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WARHAMMER III**
TWICE AS HUGE AND
OVERRUN WITH DAEMONS

WORLD EXCLUSIVE

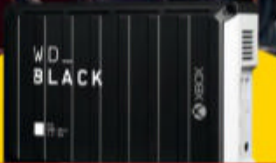
**BALDUR'S
GATE III**

The future of the
smash hit RPG
revealed

BACK TO BLOOD

**IS THIS
THE NEW
LEFT 4 DEAD?**

**HITMAN 3
VALHEIM
PERSONA 5 STRIKERS
DEAD BY DAYLIGHT
WOBBLEDOGS
AMONG US
& MORE!**



HARDWARE

**TOP SSDs
REVIEWED**

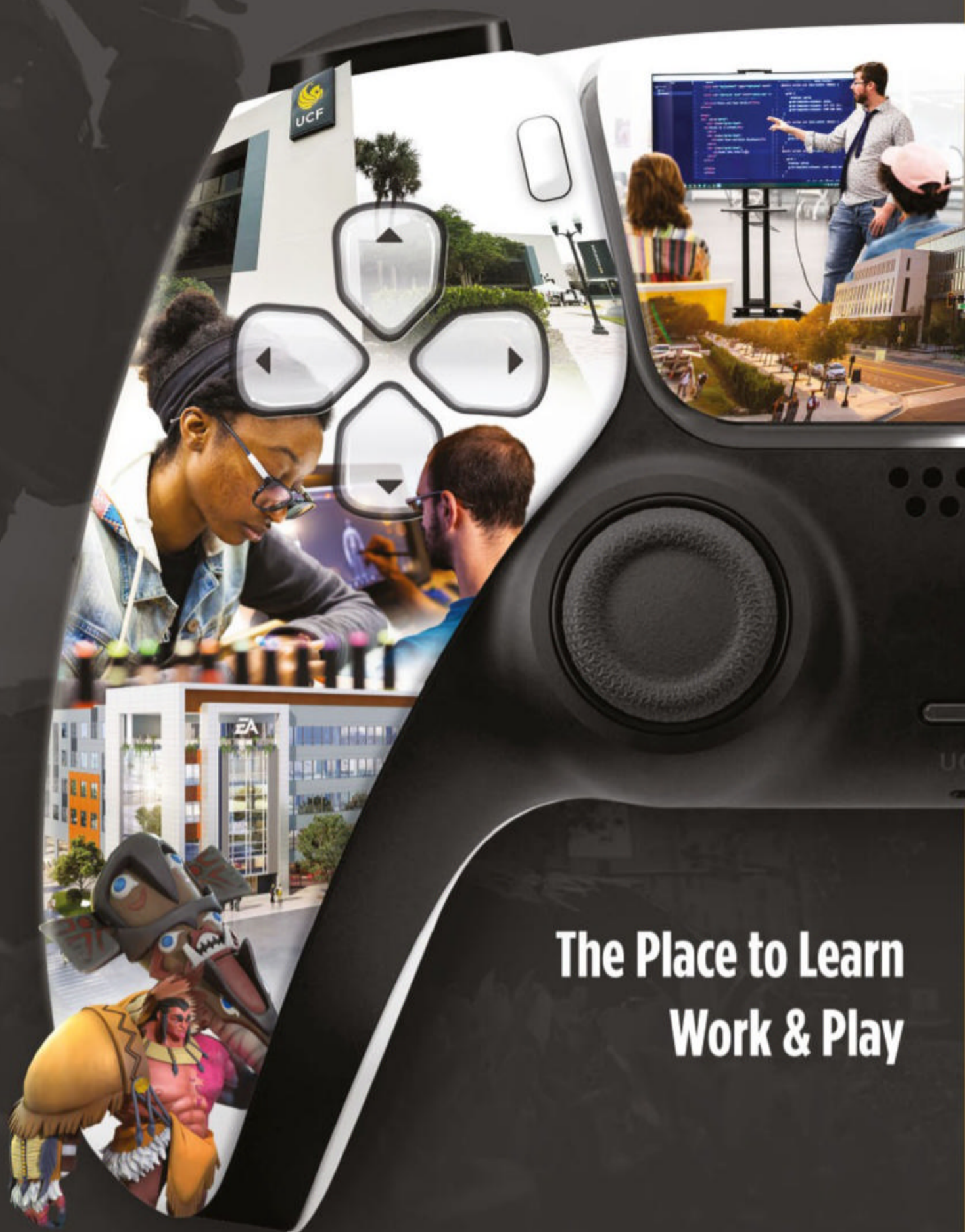
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HOW YOU GAME**

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ISSUE 343

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WELCOME

“TURTLE ROCK IS HOPING TO RECLAIM THE CO-OP CROWN”



How on Earth do you make a spiritual sequel to a game as iconic as *Left 4 Dead*? How do you capture what made that formula so electric in 2008, and create something fresh and modern for 2021? And without Valve’s involvement?

Thankfully, I don’t have to answer these questions. That falls to developer Turtle Rock Studios who, with *Back 4 Blood*, is hoping to reclaim the

co-op crown. And with an arsenal of fresh ideas, and the expertise that brought us the original game, they might just pull it off...

ROBIN VALENTINE
Specialist in
Resurrecting dead jokes

Twitter
@robinvalentine

This month
Shuffled around, groaned, slowly decayed—same as usual, really.

ROBIN VALENTINE
PRINT EDITOR
robin.valentine@futurenet.com

TALK TO PC GAMER
Have your say!
Email us at letters@pcgamer.com

The PC Gamer team



FRASER BROWN
Specialist in
Earning the favour of the dark gods

This month
Wrote about Warhammer again. It is literally impossible to stop him.



JODY MACGREGOR
Specialist in
Basically any game with cards in

This month
Found a bunch of cards inside a book, or something.



RACHEL WATTS
Specialist in
Unstable canine physics

This month
Justified her salary by bringing to our attention a game called *Wobbledogs*. Stellar work.



CHRIS LIVINGSTON
Specialist in
Cowboy crimes

This month
Tried to bring order to the Wild West one bullet a time (from other people’s guns, into his head).

PC Gamer (ISSN 1470169) is published 13 times a year, monthly plus a Holiday issue following the December issue, by Future US, Inc., 11 W 42nd St, 15th Flr, New York, NY 10036 USA. Website: www.futureus.com. Periodicals postage paid in New York, NY, and at additional mailing offices. Newsstand distribution is handled by Curtis Circulation Company. Basic subscription rates: one year (13 issues) US: \$24; Canada: US\$47; Foreign: US\$47. Canadian and foreign orders must be prepaid. Canadian price includes postage and GST (GST #R128220688). PMA #40612608. Subscriptions do not include newsstand specials. POSTMASTER: Send changes of address to PC Gamer, PO Box 2024, Langhorne, PA 19047, USA.

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PRODUCED IN THE UNITED STATES OF AMERICA.

PC GAMER

#343 MAY 2021

Future Publishing Ltd
11 W 42nd St, 15th Flr, New York, NY 10036
Tel +1 212 378 0448 | Email pcgamer@pcgamer.com
www.pcgamer.com



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FUTURE US, INC.

11 Hanover Square, 14th Floor, New York, NY 10005, USA
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BACK ISSUES

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ISSN 1470169

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From bears climbing ladders to the combat ability of giant badgers, Larian tells all.

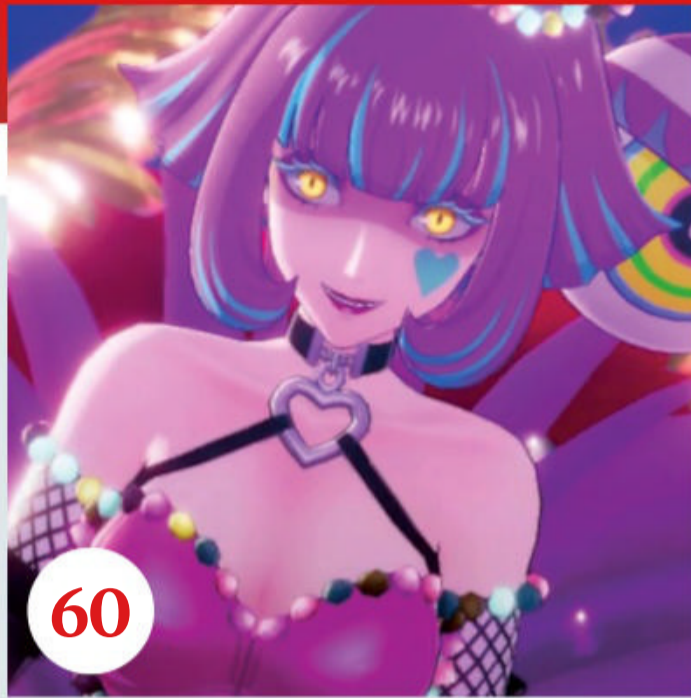
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Left 4 Dead's original creators are back with a co-op zombie shooter that's both comfortingly familiar and surprisingly new. Can it live up to its spiritual predecessor?

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MONITOR

NEWS | OPINION | DEVELOPMENT



Your opinion on Herobrine likely has a lot to do with how old you were in 2010. .

GHOST IN THE MACHINE

HEROBRINE: a decade-old *Minecraft* legend both exposed and made real

Herobrine is a legend in *Minecraft*, the star of a creepypasta not dissimilar to Slender Man. The character appears in singleplayer games, so the story went, where he does weird things like carving 2 x 2 tunnels in the rocks or cutting all the leaves off of trees; he looks identical to the default *Minecraft* skin, but with white, empty eyes.

First reported in a 2010 4chan post, Herobrine went unnoticed until a streamer named Copeland shared several images 'proving' the odd

character's existence. Stories of the spooky ghost miner began to rise to prominence alongside *Minecraft* itself in the early 2010s.

BRICKING IT

Like all good legends, this one had a hook in the real world: Herobrine

LIKE ALL GOOD LEGENDS, THIS ONE HAD A HOOK IN THE REAL WORLD

was reportedly Notch's dead brother, and theories veered from Notch coding a deceased sibling into *Minecraft* to preserve him for eternity, or a neglected brother's vengeful spirit come back to haunt the game. Not that it matters because—spoiler alert—the whole thing was made up. Herobrine doesn't exist and, for the record, Notch never had a brother. *Minecraft*'s developer tweeted about Herobrine several times before saying in 2012, "I don't have a dead brother, and he never was in the game. Not real. Never was."

Copeland then admitted his Herobrine material was a hoax, telling *Minecraft* Wiki editors that he

TIME LOOP

PRINCE OF PERSIA



Once again, Ubisoft's remake of *Sands of Time* has been delayed. It had already been pushed back from January to March, and Ubisoft is now hesitant to pin down an exact month. ■ **RW**

HOT TIP

CRACK A BREW ON



A new mug holder from Asus ROG and Ikea shows a great understanding of the PC gamer condition. We're far more often fuelled by a cup of tea than a bottle of G Fuel or Sneak. ■ **JR**



BEHIND THE TIMES

ASS EFFECT



If you've played *Mass Effect 2*, you might remember the camera lingering on Miranda's bum a lot – even during serious moments. Thankfully the *Legendary Edition* has toned it down. ■

DIY

Dive into the brine

If you'd like to check out the original Herobrine world for yourself, you'll need to use *Minecraft Java Edition* with 'Historical versions' enabled in the launcher. Select version a1.0.16 and then either edit the save file (that version doesn't support entering seeds) or, more easily, Google Herobrine prepared world file. Here are the details you'll need:

SEED 478868574082066804
VERSION Java Alpha 1.0.16_02
ALPHA COORDINATES X=5.06 Y=71 (72.62 eye pos) Z=-298.54
MODERN COORDINATES X=5.16 Y=71 Z=-298.53
CAMERA ANGLE RX=93.75 RY=-1.2



TOP, RIGHT: Kminster's announcement of the find also credits the following as major contributors, so we will too: "Neil, BoySanic, polymetric & MC (PseudoGravity)".

ABOVE, RIGHT: "Unlike Slenderman or anything else, it was *Minecraft* specific," Copeland says. "I think that's what it had going for it, really. It just wouldn't be the same if it was just an old meme thrown into the *Minecraft* world."

liked the original text post about Herobrine and got involved by posting edited screenshots of his own showing the ghostly miner. At the time, it got a big reaction.

Herobrine isn't real. What is real, however, is the *Minecraft* world in which Herobrine was first seen. This became the obsession: The final proof, if you will, of whether Herobrine was miner or myth. Nobody knew which world it was: Specific *Minecraft* worlds can be perfectly recreated with 'seeds' but, if you don't know the seed, you're out of luck. It is possible to crunch the numbers to discover specific seeds, though: The *Minecraft* title-screen seed was discovered in July 2020, among many other fan-sought locations.

And finally, the Herobrine seed was discovered. This was announced January 16 by andrew_555 (Kminster), who'd found it with great help from members of the *Minecraft@Home* community. He posted on Reddit that it took "probably about 50 hours in total for developing/writing the code back in September", followed by months of debugging, until realizing "there was a wrong leaf in the recreation which had been the problem all along".

Players then piled-in. Herobrine, of course, was not there, even if he lives on in the minds of *Minecraft* players spooked by the legend in younger years. Herobrine always had his skeptics, with shrewder players noting that the character looked like some kind of edited texture from the very beginning. Some even suspected it of being a prank started by Notch, not Copeland. Whatever the truth, Herobrine was never a 'real' part of *Minecraft* but, after a decade of legends and stories, has somehow surpassed any need for an in-game form.

Rich Stanton

Highs & Lows



HIGHS

Gamestop stocks in Jan

A wild investment campaign on reddit saw the stock of US retailer Gamestop go through the roof.

Resi's tall vampire lady

Folks went wild over the upcoming *Resident Evil Village's* very tall Lady Dimitrescu—the devs have officially announced she's nine foot six.

GoldenEye

Rare's unreleased remaster of the N64's *GoldenEye 007* has leaked.

Gamestop stocks in Feb

After peaking at \$483/share the stocks crashed to \$88/share.

Stadia shutdown

Google announced the closure of its first-party studios as it backs away from streaming service Stadia.

Epic mistake

A four-year-old's family was questioned by UK police after the boy was reported for talking about his dad's "guns and bombs". He was talking about how they play *Fortnite*.

LOWS



Special Report

PCG INVESTIGATES



Just look at this place. No wonder *Hitman 2* was so big!

