The game itself employed a fairly rudimentary control system, whereby the player selects the angle of the shot at the top left of the screen, sets the range via a bar along the top, and then presses the **RETURN** key to take the shot.

If you've been following our Source Code articles each month, you will have seen the pinball game where a ball bounces off various surfaces. In that example, we used a few shortcuts to approximate the bounce angles. Here, we're only going to have horizontal and vertical walls, so we can use some fairly straightforward maths to calculate more precisely the new angle as the ball bounces off a surface. In the original game, the ball was limited to only 16 angles, and the ball moved at the same speed regardless of the strength of the shot. We're going to improve on this a bit so that there's more flexibility around the shot angle; we'll also get the ball to start moving fast and then reduce its speed until it stops.

To make this work, we need to have a way of defining whether an obstruction is horizontal or vertical, as the calculation is different for each. We'll have a background graphic showing the course and obstacles, but we'll also need another map to check our collisions. We need to make a collision map that just has the obstacles on it, so we need a white background; mark all the horizontal surfaces red and all the vertical surfaces blue. As we move the ball around the screen (in much the same way as our pinball game) we check to see if it has

collided with a surface by sampling the colours of the pixels from the collision map. If the pixel's blue, we know that the ball has hit a vertical wall; if it's red, the wall's horizontal. We then calculate the new angle for the ball. If we mark the hole as black, then we can also test for collision with that – if the ball's in the hole, the game ends.

We have our ball bouncing mechanism, so now we need our user interaction system. We'll use the left and right arrow keys to rotate our pointer, which designates the direction of the next shot. We also need a range-setting gizmo, which will be shown as a bar at the top of the screen. We can make that grow and shrink with the up and down arrows. Then when we press the **RETURN** key, we transfer the pointer angle and the range to the ball and watch it go. We ought to count each shot so that we can display a tally to the player once they've putted the ball into the hole. From this point, it's a simple task to create another eight holes – and then you'll have a full crazy golf game! Ⓦ

Crazy Golf in Python

Here's Mark's code for a nifty top-down golf game. To get it running on your system, you'll need to install Pygame Zero. Full instructions are available at **wfmag.cc/pgzero.**

```python
# Crazy Golf
import pgzrun
import math
from pygame import image, Color

collisionMap = image.load('images/collision.png')
pointer = Actor('pointer',center=(90,85))
pointer.angle = 0
ball = Actor('ball', center=(100,150))
ball.speed = ball.dir = 0
gamestate = shots = 0
shotrange = 300

def draw():
    screen.blit("background", (0, 0))
    ball.draw()
    pointer.draw()
    screen.draw.filled_
rect(Rect((180,5),(shotrange,10)),(255,0,0))
    screen.draw.text("SHOT RANGE:", topleft = (20,
2),color=(0,0,0) , fontsize=28)
    if gamestate == 1 : screen.draw.text("YOU SUNK THE BALL IN
" + str(shots) + " STROKES", center = (400, 300), owidth=0.5,
ocolor=(255,255,0), color=(255,0,0) , fontsize=50)

def update():
    global shotrange
    if gamestate == 0:
        if keyboard.left:
            pointer.angle += 5
        if keyboard.right:
            pointer.angle -= 5
        if keyboard.up:
            shotrange = limit(shotrange + 10, 0, 600)
        if keyboard.down:
            shotrange = limit(shotrange - 10, 0, 600)
        checkBounce()
        moveBall()
        ball.speed = limit(ball.speed-0.01, 0, 10)

def on_key_down(key):
    if gamestate == 0:
        if key.name == "RETURN": hitBall(pointer.
angle,shotrange/100)

def hitBall(a,s):
    global shots
    ball.speed = s
    ball.dir = math.radians(a)
        shots += 1

def moveBall():
    ball.x += ball.speed * math.sin(ball.dir)
    ball.y += ball.speed * math.cos(ball.dir)

def checkBounce():
    global gamestate
    rgb = collisionCheck()
    if rgb == Color("black"):
        gamestate = 1

def collisionCheck():
    r = 4
    cl = [(0,-r),(r,0),(0,r),(-r,0)]
    for t in range(4):
        rgb = collisionMap.get_at((int(ball.x)+cl[t]
[0],int(ball.y)+cl[t][1]))
        if rgb != Color("white"):
            if rgb == Color("blue"):
                ball.dir = (2*math.pi - ball.dir)%(2*math.pi)
            if rgb == Color("red"):
                ball.dir = (3*math.pi - ball.dir)%(2*math.pi)
    return rgb

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

pgzrun.go()
```


⌃ …but weirdly, the loading screen spelled the name as *Krazy Golf*. The early games industry was strange.

Could a modern indie game light up the arcades?

KIM JUSTICE

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

Not too long back on one of my streams, myself and my viewers were having a few laughs at the possibility of *Sid Meier's Civilization* being turned into an arcade game. Obviously doing such a thing would be very silly, although in reality, the publishers of the grand strategy classic, MicroProse, did try to take some of their successful PC flight simulators such as *F-15 Strike Eagle* to the arcades. They lacked any experience in or understanding of the field, spent a lot of money, and they failed miserably – creating something that looked impressive, but was completely ill-suited to being an arcade game in every possible way. Such things clearly should have been left to folks like Sega, Capcom, and Konami, who actually knew what they were doing.

Jokes about spending 20p on building an empire aside, the light conversation did turn to speculation on the sort of games from these days that could possibly work in the arcade – the consensus was that a fair few modern indie titles, the action-packed ones that embrace old-school difficulty and play styles, may actually work. In particular, people focused on Studio MDHR's almighty *Cuphead* as a game that could absolutely fit the bill – it's got the impressive and unique look, it's got the serious challenge, and people would no doubt love to see Cuphead, Mugman, and the Devil immortalised on an arcade mural. But would it actually work?

Having thought about it, it most probably would – although there'd need to be some more subtle changes. Even if the difficulty and the presentation are absolutely there, there's a little bit more to it than that when it comes to making *Cuphead* a proper arcade game. An arcade game of the old-school variety needs to satisfy the player and deliver an immediate first impression – ideally, a player gets a good few minutes with the game before moving on, ready for the next player to put their coins in. So you'd have to streamline the experience a fair bit. The tutorial? Probably needs to go because there's no time for it – you need big buttons marked 'JUMP' and 'FIRE' instead. In fact, you might have to simplify the controls a fair deal, removing some of the game's more intricate parts. Maybe you'd have to purely focus on the boss rush style and do away with the side-scrolling stages completely, reducing *Cuphead* to its essence.

These are just a few things you may have to do to take *Cuphead* and make it palatable for the arcade, where satisfaction must be immediate, and turnover is paramount. It could be done… but in the process of doing it, would you end up taking too much away from the game? Would you lose a significant chunk of what makes *Cuphead* great? It's a delicate act, more than just sticking a game on a ROM board because it's classically tough. Still, it's quite interesting to think about, isn't it? No matter the result, I'd definitely want to be first in line. ⓦ

⌄ Everyone loves to take on the devil in the home, but would *Cuphead* stand out in a room filled with so many other distractions?
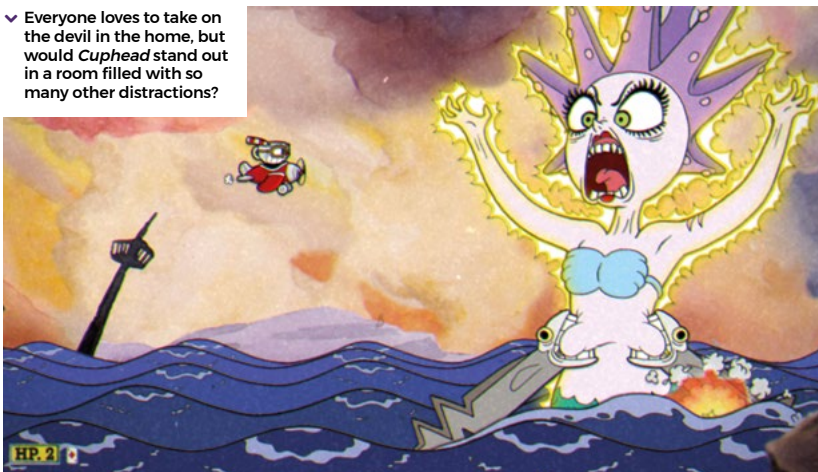
PHILIPS
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Golf Club: Wasteland

"Human life is mostly wiped out. Earth is now a golf course for the ultra-rich." It's a solid setup for a stark, haunting game of the world's best way to ruin a good walk. *Golf Club: Wasteland* mixes satire with beauty to good effect, as Nikola Stepković, creative director at Demagog Studio, explains: "Our main task was to bring the wasteland to life in a way that showed the melancholy of our main character, the emptiness of the future world in which the game is set, and create a polygon to reflect our present social and cultural moment.

   "At the same time, we wanted to be funny and draw out the humorous premise and make it apparent at all times. So it was important that world-building and the visual style remain light-hearted as much as possible." A highly stylised approach was thus used to great effect, with every environmental asset reduced to its silhouette, and a colour palette remaining as limited as possible without quite being monochromatic. "This way we could iterate fast on the ideas and stay visually consistent throughout the game development," Stepković says, "without fear that we will break the mood no matter what silly idea we come up with in the process.

   "Other important aspects of the visual style were fog and pink neons scattered across the landscape. The fog helped us achieve the gloominess of the post-apocalyptic landscape. When combined with pink neons, the bluish fog created a weird contrast that was a perfect visual platform for the message we tried to send."

GAME
Golf Club: Wasteland

ARTIST
Demagog Studio

RELEASE
Out now

WEBSITE
golfclubwasteland.com

30 GREAT SPORTS GAMES

(for people who don't like sports)

WRITTEN BY **IAN DRANSFIELD**

It's time for a bit of physical education education

The all-powerful reign of sport has taken hold in 2021, probably no more than in years past, but in a way that feels more significant, owing to the planet teetering on the brink as it is. This year's sport has been *important* and *vital* and *everywhere* – but we don't all like sport. Some actively *dis*like sport. And so it is we thought to put this handy guide together, pulling in all manner of video game representations of various sports that could actually appeal to those of us who have no actual interest *in* sports.

The idea of abstracting the concept of sports for the sake of a fun video game goes back as far as the medium itself – early on, developers couldn't represent the specifics and technicalities of much of anything, so instead, we got two sticks and a ball. Or 22 sticks and a ball. Or some sticks holding sticks with a ball. And so it is video games have been known to take existing sports and just abandon all pretence, turning them into something that values fun or silliness over strict attention to detail. The big money might be in virtual sticker books for the likes of FIFA, but we all know the *real* fun's to be had in golfing with buildings, (non-)horse racing, and tabletop games masquerading as sports. Spoiler: there's a lot of golf and golf-adjacent titles.

REAL SPORTS (BUT FUN)

Pong (1972)

It's the game that made gaming gaming, *and* it's based on tennis. Yet it's so abstracted from the original concepts of the sport. Beyond there being two 'players', a ball, and a score, there isn't much about *Pong* that screams TENNIS at your face. This is more a game of reactions and the wonder of angles; hoping your return shot will wrong-paddle your opponent and leave them rushing to set the (square) ball off once more. It's tennis, but really, it's not tennis. Tennish, then.

Mario Golf: Super Rush (2021)

The earlier *Mario Golf* titles on Game Boy Color and Advance took the series on RPG-flavoured walks so also come recommended here, but the most recent *MG* on Switch introduced enough about it to veer *fairly* wildly off the path of pure-golf-'em-up. Camelot's *Super Rush* simplifies shot mechanics, adds in the need to *dash to your ball*, and generally makes for a chaotic, almost party game-style of golf-alike.

Tony Hawk's Pro Skater 1 + 2 (2020)

The 2020 Olympics proved one thing: it's too warm in Japan. But also: skateboarding is the absolute best sport in the world, infinitely wholesome, infinitely cool, and full of genuinely talented, driven individuals who go out there and *just have fun.* It's spectacular. What a sport. And if you still don't care about it even after that impassioned endorsement, then you can play *Tony Hawk's Pro Skater 1+2* – because while it features real-life skaters, brands, tricks, and what have you, in actuality the game is just a combo-based score attack.

NBA Jam: Tournament Edition (1994)

The classic Midway arcade game reached said classic status for a good reason: it did enough to fool fans of basketball into thinking it was recreating their beloved sport, while at the same time not actually bothering to offer a particularly in-depth simulation of the game. Plus with *Tournament Edition*'s added bits – high score hot spots, power-ups, and more – it became even more of a manic arcade free-for-all. Plus you can play as Hillary Clinton, for some reason.

Football Manager (1992–present)

Turn off all the 3D match simulation stuff, run the matches at full speed, stick with nothing but on-screen commentary – or even play on *Football Manager Touch* where you can simulate (i.e. 'skip') games – and you start to boil away the extraneous, off-putting footballery of Sports Interactive's long-running management sim. What you're left with after this distillation is one of the deepest, most involved games ever made; one where you'll come away with actual, genuine stories to tell other people in real life, where the decisions of your digital players – their personalities, their triumphs, their successes – all shines through and makes you care far more than you ever think it could. It's the best RPG series ever.

Golf With Your Friends (2020)

Mini golf, specifically. You know – the one where people who don't actually play golf get together to thwack some balls around, miss a lot, and generally finish holes with scores in the teens. The best digital incarnation of this wonderful half-sport is Blacklight Interactive's *Golf With Your Friends* – a mix of puzzle-like hole challenges and captivating online multiplayer, it was a winner on Twitch even for those with no interest in sports.

Blitz: The League II (2008)

As stupid a game as you would expect from Midway in the first decade of the 2000s, most of the *Blitz* series trod pretty much the same path: serviceable American football. But also a path of over-the-top violence and ridiculously late tackling. What pushes *Blitz: The League II* (and its predecessor) over the line for these pages, though, is the Campaign mode – sleaze, cheating, imprisonment, and more all feature in a game that absolutely does not toe the official NFL line. It is: silly.
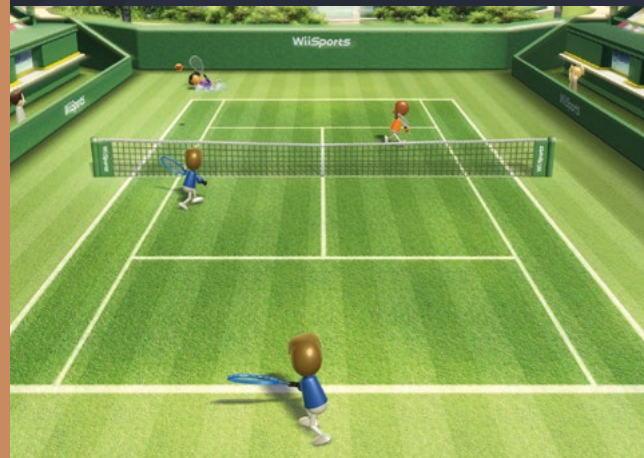
Wii Sports (2006)

The cries back in the mid-noughties of 'It's not like doing real sports!' completely missed the point – *Wii Sports* was always great, and still is great, because it's not actually like playing any sports. It's just standing up with friends or family and waggling things about until you either win or don't, while laughing a lot. There's plenty to be said for the finer elements of Nintendo's best default pack-in game, but at its simplest level, it's just a ton of fun.

Super Fire Pro Wrestling Special (1994)

This one's an example where you might want to get someone else involved to play the actual 'sport' bits for you, because the *Fire Pro* series is an excellent and in-depth re-creation of sports entertainment. What sets the SNES *Special* incarnation apart, though, is its Champion Road mode – basically, story mode. It's a weird and *intensely* dark tale of the best and worst of professional wrestling, all penned by one Goichi Suda – or Suda51, as he later became known. A wonderful soap opera full of surprisingly mature material, it's well worth a look even if real-world wrestling does nothing for you whatsoever.

Sega Soccer Slam (2002)

Super Mario Strikers might be screaming for attention right now, but we'll focus firmly on Sega's precursor to Nintendo's 'inspired-by' follow-up. *Sega Soccer Slam* is big dumb fun, an arcade-fest of wild dashes, superpowered strikes, and only a cursory understanding of the rules of football. ➡

LESS REAL SPORTS
(STILL FUN)

Speedball 2 (1990)

We're still waiting on the sports of the future to land, but at least we still have a digital re-creation of what we should be playing by the year 2105: The Bitmap Brothers' *Speedball 2*. While on paper it's a regular sport – just futuristic and sci-fi-y – in practice it amounts to hammering one button while holding a direction for approximately three minutes per match. You ostensibly try to get the ball in the opposition's goal, but you can score just as many points by hitting buzzers and targets on the pitch, or by beating your opponents to a pulp.

Blood Bowl (2009)

Neither this incarnation nor its 2015 sequel will win any awards for best video game, and it's still preferable to play the actual, physical, tabletop version of this Games Workshop great – but it's still hard to get through a list of sports games for non-sports fans without including Cyanide's riff on the turn-based strategy/ultraviolent sports mash-up. Matches are like chess with more balls and punching, and rather than a game of reactions and skill, it's one of thoughtful consideration and smashing in the faces of orcs. The third game should be out by now, too.

Rocket League (2015)

There's a reason *Rocket League* has remained supremely popular for around six years now: it's football, in cars, but with a whole different skillset required and with a fanbase that isn't a straight 50-50 split between lager and racism. No, *Rocket League* is a driving game with a big ball in it – a test of dexterity, reactions, timing, and skill, no doubt – and certainly a series of matches in which teams of equal numbers face off to bag the highest score. So… it *is* a sport. But it's also not: it's just daft fun. And well worth your time.