DECEPTIVELY SMALL

How **HITMAN 3**'s developers cut the trilogy's install size in half

Hitman 3 is an enormous PC game—at least if you own *Hitman 1* and *2*, which *Hitman 3* can import to bring the entire trilogy into a single package. That sounds like a recipe for an install size big enough to make an SSD cry, because *Hitman 2*, with the first game's levels imported, is currently 149 gigabytes. *Hitman 2* is one of the mightiest storage hogs on PC, second only to *Call of Duty*. But *Hitman 3* will actually shrink instead of grow, retroactively optimizing the first two *Hitman* games into a dramatically smaller package. How did IO Interactive manage to halve the install size? We asked the developer to break down the technology and techniques it used to cut 80 gigabytes out of the trilogy.

“With all content installed, including the locations from *Hitman 1* and *Hitman 2*, we're expecting *Hitman 3* to clock in at approximately 60-70 GB and we're really happy with that,” IO Interactive's chief technology officer Maurizio De Pascale says.

Even without the older games bundled in, *Hitman 3* is a leaner install than IO has managed to pull off with its last two games. As De Pascale explains to me, the answer is simple: More compression. But why *Hitman 3*'s compression is so effective, and why they didn't use the

same techniques last time, is where it gets more complicated (and more interesting).

Hitman 3 uses a technique called LZ4 compression that's been around for about a decade. Almost everything in the game runs through this compression algorithm, which is especially efficient. Here's how De Pascale explains it, “Almost all lossless compression techniques exploit the fact that data often has repeating sequences. For example, ‘HITMAN’ or ‘IO Interactive’ will likely appear frequently in an article about IOI.

“Those duplicated sequences don't need to be stored multiple times and can be omitted, as long as you embed some information in the compressed stream about where they appeared originally, so that you can still perfectly reconstruct the initial data. The super simplified description of LZ4 is that it replaces those lengthy sequences with a reference to a sequence that has previously appeared in the decompressed stream.

“So instead of storing the word ‘compression’ as-is, the algorithm can store the equivalent of ‘the word that appeared X words ago’, which can be very efficiently encoded with few bits. Of course that's not exactly how it works, but it's sufficiently close to convey the idea.

“This is actually a pretty common technique, which other compressors employ as well, but LZ4 has a very performant implementation that provides a good trade-off



Mega textures

4K textures are one reason for today's huge file sizes. Some PC gamers worry that games will soon demand more VRAM than their graphics cards can meet, but brand new PCIe 4.0 SSDs (like the Samsung 980 Pro, and the PS5's) are so fast, they can potentially stream far more data near-instantly, drastically reducing what needs to be stored in video memory. Neat!



FAR LEFT: First stop for Agent 47 in *Hitman 3*: the tailor, obviously.

LEFT: I assume this is the vault where IO keeps all its fanciest compression tech.

SPACE HOGS *The biggest games on PC as of early 2021*

COD: MODERN WARFARE

Call of Duty: Warzone is a heavy 70GB alone, but tack on *Modern Warfare* and it's over 200 gigs.

HITMAN 2

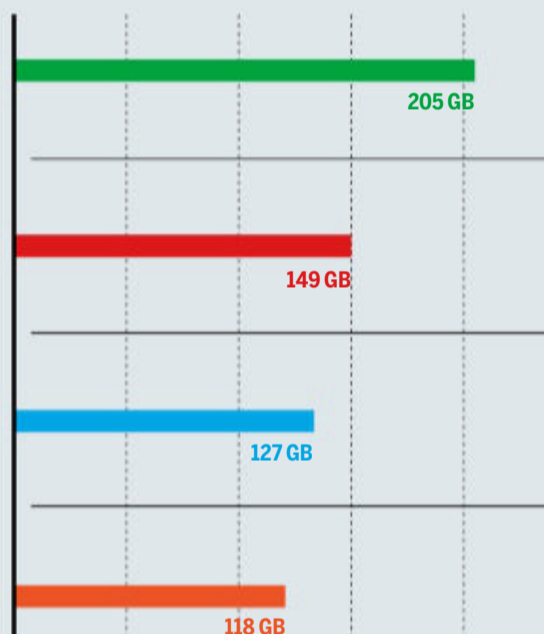
Agent 47's previous outing is one bloated hog with its DLC and the *Hitman 1* levels installed.

MICROSOFT FLIGHT SIMULATOR

How'd they fit the whole Earth in a package smaller than *Call of Duty*?

RED DEAD REDEMPTION 2

Talk about Big Country! No, not the band from the '80s...



between reasonable disk compression and great decompression speed, which makes it a common choice for videogames.”

COMPRESS GANG

With *Hitman 1* and *2*, IO didn't apply compression as broadly “to avoid performance issues on low-spec hardware”. The game only has so much CPU power to work with, so decompressing data has to be weighed against everything else it's doing, like running the AI and processing inputs. The trade-off is to skip compressing some files, resulting in a larger install but better performing game. By *Hitman 3*, engine improvements have lightened the load in other areas, freeing up more processing cycles to spend on compression.

Another big improvement comes from how IO is importing the data from *Hitman 1*. Because the game was built episodically, every episode had to have all the code and assets needed to work standalone. “In *Hitman 3*, we're handling the way we give access to the legacy titles in a different way, which makes it easier for us to

around and break a potentially longer sequential read.”

SSDs are also faster at sequential reads than random ones, but because they don't rely on moving parts, the performance hit is nowhere near as severe as it is on a hard drive. Games designed purely for SSDs today don't

have to employ those tricks.

But IO Interactive has developed all three *Hitman* games to run on consoles, too, and the PS4 and Xbox One use 5400 RPM hard drives made a full decade ago (with measly 8MB caches, to boot). De Pascale

says that IO Interactive still uses technology that the studio built for when its games were loading directly from DVDs, which are even slower than hard drives.

Now that the PlayStation 5 and Xbox Series X are here with next-gen SSDs, that technology is hopefully soon to be obsolete, and any game developers who still duplicate resources for faster load times can follow IO's lead in slimming down their games. Will *Call of Duty: Warzone* manage to shave off some dead weight in 2021? Even if it does, it's going to be hard to upstage *Hitman 3*'s 80 gigabyte diet. Agent 47's definitely going to need a new tux. ■

Wes Fenlon

EVERY EPISODE HAD TO HAVE ALL THE CODE AND ASSETS NEEDED TO WORK STANDALONE

Positive Influence

INSPIRATIONS AND CONNECTIONS IN GAMES

GLORIOUS MUD

How one man's love for spinning tyres birthed **MUDRUNNER**

There's nothing quite like *Mudrunner* for cooling the blood, to paraphrase the classic Flanders and Swann number. There's something meditative about plunging a truck into brown soup, then spending ten minutes wiggling the left stick and attaching winches to trees in a gradual and patient attempt to free your wheels from the quagmire. It's a premise that would be considered ponderous or perverse by conventional game design standards, which hold that players should be swept along and kept busy at all times. But *Mudrunner* didn't come from conventional game design—it came from the mind of Pavel Zagrebelnyy.

Zagrebelnyy was born in St Petersburg, Russia. It was a grounding that would give him access to people, infrastructure, and ultimately work at an internationally known game studio. But it also gave the young Zagrebelnyy reams of strange, swampy countryside to explore. When he was at home, he played with toy trucks; when outside, he watched real trucks and excavators work in the fields.

In particular, Zagrebelnyy fell in love with the super-heavy mechanical monsters of the Soviet era. These were trucks that met hostile terrain with equal and opposite hostility. To Western sensibilities, they resemble the invented vehicles of Gerry Anderson's Thunderbirds—highly specialized tools, running on tracks or enormous wheels, with irregular silhouettes and deafening calls. “These types of vehicles are simply what I grew up around, you could see them everywhere,” says Zagrebelnyy. “They

looked normal to me. But later I realized they seemed strange and exotic to people in other areas of the world.

“I found them to be inspiring. Think about the military vehicles—they have nothing extra. Everything serves a practical purpose. And when you hear their monstrous engines roar, you feel their power. You can't help but be impressed.” Further inspiration came from a teacher, who awoke Zagrebelnyy to the wonders of physics. That led to a degree in computer software engineering, and later a job as a graphics programmer at Saber Interactive. There he worked on *Halo*'s anniversary remake, gaining the experience needed to build something on his own.

KEEP ON TRUCKIN'

Mudrunner began as a side project that melded Zagrebelnyy's obsessions: Volatile physics and misshapen trucks. “The hobby mindset, versus a commercial one, allowed me to shape the game in the exact form I wanted it to be,” he says. “I just kept building something I loved.”

Even for Zagrebelnyy, situated in a city at the edge of civilization, the wilderness of *Mudrunner* holds a certain romance. “Unfortunately, I haven't even traveled that much in Russia, it is such a vast country,” he says. “Certainly, the frontiers capture the imagination. Siberia evokes something special in the minds of everyone. It almost feels like a different planet, yet people live and work there. And the vehicles you see in *Mudrunner*, they feel at home.”

Today he still lives in St Petersburg, and works at Saber, who led development on *Snowrunner*. “I played a different role on *Snowrunner*,” says Zagrebelnyy. “While I contributed as a consultant, it was a more ambitious project, with higher production values and efforts to make the gameplay more accessible. It was so much bigger than just me.”

Zagrebelnyy's transfer of creative control turned out to be a good thing for *Snowrunner*, which benefits from clearer objectives and a Ubisoft-esque open world. “I can't speak for Saber, but perhaps *Snowrunner*'s exploration structure was simply a natural evolution,” he says.

The game's engine, however, hasn't been swapped out. “Personally, I don't want to make videogames that provoke anger, jealousy, or other negative emotions,” he says. “I like the balancing of traditional challenges, the integration of physics, and the feel of the wilderness. I'm proud to showcase the technologies in the game while giving players something fun in a new way, perhaps even peaceful.” ■

Jeremy Peel

DIRTY WEEKEND *The best places to get mucky on PC*



MXGP 2020
MXGP's signature is its deformable mud—you won't be racing on the same track by the third lap.



DIRT RALLY
If you're not afraid of roadside ditches, you will be after a few hours on Codemasters' forest trails.



DEATH STRANDING
Nothing captures the sensation of shuffling down a wet hillside like Kojima's hiking simulator.



THE HOBBY BECAME A HUGE SOLO SUCCESS, INTRODUCING THE WORLD TO ZAGREBELNYY'S INFLUENCES



ABOVE: High engines are essential for avoiding critical water damage.

FAR LEFT: Zagrebelyny worked on *Snowrunner* as a research and development consultant.

DNA Tracino

GAMING

A UNIT FORGED IN
HARDSHIP THAT
WOULD PROVE TO
LAST DECADES

BIG BAD WOLF

How **MACHINE GAMES** reversed the reputation of licensed games

Jens Matthies is laughing somewhat incredulously. Although his clothes are casual, his body language is guarded. It's QuakeCon 2017, and I've just told the creative director of MachineGames that some people are saying single-player games are dead. "People," he retorts. "What people?"

"People in the industry," I suggest, unconvincingly. And so Matthies continues to laugh. I'm not sure what kind of response I expected: He and his team have bet their careers on the argument that single-player games are very much alive. That no matter how many times publishers chop the head off story-led adventures, developers will succeed in reanimating them.

It's a conviction that set in years before MachineGames was founded, back when its core team worked at Starbreeze, bonding over the difficult development of *The Chronicles of Riddick: Escape from Butcher Bay*. Then, as now, Starbreeze was wracked by financial problems, and shedding staff at a demoralizing rate. In order to insulate themselves, the *Riddick* team moved to a different floor, shutting out the miserable drama that had consumed the rest of the company. It was a unit forged in hardship that would prove to last decades.

The world beyond Starbreeze's doors expected little from *Butcher Bay*, wary of ropey licensed games made on shoestring budgets. But the *Riddick* team made smart use of its 18 months, eschewing multiplayer to focus completely on a campaign inspired by *Half-Life* and *Splinter Cell*. Setting the game exclusively within the confines of a labyrinthine prison was a shrewd economic choice, too. While Starbreeze couldn't have competed with the lush outdoor environments of *Far Cry*, it could pour detail into *Butcher Bay*'s cell blocks, which were dark, dramatically lit, and densely textured.

DIESEL POWERED

Butcher Bay's one great risk was its first-person perspective, which left its most valuable asset, Vin Diesel, offscreen for most of the game. But Riddick's background presence befitted a character who was best pals with the shadows, lending mystery and malevolence where exposition would merely have bored. Diesel cut back the dialogue, rightfully recognizing that players would lean in to listen if his baritone was used sparingly. What's more, Starbreeze succeeded in making first-person fist-fighting a highlight—a feat that was practically unheard of in 2004.

What stands out about *Butcher Bay* today isn't its shooting, but its breathing room. The game's centerpiece is a non-linear negotiation of 'double-max' society, during which Riddick trades cash for smokes and favors for shivs. The quiet and the conversations have a grounding effect, situating you in a world that might otherwise seem like a series of corridors. It's a trick that has since become MachineGames' signature. That, and the studio's ability to instill licensed property with flair. To make spin-offs and retreads feel, paradoxically, original.

The latter was never the plan.

When MachineGames' founders left Starbreeze during the development of *Syndicate*, they spent 18 months pitching new ideas to publishers. All were rejected, and the studio's directors considered selling their homes to keep the company afloat—

BELOW: Pimp My Ride's Xzibit makes for a surprisingly consistent villain.



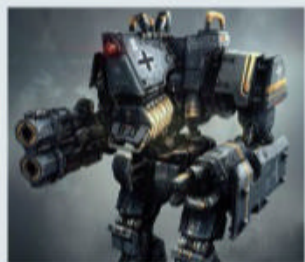
MACHINE GUN-DAM

The lineage of Wolfenstein's bots



RIOTGUARD
ESCAPE FROM BUTCHER BAY

These suits come with two miniguns and a weak spot behind the head.



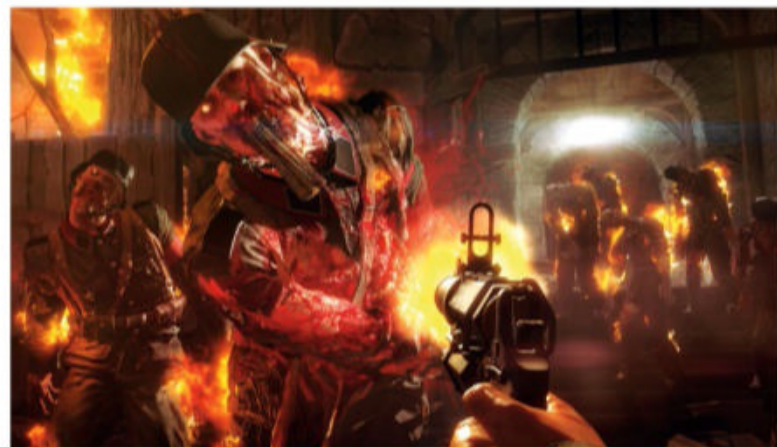
SCHWERER ROBOTER
WOLFENSTEIN: THE NEW ORDER

Resembles a shark. On legs. With laser cannons. Bond villains wish they had these.