Brutal Sports Football (1993)

The middle ground between *Speedball 2* and *Blood Bowl*, *Brutal Sports Football* mixes the fantasy of the Games Workshop title with the second-to-second action of The Bitmaps' classic. The result is a fun mix of end-to-end, brainless punting, passing, and scoring mixed in with some adorably sinister violence as you behead your opposition and go on to score goals with their noggin as a substitute for the ball. Don't bother with the Steam re-release of this – it's garbage.

Behold the Kickmen (2017)

One of the standout recommendations for this list, *Behold the Kickmen* achieves such recognition because it's a football game made by a designer (Dan Marshall of *Lair of the Clockwork God* fame) who doesn't like football, that openly acknowledges that its creator doesn't like or even understand the beautiful game. As such, you get a wilfully silly take on a sport that, frankly, can be very silly when looked on by an outsider – full of made-up rules, referees giving you a kiss, and the ever-growing need to 'do a goal', it's probably a bit off-putting to the humourless footie fans out there, but a nice dig at sport in general for the rest of us.
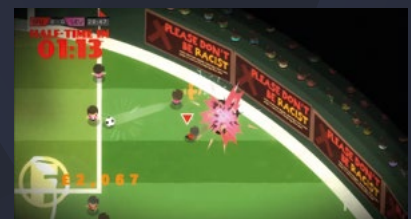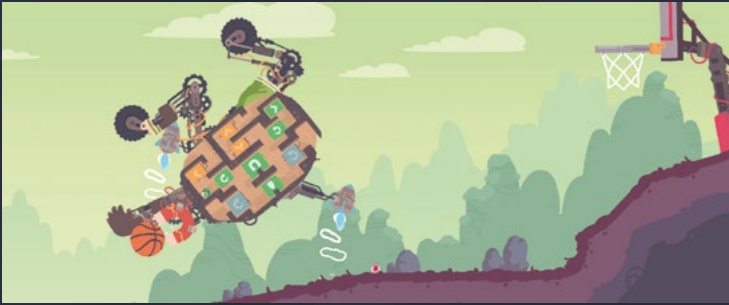
Regular Human Basketball (2018)

Nothing to see here, just some regular humans. Playing basketball. Some say it's actually a bewildering mix of management, multiplayer, and physics in which you take control of giant machines and run around inside them, instigating movements and manoeuvres for the beastly robots… but we couldn't possibly say either way. Regardless, this game that definitely features humans who are regular and playing basketball is a hoot and a holler.

Grand Prix Story 2 (2017)

All of Kairosoft's intensely captivating mobile games feature a lot of hands-off interactions with the main meat of things, and this is no more true than in the studio's sporting output like the excellent *Grand Prix Story 2*. It's a casual management title full of levelling up, getting new parts, hiring new staff, and throwing your best (automated) efforts out there on the race track. And you certainly don't need to know a carburettor from a vanburettor.

AaAaAA!!! – A Reckless Disregard for Gravity (2009)

Base jumping: sport, or exercise in tempting fate? That's for others to decide. *AaAaAA!!!*, meanwhile, lets you decide for yourself just how much fun it is pretty quickly. 'Basic' is the wrong word, but it *is* a basic score-hunt focused on falling with style and precision; straightforward fun and the sort of thing that's nothing like the demi-sport it's based on.

Golf Story (2017)

Golf Story leans far more on the story than it does the golf, at least in the traditional rounds-and-birdies format. It's more an RPG with a lot of collecting hidden items, one-off skill shots to hit, flying discs, and a genuinely funny self-awareness about it all. Handily, it does play a fabulous little game of the ol' stick-ball-thwocking, so that helps, but for those of us not interested in golf, it's definitely not the only thing going for this overlooked Switch gem.

Captain Tsubasa: Rise of New Champions (2020)

If you've ever wondered what it would be like to slather anime all over a basic football game, here's your answer. Also: the *Inazuma Eleven* series. *Captain Tsubasa* looks like some regular kick-ball-foot until the fiery super-shots, shoulder barges, and teen melodrama hit – that's when you realise you're onto something a bit different from the usual mix of fireless super-shots, shoulder barges (resulting in red cards), and teen-to-mid-30s melodrama seen in non-anime football games. ➡
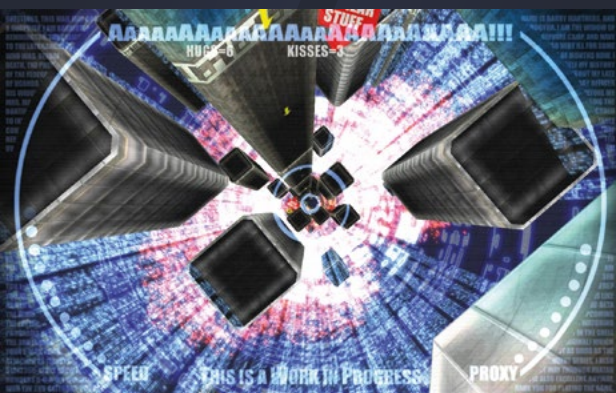
RIDICULOUS SPORTS (ALSO FUN)

Ribbit King (2003)

More golf-adjacent action, *Ribbit King* takes the general outline of the traditional sport and mixes things up a bit. You're now hitting catapults to launch frogs, both at the course's holes and targets along the way – like flies to munch on, obviously. It's very froggy. Strip all the extraneous silliness out and you have a pretty basic golf game. Layer it all on there – as is the case in *Ribbit King* – and you've got a wonderful multiplayer activity that everyone can get into. Unless they hate frogs.

Blaseball (2020)

Fantasy baseball? Surely that's just sports for those who can't play sports, rather than those who don't like them? Well yes, but not when you're talking about *Blaseball*. This absurdist re-creation of the demi-sport mixes in player incinerations, betting (not for real money), other players getting trapped in peanut shells, and more. It's an internet darling right now and well worth a play.

Ninja Golf (1990)

After hitting your ball down the course, *Ninja Golf* on the Atari 7800 then has you make your way to where the little sphere of destiny landed. Of course, this being golf with ninjas, your route to your ball involves battling other ninjas, dirt-lobbing gophers, mutant frogs, and much more. Yes, *Ninja Golf* is a mix of golf game and side-scrolling brawler, sort of *Jack Nicklaus*-does-*Shinobi* vibes. Is it good? No, not really. Is it absurd and funny? Yep. Perfect for golf haters everywhere.

Japan World Cup (2010)

A series of DVD-based horse races with randomised outcomes, made for players to watch and bet on. We'd hope to bet for things like bragging rights and not money, because anyone betting real money on a DVD game probably deserves to lose everything. Regardless, *Japan World Cup* is… daft. Jockeys ride horses with bouffant haircuts, giraffes, other jockeys dressed as horses, and more. It's genuinely funny, and helps you forget how horrible the real sport of horse racing is.

Barkley, Shut Up and Jam: Gaiden (2008)

Back in the heady days of memeing's past, things like *Barkley, Shut Up and Jam: Gaiden* would appear and would be both genuinely fun, and genuinely funny. They also wouldn't secretly be funded by Blackstone or whoever, instead, being genuine indie fan projects. See, *Gaiden* positioned itself as an unofficial sequel to the *Barkley Shut Up and Jam* titles of the 1990s, pivoting from basketball to surrealist JRPG-inspired mayhem. It's incredible.
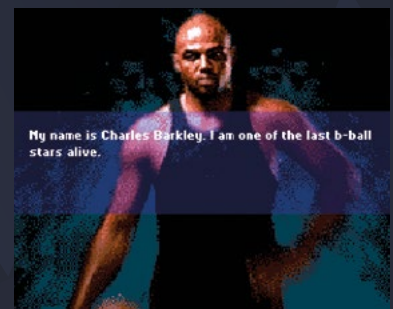
Diabolical Pitch (2012)

Kinect games are terrible and you shouldn't bother with them – that's the standard disclaimer – but *Diabolical Pitch* does manage to be a big pile of cathartic fun for those with a room big enough to use the ill-fated camera. While you do play as a baseball player and it *is* baseball-themed, Grasshopper's title actually plays out more like a fairground romp, lobbing balls as hard as you can at all manner of nasties in your way. It's genuinely stupid and has approximately zero depth, yet somehow it's 500 times more entertaining than real baseball. Who knew?

Rusty's Real Deal Baseball (2013)

A genuinely unique offering from Nintendo, *Rusty's Real Deal Baseball* presented itself as a free-to-play platform with a bunch of mini games you could purchase from the titular dog for real money. Thing was, the canine wanted you to haggle him down for them – in real money – to buy them at a discount. A metagame postively stuffed with minigames, it did a fantastic job of distracting players from any of the sports-based action they might encounter within.
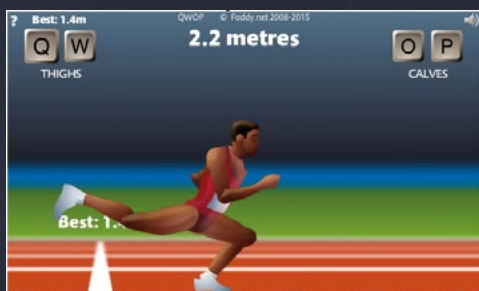
QWOP (2008)

If you've ever met the internet, you've probably played *QWOP,* and if you both hate sports and caught some of the Olympics this year, you probably had images of it flashing through your head. It's a legendarily difficult racing game that, secretly, is an exercise in torturous physics-based frustration and trying to make your *damn* fingers work in some kind of *damn* order to get this runner at least moving slightly forwards, never mind running. What a game.
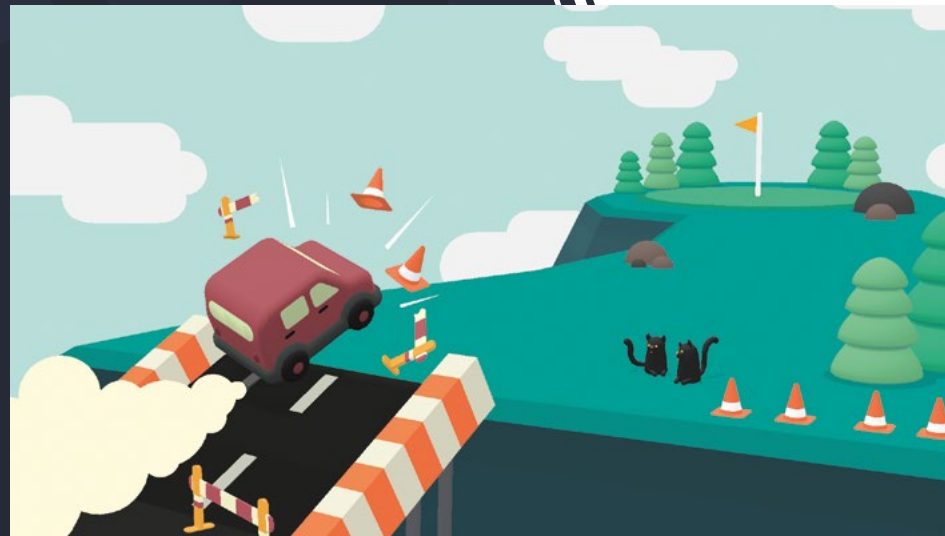
What the Golf? (2019)

At first glance it could be written off as a cutesy mini-golf game, akin to the previously mentioned *Golf With Your Friends.* Then you get to the hole where you go to hit the ball and, in fact, end up hurling your golfer avatar towards the hole. That's when something goes 'Ping!' in your brain and you realise you're playing one of the most laugh-out-loud funny, genuinely silly games of the past however many years you want to count. *What the Golf?* is brilliant and superb all at once.

Ninja Baseball Bat Man (1993)

Created by a baseball fan and featuring all manner of base and ball paraphernalia – especially bats – *Ninja Baseball Bat Man* eschews the vast majority of the sport in favour of being a scrolling beat-'em-up from Irem. Which is a fair bit of a pivot, to be fair. It's actually a bit of a hidden gem in arcade gaming circles; a forgotten curio from the time when wandering around battering people and eating bin chickens was an everyday thing. Ⓦ

︿ What to do with all the leftover food? You can try to pack some of it away in the fridge – the rest goes in the bin.

Interactive / Hot Pot For One

Co-creator Rachel Li talks us through her introspective cooking game

t's Christmas Eve, and you're all alone in your cosy Manhattan apartment. A pot of sausages and vegetables bubbles comfortingly on the stove, the sound mingling with the rush of traffic outside. So begins *Hot Pot For One*, a disarmingly personal interactive tale by Rachel Li and Qin Yin. The design duo's game is rich with the kinds of details that could only come from lived experience: the photos and odd bits of ephemera stuck to the fridge; the knick-knacks crowded onto shelves; the desk incongruously placed next to a kitchen unit, meaning the drawer can only be opened by a few millimetres. "It is indeed a personal game," agrees Li, who co-developed *Hot Pot For One* as her game design thesis project at New York University. "It's heavily inspired by our experiences as international students who have to live in a foreign country far away from family and friends. That means learning a new language, understanding a new culture, and adapting to a new lifestyle. As exciting as it may be, we often feel very lonely, especially in the holiday seasons, when our local friends get to go back to their

families... making food from home has been a safe space for me; the familiar taste brings me comfort, reminds me of good memories, and brings people's hearts together. *Hot Pot For One* is inspired by all those stories."

As a game, *Hot Pot For One* is simplicity itself: you pick your ingredients – chicken legs, broccoli, mushrooms, that sort of thing – and lower them into the pot of broth warming on the stove. As all this is happening, though, a bittersweet narrative unfolds: you're expecting a few of your friends to come around and share the meal, but as messages keep popping up on your phone, it becomes clear that you'll be spending the evening on your own.

"It's a mix of positive and negative emotions," Li explains. "There's the satisfaction of hot food [cooking] in the pot, but also the cold and snowy winter outside. We have the warmly lit kitchen and the rest of the apartment hidden in the dark. Players are given plenty of food from the start, but have to dump everything away at the end. We intentionally filled our entire game with such contrasts and emotional ups and downs
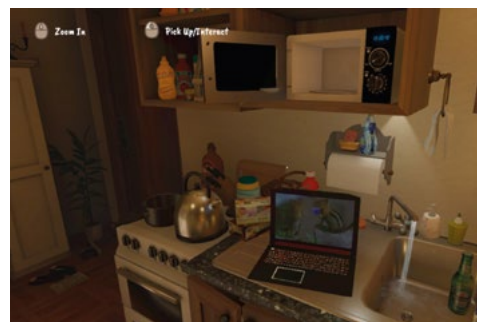
^ *Hot Pot For One* began as a tiny demo with a pot of boiling water. "Now it seems pretty crazy to me that someone would design an entire game from an ambiguous emotion we couldn't even define," Li says.

because we believe this complicated and often conflicting feeling is closer to how our emotions work in real life, making the story more realistic and relatable."

That realism took time to create, though: all told, it took Li and Yin around 18 months to build the game. "A huge chunk of the time was used to design the kitchen space, make food models, and customise textures," Li says. "We did plenty of research to develop a personalised kitchen layout because we wanted it to feel realistic… We asked our fellow classmates and friends to take photos of their kitchens to make sure we got the details right. It took us a couple of months to iterate and block out the level in 3D. For the 3D models, we first used existing assets to occupy the space to get the feeling exactly right; the meshes were then modified and reskinned with original textures to match the visual aesthetics."

Hot Pot For One, then, is a rare example of a game that goes for smaller, quieter emotions rather than grand themes – it's the game equivalent of a poem or a short story, perhaps. "It's still rare to see personal stories in games, because they're more about self-reflection and everyday moments and are thus more static and internal," Li agrees. "It's less about action and excitement than quiet contemplation. One of the main design objectives of our project was to convey subtle emotions through slow and mundane activity. This is challenging because we need to let the player slow down, get into the mood of the story,

^ Sounds, like the simmering pot and the traffic honking outside, are key to the game. Fortunately, all Li had to do was place a microphone outside her window to capture it.

and be ready to listen to what we're trying to say. Slowness and silence are dangerous elements in game design because it's easy to bore your players and lose their attention. So I can see why other games choose not to do that."

The game is made all the more poignant because it captures such a brief moment in time – after graduation, Yin got a job and moved back to Beijing, while Li stayed in New York. The pair probably won't make another game together, Li says, but she does at least have a concept in mind if they do team up again. "During quarantine, we developed a hobby of birdwatching in the city," she tells us. "We might make a game about that in the future!" ⓦ

***

Hot Pot For One is available on Steam and itch.io now

"It's inspired by our experience as students in a foreign country"

FOOD PHYSICS

One of the most charming aspects of *Hot Pot For One* is its use of physics: there's a tactile quality to the way your ingredients wobble and bounce around as you place them in your cooking pot. And later, when you're faced with the gloomy task of throwing all the uneaten food away, you'll often end up with assorted sausages and mushrooms bouncing off the side of the bin and onto the kitchen floor. "Working with physics is always super-messy," Li says. "It breaks so easily that adding physics immediately makes your game funnier. It's a good thing if you want that kind of humour in your game; in our case, it's trickier. We needed an accurate simulation of physics for individual food pieces and their interaction with the environment, in order to make the experience smooth and enjoyable; however, we kept the physics effects rather contained so that the simulation wouldn't get too chaotic and break the mood. A lot of tweaking and fine-tuning had to be done to find the perfect balance."

CP System

We look back on the Systems that made Capcom

There was a time before the CP System, Capcom's proprietary arcade hardware powering the company through eleven years of genre-defining, bar-raising coin-op greats. There was a time after the CP System, too, when development moved on to hardware like the Dreamcast-based NAOMI and others. But it's the CPS, CPS2, and CPS3, from 1988 to 1996, that brought the majority of what made Capcom, *Capcom*. *Final Fight*, *Street Fighter II*, *Strider*, *Marvel Super Heroes*, and so many more – the CPS has a lot to answer for. So it's probably time to take a look back over the archetypal arcade experiences that made a great developer *legendary*.