ZITADELLE
WOLFENSTEIN II: THE NEW COLOSSUS

Rocket launcher to the left, flamethrower to the right. Pretty deadly.



DNA Tracing

ALTERNATE TIMELINE

The way the wolf pack came together

ESCAPE FROM BUTCHER BAY
The stealth-shooter that put Starbreeze on the map.

THE DARKNESS
A comic book FPS that cemented the team's way with adaptations.

ASSAULT ON DARK ATHENA
An uninspired *Butcher Bay* sequel made after a staff exodus.

WOLFENSTEIN 3D
The first ever FPS, from the masters at id.

RETURN TO CASTLE WOLFENSTEIN
Introduced stealth and alarms, plus the future *COD* engine.

WOLFENSTEIN (2009)
A misfire that's now impossible to buy.

WOLFENSTEIN: THE NEW ORDER
A confident debut built on *Butcher Bay*.

WOLFENSTEIN II: THE NEW COLOSSUS
A surprisingly sensitive sequel.

WOLFENSTEIN: YOUNGBLOOD
Made in collaboration with *Dishonored* dev Arkane.

WOLFENSTEIN: CYBERPILOT
A VR spin-off that stars a French Resistance hacker.

UNTITLED INDIANA JONES GAME
Another chance for Machine Games to do what it does best.

WOLFENSTEIN: THE OLD BLOOD
An unexpected retelling of *Return to Castle Wolfenstein*.



KEY

- Starbreeze Studios
- MachineGames
- id Software
- Gray Matter
- Raven Software

» anything to lash together the raft that carried *Riddick*'s survivors. A deal between two unrelated companies was the saving of MachineGames: Bethesda acquired id Software, and with it the licence for *Wolfenstein*.

BLOOM EFFECT

It's testament to MachineGames' success that *Wolfenstein* is now considered bankable, spawning a board game, VR tie-in, and prequel comic series. Back in 2010, it was another story. Among id's licences, *Doom* and *Quake* were top of the pile—*Wolfenstein* was the difficult sibling. Developers had failed before: Raven's 2009 iteration was a commercial disaster. It's perhaps unsurprising that when asked if anybody was working on a new entry, Bethesda said MachineGames was free to try.

If *Riddick* thrived in the shadows, MachineGames did so on low expectations. The established lore of *Wolfenstein* was a pulpy mess—a mixture of POW escape fiction, zombie horror, and Mecha-Hitler boss fights. Nobody was asking for it to be treated with reverence, but Matthies and a team of majority-Starbreeze alumni told *Wolfenstein: The New Order*'s story with a straight face—even as they kept the villain called Deathshead, and protagonist named BJ.

In a master stroke, the studio shifted the action from WWII to an alt-1960, in which the Nazis were the dominant force in the world—a concept that was gripping in the fashion of the best 'what if?' tales. It cast Brian Bloom (an accomplished co-writer of *Call of Duty*'s best stories) as Blazkowicz, lending the Polish-American Jew a genuine gravity that belied his daft name.

INDIE GAME

That juxtaposition, of the tender and the absurd, has become *Wolfenstein*'s distinguishing quality during MachineGames' tenure. By *The New Colossus* in 2017, it



LEFT: *Wolfenstein: Youngblood* is a family affair.

BOTTOM: *The New Colossus*' Nazi-fied United States is *Wolfenstein*'s most striking setting.

IT'S THE MIRACULOUS STORY OF MACHINEGAMES, RELATED IN THE MOST AUDACIOUS WAY

felt as if the studio was deliberately pushing the formula as far as it could go. In one pivotal scene, BJ is beheaded in a televised execution—only for his fellow resistance fighters to catch and transplant his noggin onto a new body in an experimental procedure. The twist is played not for laughs, but to show the lengths that a ragtag family will go to keep the unit together. It's the miraculous story

of MachineGames, related in the most audacious way imaginable, by an outfit at the top of its game.

In mid-January, Bethesda tweeted a teaser. As the camera panned across a desk covered in tomes and maps, it took in a

typewriter bearing the legend "MACHINEGAMES", plus a fedora and a bullwhip. The message was clear: Matthies' team will be taking on an *Indiana Jones* adaption next. In some respects, it's familiar territory—a cause for further Nazi-bashing, and an excuse to return to fist-fighting mechanics. But in one other key aspect, it's terrifyingly different. For the first time, the *Riddick* team is facing high expectations. They only have themselves to blame. Who else taught us that licensed games could be great? ■

Jeremy Peel





BECKER COLLEGE

#2 GAME DESIGN IN THE WORLD

THE PRINCETON REVIEW

#7

IN THE U.S.

GAME DESIGN MFA

THE PRINCETON REVIEW

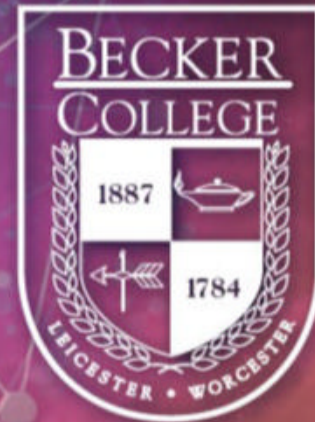


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SEQUENCES OF ACTION AND VIOLENCE

ENGLISH SDH
Color/151 Mins.

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PREVIEW





NEED TO KNOW

RELEASE
TBC (Out now in Early Access)

DEVELOPER
Larian Studios

PUBLISHER
In-house

LINK
baldursgate3.game

BALDUR'S GATE III

Druids are set to turn Larian's RPG sandbox into a zoo

Look,” David Walgrave pleads with his fellow Larian developers. “The player will respect the fact that they’re a bear. They will not fit through the door, they’ll just have to change back. If my dungeon master told me ‘You can’t get in that house, you’re a huge bear’, I would go ‘OK, you’re the DM, you make the rules’. You just have to accept it.”

Walgrave is a producer, and producers are the reason you’ve ever played a finished game. They are the bulwark against feature creep, the developers who say ‘no’ when everyone else is saying yes. In *Baldur's Gate* terms, they are Elminster—the sage advisor who shows up in the woods to remind wayward adventurers of their purpose in the game.

It’s not clear what Walgrave did wrong in a past life to become head of production at Larian—a studio that likes to tackle everything and compromise on nothing—but he’s surely paying for it now. “No,” say his colleagues, embodying the player. “No, I simply cannot accept it. I’m a druid, I’m proud of being a druid. I want to be able to walk through a door, I’m a bear, I want to climb a ladder.”

In *Baldur's Gate III*, bears will become playable as part of the shapeshifting druid class. And yes, thanks to the elastic imaginations of Larian’s animators, those bears will stride through doors and clamber up ladders. It’s a matter of druidic pride. Producers, Walgrave jokes, have a different role at Larian than at other game companies. “You need a guy to sit in the corner and say no—that’s when you know it’s a really good idea.”

BEAR NECESSITIES

Daft as it is, the ladder climbing befits a class that Larian was drawn to by its versatility. In *Dungeons & Dragons*, druids

can throw magic about from the moment they step out of character creation. Larian has adapted 13 new spells and actions from the tabletop game, and they run the gamut of combat functions, from buffing to damage to crowd control. When enemies draw close, druids can cover themselves in bark and summon a flaming scimitar. It’s a toolbox practically begging you to ditch the party and do a solo run—especially if you pick the Circle of the Land subclass, which lets you pull extra spells from the earth beneath your feet. Talk about green fingers.

It’s the second subclass, however, that Larian refers to as the “real druid experience”—the Circle of the Moon. The literal Bear Grylls of the druidic discipline, this survivalist might spend weeks out in the wilderness without crossing paths with another human being. And even if they did, they might not be recognized as such, because they spend so much of their time in beast form.

The *Forgotten Realms* shares plenty of animals with planet Earth, but even Larian couldn’t provide the full encyclopaedia of organisms for players to pull from. Instead, it surveyed tabletop D&D players to find out what their DMs let them get away with in wild form. Once druids are implemented in a future *Baldur's Gate III* patch, you’ll be able to turn into a giant badger, burrow beneath the ground, and surprise your enemies from below. Or transform into a polar bear, and attract attention away from a vulnerable companion with a deafening roar. “For every beast, we tried to figure out the niche,” says lead systems designer Nick Pechenin. “A role in combat, and a little kit that they could use.”

That said, some wild forms are simply for roleplaying purposes. “We know that not everything revolves around combat,” says Pechenin. “You also want to just chill out and sneak around as a cat or fly about as a raven.” This being a Larian game, of course, roleplaying isn’t just for flavor—it’s easy to imagine players finding alternate

NEW
INFO

BEARS WILL BECOME PLAYABLE AS PART OF THE SHAPESHIFTING DRUID CLASS

Baldur's Gate III

» solutions to encounters by slipping into something a little fluffier.

BEAST MODE

In anticipation, the studio has been clearing away any potential obstacles—the scripting that might prevent a player from flying through an area, for instance, or level design that could trap a larger beast in place. One headache was Thorn Whip, the druid spell that lets you lasso an enemy and pull them closer—an action no other *Baldur's Gate III* class can do.

“You can pull them off roofs,” says Pechenin. “We needed to be very careful so you didn’t get locked into a clipping situation, or you didn’t fling an enemy god-knows-where—where they’re not supposed to ever go.” In a game that’s already taking us through the Underdark and at least one layer of hell, it’s hard to contemplate a void you *shouldn’t* enter. Then again, the *Baldur's Gate* series did begin with a Nietzsche quote about the dangers of gazing into the abyss.

Baldur's Gate has a long history with druids, too. One of the central characters of the Bioware games, Jaheira, was a headstrong treehugger dedicated to the balance of all things, even if that meant thwacking the scales with a club from time to time. Given that the new sequel is set a century on, she’s unlikely to still be around, and Larian says it has no plans to pay tribute to her.

A key faction from the early games still endures, however. Made memorable by their shocking and uncompromising stance, the shadow druids are cultists who believe civilization is a blight that needs to be burned away—so that a greener world can grow in its place.

The original *Baldur's Gate* featured a shadow druid companion named Faldorn, who turned venomous if Jaheira was in the party—ultimately attacking and, depending on how the fight went, killing her over an ideological dispute. By *Baldur's Gate II*, Faldorn had taken over a grove and set the wildlife against the locals, leaving the town of Trademeet under a bizarre state of siege. Where classic D&D is often accused of painting in black and white, its druids were as complex as animal activists are in real

SHADOW DRUIDS ARE CULTISTS WHO BELIEVE CIVILIZATION IS A BLIGHT

life—existing along a spectrum of belief which, at the far end, includes extremism.

True to form, the shadow druids have infiltrated *Baldur's Gate III*. Without wanting to spoil anything, you may already have come across them in the game’s first act—which is currently available in Early Access—without necessarily recognizing them. Suffice to say that the Sword Coast’s druidic population is as susceptible to vicious infighting now as it was 100 years prior.

CLASS ACTS

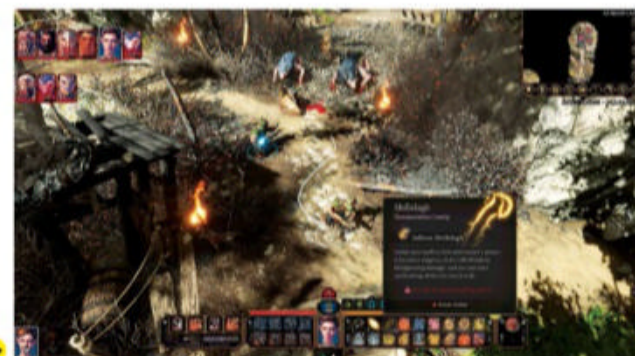
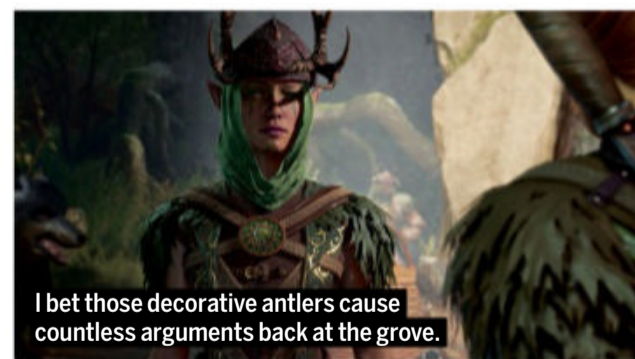
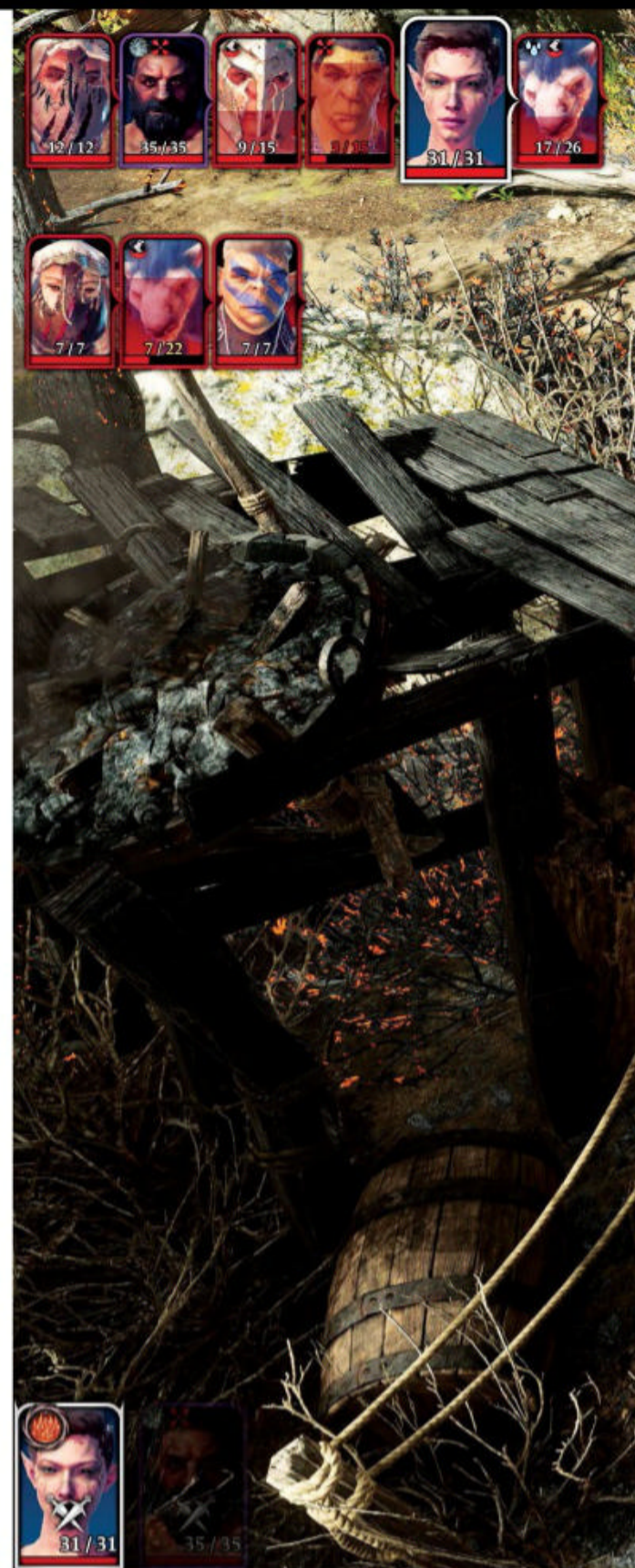
Larian has carried out an extra dialogue pass on Act One’s grove area ahead of introducing its new class—ensuring that a den of druids acknowledges a fellow shapeshifter. “They should see through the fact that though I may look like a bear, I’m actually a druid,” says Walgrave. “It’s not easy to go back and organize the entire voice recording and cinematics because we introduced three new options in a dialogue. But we have to do it, because otherwise, you don’t feel like you made that choice in character creation. You want to have that reactivity.”