In the years before 1988, Capcom had operated like other arcade publishers, making games on individual boards – this meaning the whole thing would have to be removed in order to install a new game in an arcade cabinet. Following a couple of years' worth of development and tens of millions of dollars (in modern money), the CP System was born: a static unit that could remain in arcade cabinets, with game boards able to be easily switched in and out.

The CPS started strong with the likes of *Forgotten Worlds* and *Ghouls 'n Ghosts* landing in 1988, while early movie tie-in *Willow* showed a side of Capcom's output that would remain consistent through the next decade: good games based on licences. But it was 1989's *Final Fight* that took things to the next level: gigantic, chunky sprites menacing their way around the screen, beating miscreants into unconsciousness in the greatest accidental satire of American life yet seen in gaming. *Final Fight* was emblematic of the CPS – instantly recognisable, and seen everywhere.

But it was, of course, *Street Fighter II* that cemented the CPS legacy for all of time. The world's greatest fighting game just couldn't have been done anywhere else, and given its popularity, it meant the CPS had to be in every arcade. And what was that about operators being able to switch out games in their cabinets at will? Well, now...

Still, by 1993 Capcom had moved on – an upgrade had arrived in the form of the CPS2 and with it a host of improvements to the animation, visual fidelity, and sound we could all have wash over us in the local smoky arcade. Beyond mere technological upgrades, the introduction of the CPS2 came about with improved anti-piracy protocols in place. The previous model had seen plenty of bootlegs of its games over the years – who doesn't remember *Street Fighter II: Rainbow Edition* at their local leisure centre? – and so Capcom embraced encrypted ROMs for its follow-up hardware. Said encryption wasn't reverse-engineered until 2007, long after the CPS2 was relevant to Capcom, so safe to say it did its job well.

Of course, it also did its job well with the games released on the CPS2, with this period being a true golden one for fighting games in particular.

⌃ There was the stopgap hardware of the CPS 1.5, or CPS Dash, which implemented among other things the famed QSound chips. And *Cadillacs and Dinosaurs*, too.

⌄ By copying consoles and making a hardware base with changeable games, Capcom shifted the arcade playing field in its favour.

▲ The CPS platforms were the home of almost every 2D *Street Fighter* game released to date: it's more than *just Street Fighter*, but it'd be folly to say the CPS isn't the *Street Fighter* system.

Street Fighter II might have been born on its progenitor platform, but it was the CPS2 that took both that game to its highest point with *Super Street Fighter II Turbo* and introduced the stunning spin-off *Street Fighter Alpha* series. Not forgetting the *Darkstalkers* and Marvel tie-ins such as *X-Men: Children of the Atom* and *Marvel vs Capcom* – *and* their plentiful sequels and spin-offs.

This perfect arcade period wasn't just about one-on-one brawlers, with the CPS2 home to more classic scrolling beat-'em-ups – *Alien vs. Predator* is still legendary to this day, while *Armored Warriors* and *Battle Circuit* still serve as two of the finest examples the entire genre has to offer. *Dungeons & Dragons*, *19XX: The War Against Destiny*, even other developers got in on the action with titles like Takumi's *Mars Matrix* and Cave's superb *Progear*. It's no exaggeration to say that, for a few years from 1993-on, the arcade was pretty much *made* by the CPS2.

The audience was moving on, but the brass opted for one more stab at 2D greatness with the creatively named CPS3. A big-name game would be needed to launch the new CD-based system with a bang, and... no, the first game was *Red Earth* in 1996. A serviceable, forgettable fantasy-based fighting game, and one that's so thoroughly *just there* that Capcom has never seen fit to port it to any format outside of the arcade.

> **"The CPS2 period was a true golden one for fighting games"**

Street Fighter III was the big hit for the CPS3, of course, but while there was solid competition for that accolade coming from *JoJo's Bizarre Adventure* on the platform... there just wasn't anything else. The CPS3 launched in 1996, saw six releases – the aforementioned *Red Earth*, three versions of *Street Fighter III*, and *JoJo* and its sequel.

By 1999, even Capcom saw it was fighting a losing battle and had moved arcade development to Sega's NAOMI, with 3D arena-brawler *Power Stone* releasing that year and the 2D *Marvel vs Capcom 2* hitting in 2000. The CP System was dead after eleven strong years. Well, maybe seven or eight *strong* years and a few more in the wilderness, at least where it concerned mainstream arcade players outside of the fighting game community.

But the impact and legacy is gigantic. The CP System made arcades special thanks to a combination of factors. Capcom made great games, sure. The hardware itself was impressive enough to blow away home console efforts. And the manner in which operators were able to switch games in and out with minimal effort meant arcades with CP Systems would be able to show you a wider variety of games over the months and years. It was smart, it did the job well, and it was simple to use.

And best of all, it wasn't just the home of *Street Fighter II* – much more than that, the CP Systems all had something individually special about them. Ⓦ

CPS at home

The years have been kind to the CP Systems with relation to home ports – Capcom has been all too keen to offer emulated versions of its games (from all versions of the hardware), stretching back to the original PlayStation. But those looking to use the actual hardware have been catered to – Capcom itself released the CPS Changer in 1994, a home console version of the CPS hardware with eleven games released, the likes of *Final Fight* and *Street Fighter II Turbo* being made available.

But the tinkerers of the world have been hard at work themselves, resulting in 'consolized' units that add things like controller ports and HDMI outputs to CPS2 and CPS3 units – when combined with hardware manufacturer Darksoft's CPS Changer kits, they become all-in-one units capable of playing the actual arcade games in the home, with relative ease. A kit for the original CPS is releasing 'soon' at the time of writing, too. None of it's cheap, but it is there, and it reflects the love people have for the CPS line in general.

Come Play Some

10 CPS greats from three generations

01
### Strider
CPS – **1989**

Not the first on the CPS, but easily one of the most iconic games in all of Capcom's back catalogue. *Strider* took players on an adventure into the future CCCP, leaping, somersaulting, and slashing their way through legions of bayonet-toting troops and robotic enemies. The Mega Drive port is the stuff of legends. The Amiga one, not so much.
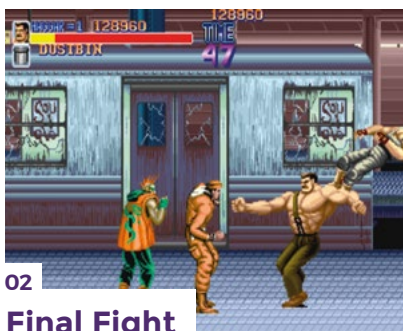
02
Final Fight
CPS – **1989**

Often cited as one of the games to save Capcom from oblivion, *Final Fight* gave a kick up the jacksie (and a punch, and a piledriver) to the scrolling beat-'em-up genre. Cody, Guy, and mayor Mike Haggar made their way through the mean streets of Metro City, battering potential voters and eating chickens out of bins. It was – it is – magnificent.
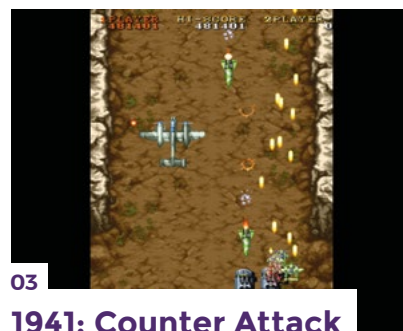
03
1941: Counter Attack
CPS – **1990**

There were many instances of Capcom showing the CPS format wouldn't mean forgetting about the company's past, and *1941: Counter Attack* was a fine example of this. A sequel to 1984's *1942* – read that three times fast – *1941* brought more sprites, more hectic action, and more over the top combat to the vertical shoot-'em-ups in Capcom's stable.

04
Street Fighter II: The World Warrior
CPS – **1991**

Saying it 'single-handedly changed gaming forever' is still an understatement, but here we are: *Street Fighter II: The World Warrior* single-handedly changed gaming forever. It tore up the book on what a one-on-one fighting game should be and set the template that's still being followed to this day. No longer the best in the series, it's still a hoot.

05
Alien vs Predator
CPS2 – **1994**

One of the finest mash-ups of licence and game, *Alien vs Predator* still holds the distinction of never actually being ported to any format beyond its arcade home. And that's still a huge shame, as it's an endlessly entertaining and fun beat-'em-up, full of hordes of Xenomorphs to slice, shoot, and explode – as well as stylish and smart to boot.

06

Dungeons & Dragons: Shadow over Mystara

CPS2 – 1996

Proving your beat-'em-ups didn't have to be brainless button-mashing affairs, the *D&D* tie-ins on the CPS2 added depth way beyond expectations, at least for arcade games. A (light) class-based RPG with items, magic powers, and special moves to pull off, it's still far more engaging than it has any right to be and is a bona fide CPS classic.

07

Mars Matrix

CPS2 – 2000

From the early days of the CPS, Capcom was open to other studios working with them, but it wasn't until the CPS2's sunset years that studios really started getting involved. *Mars Matrix*, developed by Takumi, was one such example. A fast-paced bullet hell shooter, it looked like no other CPS2 game and still stands out as a highlight of the genre.

08

Hyper Street Fighter II: The Anniversary Edition

CPS2 – 2003

Once the dust had settled and the CPS as a format was officially dead, Capcom went back for one last 15th-anniversary hurrah with *Hyper Street Fighter II*. The game brought together all previous versions of *SFII* into one grand mash-up, meaning you could pit World Warrior Ken against *Super Street Fighter II Turbo*'s Akuma… *and watch him get obliterated.* Wonderful fan service.


09

JoJo's Bizarre Adventure

CPS3 – 1998

Aka *JOJO's Venture* outside of Japan, this was the *other* CPS3 game more than worth your attention. While playing similarly to any number of other fighting games, *JoJo* introduced 'Stands'; sort of a secondary character to be called in and dismissed at will, that powered you up and let you carry out unique attacks. It was a neat gimmick in a solid game.
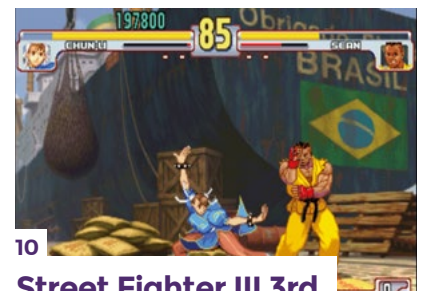
10

Street Fighter III 3rd Strike: Fight for the Future

CPS3 – 1999

Third time proved a charm in *Street Fighter III*, with *Fight for the Future* introducing more characters on top of those arriving in the first two versions of the game, alongside tweaked features and what is roundly accepted as the best fighting game mechanics in… well, some say all of fighting games. *SFIII* is a legend, and while the CPS3 failed, the game is proof of the format's greatness.

Online Diary

GITTIN' GUD

The Euros are over, it's time for a new circle of hell with eFootball PES 2021 online

WRITTEN BY IAN "MENTION THAT FOOTY SONG AGAIN" DRANSFIELD

And so I wave goodbye to *PES*, swallowed whole by the monster that is *eFootball*; the worst name of anything in the history of gaming – and this in an industry where things were called 'Dreamcast' and 'GameCube' and 'Vectrex'. But yes, *PES* is dead, so I had to send it out with a bang. Inevitably, it was a whimper.

Regular readers of these pages will know I'm not one for competitive online games, not for the most part. It's for many reasons, but a big one is that I get flustered, and angry, and end up playing even worse as a result – especially if the game's fast-paced, involves moment-to-moment action, and where fortunes can change in the blink of an eye. All of those really just mean: games where

No idea what he's so mad about. Saw a bee in distress, probably.

I can be doing OK but then I'm suddenly losing, because that's when the downward spiral begins.

You can guess where football games fit in here. But my experience this past month wasn't what you might expect from that setup. In the first instance, I was hardly able to get any matches going at all – it would either be a potential opponent disconnecting before a game got anywhere near to kicking off, or the more frequent occurrence of there just not being anyone to play against. I know it's 1pm on a Tuesday, but you'd think there'd be someone, somewhere in the world looking for a myClub match on *PES 202*1. Apparently not.

So it was that I actually ended up playing a number of matches against the computer; easily trounceable opposition with all the grace of a me on roller skates (I cannot roller-skate), every single match was a walkover. But you know what? It still felt good, because dopamine doesn't discriminate that much. It's not very online diary-ish though, is it? Well...

In the second instance of this being not what you might expect, given my initial setup on these pages, I found that when playing against human opposition, at least in the games I was able to get going... I could *win*. And not only was I capable of winning, but it also seemed my playing style – honed over 20-plus years of *PES* and *ISS* veterancy alongside an incessant desire to play it safe – was really winding people up. And would you believe it, that's where the real game began.

Can it be called griefing? Trolling? Playing in bad faith? You'll hear arguments saying yes to

^ Something else that annoys human opponents is, apparently, an ability to tackle with a level of subtlety. The more you know.

any one or all of those, I'm sure, and I would say it's not really playing in the spirit of the game as it's intended… but it's very funny. Passing the ball around your back four, side to side, quickly yet calmly, is apparently a wonderful recipe to wind up your opponent. Just like in real football, it makes it very hard for them to actually do anything – yes, you're not pushing on, you're not going to get a goal, you're not being in any way exciting or interesting. But you're retaining possession, and your opponent is getting tired out chasing the ball.

Plus they're getting wound up and you're getting a laugh out of it, if you're anything like me.

Now, it doesn't always work perfectly – human opponents in *PES* have always had a penchant for incredibly quick closing down, and if you're off the (fairly slow) pace you will get caught out. As you're passing between your back four, this means they'll likely score from any successful tackle they make. But done right, it means you keep the ball for a significant chunk of the match, you nigh-on cannot be tackled, and your opponent ends up… well, let me tell you a story.

I played intentionally boringly against my third opponent. We were matched on skill levels and our teams were equally rated. His attacking was direct and artless. Mine involved things like patient build-up and wing play. The match was back and forth, him having more attempts on goal but me having more possession and meaningful pressing into his half. My patience paid off, and I (luckily) went one-nil up.

We both continued as-is – it's one goal, it might as well be none, after all – but the same happened again. Slow and patient build-up led to a scramble in the box, and another goal for me.

And so I began to play the DDW ("Dransfield Dull Way"): passing the ball across my back four, goalkeeper, and defensive midfielders, keeping my opponent at arm's length and maintaining possession without much in the way of attacking ambition. I would try and break were he to show any major gaps, of course, but in the most part, I was happy to just sit back.

And that's when it happened. He finally got the ball from me, and promptly… scored an own goal. A mistake? Probably. It was a long ball played back to the goalie, perhaps he was wrong-footed or something silly. But then on kicking off, my opponent immediately passed the ball back to their goalie again, who let it go in. 4-0. And on kicking off again, they did the exact same again.

Maybe going two down was the trigger, but I don't think it was. I think it was the fact I resorted to being a Chelsea under Mourinho. An England at Euro 2020. Maybe less a case of parking the bus as with the former, and more just holding the ball and being slow. Patient. Considered. Intentional. Everything you're not 'supposed' to be when playing *PES* online. And everything it took to wind up a player so much he chose to shoot himself in the foot repeatedly rather than put up with it for another solitary second. I count that as a double-win. ⓦ

Being boring

Take time
The key to playing a good game of online football is to not behave like a wild beast on the pitch: in the vast majority of situations, you can take your time.
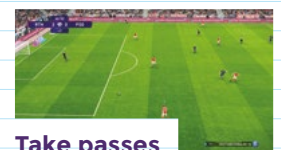
Take passes
It also helps to just pepper some passes around, usually from your back four, pinging from one to the next and back again to frustrate and tire your opponent, who will inevitably be running at full pelt to tackle you.

Take more time
Really, even if you're not winning by goals scored, the true victory in *PES* online comes from annoying the hell out of your opponent by playing like England did at Euro 2020: slowly, and boringly.
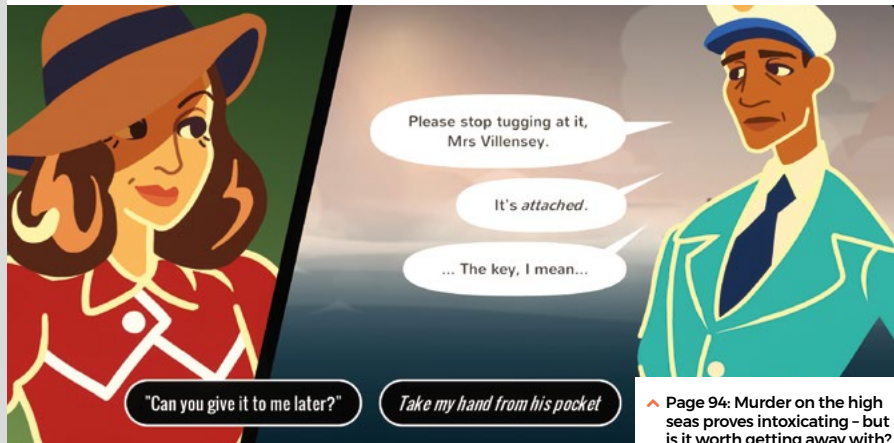
Story? More like BORE-y. (Sorry)

STEVE MCNEIL

As a trained actor, you'd think Steve might have at least a passing interest in narrative, but no.

> "The story is secondary to the joy I get from shooting zombies in the face"

There's loads of things about myself I don't want other people to know. Guilt, shame, and self-loathing are very much the baseline for self-reflecting humans these days, where even a simple act like buying a pint of milk is politically loaded because of all the sad cows and their bum gas. As I constantly tell anyone who'll listen, "You can't hate me more than I do", and yet, of all the things that create the sack of shame that hangs heavy from my ageing neck, one of the biggest sources of embarrassment is my complete lack of interest in stories in games.

Don't get me wrong. *The Last of Us* is a masterpiece. Of course it is. Well done, everyone. But, for me, the story is secondary to the joy I get from shooting beautifully rendered zombies in the face, or gaffa-taping scraps of metal onto a stick I found, to make a weapon I can wallop them with.

I'm not alone in this. And yet the act of writing it here in black and white still feels somehow dangerous, exposing, sacrilegious almost. The promise when I was growing up was that one day,

games would be like interactive movies, with the heavily implied result being that games would be better than movies as a result. Story is everything.

But the truth is, when I play these sorts of games, I want to feel in control when I'm immersed. I want to believe that I'm the character. And any imposition on me as to what I'm meant to say or feel or do next pulls me out of that and is a reminder I don't really have agency.

Having said that, I think a big part of why I'm generally a 'skip cutscene' kind of guy is that also, ultimately, it rarely feels like the story actually matters. Whatever's been said, whatever plot point has been plopped into the mix, ultimately, the 'bit where I don't press buttons and zone out' will end, and then I'll walk towards the next thing and find some stuff, or the next thing that needs killing.

Don't phone the Nerd Police just yet, though, as thankfully, before they come to arrest me and lock me away in a library until I promise to care about character arcs, I have discovered an appreciation for narrative in games. Twist!

The title that finally got me there, if you're asking, is *Wildermyth*. An incredible procedural turn-based RPG, its gameplay scratches that sweet, sweet spot I've discussed here many times in the past. But what makes *Wildermyth* different is the way it frames it all in the semi-randomised occurrence of branching narrative points and side quests which have real impacts on the appearance, abilities, relationships, and future of the characters you create at the start. As a result, you genuinely invest in the unique individuals you create in a way that normally feels absent and, when you reach the end of a campaign and put them out to pasture, there's a genuine sense of loss. It's like losing a friend, I imagine. I don't really have many friends these days. As I think I've made abundantly clear here, I'm awful. Still, check out *Wildermyth*. It is good. They can have that as a pull-quote. Ⓦ

∧ It's hard to make you truly care about things, but *Wildermyth* does very well at doing just that.

Backend Contents

Reviews, retro games, and lots more besides

OUR SCORES

1–9
Trash. Unplayable; a broken mess.

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

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

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

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

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

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

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

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

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

100
Never say never, eh?

Please stop tugging at it, Mrs Villensey.

It's *attached*.

… The key, I mean…

"Can you give it to me later?"

Take my hand from his pocket

^ Page 94: Murder on the high seas proves intoxicating – but is it worth getting away with?

PLUS

^ Page 108: Turns out the latest *Terminator* game was worth a bit of a (burning) thumbs-up.

Review

Minute of Islands

Desert island risks

REVIEWED BY
Jon Bailes

⌃ **The tone of narration changes at times to reflect Mo's subconscious complexes and doubts.**

Minute of Islands feels like gaming's interpretation of the old aphorism that music is the silence between the notes. It's more quiet than noise, a walking sim disguised as a platform-puzzler which rarely wrangles its pieces into anything taxing. But it makes something from the long gawping pauses required to fully drink in its scenery, its gentle narration, and the satisfaction of stoic routine. In between inputs, it unfurls an experience of isolation, misguided obligation, and stubborn attachment to parts of a life that's already gone.

The bedrock of these meditations is *Minute of Islands*' visual magnetism. Each of its isles is a giant ligne claire comic panel – a little Moebius, a little Hergé – zoomed in tight to let us gorge on its detail and colour, centred on a protagonist who might have arrived from a children's book. Mo is a girl with blue flowing hair, yellow wellies, and a matching cape wrapped up to her chin like she's hiding in a bath towel. Her arms aren't there until they unravel to pull her up to a ledge, before neatly folding back in. The way she ambles, hops, and floats groundward, you wouldn't guess at her troubles.

Yet this is the grimmest of fairy tales, set on an archipelago that springs from a network of biomechanical caves with cardiac valve doors, inhabited by four pale, hairless giants. A disorienting concept in itself, but the cause for concern is above, in infectious fungal spores that ride the breeze, laying waste to humans and wildlife. The giants have submitted to a kind of enslavement, ceaselessly winding cranks on machines that cleanse the air, with Mo in charge of maintenance to ensure the system keeps running. But things are getting worse. The game begins with Mo's discovery that the giants have stopped cranking, apparently collapsed into a deep sleep. Now she has to manually reactivate the purifiers on every island then visit each giant to revive them. It's a job that exposes you to both this world's enduring hardship and its ingenuity, above and below. Mo's boat is a patchwork of timber, alien metal, and rubbery

^ The giants aren't as intimidating as they first appear.

tentacles that uncoil into a boarding ramp. On islands where people once lived, and a few still do, you find ramshackle sheds and farm huts, work gear and containers left from before, creaky lifts and monorails, reinforced with shipwreck driftwood, cemented by outcrops of rainbow mushrooms. It's hard not to stop and snap screenshots of the surroundings, like someone trying to enjoy an accidental holiday in a nuclear wasteland.

Mo herself acts without fuss, however, supported by a soothing yet matter-of-fact narrator. A few of the islands house the remnants of her estranged family, including sister, Miri, who also seem staunchly accepting of their predicament. Details of the past are calmly revealed through collectable floating memories, scenic tooltips, and conversations. "Miri taught herself the cello after the fungus ate her arm," explains the narrator as you poke around Miri's home.

Making-do-and-soldiering-on is at the core of how you interact with the world, too. Mo isn't on an adventure; she's doing what's needed, unfazed by her festering environs. Platforming involves climbing over and dropping down behind chunks of scenery, a little switch-pulling at most. A means to an end as you pick through nature's revenge on a fragile civilisation. 'Puzzles' in the caves have you pushing fleshy blocks to reconnect arteries. It's like checking all your connections before rebooting your system. And as for that, Mo follows instruction manual prompts with her staff-like 'omni-tool' – insert the stick, crank it round, then plug it into a power source, link the power

"A walking sim disguised as a platform-puzzler"

to a destination point and pump in energy – a manual chore turned satisfyingly ritual through tactile repetition.

Minute of Islands wouldn't add up if all this evolved into proper puzzles and jumping challenges. It wouldn't be a tale of Mo's sacrifice, fuelled by a sense of self-worth that she only finds in martyrdom, of solemn duties that she won't permit anyone to help her fulfil. It wouldn't explore so fluently the need to find community in people rather than places, as Mo chugs between islands, inhaling clouds of mustard spores that alter her mind and intensify her loathing. In fact, it's only in the hallucinogenic intervals where *Minute of Islands* does feel unreasonably shallow. These introduce neat visual tricks, from backdrops of bizarre sealife to platforms that only appear in watery reflections, as Mo hunts down an ordered sequence of memories. But they only ever amount to a bit more walking and the mildest tests of recollection. It feels like they should be more surreal, mazy, and difficult to escape, to contrast against the logical processes outside.

It's a misstep, and so is some heavy-handed messaging in the final act. But much of the game dwells elsewhere, in the pull between subterranean machinic flesh where Mo finds solitary refuge, and the colourful surface decay where life and relationships want to go on. It's in the spaces between layers and landmasses that *Minute of Islands* asks whether toil and alienation are worthwhile sacrifices to hold on to something that's falling apart, and provides the silence for us to think that through. ⓦ

^ The tricky part of platforming can be figuring out exactly how the steps and paths link together.

Review

Chivalry 2

'Tis but a scratch

VERDICT

Limited maps and a few (hundred) cheap deaths aside, *Chivalry 2* is a gory, comical, cathartic multiplayer masterpiece. Joyous video game violence as an artform.

88%

There are two unforgivable clichés in game reviewing, and Pythonesque medieval multiplayer murderfest *Chivalry 2* is both so fun and so visceral that I don't even feel bad for just having used both of them. Go on, here's another one: *Chivalry 2* really makes you *feel* like a metal-plated murder machine. You'll lose limbs, and you'll keep on fighting long enough to kill your assailant with a thrown loaf of bread as you bleed out. You'll charge triumphantly into the fray, honour bound and proud, and then get flattened by a coward with a catapult on the other side of the map. And you'll laugh.

You'll laugh because *Chivalry 2* feels almost godly in its success at making failure fun. There exists, theoretically, the platonic ideal of a *Chivalry* duel: one that implements all the complex feints, parries, kicks, and blocks that this robust combat system offers. Mastery is well-rewarded, but it's far from essential. You'll find just as much success running up behind two opponents engaged in swordplay and lopping one of their heads off with an axe. To wit: *Chivalry 2* offers an astounding time investment to pure enjoyment ratio. It is pure, unbridled, uncomplicated catharsis from the moment you learn the controls.

Team playlists, solo free-for-alls, and dedicated duel servers mean carnage of all types is catered for. The best of the team maps play out as huge battles between defenders and attacks, with trebuchets, siege towers, rocks

"You'll keep fighting long enough to kill your assailant with a loaf of bread"

to pulp heads from parapets, and projectile chickens. There are four classes divided into 16 subclasses, each with a variety of main, sub, and special weapons. Pikemen with maces and medkits. Shielded knights with short-swords and oil grenades. Commanders with great axes and healing trumpets. Each weapon class feels carefully considered and balanced. An axe wielder might knock the sword out of your hands, forcing you to draw a dagger, but if you get inside that axe's range, your speed means that you're still in with a fighting chance.

"Try to hit your opponent with your weapon, not with your eyes", the tutorial teaches you, and this approach serves *Chivalry* well. While you can lurk back with a crossbow and click to score detached kills on whatever wanders into your crosshairs, the real game starts when you're up close. Here, *Chivalry* feels authentic without getting bogged down by fastidious simulation, and immediately gratifying without feeling weightless.

There are drawbacks to the dense chaos: you'll see every map and scenario after an evening or two of play, and it can still be intensely frustrating to skilfully best multiple assailants in virtuosic swordplay, only to eat dirt seconds later from a single arrow to the eye. Netcode, while stable, isn't flawless either, although I've never had to wait more than half a minute for a game. These aside: *Chivalry 2* takes the crown as the go-to medieval power fantasy. It's the most fun I've had gaming this year. Visceral, too. Ⓦ

> A funny smell for little bugs to get stronger.

HIGHLIGHT

Players can call home from phone booths all over the map, and the pup's mother will pick up, offering a vague hint towards the next objective. But wait too long, and dad will reach for the receiver, ready to spell it out directly if the player needs it. *Genius.*

∧ **Players can take art classes to expand their creative toolset, honing the finer side of their paintbrush skills.**

Info

GENRE
Puzzle platformer

FORMAT
PS 5 (tested) / PC / Mac / PS4

DEVELOPER
Greg Lobanov

PUBLISHER
Finji

PRICE
£15.49

RELEASE
Out now

REVIEWED BY
Jordan Oloman

VERDICT

Chicory: A Colorful Tale is a superb paint-based puzzle platformer with an important story to tell.

83%

Review

Chicory: A Colorful Tale

Happy little accidents

Anyone can be an artist. This is the message that welcomes you as you load into the warm world of *Chicory: A Colorful Tale*. And over the course of this special little game, you'll hopefully wrestle with and embrace the truth in that statement.

You see, the world of *Chicory* is utterly devoid of colour, and it's up to a plucky pup with a paintbrush to rejuvenate the people and places within it. The problem is that the protagonist doesn't really know how to do that – but then, neither do you. It's quite the burden to put on one person's shoulders, even if you think you're the next Picasso. Thankfully, the way this works from a gameplay perspective is accessible, encouraging, and extremely neat.

On the PlayStation 5, I can move the right stick to control a cursor and then pull L2 to lay down a shade of varying size or colour, cleaning it up with the opposite trigger. The triggers work brilliantly, but I often resorted to using the DualSense's touchpad to quickly colour my way through sensitive puzzles.

It's hard to mess up the platforming controls that *Chicory* boasts, but to have a unique painting system live on top of that *Zelda*-like foundation without any issues is remarkable. The mechanic is central to everything, but never in a way that feels gimmicky. As you design quirky T-shirts, render complex motifs, or just splatter a mouse's house with your maker's mark, the important emotions that come from indulging your creativity quickly come into focus.

Perhaps the most profound thing about it is that once you complete *Chicory*, you'll have a gigantic and unique work of art that's based on how long you took to complete the game's puzzles, and where you hung out in its secret-filled open world.

At one point mid-game, I reached for my water bottle and accidentally globbed a load of green paint onto a badger named Custard. If this were a physical canvas, I might have been frustrated that I'd made such a clumsy error, but in *Chicory*, you're taught to love your mistakes. Through irreverent dialogue and intelligent storytelling, it pushes you to consider the value of your imagination, no matter how messy. Before long, the entire area's lit up in a sea of colour and stamps.

> **"I accidentally globbed green paint onto a badger named Custard"**

As you'll learn across its roughly ten-hour campaign, *Chicory* is a confident achievement in game design and a capable vehicle for some powerful morals. It's a game about being good to yourself and an exercise in imagination that just about anyone could appreciate. What's most pleasing about *Chicory* is the thought of someone in a creative rut playing the game, and feeling better for it afterwards. *Chicory* is a great game, then, but also an invaluable tool – a way for people to see the childlike joy in creativity without the harsh judgment that comes from within. What colour is the sky in your world? Ⓦ
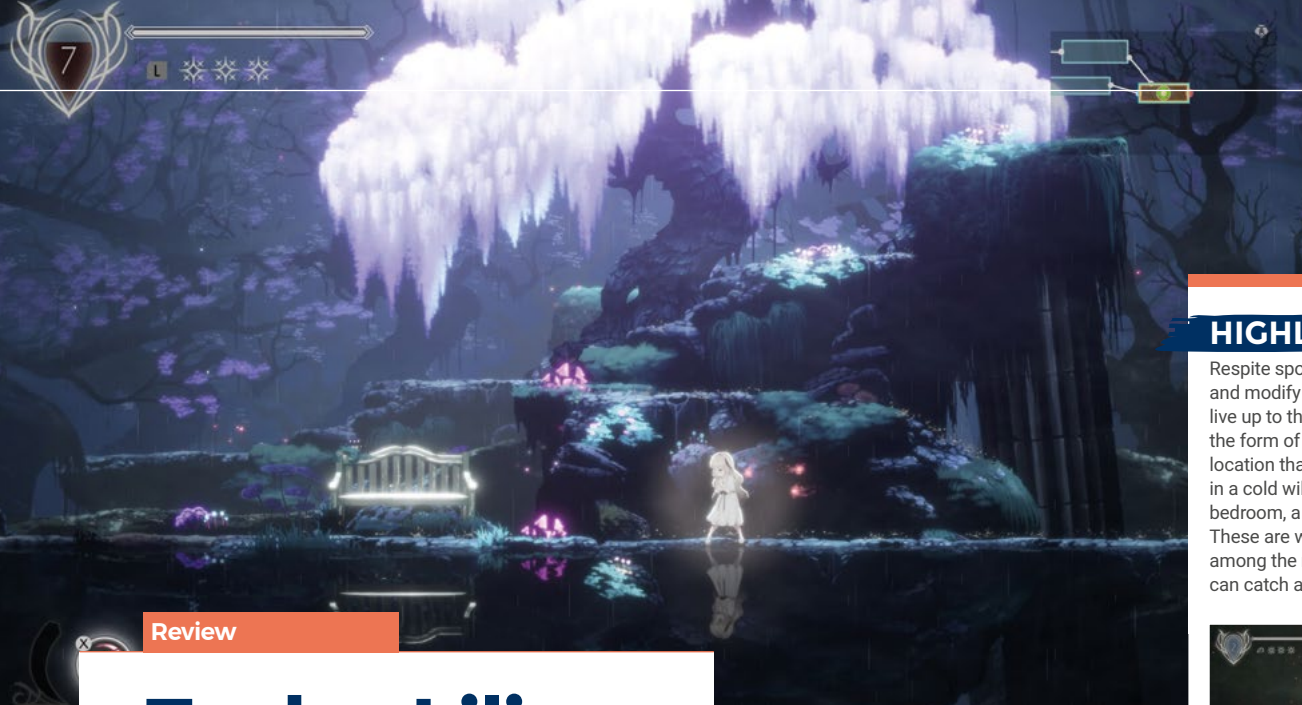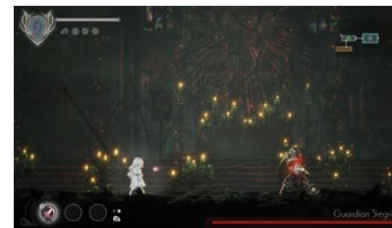
Ender Lilies:
Quietus of the Knights

The blight to remain silent

Ender Lilies is shy and reluctant to show itself. It's a Metroidvania, it tells you, mostly 'Vania, with a little *Hollow Knight* in its semi-open design, a little *Ori* in its lush background tapestries. Nothing special, it mumbles, staring at its shoes, just a good one of those. Its protagonist only adds to the feeling, a silent, almost ghostly girl, along with a soundtrack that whispers with melancholy. But once you get to know it better, *Ender Lilies* straightens its gaze and steps from others' shadows into its own light. Beneath that bashful exterior is a quiet mastery of classic design and surprising depth.