No matter what preparations Larian makes, however, the studio knows it can’t account for everything its players will try to do. “We release a game into the wild, and we see people play it and break it in all possible ways,” says Walgrave. “We think ‘we never intended *that* to happen’. And that makes it so much fun.”

The great breaking of *Baldur's Gate III* began in October, when Act One launched on Steam. Perhaps more so than the average PC gamer, Larian fans are inclined to take the scenic route and discover indirect paths to success. In D&D, however, success is measured in experience points—and some players were disappointed that their creative solutions for avoiding combat weren’t being acknowledged with a decent amount of XP. As of December, for instance, 56% of players had dodged the goblin ambush set up to catch them out in Act One—but the lion’s share of the XP was to be found in goblin corpses.

“You can circumvent all the fights by talking your way out of them,” says Pechenin. “You make the goblins think that you’re actually secretly one of their commanders. Players shouldn’t feel compelled to kill every single goblin.”

It’s a problem with deep roots in D&D, which grew from miniature wargames into a system that tied progress to kills. That worked just fine for the PC dungeon



Druids fare better in close combat than your average skinny wizard.



Druids in existing Early Access areas will speak differently to their own kind.



Origin Race Appearance Class Skills Abilities

Tav

Race: Wood Elf
Class: Druid

Abilities

STR 10	DEX 16	CON 13
INT 8	WIS 16	CHA 12

Proficiencies

- Stealth
- Nature
- Religion
- Animal Handling
- Insight
- Perception

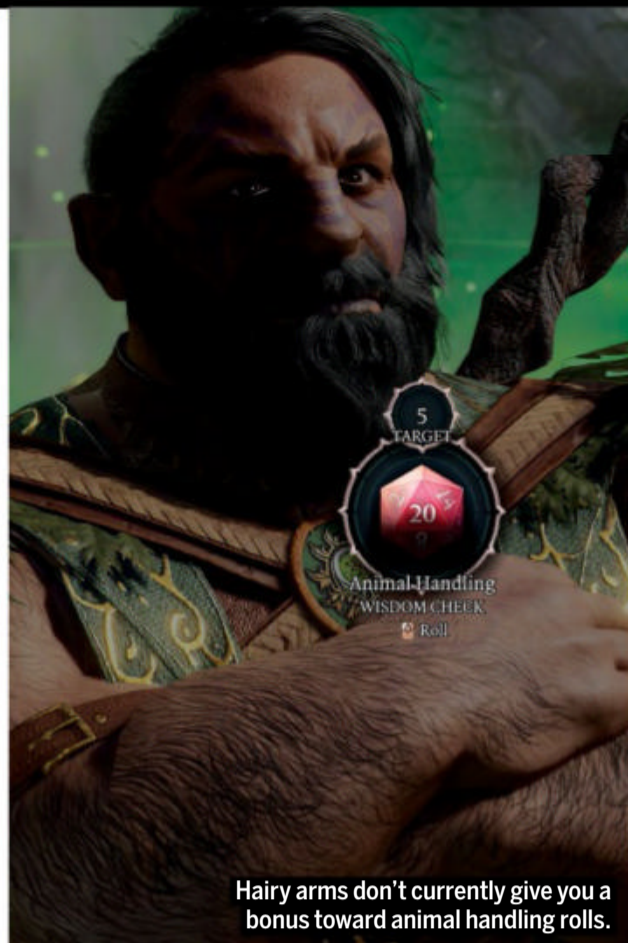
Cantrips

ANIMAL HANDLING
This is the skill that allows druids to keep creatures calm, or work out an animal's intentions. It's tied to their high Wisdom stat.

THORN WHIP
Hits a creature with a spiky whip, dealing 1d6 piercing damage and pulling them three metres closer, so long as the target isn't extra-large.

? + + +

Venture Forth



Hairy arms don't currently give you a bonus toward animal handling rolls.

» crawlers of the '80s and '90s, but now that D&D games are massive, complex sandboxes which simulate stealth and social situations, that approach falls quite short. Pechenin says there are “several schools of thought” among DMs for handling rewards, with some simply doling out experience point caches when players hit certain milestones—letting adventurers reach those milestones in whatever way they want.

“But if it's a videogame, you want to feel good about what you're doing,” explains Pechenin. “You want the game to validate your actions, and say that you're moving in the right direction. Small experience rewards really work as these breadcrumbs that say you've moved ahead in solving a situation.”

PEACE AND LOVE

As such, Larian has patched in new, bite-sized experience rewards for pacifist problem-solving. In any given area, it tries to balance out the big picture, ensuring there's more than enough XP available to level appropriately for the next challenge, without mopping up enemies you might have cleverly sidestepped.

“If I know I'm gonna get a similar amount of XP for not killing a dangerous enemy, I'm gonna actually try,” says Walgrave. “In D&D especially, roleplaying is so important and you have stats that matter, so we want to use them in the game. We want to show you that you got this dialogue choice because you picked that option in character creation.”

Some of the quirks of D&D's system cannot be ironed out by smart design. One is the spellbook, which contains magic such as Magic Missile and Charm Person. Players have decades of fond associations with these incantations, and they can't be fundamentally altered for the sake of balance.

“At Larian Studios that's a bit hard to accept,” says Walgrave. “With *Divinity: Original Sin II*, we were looking at the statistics to make sure the distribution of spell usage was fair. If a certain spell was underused, it needed to be buffed up. We wanted to make all of the spells as attractive as each other. But in D&D, you need to accept that if one of the spells

creates a flame in your hand and that's it, then that's it. It's a different system.”

The magic is in knowing which spells to pick. In D&D, wizardry is not just a fireball-throwing fantasy—it's the dream of becoming a gifted academic, steeped in arcane knowledge. In the original *Baldur's Gate*, pages rustled as you flicked through your tomes, noting the effects of spells and memorizing those that best served your purposes. “It's actually something that D&D's fifth edition is explicitly designed towards,” says Pechenin. “So that you feel like a wizard going through all your options, creating plans.”

SURFACE DETAIL

Since launching *Baldur's Gate III*, Larian has nerfed cantrips—spells that can be cast without advance preparation—so as not to undermine the good planning of wizards. As a side effect, battlefields aren't blanketed by electrified pools and flaming oil the way they were in *Divinity*. “It was a big point of community feedback that players wanted surfaces to matter,” says Pechenin. “They wanted to feel like they cost something, so they needed to think about where they put them.”

Looking to the future, Larian is focusing on larger problems, like how to build the city of Baldur's Gate itself. It's the great promise of the title—not to mention the studio's teaser trailer—and so the team has to get it right, creating a metropolis that doesn't sacrifice its trademark depth for scale. A year ago, when I first spoke to Walgrave, he admitted Larian was still figuring it out.

“Back then, level design was still in R&D phase,” he says. “They had a couple of ideas and we didn't know whether it would actually give you that impression of being in a big city while still giving you that dense Larian feel. We don't want to have to close down doors for no reason. But last week I saw a presentation from level design. We do have a solution, and we're very happy with it. It's still gonna be a lot of work, because it's a city, but at least now we know how to tackle it.”

In the meantime, Larian can celebrate smaller triumphs, like teaching bears to talk to bears. Since D&D has a Speak with Animals spell, and druids will be able to take the form of animals, Larian has naturally committed to supporting animal-only conversations. “It starts with saying it's impossible,” laughs Pechenin. But that's never stopped Larian before, and it certainly won't now.

Jeremy Peel



ENTANGLE
A level two conjuration that covers the ground in vines, wrapping up any enemy who fails to make their saving throw. Deceptively powerful.

SOME OF THE QUIRKS OF D&D'S SYSTEM CANNOT BE IRONED OUT BY SMART DESIGN



NEED TO KNOW

RELEASE 2021	DEVELOPER Creative Assembly	PUBLISHER Sega	LINK totalwar.com
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TOTAL WAR: WARHAMMER III

The epic trilogy ends with its largest war yet

After leaving us guessing for a couple of years, Creative Assembly has spilled the beans on *Total War: Warhammer III*, and it's going to be a big 'un, featuring a war of "unprecedented scale" spread across the Realm of Chaos and the Lands of the East.

"In campaign map terms, it's big... roughly twice the size of *Warhammer II*'s Eye of the Vortex map," says game director Ian Roxburgh. "And it needs to be, as this is the part of the Warhammer world that gives way to the Realms of Chaos, which take up a significant area in their own right. But I suppose more than anything, you can apply the term 'unprecedented scale' to our ambition for the game. We're aiming to conclude the trilogy in a big way—from the narrative, to the playable races, to the wealth of new features."

The armies of Khorne, Nurgle, Slaanesh, and Tzeentch are *Total War: Warhammer*'s first daemonic factions, fielding monsters like the gruesome Bloodletters and hulking Bloodthirsters. The introduction of these factions also creates new wrinkles, because it's not like a bunch of Chaos-loving daemons are going to be into stuff like diplomacy, which has become an increasingly significant part of the *Total War* franchise.

ICE TO MEET YOU

Not quite as extra are the pair of human races, Cathay and Kislev, though they could be just as interesting. Cathay,

Warhammer's analogue for China, exists in the tabletop game just as lore, so there's no army for Creative Assembly to work with. The shape the faction will take, then, is a bit of a mystery.

"We've built this incredibly close working relationship with Games Workshop over the years, and Cathay's realization in *Warhammer III* is testament to that," says Roxburgh. "Their design team led the way in defining what Cathay would look like as a fully-fledged faction, and we've fed that design through the *Total War* lens, so in the final game you'll see a playable race as complete and as storied as any other."

Kislev should also provide some surprises. Like Cathay, the Russian-inspired faction doesn't have an official army in the current version of the tabletop game, though with the upcoming resurrection of the Old World, Games Workshop is currently designing one.

The previous games featured two major events that they hung on: The Chaos invasion in *Warhammer I* and the fight over the Vortex in *Warhammer II*. The final game will also feature some kind of big objective or crisis, though Creative Assembly's keeping that in its back pocket for now. Roxburgh does say, however, that the team's learned a lot about designing Warhammer campaigns, and that experience coupled with player feedback means it's got something "appropriately epic" in mind for the trilogy's conclusion.

All this talk of massive-scale campaigns would have left me a little bit worried about performance a few years ago, but Creative Assembly's made great strides in that regard. You no longer have enough time to make a cup of tea and start a book after you hit 'End Turn'. These improvements bode well for *Warhammer III*, and Roxburgh says that "performance is always foremost in our minds". The work to optimize this behemoth continues.

Even with a lot still under wraps, I'm incredibly excited. *Warhammer II* has grown into my favorite *Total War*, and it seems like *Warhammer III* will be even more unusual and experimental. There's no release date yet, but Creative Assembly is aiming to get us back into the war this year.

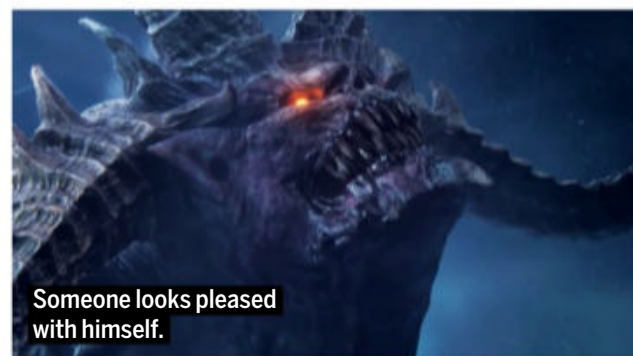
Fraser Brown

FIRST LOOK

Surely that hat is just going to make her even colder?



The campaign will be twice the size of the last one.

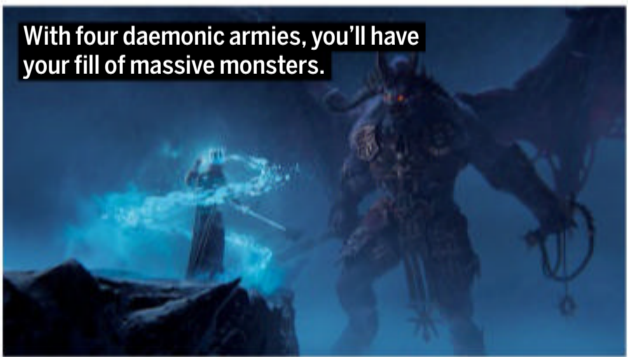


Someone looks pleased with himself.

"WE'VE BUILT THIS INCREDIBLY CLOSE RELATIONSHIP WITH GAMES WORKSHOP"



Pucker up.



With four daemonic armies, you'll have your fill of massive monsters.