All Metroidvanias are limiting early on, of course – it's in the DNA – but it's pronounced here. The girl is a kind of priestess, immune to a zombifying blight that's stricken the land, and able to purify the souls of the afflicted. She can only jump, dodge – an oddly dramatic dive, like Bruce Willis hurling himself from an explosion – and heal herself. It's fortunate then that purified souls can be used, much like enemy souls in some *Castlevania* games, to add a buffet of violence to your repertoire. A default spectral swordsman is soon joined by other warriors, animal familiars, and archers and wizards for ranged assaults. Unlike *Castlevania*, however, these aren't random drops. Meat and potato attacks come from cleansed bosses, doubling as abilities that grant access to new areas, the rest from elite versions of regular enemies tucked away in secluded rooms.

At first, wielding your gang of spirits in combat feels rather meek, with squelchy impacts that barely seem to register, except on your opponents' health bars. But as ground and aerial threats stack up, emptying those bars quickly becomes a gripping occupation in its own right. It's worth tracking down additional souls, too, since most can prove invaluable against particular foes. Dangling skeletal spider monsters? There's a soul for that. Carefully switching and levelling up these powers becomes essential to progress.

Similarly – there's a pattern here – level design starts off rudimentary, relying instead on the game's visual composition to hold the attention. And it really is evocative, from mist-choked forests to the beauty of your reflection in ankle-deep waters. But in time, the explorer's eye takes over. *Ender Lilies* unfurls, branching at key points and refusing to guide you around its environs, yet full of provisional dead-ends and hidden treasures. Its map of bureaucratic rectangles only tells you there's more to find, teasing you to revisit unplundered sites each time you evolve.

Ender Lilies thus becomes an alluring web that pulls you towards its centre, especially if you seek its true ending. After drifting through opening stages, you get entangled in puzzle-box castles, hidden tunnels linking disparate map nodes, deadly gauntlets of hazards, and bosses that demand your ingenuity. Exacting, compelling, even devious. It's always the quiet ones. ⓦ

"An alluring web that pulls you towards its centre"

Info

GENRE
Metroidvania

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

DEVELOPER
Adglobe

PUBLISHER
Binary Haze Interactive

PRICE
£24.99

RELEASE
Out now

REVIEWED BY
Jon Bailes

VERDICT

From generic beginnings, *Ender Lilies* blossoms into a dense and demanding Metroidvania.

77%

⌄ **Key items, like your earrings, may play a pivotal role in how Veronica's little drama plays out.**

Review

Overboard!

Getting away with murder

Overboard! brings a question to mind: is there anything game designers fear more than malleable narratives? I'm not talking of inconsequential side quests tacked on to prolong engagement with sprawling open worlds, or the alternative cutscenes you might get to watch as an epilogue based on a couple of Big Decisions made during glaringly signposted moments along the way. No, this is about the real thing, entire plot lines that bend, twist, and shatter under the pressure of player choice, meaning that for every permutation of the story you shaped, myriad shocking twists, one-liners, and emotionally charged revelations still lie submerged. This is a medium loath to produce any substantial chunk of 'content' that risks being left unseen.

It's a dictum followed across the industry, but inkle has carved a special niche for itself by gleefully ignoring it. The studio's been tinkering with unconventional narrative structures for the better part of a decade, whether by updating

classic *Choose Your Own Adventure* books in *Sorcery!* or saving the galaxy one translation at a time in *Heaven's Vault*. *Overboard!* is the latest in that series of playful experiments, a reverse murder mystery in which you must deduce the agendas, interests, and personal weaknesses of a maddeningly nosy troupe of fellow passengers, so as to allay suspicions you had a hand in the disappearance of your unfaithful, debt-ridden, and – worst of all – excruciatingly boring husband. Or, better still, pin the heinous deed on any member of that insufferable supporting cast of upper-class swindlers, drunken socialites, and harrumphing army officers.

Sometime between the two World Wars, mere hours before the transatlantic ocean liner SS Hook docks at New York's Chelsea Piers, former actress and newly widowed Veronica Villensey is startled by an early-morning knock on her door. Only the cabin boy, announcing breakfast, but already, that first, innocuous interaction on behalf of the unscrupulous protagonist will have players on the defensive: you'll need to calmly assess the situation, avoid blurting out anything incriminating, and make sure the eager youth doesn't enter to see you've just awakened in last night's dinner dress – the one you wore as you pushed Malcolm over the railing. As you start planning your next steps, that feeling of paranoia intensifies. Was somebody watching when you took your husband for one final stroll on the upper deck? Can a missing earring link you to the fatal shove? And how will people react when they notice he's missing, especially
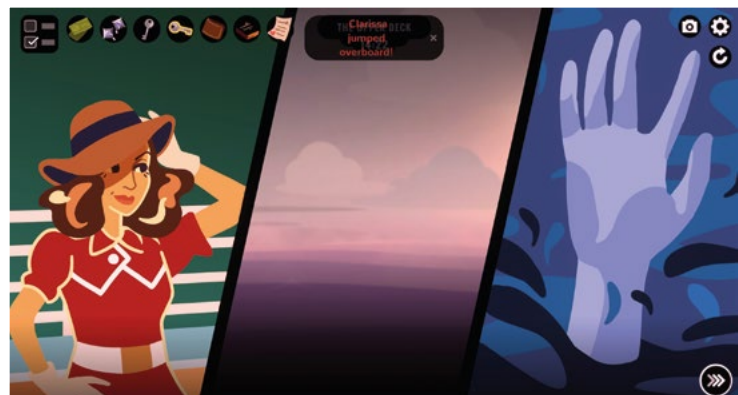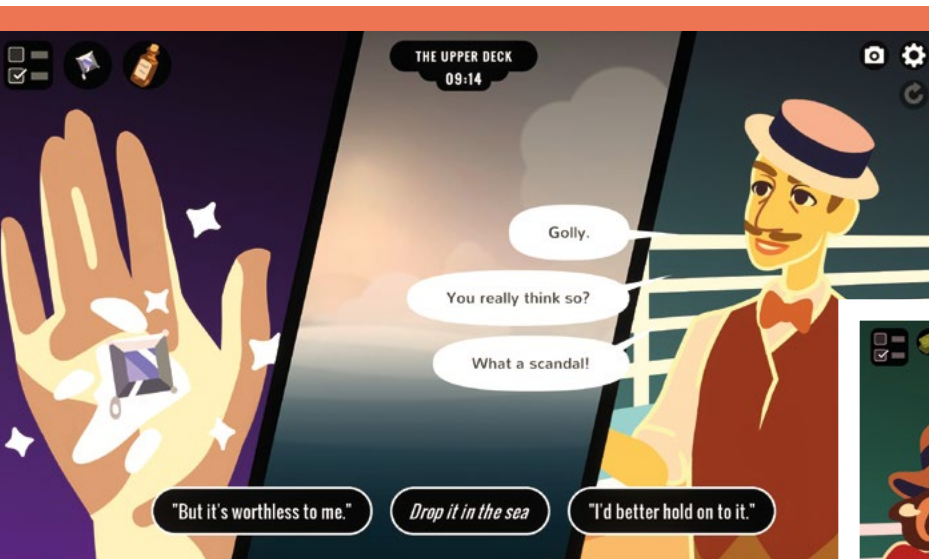
those with personal stakes in the man's fate: a poetess somehow infatuated with the dullard or the card players he accrued a debt to during the voyage? It's a captivating premise that inverts *Phoenix Wright: Ace Attorney*'s structure. Instead of looking for clues and exposing logical gaps in the prosecution's arguments to acquit those unjustly accused, here the aim is to muddy the waters, tamper with evidence, and construct a fake but plausible story that literally lets you get away with murder. The fundamental difference between the two, however, lies in *Overboard!*'s urgency. The ship functions as a stage but, unlike most games, none of its actors are frozen in time waiting for your arrival before they spring to life. While you're chatting up the captain, a maid might enter your cabin and take notice of a strangely unruffled bed; opting for a late breakfast means there's every chance a passenger that has already finished will wander near the spot where Malcolm fell – who knows what they'll discover there? Aboard the SS Hook's chessboard, every piece moves simultaneously, some unwittingly stumbling on compromising information, others actively seeking to frame you.

An eminently replayable maze of possibilities where one unused dialogue option may reveal a silent grudge and another trigger an uneasy truce built on promises of mutual destruction, *Overboard!* keeps adding twists long after you think you have it all figured out. There's a pleasure in the awareness that a minor decision may derail the story, but inkle doesn't solely rely on complex narrative structure for impact.

"Can a missing earring link you to the fatal shove?"

Bold colours and evocative, comic-style panelling complement the unrepentant wickedness, while Tom Kail's excellent sound design adds an extra layer of theatricality, from the angelic choir that ironically punctuates the consummation of an illicit affair, to the frenzied strings accompanying Malcolm's fateful plunge.

However, unlike earlier attempts at emergent storytelling, letting players loose in a world whose various subplots move in real-time (or simulation thereof) and where every action can have far-reaching consequences, Veronica's laser-focused machinations feel at odds with what is an inherently exploratory structure. Golden Glitch's *Elsinore*, for example, encourages your wandering in the titular castle by refusing to task you with saving Ophelia and, though Cinemaware's much older *It Came from the Desert* leads inexorably toward a final showdown with the giant ants closing in on the town of Lizard Breath, every path taken there feels equally legitimate. On the contrary, *Overboard!* is obsessed with exonerating its protagonist, a single-mindedness that helps establish a gripping sense of paranoia in the first few playthroughs but eventually imposes an ill-fitting hierarchy of choices. A checklist of suggestions in the top left-hand corner helps sustain tension by hinting at what you should be looking for next but, by highlighting certain paths, it devalues others as you're gradually corralled towards an ideal narrative trajectory. In this way, *Overboard!* matches the outlook of its capricious villain: quick to delight but easy to tire of. ⓦ

HIGHLIGHT

The pithy dialogues are never less than engaging and, while only a limited number of lines are voice-acted, Amelia Tyler's performance as Veronica makes for an irresistible villain, dripping with disdain for everyone around her yet curiously sympathetic – a Jazz Age Cersei.

VERDICT

Another engaging narrative experiment by inkle, even if *Overboard!*'s single-mindedness clashes with its open-ended structure.

72%

Level 25 Base Paws

1 137

Light Jelly

07 10 02

1086 / 1261

Review

Scarlet Nexus

Mind-blowing

Info

GENRE
Action RPG

FORMAT
PS5 (tested) / PS4 / XB X|S / XBO / PC

DEVELOPER
Bandai Namco Studios, Tose

PUBLISHER
Bandai Namco

PRICE
£49.99

RELEASE
Out now

REVIEWED BY
Alan Wen

VERDICT

A little too eager to fry your brain, *Scarlet Nexus* is at its best when focused on the action.

74%

The left trigger has many uses – hitting the brakes in a racer, aiming in a shooter – but you don't usually pull it back for a killer move. So there's something novel and gratifying when, after hacking and slashing enemies until their shield has shattered, a prompt urges you to hit the trigger for a spectacular finish. It's like setting off fireworks each time, and never gets old.

In this 'brainpunk' future, humans have psionic powers, not least psychokinetic protagonists Yuito Sumeragi and Kasane Randall. Special attacks build up a psionic gauge that can be spent on flinging objects at your foes, making the flow of melee and psychic combat akin to *Control*. And unlike the Hiss in Remedy's game, the Others you face here have some wildly distinctive designs: early ones resemble mutant pot plants while others have the appearance of a deity Bayonetta would've given a spanking.

Scarlet Nexus is also a party-based action RPG. Borrowing your allies' abilities adds further depth to combat, since skills are key to cracking an enemy's weakness. These powers do stretch the definition of 'psionic', though: clairvoyance lets you see hidden or disguised enemies, which makes sense, but elemental attacks like fire and electricity? It's best not to think too hard about it.

You can better expand your teammates' abilities through bonding episodes or giving gifts between story phases. Fans of *Persona 5* will enjoy this sort of downtime, but sometimes it doesn't make a whole lot of narrative sense and adds to the already lengthy runtime that would take up several seasons of an anime. It could be

argued that *Scarlet Nexus* would have been much more effective as a tight, ten-hour action game.

The ideas it puts forth – disturbing imagery automatically censored by your brain; communication with teammates through the equivalent of a cerebral Slack channel; a hugely powered-up state that can also literally fry your brain – are arguably more fascinating than the daft plot twists. (That said, if you enjoyed the "that wizard came from the moon" line cut from the original *Destiny*, you're in for a hell of a time.)

Nonetheless, the story's delivered by an earnest and likeable cast who transcend the usual tropes, with a refreshing absence of dodgy fan service. The leads are compelling in their own right, and even if their paths don't necessarily diverge all that much, their distinct personalities and arcs make it worth a second playthrough. Compared to player-created blank slates, *Scarlet Nexus* proves that these kinds of games do benefit from putting fully authored characters at the centre of the action. Ⓦ
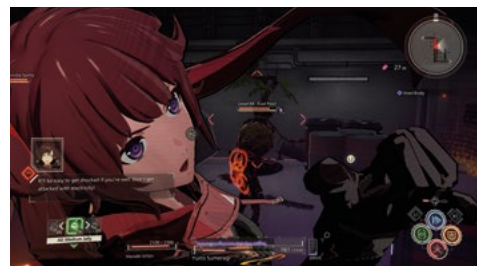
⌃ **Having your teammates jump in, striking a big anime pose when you activate their ability, literally adds character to the character action spectacle.**

Review

Backbone

From solving crime to the nature of mind

Backbone feels like two separate games stitched together, and I'm not entirely sure how I feel about that. It's certainly interesting when a game makes a big shift halfway through, and it's a risk that not enough games take. Whether it works here is another question.

Set in a dystopian version of Vancouver populated by anthropomorphic animals, you play as a raccoon detective named Howard Lotor. The game starts as a million detective stories have before it: Howard takes what seems like a simple case and inadvertently stumbles onto a mystery far more complex and dangerous, with ties to murder in the criminal underworld, as well as the interests of those at the top of a heavily stratified, class-based social structure.

As you begin plodding the beautifully drawn and richly atmospheric city streets, the game perhaps doesn't do itself any favours by setting up a number of expectations that go unrealised. The opening section of the game, inadvertently or not, hints at multiple ways to achieve objectives, the potential for different routes to infiltrate off-limit areas, branching storylines, puzzle-solving, and so on. It turns out there's none of this.

Still, by the time you've realised that this is a linear detective narrative as opposed to a game where you are actually doing detective work, it's settled into a nice rhythm. You follow the trail of the story's central mystery, pulling on some tantalising threads as you interrogate characters from across the city's social strata.

That is, until you don't. *Backbone's* investigation stops dead in its tracks at a key moment in the story, leaving Howard struggling with a terrifying existential crisis. At this point, the game ceases being a detective mystery and instead takes a very different (and philosophical) direction.

The game deserves some credit for being willing to undercut our expectations in such a dramatic way. But while the direction the game takes is a bold one, it's debatable whether *Backbone* gives itself enough narrative space to fully explore the ideas it introduces.

You'll want to see far more of this incredible city you've been introduced to than you are allowed. Some of the game's most intriguing stories are left unresolved (this is, perhaps, part of the point, but that doesn't make it any more satisfying). *Backbone's* musings on issues like racism and wealth inequality feel under-developed, while the whiplash into the game's introspective latter portion makes it difficult to get oriented before it's all over.

Despite some of these issues, *Backbone's* a likeable game, and it would be fascinating to see where a sequel could take us. That *Backbone* leaves the player wanting to see more at least means that, regardless of any misgivings, the game still remains an engaging success. ⓦ

▽ ***Backbone*** has empathy for those who find themselves on the wrong side of the tracks.

Info

GENRE
Adventure

FORMAT
PC

DEVELOPER
EggNut

PUBLISHER
Raw Fury

PRICE
£19.99

RELEASE
Out now

REVIEWED BY
Paul Walker-Emig

VERDICT

A surprising and intriguing detective mystery that could do with a little more focus.

70%

Review

Final Fantasy VII Remake: Intergrade – Episode: INTERmission

Yes, but how long until the second act?

Final Fantasy VII Remake: INTERmission is the crown jewel of *FFVII Remake: Intergrade*, the PS5 upgrade for 2020's best action RPG. The five-hour expansion brings back Yuffie, a fan favourite party member from the 1997 original, adding a ton of personality to the game in the process. As *INTERmission* begins, Yuffie arrives in Midgar, from neighbouring Wutai, in search of an especially powerful Materia – those glowing orbs you slot into your armour to equip powers. Her journey takes her through the Sector 7 Slums and up to the headquarters of Shinra, the megacorp sucking the planet dry. The journey from below the plate to above the plate will be familiar for anyone who played the base game, but Yuffie is a fun character to spend time with. She's a markedly different character from main game protagonist Cloud – exuding an optimism and confidence that starkly contrasts Cloud's brooding insecurity.

INTERmission takes place during the events of the base game and, as a result, the expansion doesn't go to any wildly new places. Instead, we get an alternate perspective on a familiar story, with some pleasant characters along for the ride. Yuffie is joined by Sonon, a stoic, good-natured Wutaian, intent on helping her accomplish her mission. The pair have an easy chemistry, and watching their short brother-sister arc play out was one of the highlights of the expansion.

Combat hasn't been radically reworked, but it has been tweaked to accommodate Yuffie's use of a shuriken, instead of a sword or gun. She can attack with close-range melee attacks or throw the shuriken into an opponent and attack with ninjutsu from a distance. Yuffie is a powerful all-rounder – she may even be a little overpowered, but *INTERmission* never gives you a full party to command, so the skew feels right in this context.

INTERmission's final moments give us a glimpse into what the base game's party (Cloud, Tifa, Aerith, Barret, and Red XIII) have been up to since the close of the game. These bits have me excited for whatever comes next. This bite-sized chunk of *FFVII Remake* only has a few bosses, but in keeping with the base game, they're a ton of fun to fight. This expansion doesn't overstay its welcome, but its conclusion points towards a bright future for this massively expanded take on the classic JRPG. Ⓦ

HIGHLIGHT

INTERmission's biggest entirely new addition is Fort Condor, a terrific MOBA-like minigame that takes its name from a location in the original game. There are a few opportunities to play in this expansion, but I would gladly play a standalone game dedicated entirely to it.

VERDICT

A short, but welcome, return to Midgar, buoyed by a joyful and charismatic lead.

79%

Cris Tales

Time management skills required

There's something magical about walking around in *Cris Tales*, like exploring scenes in a pop-up book. It's in the way the camera dollies and trucks to follow protagonist Crisbell into the layers of delicate dioramas. It's in the fairy tale colours and ink lines and impeccable paper characters. But also in some actual magic, as Crisbell is a time mage who sees the past, present, and future all at once. Within cities, the current reality lies in the centre of a split display, with its before and after states to the left and right. A cart becomes a tractor as it passes into the end window; a tough-looking guard seems less intimidating when you scroll him to the margins and see him as a child. It's mesmerising, tempting you to tour locations in this Colombian-made 'JRPG' purely to admire how they warp around your presence. It's not just for show either, but a tidy means of fleshing out *Cris Tales*' appealing cast, showing that each is a culmination of choice and circumstance, capable of redemption or decay. With that in mind, Crisbell sets out to strengthen her powers and defeat a tyrannical empress, aided by Matias, a debonair frog who talks like a posh *South Park* character, and a growing band of misfit mages whose amusing banter offsets the serious matters at hand. *Cris Tales* then drags you into various regional political struggles, touching on issues such as automation and xenophobia. It's light but sufficiently elaborate, as are parallel side quests that affect the outcome of each chapter.

Yet, despite early promise, the time-bending mechanics can't keep pace with the plot or the lavish presentation. The turn-based battles, for example, initially focus on Crisbell's power to age and de-age opponents. It's an idea bursting with potential, in that enemies might change suddenly – one rewind transforms a pathetic blob creature into a huge carnivorous insect – or you can 'plant' certain abilities and then forward time to increase their power. But mostly it doesn't matter, and late on, the concept is seemingly abandoned. And while the underlying combat is solid, thanks to *Mario* RPG-style timed inputs and varied character abilities, it's also stunted by a paucity of enemy types, plus a challenge level that evaporates so completely in the second half it feels like a miscalculation.

It's a similar story elsewhere, as basic tutorial puzzles repeat rather than evolve, and dungeon exploration never advances beyond rudimentary object manipulation. It's more legwork than brainwork, especially near the end; even if you still enjoy the walking and talking, there's a lot of dead space around it.

Like the aforementioned pop-up book, *Cris Tales* is full of charm and imagination, but as time passes, its pieces remain glued in place. ⓦ

▶ There's nothing like arriving somewhere new and seeing the whole place spread out in front of you.

VERDICT

Cris Tales has immense charm and beauty, but spreads its content too thin.

65%

Review

The Chameleon

Phantom P. I.

Info

GENRE
Indie, stealth

FORMAT
PC

DEVELOPER
Merlino Games

PUBLISHER
Merlino Games

PRICE
£7.19

RELEASE
Out now

SOCIAL
@merlino_games

REVIEWED BY
Kyle Hoekstra

VERDICT

A short game with joyous PSone graphics, simple yet nail-biting stealth, and a wonderful punching ability.

74%

You wake up in the bowels of a secret, underground research facility. Around you are defeated robot guards. You don't know how you got here, but you know this: you're wearing a Hawaiian shirt and a *Magnum P.I.*-style moustache, and you need to escape.

The visuals are the first thing you notice about *The Chameleon*, a stylish experiment in retro stealth by Mexican solo developer Antonio Freyre. Its prodigious polygons hark back to the 3D graphics of the 1990s. They're washed over with vibrant lighting which casts foreboding shadows across the bunker's chunky textures. The effect is unnerving.

The Chameleon prefers to keep you guessing about its backstory. Like all great 1970s private investigators, you're resourceful. You'll learn from tape recordings, notes, and other materials that it's 1975. A maverick scientist named Dr F has been making a study of lunar entities, and something's gone terribly wrong. Now robot guards patrol the facility's sunless concrete chambers, ready to make short work of any florally clad humanoids with their electrified fists.

It's right to be frightened of guards. With their blazing white visors and black suits, they make intimidating assailants. When they spot you, their visors shift amber then red, before they instantly kill you. Evading them mostly involves scampering in the cover of crates. You can also dash, slow time, impersonate enemies, and super-punch them to oblivion. The trouble with these is they drain precious energy from a meter. This slowly replenishes, or you can harvest it from capsules.

The safer way to bypass foes, then, is to stay low and wait for opportunities. Just shuffling around produces an audible clatter, so each step is measured. The mood is tense, only occasionally cut through with a funky bassline. The key to making progress is to look out for guards' footfalls and gleaming eyes, then either breeze past them in disguise or despatch them. The restrictive camera only adds to *The Chameleon*'s growing sense of claustrophobia.

Progressing through the game's short runtime has you opening doors from consoles spread around the cavernous facility, while plotting routes with blueprints you find. It ends earlier than expected, but a surprising development in the late game introduces turrets to counter and a wonderfully pulpy continuation of the story.

Because *The Chameleon* is happily a short-form experience, you'll never spend long enough with the mechanics to really grow tired of them. What's there, however, is rich and enjoyable. If you aren't already enamoured with its blocky visuals, you should instead play to learn the truth about the Chameleon and Dr F's unsettling experiments. ⓦ

As in other stealth puzzlers, your greatest assets are checkpoints. *The Chameleon* is merciful on this score.

▶ STREAM OF CONSCIOUSNESS

Chatting with **Cupahnoodle** in this month's hot seat

What's your favourite game?
My favourite game is *Resident Evil 2* (OG *RE 2*).

And why is that? What is it about that particular game that resonates so much with you?
When it comes to horror, zombies have always been my favourite. *Resident Evil* is one of my favourite gaming franchises, period, but *Resident Evil 2* has always been my favourite in the series. It had such an immersive story. From the characters (shout out to Claire) to the monsters (the Licker is still one of my favourite enemies in a game), it didn't matter if I was playing or watching, I just wanted to be there. *RE 2* was also one of the first horror games I beat by myself.

What game got you into gaming to begin with? What are your enduring memories of it?
I don't have a specific game, but I will say the NES got me into gaming. My first game was *Mario*, the *Super Mario Bros.* that came with *Duck Hunt*. It's when I began my journey as a player. Games like *Mega Man 3*, *DuckTales*, *Chip 'n Dale Rescue Rangers*, and *Teenage Mutant Ninja Turtles* are still some of the best games I've ever played. *Super Mario Bros. 3* is, to this day, one of my favourite *Mario* games in the franchise. It really was a time when music in games was insane, and Nintendo was truly leading the pack.

I will never forget learning all the pipe shortcuts in *Super Mario Bros.*, and the feeling of showing them off to friends. Along with the feeling of finally beating the game – it was something my brother and I never thought we could actually pull off. Friends claimed to do it, but back then, it was nothing short of a myth.

Has there ever been a point you've been put off gaming? If so, why?
I've never been 'put off' from gaming, as much as I hit a point in high school where I became a super 'casual' player. I was getting older, and in finding myself I began doing other things. I got heavily into music, and started playing the bass. I also ran track and played softball, so time became very limited.

What's the appeal of playing games for an audience – whether that's pre-recorded or live streaming?
I love creating content on both Twitch and YouTube. I love being able to get to know and talk to people from across the globe. I'm fortunate enough to have an amazing [streaming] community – Cupton really is one of the greatest groups of people I never thought I'd cross paths with. I've learned that content creation is more than the games, and it's more than the person playing them. It's about coming together. I've learned so much about myself and the type of person I am. It makes me want to be a better person. All I want to do is look out for the gaming community – and have fun along the way. ⓦ

Catch Kason 'Cupahnoodle' streaming Monday to Thursday from around 8pm UK time: wfmag.cc/cupah

> **"I've learned that content creation is more than the games, and it's more than the person playing them"**

The Wireframe H🔥TLIST

The best PC games, according to Wireframe,
catering for whatever your mood might be

The games for... BIG ADVENTURES

Assassin's Creed Odyssey / Ubisoft / **93%** (Issue 1)

Yakuza: Like a Dragon / Ryu Ga Gotoku Studio / **90%** (Issue 45)

Amnesia: Rebirth / Frictional Games / **87%** (Issue 46)

The Last Campfire / Hello Games / **86%** (Issue 47)

Resident Evil 2 / Capcom / **86%** (Issue 7)

Far Cry New Dawn / Ubisoft / **85%** (Issue 9)

Journey to the Savage Planet / Typhoon Studios / **84%** (Issue 33)

The Outer Worlds / Obsidian Entertainment / **84%** (Issue 28)

Monster Boy and the Cursed Kingdom
/ Game Atelier / **84%** (Issue 6)

Nioh 2 / Koei Tecmo Games / **80%** (Issue 38)

The games for... REPEATED PLAY

Hades / Supergiant Games / **94%** (Issue 44)

📷 **They Are Billions** / Numantian Games / **88%** (Issue 20)

Sekiro: Shadows Die Twice / FromSoftware / **87%** (Issue 11)

Streets of Rage 4 / DotEmu/Lizardcube/Guard Crush / **86%** (Issue 40)

Trials of Fire / Whatboy Games / **84%** (Issue 50)

Katamari Damacy REROLL / Monkeycraft / **84%** (Issue 4)

Spelunky 2 / Mossmouth / **83%** (Issue 44)

Hitman 2 / IO Interactive / **82%** (Issue 3)

Alba: A Wildlife Adventure / ustwo Games / **82%** (Issue 46)

Slay the Spire / Mega Crit Games / **81%** (Issue 45)
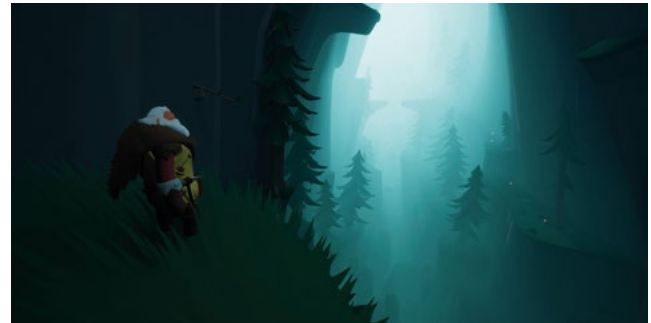
The games for... SOLID STORY TIMES

Disco Elysium / ZA/UM / **94%** (Issue 28)

Mutazione / Die Gute Fabrik / **86%** (Issue 26)

Whispers of a Machine
/ Clifftop Games/Faravid Interactive / **85%** (Issue 14)

Mythic Ocean / Paralune / **84%** (Issue 36)

Sunless Skies / Failbetter Games / **83%** (Issue 7)

📷 **Arise: A Simple Story** / Piccolo Studio / **82%** (Issue 31)

Assemble with Care / ustwo Games / **81%** (Issue 27)

The Walking Dead: The Final Season
/ Telltale Games/Skybound Games / **81%** (Issue 11)

The Procession to Calvary / Joe Richardson / **80%** (Issue 40)

Outer Wilds / Mobius Digital / **80%** (Issue 17)

The games for... FIRING UP BRAIN CELLS

Telling Lies / Sam Barlow / **92%** (Issue 24)

Kentucky Route Zero / Cardboard Computer / **90%** (Issue 33)

Slipways / Beetlewing / **90%** (Issue 53)

Heaven's Vault / inkle / **89%** (Issue 12)

The Pedestrian / Skookum Arts / **84%** (Issue 35)

The Legend of Bum-Bo / Edmund McMillen / **83%** (Issue 31)

A Monster's Expedition / Draknek & Friends / **82%** (Issue 47)

Total War: Three Kingdoms
/ Creative Assembly/Feral Interactive / **82%** (Issue 16)

It Takes Two / Hazelight Studios / **81%** (Issue 51)

Wanna Survive / PINIX / **80%** (Issue 42)

The games for... HIGH-INTENSITY PLAY

Tetris Effect / *Monstars Inc./Resonair* / **90%** (Issue 4)

Sayonara Wild Hearts / *Simogo* / **89%** (Issue 25)

Star Wars: Squadrons / *EA* / **86%** (Issue 45)

Devil May Cry 5 / *Capcom* / **84%** (Issue 10)

Black Bird / *Onion Games* / **84%** (Issue 3)

BPM: Bullets Per Minute / *Awe Interactive* / **83%** (Issue 45)

⌾ Resident Evil Village / *Capcom* / **82%** (Issue 52)

Catastronauts / *Inertia Game Studios* / **82%** (Issue 1)

Olija / *Skeleton Crew Studio/Thomas Olsson* / **81%** (Issue 48)

DUSK / *David Szymanski* / **81%** (Issue 7)

The games for... CURING THE INDIE ITCH

If Found... / *DREAMFEEL* / **92%** (Issue 44)

Can Androids Pray
/ *Natalie Clayton/Priscilla Snow/Xalavier Nelson Jr.* / **90%** (Issue 21)

⌾ Tales From Off-Peak City Vol. 1 / *Cosmo D* / **89%** (Issue 39)

Baba Is You / *Hempuli Oy* / **88%** (Issue 10)

Afterparty / *Night School Studio* / **86%** (Issue 33)

Witcheye / *Moon Kid* / **86%** (Issue 30)

Hypnospace Outlaw
/ *Tendershoot/Michael Lasch/ThatWhichIs Media* / **86%** (Issue 11)

Haunted PS1 Demo Disc / *The Haunted* / **85%** (Issue 39)

Xeno Crisis / *Bitmap Bureau* / **81%** (Issue 33)

Art of Rally / *Funselektor Labs* / **80%** (Issue 45)

PC Top 10
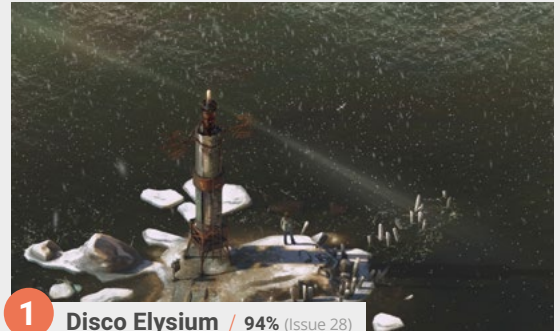
① Disco Elysium / **94%** (Issue 28)

Smarter and deeper than anything else; truly an RPG in a class completely of its own.
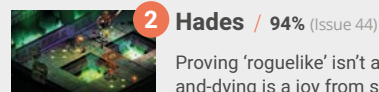
② Hades / **94%** (Issue 44)

Proving 'roguelike' isn't a dirty word, learning-and-dying is a joy from start to finish.
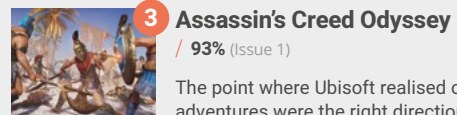
③ Assassin's Creed Odyssey
/ **93%** (Issue 1)

The point where Ubisoft realised over-the-top adventures were the right direction.
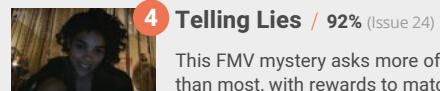
④ Telling Lies / **92%** (Issue 24)

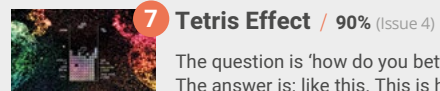This FMV mystery asks more of the player than most, with rewards to match.
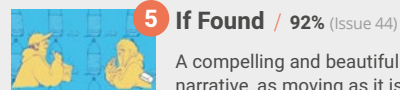
⑤ If Found / **92%** (Issue 44)

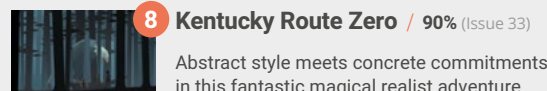A compelling and beautifully illustrated narrative, as moving as it is memorable.
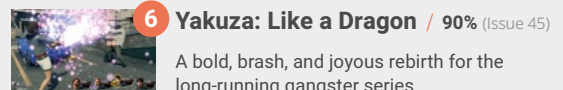
⑥ Yakuza: Like a Dragon / **90%** (Issue 45)

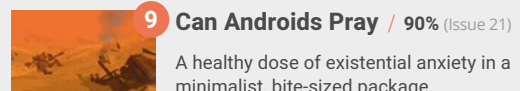A bold, brash, and joyous rebirth for the long-running gangster series.

⑦ Tetris Effect / **90%** (Issue 4)

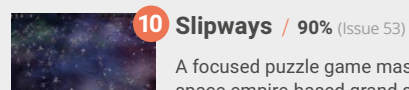The question is 'how do you better *Tetris*?' The answer is: like this. This is how.

⑧ Kentucky Route Zero / **90%** (Issue 33)

Abstract style meets concrete commitments in this fantastic magical realist adventure.

⑨ Can Androids Pray / **90%** (Issue 21)

A healthy dose of existential anxiety in a minimalist, bite-sized package.

⑩ Slipways / **90%** (Issue 53)

A focused puzzle game masquerading as space empire-based grand strategy.