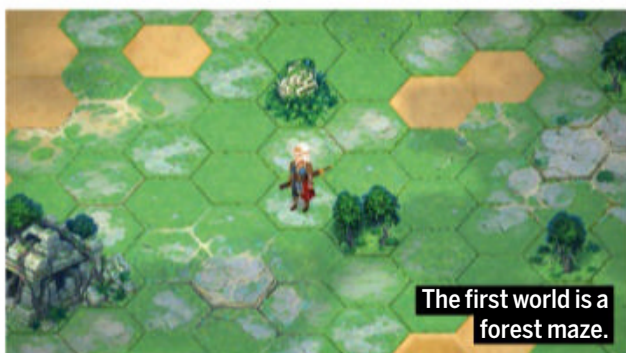
Warhammer really isn't celebrated enough for its many excellent, impractical hats.

PREVIEW

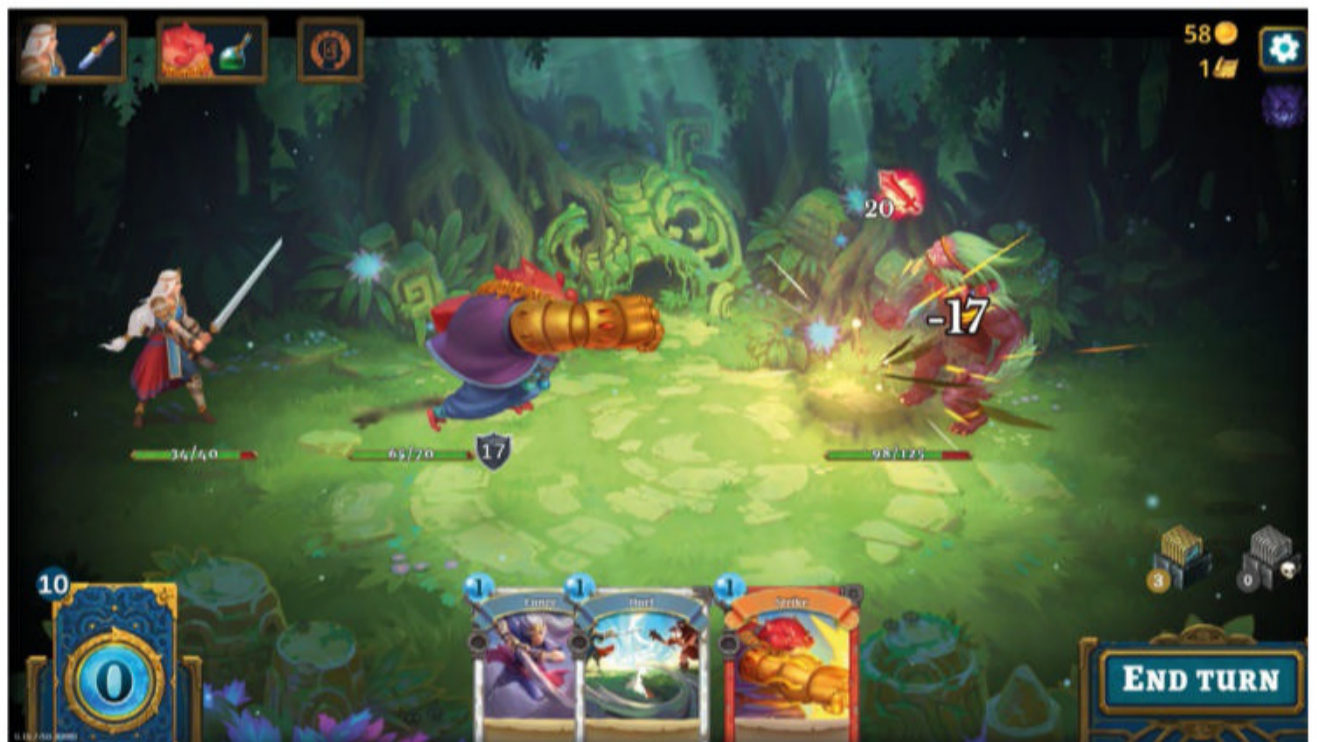
Travel to a world inside a magic book? You had me at 'travel'.



The second world is a chain of islands in the sky.



The first world is a forest maze.





NEED TO KNOW

RELEASE
June 24, 2021

DEVELOPER
Abrakam

PUBLISHER
Nacom

LINK
roguebook.net

ROGUEBOOK

Another chapter in the story of deck-building roguelikes

Last year there was *Monster Train*, before that *Slay the Spire*, before that *Dream Quest*. The digital deckbuilder is in the 'Doom-clone' stage. All these games about constructing the perfect set of cards to survive randomized battles, victory based on some huge combo, differentiated by their looks.

Aesthetically, *Roguebook* is a winner. It's designed by Abrakam, responsible for the under-rated CCG *Faeria*, and *Roguebook* shares its setting as well as visuals that are part Miyazaki forest, part children's fairytale book. Glowing orbs waft through trees, sinister beasts with antlers emerge from the undergrowth. A Disney witch crooks her finger and a louche ogre king lounges like a *Skyrim* jarl. There are a lot of fluffy yak creatures. I've been defeated more than once by raccoon jerks who fling yaks out of a catapult. I've learned to fear the yakapult.

PLAYED IT

A TOUCH OF MAGIC

Before roguelike deckbuilders were a thing there was *Shandalar*, a 1997 videogame based on Magic: The Gathering where you wandered the land fighting battles to earn cards. I bring that up because the creator of Magic, Richard Garfield, is co-designer of *Roguebook*, bringing us full circle.

And while it does feel like another clone at first, *Roguebook* reveals some depth as you go on. It gives you control of two heroes (in this demo, a half-ogre who specializes in blocking and a dragonslayer who is better at offence), and your deck is

split into cards for each of them like colors in a Magic deck.

Some cards let them swap position, with the dragonslayer causing more damage when she's in front and the half-ogre gaining two points of block if he ends the turn there. That suggests bringing her in to attack before bouncing him back up, which synergizes with a card called Blade Dance that does more damage the more switches you pull off.

The difference that feels most impactful is that *Roguebook* doesn't reward you for winnowing your deck. When I goof another run at the *Spire* it's because I added too many cards to my deck without trimming the fat, resulting in turns where I don't get access to that one overpowered combo before being engulfed by a slime monster.

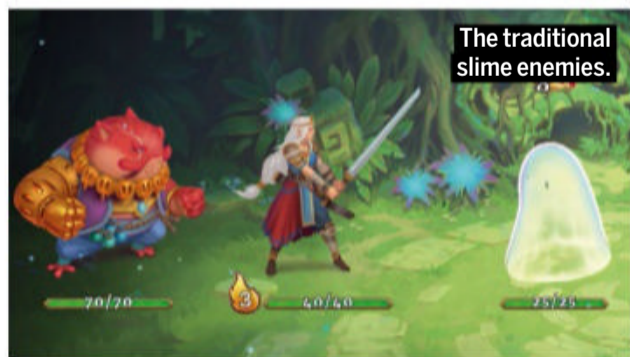
Roguebook rewards you for having more cards. When you cross deck-size boundaries, you earn buffs, leveling-up your heroes. The boring, safe choice of deleting cards until you're left with a perfect nub of smoothed-down efficiency is no longer the only option.

I burned out on *Monster Train* because of the need to plan an upgrade path and surgically remove everything that didn't fit, so a deckbuilder that encourages choosing fun options, experimenting even after finding that broken combo, might hold my interest for a much longer time.

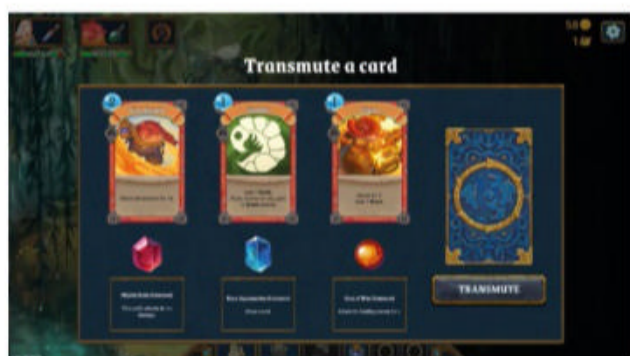
There's also an overworld inside a magic book (hence the name), a hexgrid with fog of war that's rolled back by spending the ink and brushes you earn from winning battles. As you explore you find shops, gold, piñata faeries to wail on for more gold, and short text adventure scenes. Like *Heroes of Might and Magic*, or indeed *Shandalar*, it puts context and a little story between the fights.

I'd like even more. After racking up over 100 hours in *Hades*, I want every roguelike to put more effort into the narrative, to make each loss feel less like a punishment and more like the beginning of the next chapter. When I (once again) die to the yakapult in *Roguebook* I get to spend some of the book pages I found on the map unlocking a perk for the next run, but I want quite a bit more than that. I want to talk to the yaks.

Jody Macgregor



The traditional slime enemies.



THE CREATOR OF MAGIC: THE GATHERING, RICHARD GARFIELD, IS CO-DESIGNER

THE UNIVERSITY OF UTAH

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The University of Utah's Entertainment Arts & Engineering program offers both a bachelor's and a master's degree in Video Game Development and we work with the U's School of Computing to offer an EAE emphasis in the Bachelor of Science in Computer Science. These degrees allow students to choose a distinct area of focus from Engineering, Art, Production, and Technical Art as they navigate the program, which provides them with increased skill sets as they enter the game industry.

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The water droplets as you fly through the clouds are a lovely touch.

NEED TO KNOW

RELEASE
TBC

DEVELOPER
Exbleative

PUBLISHER
In-house

LINK
exo-one-game.com

EXO ONE

Control a morphing spaceship on a journey across the galaxy

My weird disc-shaped spacecraft is hurtling through the blood-red skies of an alien world. Countless fiery meteors are falling from the upper atmosphere and crashing into the angry seas below with massive explosive force. Amidst all the chaos, my little ship gracefully glides through the sky—and I've never felt more at peace.

PLAYED IT

That's what I love about *Exo One*. The worlds you find yourself visiting are unpredictable and dangerous, but you can always escape to the skies.

This is a sci-fi exploration game that sends you on a journey through time and space, in search of an unfortunate team of astronauts in need of your help. You pilot a strange, shape-shifting aircraft that uses gravity and momentum to move. The ship can transform into a ball that zips across the ground picking up speed, and then, when launched into the air, it can transform into a flat disc to glide.



Using the left mouse button to increase the ship's mass, you can create momentum to roll and glide across these alien worlds with ease. Dropping into a valley at maximum mass creates an immense amount of speed which, by then suddenly decreasing the mass and launching off a ramp at just the right moment, can project you far into the air. With that speed behind you, you can glide for miles in disc form, like some graceful (albeit very flat) alien bird.

The mass shifting takes some getting used to, but once you've found a rhythm it's a joy. It's easy to misjudge a dip in the landscape and careen your ball straight into the ground and kill your acceleration, but you can quickly get back in the air with some agile rolling and a well-placed crater.

YOU CAN TRAVEL AT YOUR OWN PACE, TAKING IN ALL THE SIGHTS

After a couple of well-timed launches, the game quickly becomes very satisfying.

SPACEBALL

Treating these otherworldly environments as your own personal skatepark is great fun, but those astronauts need rescuing. Advancing your special mission means finding the wormhole at the end of each level, indicated by a bright, singular beam that goes from the ground into the sky.

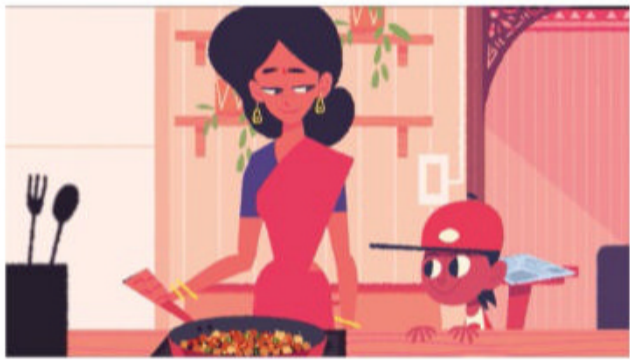
Traversing each planet and reaching the beam will take you one step closer to finding the missing crew, but it's OK to have a little exploration fun, as the places you'll glide through are stunning. With no time limit or enemies, you can travel at your own pace, taking in all the sights. These vast expanses are packed with extraordinary encounters, from desolate wastelands filled with alien structures to raging seas with no land in sight.

From the first levels, *Exo One* seems to be both a serene and exhilarating sci-fi adventure. When I'm gliding above the landscape accompanied by the ambient soundtrack, I feel truly transported.

Rachel Watts

PREVIEW

Venba's husband has to feed her food since her hands are covered in henna.



Deciding when to flip these croquettes is the key to this mini-game.



NEED TO KNOW

RELEASE
2021DEVELOPER
Visai GamesPUBLISHER
In-houseLINK
venbage.com

VENBA

A journey to rediscover a culture of cooking

As someone who struggles with anything more complicated than putting bread in a toaster, I love cooking games. The joy of mashing potatoes to the exact right consistency, keeping a steady hand as I drain the water from a pasta pot, or expertly managing the temperature of a hearty stew—it's task-ticking heaven... as long as I don't have to do it in real life.

The main focus in most cooking games is, well, the cooking—they tend to be light on story, with the usual case being that you're trying to run a restaurant of some kind. But narrative cooking game *Venba* is taking a completely different approach to the genre. Developed by Visai Games, it's an attempt to create a cooking game where the narrative is an ingredient in the main course, rather than just a side dish.

Venba tells the story of an Indian mother who immigrates to Canada with her husband and son in the 1980s. It's a story close to home for *Venba*'s designer and programmer, Abhi—although not totally autobiographical, it touches upon many of their personal experiences.

"I immigrated from India with my entire family and came to Toronto when I was 12," Abhi says. "There are obviously different cultural values, and once families come over they have expectations of a better life. But when their kids grow up in a different society with different values, it causes conflict. It's not really anyone's fault, it's just unfortunate, and *Venba*'s story touches upon that."

EACH MEAL THE PLAYER COOKS TIES IN WITH WHAT'S HAPPENING IN THE STORY

SPICE OF LIFE

Players will be introduced to a variety of south-Indian dishes and will be tasked with following each recipe. The trouble is that in the move over to Canada, *Venba*'s cookbook got damaged, and some of the instructions are now unreadable. Players will have to click on different ingredients on the kitchen countertop and experiment with the techniques they've been given to try and fill in the gaps, discovering how to get the recipe right in the process.

Each in-game day brings a new recipe, and each meal the player cooks ties in with what's happening in the story. "Food creates that bridge between both the parents and the kid," explains Abhi. "The mum is trying to communicate all the things she's trying to say through the recipes and through the meals she cooks."

Venba's collected recipes have been passed down through generations, meaning that many of the steps and techniques you'll be following are a *little* outdated. Recipes include loose instructions like measuring out 'a finger of butter' or 'mixing until the dough is sticky', and part of the fun is grappling with what *Venba*'s great-great-great-grandparents actually meant.

"One of the recipes has you making this sugary syrup and you're trying to get the right consistency," says Abhi. "Back home, they have this weird trick where they pinch the syrup with their hands, and then extend it between their finger and thumb. If it forms a line, it's sticky enough, but if it forms too much of a line it's too sticky, and you have to add more water. So it's messing around with stuff like that."

These weird little techniques are sprinkled throughout *Venba*'s recipes and fit perfectly in a story about passing down your heritage and culture from one generation to the next. Inheriting these little tips and tricks through generations is universal and one which makes the game all the easier to love.

Venba is exploring food as more than HP restoration. Food is important in our lives, cultures, and relationships, and after chatting with Abhi, it looks like *Venba* is going to tackle a lot more than simply following a set of instructions. It's a game my heart (and stomach) yearns for.

Rachel Watts



Sam Elkana's art style has a lovely pink glow.

Wobbledogs



NEED TO KNOW

EXPECT TO PAY
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DEVELOPER
Animal Uprising

PUBLISHER
In-house

LINK
wobbledogs.com

WOBBLEDOGS

Breed a mob of mutating dogs in this strange virtual pet sim

I don't really understand the science behind *Wobbledogs*' mutating pups, but I do love my new wibbly-wobbly dog family. In this 3D pet sim, you breed and raise a bunch of odd canines whose DNA changes depending on their diet and how you raise them.

The dogs start out relatively normal, but feeding them different kinds of chow will cause their bodies to change in shape and color. Since you have control over what the dogs eat, you ultimately decide how to mold and shape their rapid evolution, placing you in the peculiar position of both pup parent and gene-splicing scientist.

Wobbledogs aren't the fastest breed of canine companions and have tremendous trouble moving around, meaning that they'll need a bit of help. Keeping track of all the dogs feels like you're chasing around after a group of fragile grandpas, making sure they're eating and sleeping, and helping them if they've fallen over or gotten stuck. You need to be gentle with them, clean up their (pink) poo and most importantly give them plenty of pets.

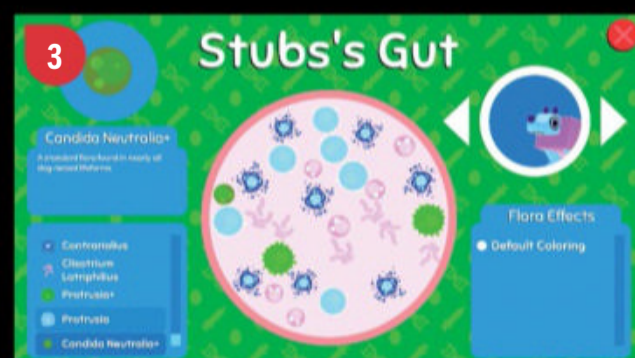
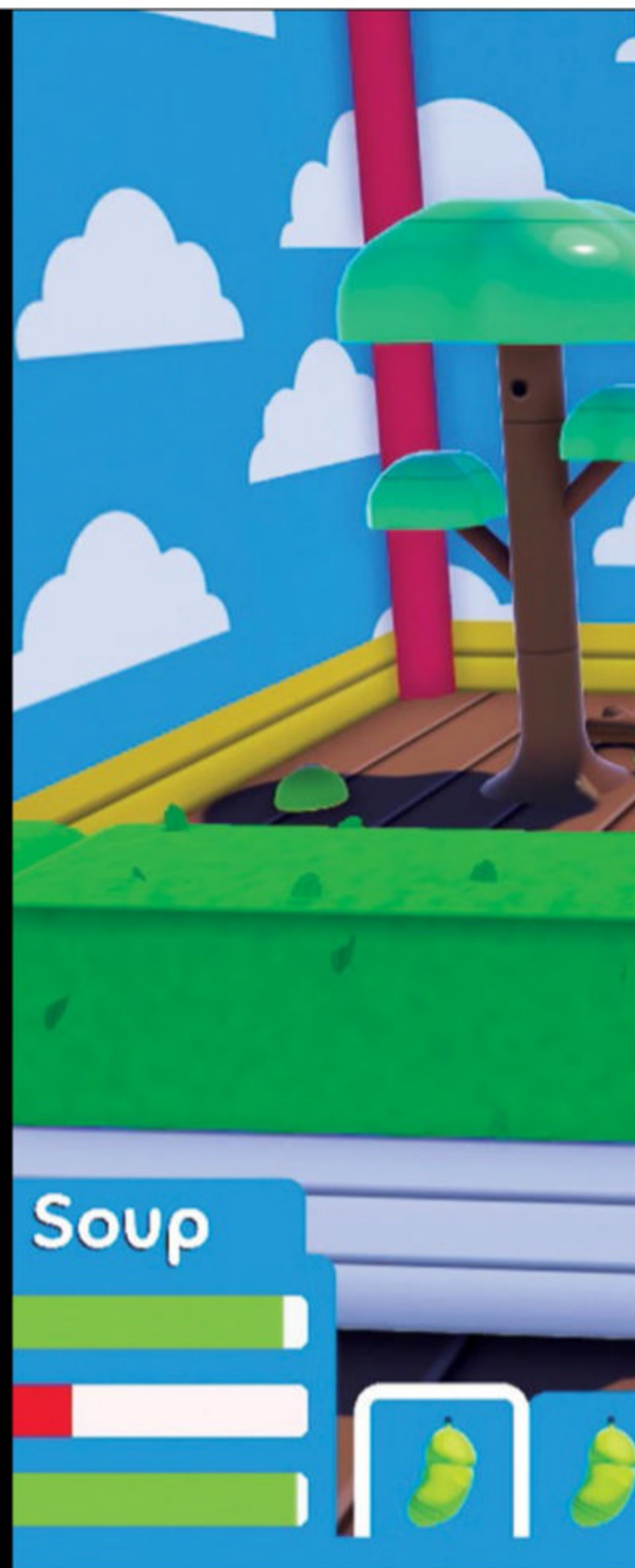
I've gotten attached to my mob of wobbledogs and, through multiple generations, I've learned a lot about their peculiar species. Often, I don't know whether to laugh or be horrified at their behavior, but regardless these weird, adorable dogs have officially wobbled their way into my heart.

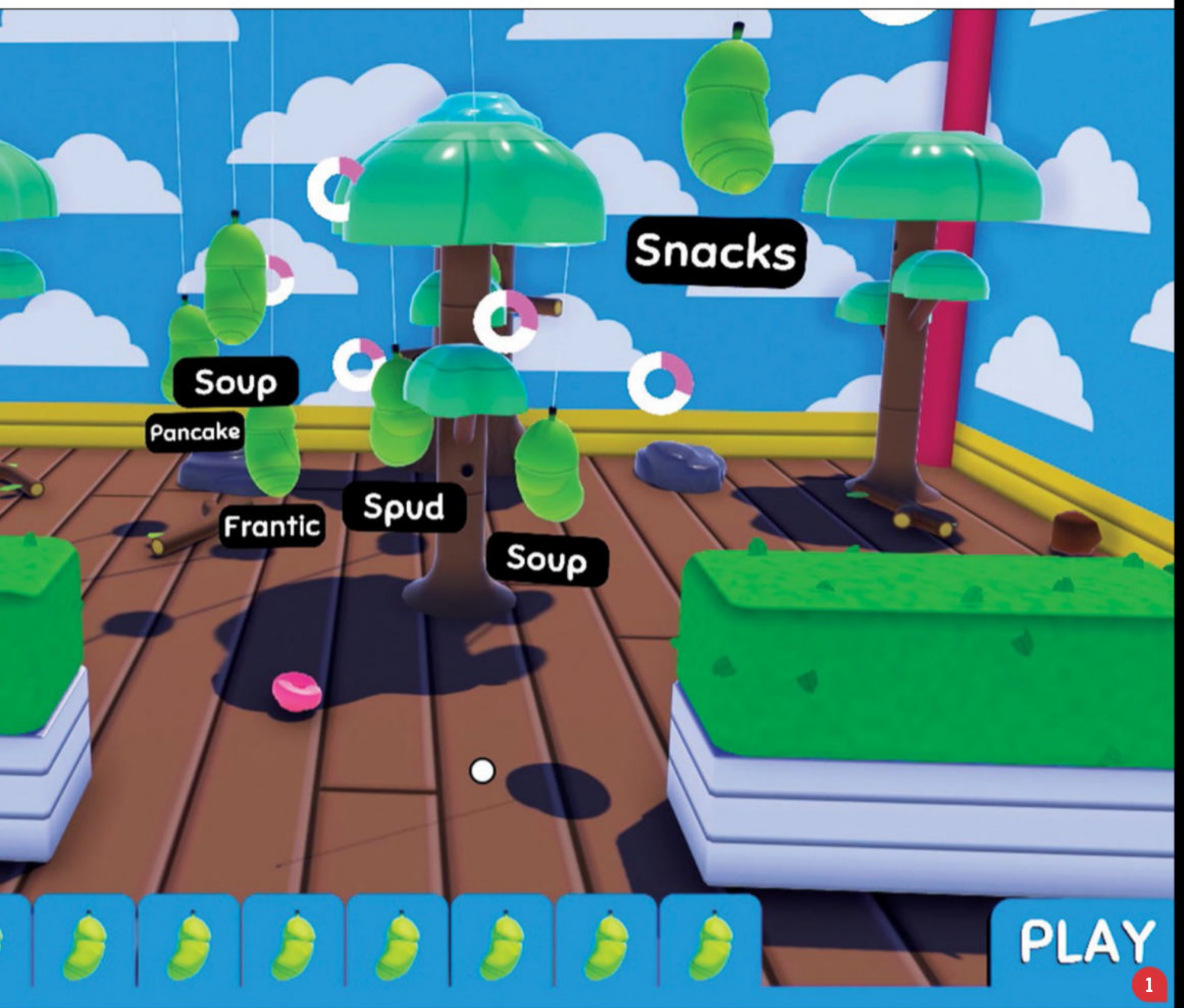
Rachel Watts

CLEAN UP THEIR (PINK) POO, AND MOST IMPORTANTLY GIVE THEM PLENTY OF PETS

PLAYED IT

- 1 There are several times in a wobbledog's lifetime where they will 'pupate', which involves—prepare yourself—forming a cocoon around their bodies and getting hoisted up into the air. The cocoon then hatches, dropping the newly mutated dog, and a whole lot of gross gelatinous liquid, onto the floor.
- 2 After a wobbledog's 'pupation' process, you'll get a breakdown of the dog's new mutations. You can try and control each wobbledog's mutation by keeping them on specific diets, but you'll never truly know what the dog will look like when it changes.
- 3 You can see inside each dog's gut with a special microscope. Clicking on the different microbes tells you how they impact the dog's body, like making a dog's legs a little longer, or changing the color of its nose. I still haven't figured out how to give them tails yet.
- 4 When it's time for a wobbledog to pass on, they give out one final howl, and fall to the floor relatively peacefully. The other dogs then howl in a shared outpouring of sadness, which is super adorable, but then proceed to eat the dead wobbledog's body which is... less adorable.
- 5 When my wobbledog Stubs hatched from his egg, he landed upside down and, bless his soul, could not stand up. The combination of a long, rectangular body and extremely long legs meant that he could only wiggle on the floor, trying to find purchase on his long limbs.
- 6 The dogs are very cute, although totally dependent on you. Wobbledogs need a little bit of help given the constant wiggle in their step, and you'll need to grab an object and bring it to them, be it food or a toy.







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Back 4 Blood

DRAWING BLOOD

Turtle Rock's **BACK 4 BLOOD** has bigger ambitions than just being *Left 4 Dead 3*.

By Morgan Park



Back 4 Blood

It's telling of *Left 4 Dead*'s quality that there still isn't a co-op shooter that has quite outdone it. Unlike many popular multiplayer games of 2021, *Left 4 Dead* doesn't ask you to theorycraft a build or study a meta. There's nothing to understand beyond a few core principles: Shoot and keep moving. That purity is why it was a foundational game for my friends and I over a decade ago and why we still squad up to mow down zombies 13 years later.

We've seen plenty of fantastic games riff on Turtle Rock Studios' original template since the series was unceremoniously shelved in 2009, but only now are its original creators jumping back into fray. With *Back 4 Blood*, Turtle Rock is staking its flag in the ground and taking back the genre it created. Well, that's the idea.

NEW BLOOD

Turtle Rock's first official action as zombie co-op reclaimers? Ditch the survivor narrative. According to Turtle Rock co-founder and design director Chris Ashton, *Back 4 Blood*'s playable characters are hunting the zombies, not the other way around. "Our setting is a year after the apocalypse and answers the question 'What happens next?'. Now we've got

BELOW: The game boasts some impressive lighting effects courtesy of Unreal Engine 4.



stable communities of people in strongholds. We call our hero characters 'Cleaners' because they voluntarily go out into the wild and take on missions to try to put an end to the Ridden," Ashton says. "In our world, there is hope for a future. This theme has a trickle-down effect into all elements of the game."

You feel the tonal difference as *Back 4 Blood*'s characters quip in a more lighthearted, confident way, but the basics really do feel like *Left 4 Dead 3*. Campaigns follow the same exact four act structure. Each mission is a familiar mad dash from one safe room to the next. Special infected include a Spitter that can root you in place, a Tallboy with an oversized

right hook, and a bloated Retch that will expunge gallons of hord-attracting acid when its belly is pierced. Yep, there's also an AI director pulling the difficulty strings behind the scenes. Treading this ground is a comfortable proposition, but its familiarity is cut by key additions that make *Back 4 Blood* a deeper and more complicated game.

With one foot firmly in the past and the other dabbling with modern conventions like sprinting, aiming down sights, and character-specific abilities, it's clear that Turtle Rock is after something bigger than a spiritual sequel.

That was cemented when I fired up *Back 4 Blood*'s first mission and





discovered how brutal it can be. Weapons and items have to be purchased from safe rooms using in-game copper. Between weapons, attachments, throwables, and all-important healing items, my group's shopping list felt as crucial to survival as shooting straight.