Backwards compatible

WRITTEN BY **RYAN LAMBIE**

Hear my Gear

In the rapidly growing retro modding scene, new ideas and solutions are coming out all the time, and many of them are becoming increasingly user-friendly and easy to install. This month, RetroSix (**retrosix.co.uk**) kindly sent me its new CleanAmp mod – a replacement sound-board for the Sega Game Gear that claims to improve the handheld's audio and clarity. Aside from the improved sound, however, there's an extra benefit to the mod: if you have a Game Gear with quiet or no sound at all, the CleanSound is far easier to install than the traditional route, which is to replace all the capacitors on the existing board. Admittedly, the latter option isn't too difficult if you're handy with a soldering iron, but for those without the time, confidence, or necessary equipment, the CleanSound is definitely the way to go.

All it requires is for you to unscrew the shell, carefully remove the connectors for the speaker and mainboard, and uninstall the existing sound-board by taking out the two screws holding it in place. The CleanAmp mod simply drops into the old board's place, and a couple of screws and replaced connectors later, it's fully installed. The kit also comes with a replacement speaker, which is similarly easy to fit: you'll need to take out the handful of screws holding the mainboard in place, then remove the existing speaker – it's held in place by a circular piece of plastic that's either screwed or glued to the Game Gear's shell. Once the old speaker's removed, the new one can be secured in place with the existing piece of plastic, and then it's a case of routing the cable from the speaker around the edge of the shell so that it's not in the way when you're putting the handheld back together.

The main thing to keep an eye out for as you're fitting the speaker is the screen: it's easy to get dust and fingerprints on the panel or the inside of the bezel, so it's worth giving both a clean before you screw the Game Gear back together.

I fitted the CleanAmp into a Game Gear I'd modded with a CleanScreen a couple of months ago, and I'm really impressed with the new audio quality: first, it's loud through the speaker – louder than you'd ever need to use it, in all honesty – but the clarity compared to the stock Game Gear hardware is immediately striking. Honestly, *Castle Of Illusion* has never sounded better.


⌃ **Once your Game Gear's open, the CleanAmp simply drops into place.**

❯ **Fitting the speaker's a little more fiddly as you'll have to remove the mainboard. This bit's optional, though.**

LED Storm

Last month, I was attempting to add the finishing touch to my nicely modded Game Boy Advance: some LEDs that made the shoulder buttons glow a classy shade of pink when pressed. And, because I'm a hapless tinkerer at the best of times, it went dreadfully wrong: I wired the whole thing up, put the handheld back together, and the lights didn't work. Refusing to be beaten, I took the GBA to bits once again and had a careful look at my daisy chains of LEDs, wires, and resistors. The problem, it turned out, was simply a lack of space: the wires between the components need to be kept short and had to be precisely routed to avoid snagging on any of the parts inside the case, which requires a fair bit of adjusting and fiddling about with a pair of tweezers. About an hour and several strops later, though, I had my handheld back together and my shoulder buttons twinkling. Phew. Now let's never speak of this again.
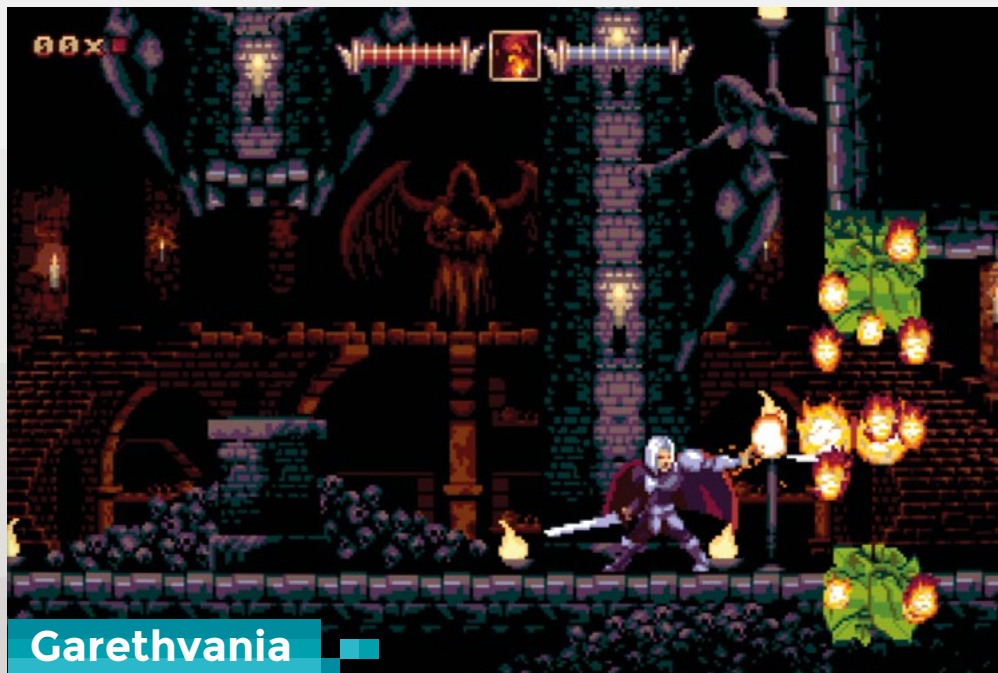
Garethvania

Sega Mega Drive owners have been positively spoiled in recent years, given the number of surprisingly good games that have come out for a system that's been effectively obsolete for two decades: we've had the joyous blasting of *Xeno Crisis*, the jolly platforming of *Tanglewood*, not to mention the muscular brawling mayhem of the long-delayed *PAPRIUM*.

Demons of Asteborg, meanwhile, offers an altogether different experience from any of those: it's a Metroidvania with the emphasis on the 'vania', given that it unabashedly harkens back to Konami's series of Gothic action-adventures. You play a warrior named Gareth on a mission through ghoul-filled towns and castles, a journey made easier thanks to his skills with a sword and, later, blasts of magic.

Every time a new game gets announced for the Mega Drive, a synapse in my brain triggers that tells me there's no way this latest release can match the quality of the last. Surely, I think, this run of great 16-bit games can't continue. But once again my cynicism has been proven wrong: I've been playing through the demo (which you can get at **demonsofasteborg.com**) and having such a merry time that what was intended to be a ten-minute dabble

unexpectedly stretched to a couple of hours. No, there isn't anything wildly original going on in *Demons of Asteborg*, but there's no denying the quality of execution. The animation on your silver-haired hero is fluid, his attacks and jumps are nice and responsive, and there are some pleasing level designs in here: a hidden dungeon located at the bottom of a well throws some simple yet effective water-based challenges at you, which in turn yields a handy magic item you can use to get to the next area.

Gripes? Well, the gloomy colour palette means some enemy types tend to blend into the scenery at times, and the game throws some unexpectedly well-armoured enemies at you early on, while you're still getting used to the minutiae of the combat. Still, this is a homage to *Castlevania*, after all, and those games are hardly a walk in the (haunted) park.

Demons of Asteborg has a physical release, meaning you can plug the cartridge straight into your old MD; it's currently 69 euros, so not exactly an impulse buy, but I'd urge you to give the demo a go. If you want another spooky action-adventure along the lines of the Mega Drive's *Castlevania: The New Generation*, then this could be the cartridge for you.

Backwards compatible

WRITTEN BY IAN "FOGGY" DRANSFIELD

MiSTical

Have you seen these hot new hip and cool retrotastic devices known as MiSTer? Bag yourself a DE10-Nano FPGA board and some other nuggets of joy ("accessories and peripherals"), install the MiSTer system using the simple and straightforward Mr. Fusion app, and that's about it. What you have in your hands, or likely on your table, is an impressively versatile emulation machine – able to play your SNES, Mega Drive, Amiga, DOS, PCE, Speccy, and plenty of arcade and other games in nigh-on perfect fashion. And, one of the most recent big additions, the CPS-2 system. Yes, that one in the System Profile a few pages ago, *as well as* the original CPS and CPS Dash.

Now all of these things have been emulated before, sure, but what helps the MiSTer stand out is how things are implemented: everything's through the FPGA (field-programmable gate array). What that means is... well, I don't have

someone with a galaxy-sized technical brain to hand, but it (very) basically means that where regular emulation sees software pretending to be hardware, FPGA emulation is hardware simulating hardware. The former is easier to work with, the latter can offer 1:1 accuracy, with every single little quirk and foible of a device recreated perfectly. Because as far as the FPGA is aware, once a specific system core is loaded and configured it *is* the original retro gaming hardware. You might not notice it at a glance, and software emulation is more than good enough for most people, but there's just that little nagging feeling in the back of the head that, actually, going the FPGA route – just like Analogue does with its excellent line of clone consoles – *that's* the way to do it.

But it's not just that with the MiSTer – it's the flexibility on offer. You can connect plenty of different USB or wireless (via USB dongle) controllers, keyboards, mice, and

more. Lag – how long it takes between pressing a button and the game reacting to said press – is as long as the response rate on your screen. And, given the MiSTer is able to connect to analogue screens via one of its add-ons, that lag can be literally next to zero if you have a CRT taking up space somewhere. Is it the perfect emulation platform? Quite possibly. At least for now, until we land in the future and things get an order of magnitude better.

What this all boils down to, from a personal perspective, is yet another box on my desk that can be switched on at a moment's notice and clumsily pawed through to find one of *many* games I might need either for work reasons, or because I just want to spend my lunch-break beating Capcom's take on *The Punisher*. And with word a Sega Saturn core is making headway – and a PlayStation one, though that seems to have fallen off the face of the earth – it shows there's still more good goodness to come with the MiSTer project.

You can pick up bare-bones DE10-Nano kits from the likes of Digi-Key or Mouser, while full pre-configured MiSTer kits are available for a few chunks more change via eBay and a few specialist sellers you'll have to do some internet searching to find. They're out there, you'll be looking at a few hundred quid, and what you get is an emulation *legend*. With *The Punisher*, to boot.
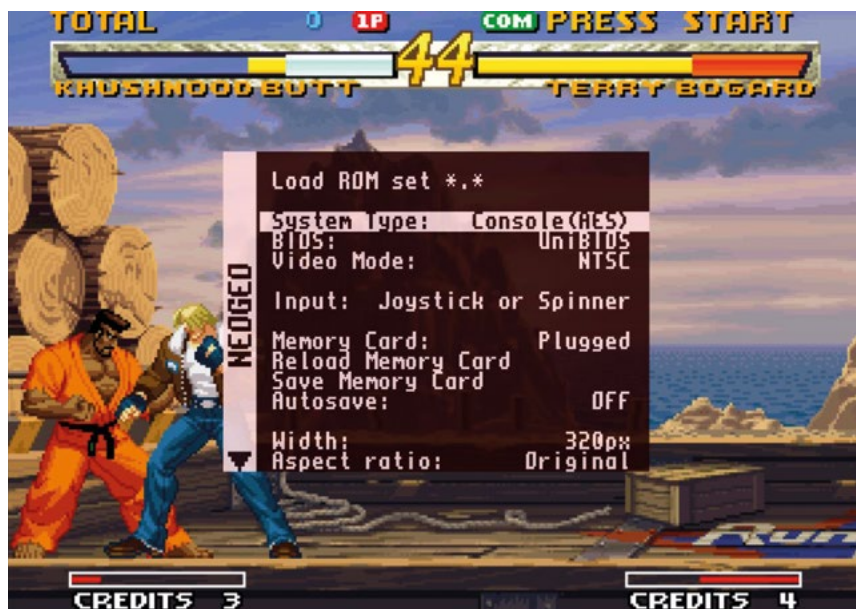
Rezzed

Taking old video content, pushing it through something like Adobe Premiere at a higher output resolution, slapping 'remastered' on it, job done. That's how upscaling has been handled for a long time now, with older, lower resolution content pushed through the wringer as much as possible to make it stretch out as much as it can be. But AI upscaling has been making strides, and the retro gaming community is getting increasingly involved in its use – we saw some years ago the AI upscaling of *Final Fantasy VII*'s pre-rendered backgrounds, and more recently, I've been on a bit of a spree watching uprezzed FMV sequences from PlayStation/Saturn-era games. I even dabbled a bit in trying it out, to results we'll charitably call 'middling'.

One of the more impressive examples is the work different folks have done with the original *Resident Evil*'s live-action intro, with fans chopping and reworking things so that it's anything up to 8K resolution (which is too much, frankly), and runs at a frame rate of anything up to 60 fps

(and again, that's too much). But what they're also doing is snipping from the disparate intro sequences to the game's different regional versions to make the 'perfect' intro – full colour, including Chris smoking, Joseph getting… well, eaten alive by zombie dogs, it's all in there.

And while if you look closely enough you can definitely see the issues – artificing, blur, the AI upscale just not knowing what to do at times – the overall result is genuinely impressive.

Get someone who doesn't feel the need to make something that should be 24 fps run at 60 fps and I think you've probably got another remaster to release, Capcom. See one up-*Resi* here: **wfmag.cc/toosmooth**.

Make it again X

Human Revolution was superb, and *Mankind Divided* did eventually prove itself to be a decent time once I gave it a chance… but I want to see the original *Deus Ex* redone. Reworked. Remastered. I'd settle for just the opening stage on Liberty Island – tweak the shooting mechanics but leave most everything else the same. Make it look better. Shinier. More lighting effects. Hook it up to my veins. Let me loose. I've a craving for a spangly version of that game, and you should get on sating me, Square Enix. Please?

A bit of the old ultra-violence

Ryan indulges his inner Keanu Reeves in the innovatively murderous SUPERHOT: MIND CONTROL DELETE

Notionally at least, *SUPERHOT: MIND CONTROL DELETE* is one of the most violent games I've ever played. I've blasted a countless array of people in the face at point-blank range. I've run people through with swords, stabbed them in the sternum with knives and screwdrivers, and beaten them to oblivion with bottles. I have, in short, indulged my inner sociopath in a way I probably haven't experienced since the grungy, guiltily sleazy delights of *Hotline Miami*, and I'm only slightly ashamed to say I've enjoyed every minute of it.

Admittedly, there are a couple of layers of separation between the player and the harsher implications of the mayhem. First of all, *SUPERHOT* takes place in a glitchy, low-polygon virtual environment pitched somewhere between *The Matrix* and the retro-futuristic world of *TRON*. Second: the violence is so absurdly over the top that it's closer to something like Monty Python than, say, the Japanese master of cinematic gore and mayhem, Takashi Miike. At least one encounter has seen me batter a man to death with a large fish, which is about as Terry Gilliam as you're going to get in a first-person action game.

Then again, *SUPERHOT* isn't strictly speaking an action game in the conventional sense. It's unspeakably brutal, yes, but developer SUPERHOT Team have introduced an ingenious time-based element that turns it into something approaching a puzzle game. In essence, *SUPERHOT* takes place in a digital world where enemies barely move unless you do: stop dead in your tracks, and time slows to a barely perceptible crawl. This gives you plenty of time to look around and plot your next move, which means *SUPERHOT* could also be classed as a turn-based strategy game of sorts.

I seem to remember there was a stage in Jonathan Blow's seminal *Braid* that fiddled with
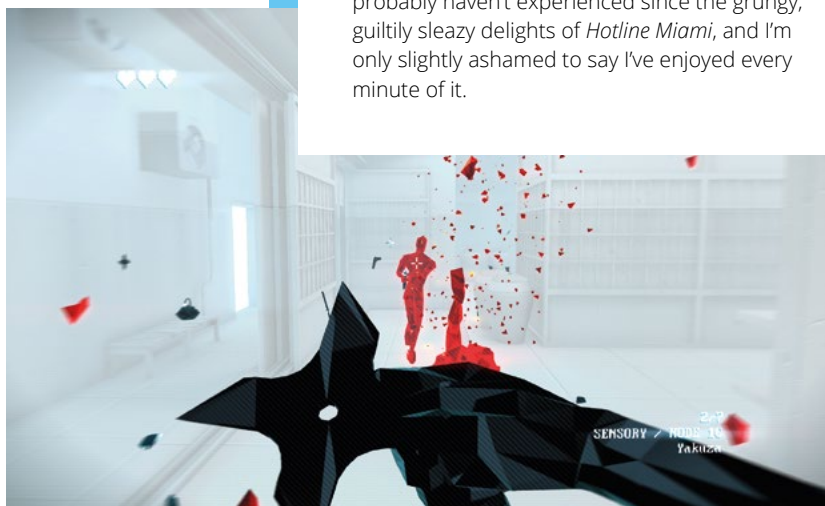
time in a similar way, but director/co-designer Piotr Iwanicki's handling of the concept turns it into something almost unrecognisably different: here, the stop-start flow of time allows you to pull off all kinds of superhuman tricks. Spot a muzzle flash aimed in your direction, and you can nimbly strafe out of the way of enemy bullets. Meanwhile, in glorious slow-motion, you can punch a bad guy in the face, snatch the gun out of his flailing hand, and then shoot him in the head with it.

The one immediately graspable rule is that if an item in the game world is black, you can pick it up and use it as a weapon against the bad guys, uniformly coloured a garish crimson. In *SUPERHOT*, any object is fair game, turning most areas into miniature playgrounds of death. So far, I've plucked an outsized clock off the wall and smashed a luckless goon in the face with it. In a colour-drained garage, I killed one assailant with a trolley jack and stabbed another with a tyre iron.

SUPERHOT positively encourages these off-the-cuff moments of murderous inspiration. One challenge saw me completely unarmed and asked to clear out a room populated by three bad guys with guns. Fortunately, a few darts sticking out of a dartboard on the wall were all I needed to duck in the room and temporarily disable one villain by lobbing a tiny arrow at their face. The shock of the assault caused them to send their shotgun spiralling in my direction, which I could then use to shoot the other two fools on the spot.