TOUGH CROWDS

Speaking to teamwork, Ashton says *Back 4 Blood's* less forgiving elements come down to giving players more ways to succeed (and fail). "The simplest way to drive teamwork is to design a game where it's hard to win otherwise. Players really want to win. So if that means sharing ammo or first aid kits, that's what people are going to do. A less obvious but related philosophy is that we have to leave

TURTLE ROCK IS AFTER SOMETHING BIGGER THAN A SPIRITUAL SEQUEL

room for teams to be bad. The more room there is for a team to fail, the more room there is for a team to be extra awesome," he says. "It's important to give teams the space to stand above the rest."

Like several aspects of *Back 4 Blood*, I'm skeptical of what this economic shift truly adds to the

THE CLEANERS *Meet your zombie-slaying crew*



EVANGELO

- Starts with the machete
- Automatically breaks out of grabs
- Increased stamina regen
- Double movement speed



WALKER

- Starts with the Glock 23
- Precision kills increase accuracy
- Max health increase
- Increased ammo cap



HOLLY

- Starts with a baseball bat
- Burst of stamina on kill
- Increased max stamina
- Deals double damage with melee weapons



HOFFMAN

- Starts with the M1911
- Can find ammo on kill
- Increased throwable capacity
- Starts with ammo pack



LEFT: The safe room is a little island of calm in the apocalypse. An island with filing cabinets.



BELOW: How many faces does one zombie need?

game. Turtle Rock is trying to encourage tactical decisions at the start of a round, but to me it feels limiting at the moment.

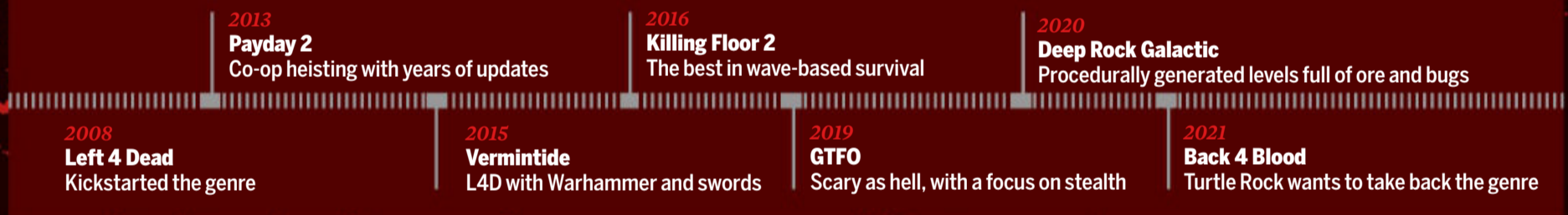
Through several playthroughs I saw few opportunities to loot support items off the beaten path. With no promise of another medkit along the way, I noticed a reluctance in my squad to let loose even on the base difficulty. When you do use up resources, it's easy to find yourself on the backfoot heading into the next chapter. Ammo is a big factor in that too. Gone are *L4D's* universal ammo piles in favor of limited ammo drops divided by weapon type. The last thing I want to do while a horde of 40 zombies chase us down is litigate who needs rifle ammo the most.

DECK SLAYER

An early winner in *Back 4 Blood's* new formula is its



BETTER TOGETHER *The evolution of co-op shooters*



✦ modifier cards. Every round kicks off with the AI director serving two to four cards that determine which special infected will populate the map. Players react by drafting their own handful of cards from a custom deck. Most cards I was served were passive buffs to healing speed or weak spot damage that can be stacked with your party if they play the same ones. The alpha build had a set number of cards unlocked from the start, but players will find new cards in missions through normal play.

“The goal with this system is to make sure that progression doesn’t separate players or do anything funky with the numbers, like zombie health or weapon damage. The idea is that my progression helps you and vice versa,” Ashton noted. “The cards also let players customize gameplay to their liking. For example, some nostalgic players don’t like aiming down sights and prefer to shoot from the hip. There is a card that turns off ADS while



LEFT: Every game’s got to have its own name for zombies these days. Meet the Ridden.



greatly increasing hip-fire accuracy on every weapon!”

That last one certainly appeals to me. I appreciate the extra mobility afforded from *Back 4 Blood*’s modern sprint and mantling, but all ADS does is kill the momentum in a game that’s all about staying on the move. Another favorite of mine is guaranteed one-hit-kills from my melee attacks, which basically let me run around like a madman knifing zombies in the brain en masse. As far as I’m concerned, they should get even weirder—like *Halo* skulls weird. Give me a limitless chainsaw that replaces both weapon slots or an obscene speed boost that makes the nasty special infected target me more often. If Turtle Rock is staking *Back 4 Blood*’s replayability on its inventive modifiers, then I hope to see many more cards that meaningfully transform my playstyle.

CO-OP SHOOTOUT

Especially because, wow, it’s a good time to shoot stuff with friends



our heads down and do our own thing, regardless of what the rest of the industry is doing. We're all huge gamers, so the hope is always that if we make something we love to play, other gamers will love it too."

One element that basically every modern multiplayer game shares is some sort of ongoing service game model, be it a seasonal battle pass or planned expansions. That's one area that Turtle Rock isn't ready to talk about yet, but Ashton reaffirmed that the team "wants to have ongoing content after launch and are still in the planning phase". Considering the game's structure, it'd certainly make sense to introduce new cards, Cleaners, or weapons on a regular basis. That said, Ashton stopped short of labelling *Back 4 Blood* a 'service game', so Turtle Rock and its publisher Warner Bros may have different plans...

Assuming a few notable issues like performance dips and strange AI behavior can be ironed out before launch, *Back 4 Blood* has a good chance of catching on. It's certainly not the purist *Left 4 Dead* successor that a part of me still desperately craves, but it's pretty darn close. If you missed the open alpha last year and want to give it a shot before its June 22 release, Turtle Rock is still taking sign ups for online tests at back4blood.com. ■

IT'S A GOOD TIME TO SHOOT STUFF WITH FRIENDS COOPERATIVELY

cooperatively. There may not be much out there scratching that specific *Left 4 Dead* itch, there are plenty of incredible co-op shooters that are worth your time. Space dwarf exterminator sim *Deep Rock Galactic* is only getting better with age as Ghost Ship Games continues to add new biomes and weapons. Fatshark's *Vermintide* series is a fantastic twist on *L4D* with a melee focus in a Warhammer-flavored world. And on the horizon is *Rainbow Six Quarantine*, a *Siege* spinoff that is focused entirely on co-op alien zombie murder.

Back 4 Blood certainly has more competition from day one than its predecessors, but that's not worrying Ashton one bit. "We love playing these kinds of games, and although there are a good number of competitors out there, we feel there is enough space in the genre for us to do our own thing with *Back 4 Blood*," he says. Ashton also says that *Back 4 Blood* isn't taking much direct influence from similar games, but noted that they can inform how their ideas will be received by players. "By-and-large, we really like to keep



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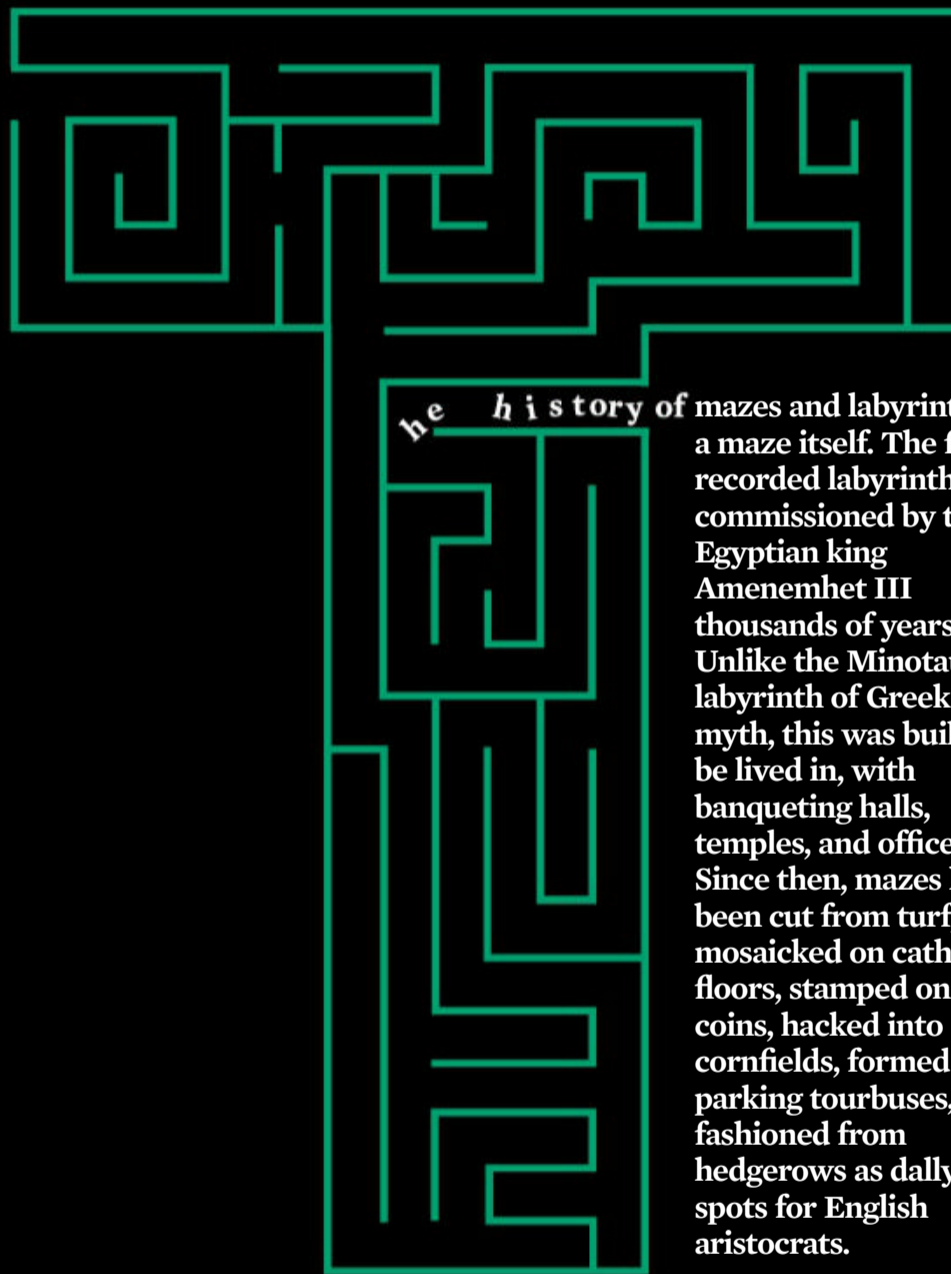
By EDWIN
EVANS-THIRLWELL



ERRAND

LOOST

*Unraveling the curious art and history of videogame mazes and labyrinths—from **AMNESIA**, through **MINECRAFT**, to the Minotaur's lair...*



The history of mazes and labyrinths is a maze itself. The first recorded labyrinth was commissioned by the Egyptian king Amenemhet III thousands of years ago: Unlike the Minotaur labyrinth of Greek myth, this was built to be lived in, with banqueting halls, temples, and offices. Since then, mazes have been cut from turf, mosaicked on cathedral floors, stamped on coins, hacked into cornfields, formed by parking tourbuses, and fashioned from hedgerows as dallying spots for English aristocrats.

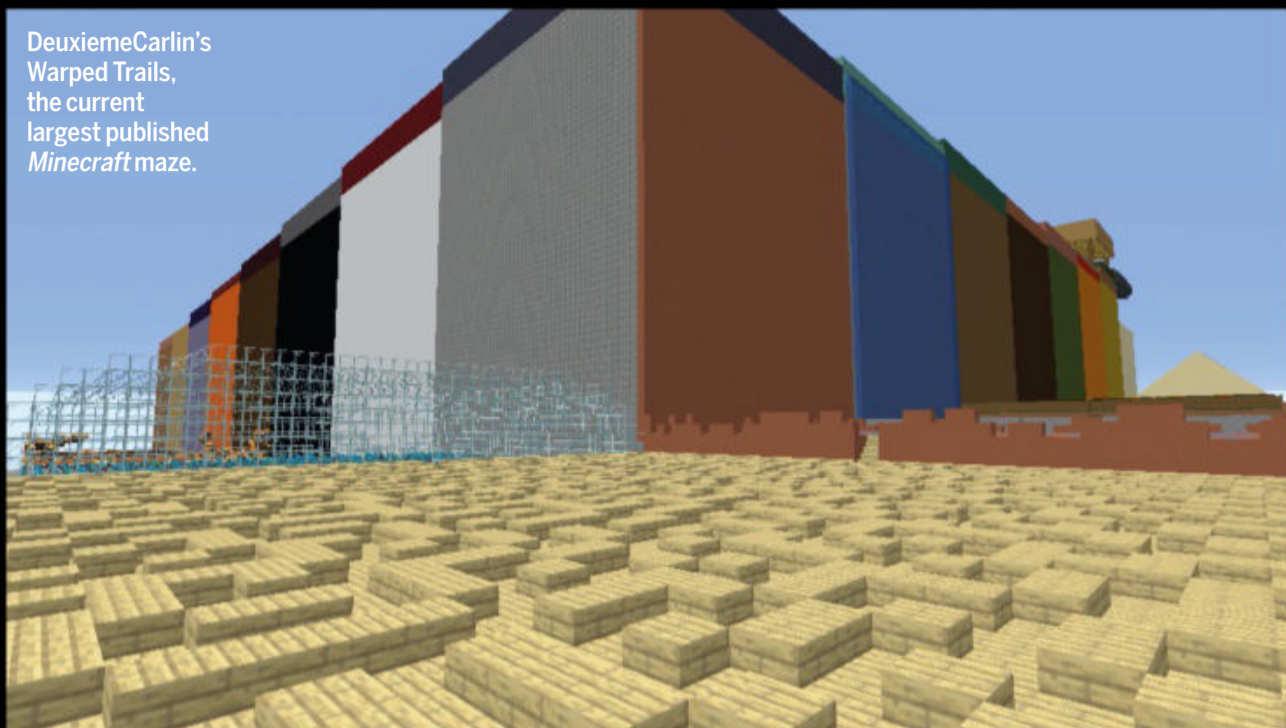
Mazes and labyrinths generate a surprising range of emotions. Partly, this is because the former isn't quite the same as the latter. The associations of the noun 'maze' are largely negative, referring to bewilderment, deceit, and worldly distraction. A labyrinth is a similarly confusing structure, but the word has acquired more positive senses over time—it can serve as a place for reverie and contemplation. Psychotherapists like Dr Lauren Artress have even prescribed labyrinth-walking as a form of meditation. Integral to this distinction is the idea that while a maze may have many paths, a labyrinth has only one, however winding.