Elsewhere, my general haplessness saw me run out of ammo in a museum (this happens a lot in *SUPERHOT*, you'll find), so I was forced to pick up small exhibits from the shelves and

repeatedly smash them into my attackers' heads. *SUPERHOT* lets you do all these things and more, and makes you feel effortlessly cool as you do so. The game's been out for a good while now, yet I avoided it until recently because, generally speaking, I'm a bit rubbish at first-person shooters. But because *SUPERHOT* completely short-circuits the need for split-second, housefly-like reactions, it's possible for even the most dawdling players to take down villains and feel unspeakably badass in the process.

Years ago, *SUPERHOT* wouldn't have looked too out of place in an arcade. It has the same snappy thrills you'd expect from a coin-op experience – levels are over in seconds, and the action's fast and easy to grasp – making it a slightly more cerebral, arthouse successor to Namco's *Time Crisis*. Admittedly, this means *SUPERHOT* has some of the drawbacks of an arcade game: murdering the same villains against the same clinical backdrops can pall after a while, as can the initial rush of seeing bodies and heads disintegrate into glassy red shards.

In short bursts, though, *SUPERHOT* remains an absolute thrill ride: an action game that manages to turn a shoot-out in a warehouse into a graceful, even beautiful art installation. Ⓦ
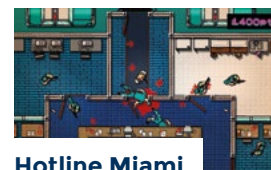

Wireframe Recommends

Max Payne
PC/PS2/XBOX/MAC
One of the first games to attempt to simulate the slow-motion heroism of John Woo movies in video game form, *Max Payne* hardly needs an introduction: as a hymn to wielding dual pistols and diving through doorways, it's seldom been bettered.

Hotline Miami
PC/VARIOUS
Take the violence and top-down perspective of an early *GTA* game, put the player in confined spaces, and multiply the tempo by ten, and you have this sleazily addictive indie gem. For our money, the original's better than the even nastier sequel.
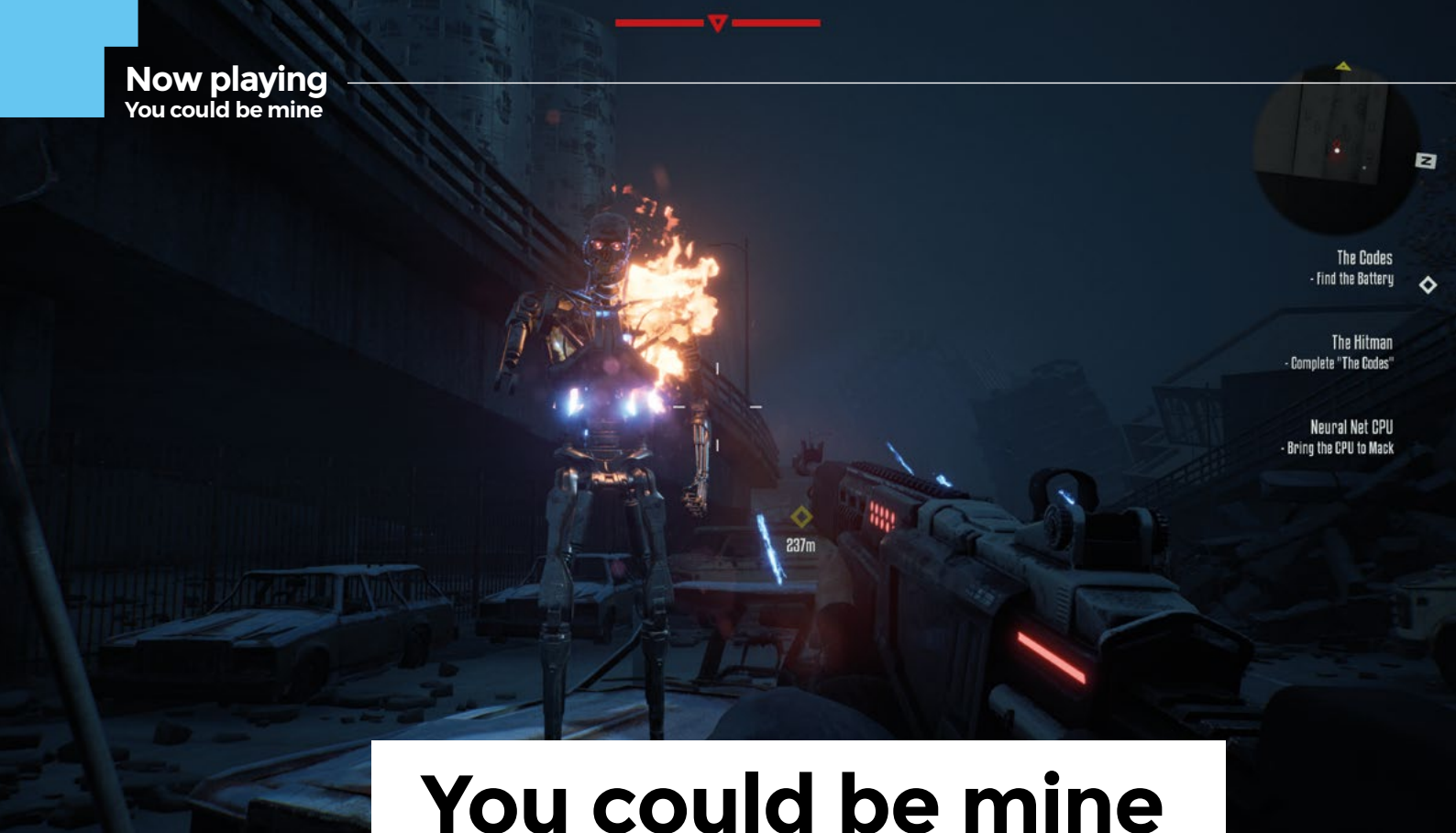

My Friend Pedro
PC/XBO/PS4/SWITCH
Like *SUPERHOT*, this ingenious side-scroller turns violence into a strangely majestic spectacle. Once you've thrown a frying pan in the air and ricocheted a bullet from its surface and into an enemy's head, you'll be hooked for hours.

You could be mine

Terminator: Resistance isn't a good game, but
Ian says it's a good Terminator experience

Well, *that* was unexpected. In no way am I going to toot the flute for *Terminator: Resistance* as a game of true quality, and I'd struggle to defend it against many of the issues raised by its (many) detractors, but the fact of the matter is: I just played through the whole game, start to finish, and the additional Infiltrator mode, got a platinum trophy for my efforts and – most importantly of all – *enjoyed it*.

It's the most 6/10 game ever made, of course. *Resistance* is a lesson in how to do things absolutely adequately without actually stepping out of any comfort zones. If the game's file name

in Unreal Engine was 'FPS template' I wouldn't be surprised. If it had tried to surprise me at all in its couple-dozen hour runtime, I would have… well, I would have been surprised. I was not surprised by the game. I was not surprised by what I did, by where I went, by anything surrounding the actual moment-to-moment mechanics.

I was, however, surprised by the atmosphere. The feel. The clear passion Polish developer Teyon has for the *Terminator* franchise is evident throughout the game, from picking up Phased Plasma Rifles ("Hey, just what you see, pal") through the song playing on the stereo you find as part of a side mission, into the soundtrack as a whole – it *screams Terminator*, and anyone with a mild obsession with the first two films of this franchise that definitely only includes two films (and one TV series) will be spoiled.

Because, see, we're starved for *Terminator* games that do what they should do: be more like Bethesda's DOS *Terminator* games from the early-mid-nineties. *Resistance* isn't as good as those classics, but it does a half-decent impression, and when you've no other options, a half-decent impression is good enough. A few drops of tepid water will taste like the nectar of the gods if you're thirsty enough, after all.

Even with all the caveats in place, though, there's no denying that I actively enjoyed
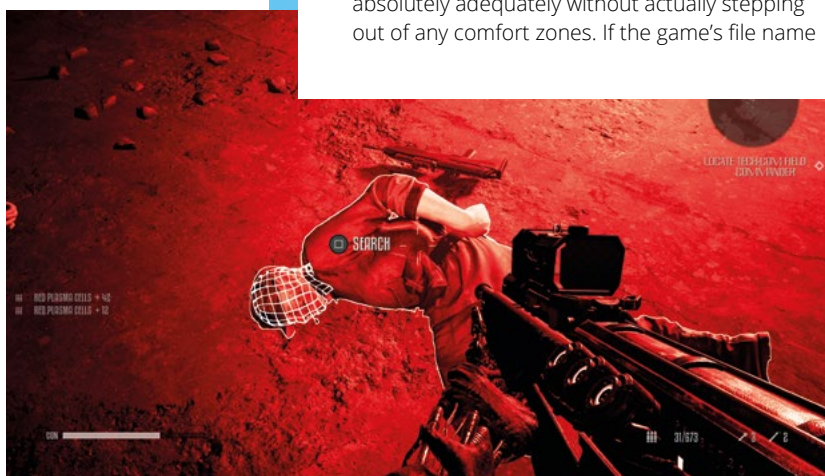
this game. Its mix of sort-of-but-not-really *Fallout*; a touch of serious tension early on when you're facing off against (i.e. hiding from) ever-smiling patrols of T-800 endoskeletons, impervious as they are to your small-arms fire; and some base-level FPS-ing of the sort that has energy bars and critical hits to consider between letting your rifle cool-down and unleashing another volley of hot plasma.

Yes, there's a story, there are choices, there's a "so-and-so liked that" friendship/morality system. Your commanding officer tries to get you into bed if you've been a good enough soldier. You know, the usual nonsensical crap that's put in a game because someone in management thinks it has to be there. There's a lot of boxes ticked – with nothing above and beyond to take it past mere box-ticking. But at the same time, there's a distinct lack of cynicism.

And I think, of everything I enjoyed with *Terminator: Resistance*, that's the biggest factor – it doesn't feel cynical. Even though it was a licensed tie-in made to release in conjunction with *Terminator: Dark Fate*, the most forgettable angry-robots-fighting movie ever made, it still has a charming honesty to its presentation. And while I'm extrapolating as I write, that charm and lack of cynicism *probably* comes from the fact that while it is a licensed tie-in with a movie out around the same time, it doesn't actually factor that movie in at all, instead focusing firmly on the first two films in the franchise. Which of course it would, because, as I mentioned, there are no other films in said

> **"*Terminator: Resitance* cannot be called a 'good' game"**

franchise, not even the one I talked about in this very paragraph.

So it is I'm left with a strange mix of feelings. *Terminator: Resistance* cannot be called a 'good' game, not while wearing my serious reviewer's hat (it's a tricorn, obviously). But I played for two dozen hours, I *platinumed* the damn thing, something I've hardly done on any game I've played since trophies were introduced on the PS3, and I came out of it all decidedly satisfied. When a 6/10 game combines with 9/10 heart from the developers, turns out I have a 10/10 time. Who knew?
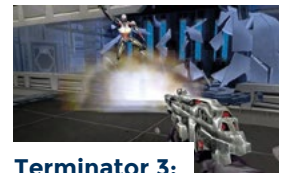
Special mention has to go to the additional DLC Infiltrator mode, which comes as standard with the *Enhanced* edition of the game I played on PS5. In it, you don't play as a human fighting against the machines, as in the main story, instead taking on the role of an 'it's not Arnie, honest' T-800 on a mission to hunt down an important member of the human resistance and – you guessed it – terminate them.

It's a contained hour or so mission with a roguelike aspect to it – you die, you're done – that sees you finding intel, discovering more and more human bases, weapons stashes, food supplies, and more to kill or otherwise destroy. It's a fantastic change of pace and the sort of thing that makes you wonder if it'd work as a whole game. Best of all, you can do it all with classic Terminator red-o-vision engaged. All together now: "I need yore cloze, yore bootz, und yore moderzycle." Ⓦ
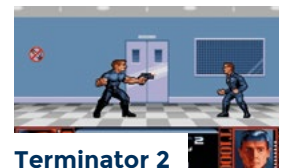
Wireframe Recommends

Terminator 3: Rise of the Machines
PS2, XBOX, GBA, GAMECUBE
In the PS2 era, it wasn't exactly a badge of honour to look like a Mega Drive game. Nonetheless, the developers behind this tie-in opted for a first-person shooter that… looked like a Mega Drive game. Also: it was awful.

Terminator 2
AMIGA, ATARI ST, C64, MULTI
If you played it, you remember it: a mix of largely impossible minigames that both made no sense and were terrible, the computer version of *Terminator 2* still circles the drain as one of the worst licensed tie-ins ever made.

RoboCop Versus The Terminator
SNES
Yes, specifically the garbage SNES version. You have to learn that, really, we don't have many *Terminator* tie-ins that are even half-decent, so we should appreciate *Resistance* more. It's only logical.

Golf

The incredible persistence of the three–tap system

NINTENDO / **1984** / **NES**

A recent column from our own Steve McNeil raised an interesting question: when did it begin? When was the first time a triple-tap system was implemented in a golf game? When was it that someone designing a game where you start your swing, peak your swing, and connect with your swing realised that could be boiled down to three button presses? Would you believe it – it was a game involving both the late, great Satoru Iwata and the great, great Shigeru Miyamoto: *Golf*, for the NES, first released in 1984.

Systems on a similar line did appear earlier in titles like *PGA Golf* for Intellivision and *3D Golf Simulation* on MSX, from 1980 and 1983, respectively, but it was Nintendo's first foray into the world of ruining perfectly good walks that the three-tap system was codified. Wireframe's loose definition of a killer feature is something that – at the very least – made (or makes) an individual game stand out from the crowd. The fact that the triple-tap input has defined an entire subsection of sports games for 37 years now... well, that probably qualifies this as a killer feature, really.

Press one starts your swing off, with the power bar raising from zero to 100%. Press two sets the power, making a miniature game of skill in every single swing as you try to hit the exact point you need to bundle the ball into the hole. The third tap increases the skill required and shows you can't rest until all three taps are done, as messing this one up can

prove calamitous – it indicates draw or fade on a given shot, which directly links to the accuracy of the hit. The third tap is basically how true you hit the ball. And that's it: three taps of a single button; golf turned from a dour televisual spectacle or impossible in-person task into a wonderfully straightforward, easy-to-understand game of skill and timing.

So it's no wonder the theme has stuck ever since *Golf* released. Other titles came along with control schemes that danced around the three-tap method, like 1986's *Leader Board* or 1990's *Links: The Challenge of Golf*, both of which opted for a hold-and-release method in place of the first two button taps. Arcade titles such as *Neo Turf Masters* figured coin-op players weren't quite ready for three button presses in 1996, so opted for two instead. But generally speaking, and outside of putting/crazy golf-focused titles, from the mid-eighties onwards, golf was a game of tap, tap, tap.

PGA Tour Golf, the first in EA's now-dormant series from 1990, used the three-press method. *Rory McIlroy PGA Tour*, the last in the series from 2015, offered the three-press method as an option. *Everybody's Golf* (1997) has used it since day one, and while it dabbled in other methods for a short time, it always came back to tap-tap-tap. *Mario Golf*, Camelot's wonderful follow-on series from the original *Golf* game, also went for the three-tap method it invented.

Well, at least it *did* until *Super Rush* came out and opted for two taps, which rightly brought a fair bit of stick. While it makes

> **"We're still dominated by a control method innovated by *Golf* on the NES in 1984"**

the game more accessible, it also removes a huge chunk of your control over shots. The same can arguably be said of titles like *PGA Tour 2K21* and, previously, *The Golf Club*, which have opted for control schemes using analogue sticks or mouse-drag-based swings.

The issue with the analogue-based schemes – and the track-ball controls seen on some arcade games of the past – is that they aren't *quite* as precise as the three-tap. Inherently so, given they involve analogue input over digital. Arguments can – fairly – be made that stick/mouse/ball controls offer a more organic input method, or even a more 'realistic' input method than pressing a button ever could. And there's obviously a lot of fans of pulling and pushing analogue sticks.

But it's hard to get past that lack of real, fine control that can only come with meters and button presses. You lose the immersion and realism, true, but what you lose there you gain in the ability to really focus and play the game how you want it to be played. Unless you slip on the controller and mash the wrong button, obviously.

There's a lot to be said for ubiquity and the need to challenge norms. It's a good thing devs try to do something different, and there can be few arguments made in good faith that control methods like those in 2K's golf-'em-up don't work. Maybe at some point, something better – something more perfect – will actually come along and everything that came before will seem so instantly quaint.

But for now, we're still dominated by a control method innovated by *Golf* on the NES in 1984. Given that golf in the real world doesn't exactly change as a spectacle at breakneck speeds, it is rather fitting that the video games imitating it don't have to change much either. Once more for the road: tap, tap, ... *tap* – oh crap, that's going in the trees. FORE! ⓦ

Golf-lag

One interesting way in which the old-fashioned, digital-based triple-tap does falter in the face of analogue controls – or a few of the double-tap schemes – is because of modern displays. Newer games don't suffer this at all, of course, but older games are rendered nigh-on unplayable thanks to the usually unnoticeable display lag introduced by using modern televisions and monitors, when compared to CRTs you would have used 15-plus years ago. *Everybody's Golf* on PSone, for example, is incredibly difficult because of this very sort of lag, with shot power and accuracy rarely where you want it to be without fundamentally retraining your brain for different timings. Were analogue, stick/mouse-based control schemes to be offered on older games (and they are in some, like *Microsoft Golf*), they wouldn't be impacted by display lag issues, relying – as they do – more on a steady hand than timing. Ah, the fun of display lag.

Next Issue

ON SALE 7 OCT

moonglow bay

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FAR

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