OFF THE MAP

For a time, mazes and labyrinths were central to videogames. The original first-person shooter was arguably *Maze* (1974), created by students on Imlac computers at a NASA laboratory. While not the first of its kind, Namco's *Pac-Man* spawned a wave of 2D arcade maze-chase games in the 1980s. "I think a lot of how we understand moving through 3D spaces in videogames today comes from maze-like experiences," notes Holly Gramazio, game designer, curator, and scriptwriter for *Dicey Dungeons*, who once organized a maze exhibition for London game festival Now Play This. "Even going back to the Windows 95 screensaver maze, right? A lot of early 3D, even if it wasn't explicitly labeled a maze, is something that we would now consider maze-like."

Mazes and labyrinths are a good introduction to 3D movement in games, Gramazio points out, because the premise speaks for itself. "You see them

DeuxiemeCarlin's Warped Trails, the current largest published *Minecraft* maze.



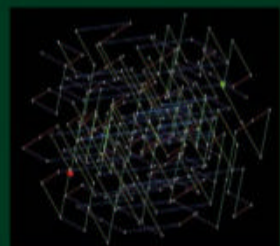
“Getting people to feel comfortable in their navigation of complex digital spaces is already quite difficult”

and you know what you have to do.” They can also be a powerful “design prompt” she adds, in that they show how many different imaginative contexts and perspectives you can tease out of an ostensibly small area.

Computer simulations offer more elaborate possibilities for maze-builders, of course: They aren't bound by everyday physical conventions. In Alexander Bruce's *Antechamber*, ascending a flight of stairs may leave you on the same floor. In Ian McClarty's *The Catacombs of Solaris*, stopping to look around morphs the corridor ahead into a wall. For all these precedents and opportunities, however, mazes and labyrinths aren't much celebrated in games today. Maze environments are inherently artificial and arcane, and it's difficult to fit them into many stories and settings. But the real problem, perhaps, is that mazes and labyrinths aren't that fun to navigate—at least by the standards of games that define 'fun' as a brisk feedback loop between task and reward with minimal ambiguity or downtime.

“In a digital maze, you cannot separate people's frustration at their inability to find their way out from their frustration with the interface and how the maze is presented,” Gramazio explains. “When people are stuck and can't find their way out, I think overwhelmingly the response is ‘I can't figure out where I'm going’. It's not ‘OK, this is very clever, I need to stop and think about the choices I've made’. Getting people to feel comfortable and confident in their navigation of complex digital spaces is already quite difficult.” Gramazio herself enjoys

BUILD MORE *Resources for lovers of mazes and labyrinths*



DAEDALUS

A free tool for building, analyzing, and completing mazes that allows for the creation of specimens that have a billion passages or operate in five dimensions.
bit.ly/2YBDpP1



ASTROLOG

A burgeoning archive of maze and labyrinth materials run by uber-enthusiast Walter Pullen. Includes a whole section on cult Bowie extravaganza Labyrinth.
astrolog.org/labyrinth/glossary.htm



R/MAZES

The maze-makers' subreddit, packed with homebrew oddities of all kinds. Consider DeuxiemeCarlin's Disorienting Hallways, which unfolds inside of an owl.
reddit.com/r/mazes



THE LABYRINTH SOCIETY

A US-based collective of labyrinth sleuths. The site has a real-world labyrinth locator and resources for constructing labyrinths at home or using them for teaching.
abyrithsociety.org

Wandering Not Lost

thinking about mazes, but is less keen on walking them, in real life and otherwise. She came close to abandoning her first *Final Fantasy* game, *Final Fantasy VIII*, thanks to a maze section where the same backdrops are used for different rooms. “I was in some kind of drain forever. I was in a drain that was basically the same four pictures of a drain representing 40 different places they could be in the drain.”

BLIND CORNERS

Mazes and labyrinths might seem obnoxious in a role-playing game with random battles, but that claustrophobia makes them well-suited, of course, to horror games. Even here, though, developers can’t afford to bewilder players too much. “I think there’s probably a lot of great inspiration to draw from studying real-life mazes and labyrinths, but my guess is that most of

it would be connected to aesthetics and general layout, and not so much about level design,” comments Fredrik Olsson, executive producer and creative lead on Frictional’s *Amnesia: Rebirth*. “In fact, most real-life mazes could act as examples of really poor level design—that’s part of their nature.”

Amnesia: Rebirth contains one of gaming’s more horrible mazes. Dropped on you around the halfway mark, it’s a grid of square pillars with paths formed by articulated metal gates linked to pressure panels. As elsewhere in the game, you can light torches to quell your character’s mounting panic, but this risks attracting attention. There’s a creature in the maze with you—half-human, like the Minotaur. As you explore you hear it ranting, growing more and more enraged as you near the exit.

Considered from on high, the maze isn’t too demanding. It’s closer to a

“Most real-life mazes could act as examples of really poor level design—that’s part of their nature”

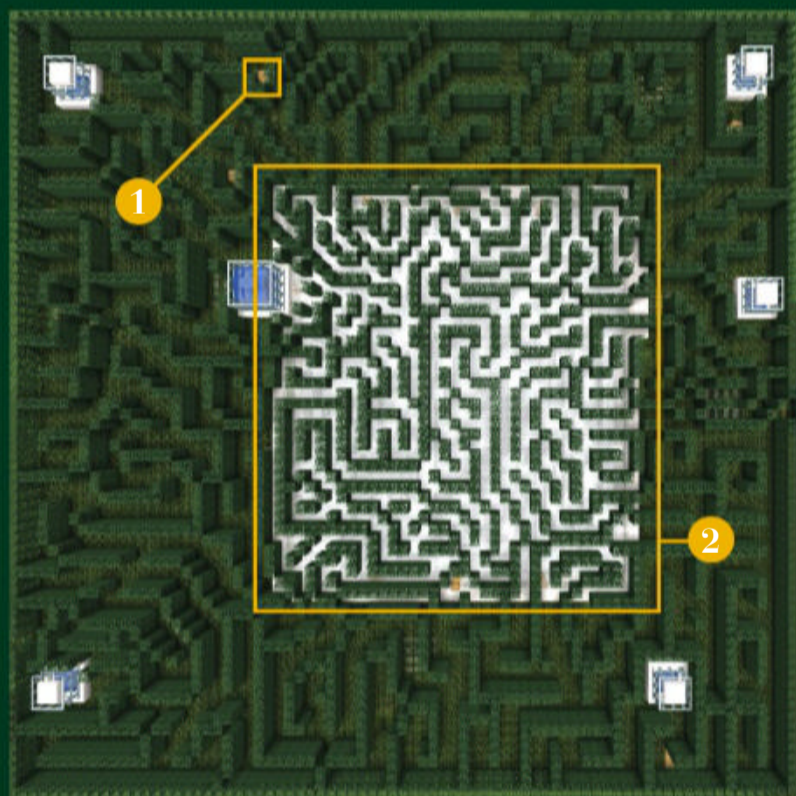
AMAZING Aris Martinian on the making of two Minecraft mazes



HAYSTACK HALLWAYS

1 “Haystack Hallways, is maybe the quintessential example of a maze. In a way, I think this is the worst maze. It’s boring, long and the volume of dead ends is something like three times the length of the critical path. Many of these dead ends have other dead ends branching off of them, so it’s hard to know if you’ve found the right path.”

2 “But halfway through, there is a bridge which you can climb to get a vantage point over the entire maze. From here you can plan the rest of your route. Additionally, there are several logs interspersed throughout, those little patches of white, which can either serve as landmarks or block off routes—sometimes both.”



FOUNTAIN FOOTPATH

1 “A two-tiered hedge maze with a greenhouse inside. While you can only see the top here, there is another layer underneath that connects to the upper layer via ladders. The inclusion of a secondary maze, Garden Greenhouse, within the first allows for a dialogue between two spaces as you make your way through.”

2 “Along the critical path, you enter the greenhouse on two separate occasions and walk on top of it another two times. This, along with the fountains throughout both the top and bottom layers, makes the space more interesting overall, and aids in the sense of progression, even as you seem to double back multiple times.”



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Control's brilliant shape-shifting Ashtray Maze, best combined with heavy metal.

single-path labyrinth than a maze, and there are unseen fail-safes (which I won't spoil) to help you reach the end. Paradoxically, mazes make it easier to add such handholds without damaging the illusion: As Olsson explains, developers can "capitalize on the confusion that naturally comes with the introduction of a maze [...] to cheat the player in a helpful and discreet manner". During *Rebirth* Let's Plays, he observes, many YouTubers don't realize that they're making progress till they burst through the exit door. "[It] might feel like the design was extremely confusing and that they were just lucky. But [this is] actually a result of some subtle cheats that, at the right moment, simply open a way forward for the player, without them noticing."

PROBLEMS OF INFLUENCE

There are less obvious reasons to be appalled by *Rebirth's* maze. The pillared layout takes limited inspiration from the Holocaust memorial in Berlin, a 19,000 square meter landscape of regularly arranged concrete slabs. The association, which I didn't notice during my playthrough, risks reducing real suffering to an aesthetic prop, though this claim obviously relies on you knowing about the game's creation. It's also a bit of a judgement upon the original monument—often described by journalists as a maze or labyrinth—which has been criticized for portraying the dead as a mass of interchangeable objects, burying their names in an exhibition beneath the monument. It's disturbingly easy to

read as 'pure' architecture that can be readily transplanted into a different context. Olsson's insistence that the memorial doesn't have "any actual connection" to *Rebirth's* events feels like a testament to this process of abstraction. "It was inspiration purely related to the spatial structure."

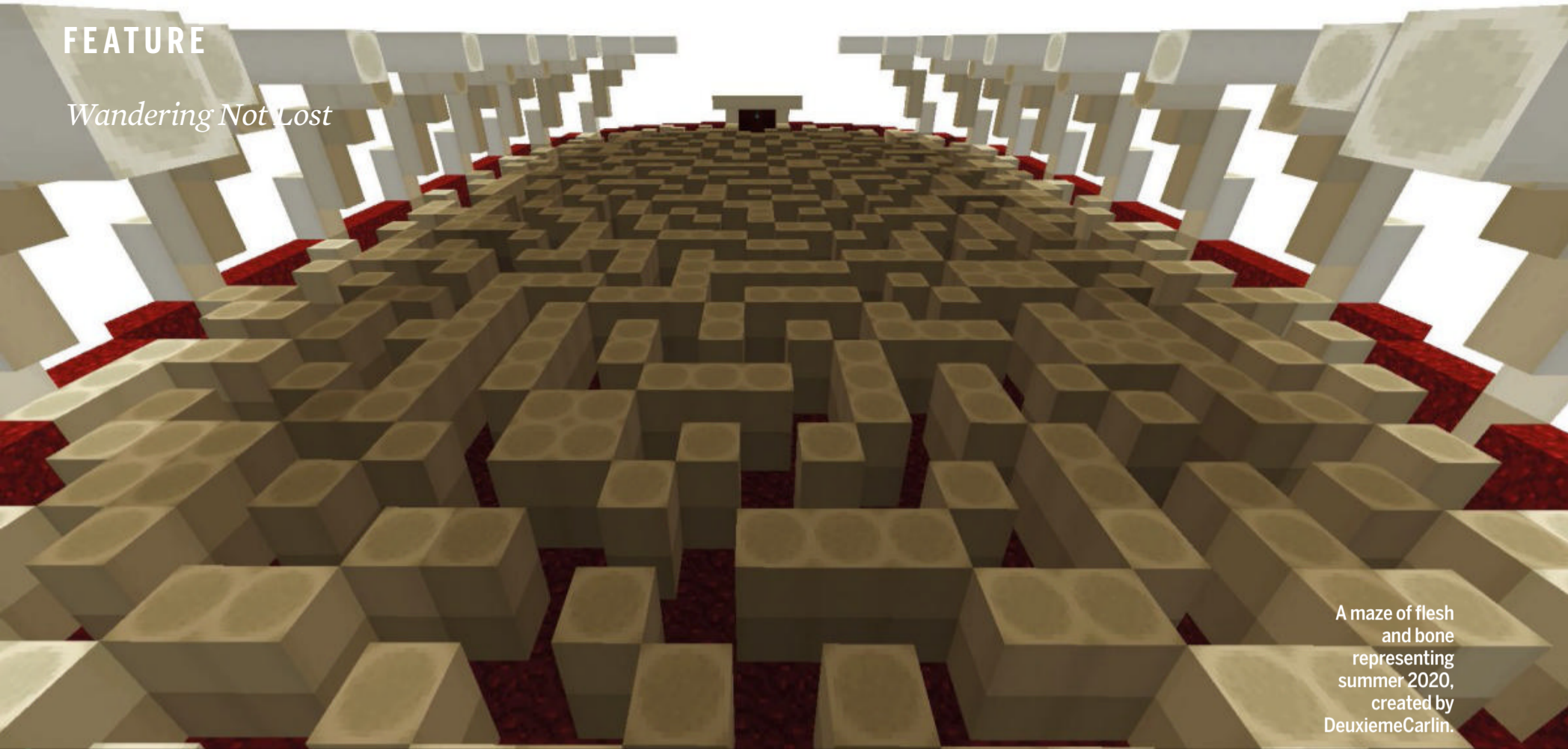
If there's no literal connection between the Holocaust and *Rebirth's* events, themes of dehumanization and genocide abound in the game's narrative. In *Amnesia's* universe, terror is a kind of energy resource. As you'll learn if you read story artefacts in a control room just before the entrance, the maze was explicitly built to maximize the dread of the unlucky wanderer before 'harvesting'. The space explicitly objectifies you, in other words: It disregards your personhood and reduces you to your capacity for fear. The control room also contains a broken maze model that once allowed the layout to be changed for optimal effect. Peering down at it helps you imagine both the frenzy of those caught inside and the indifference of those pulling the levers.

LAB TECHNICIANS

It's a far cry from the mentalities of amateur maze-builders online, many of whom do their finest work in sandbox editors such as *Minecraft*. These players try for more uplifting experiences: Perplexity, yes, but also mystery, wonder, and the satisfaction of reaching the exit square. Indie designer and Sony/Kuju Entertainment alumnus Robert Swan has been exploring mazes since the days of



An island maze built by *Fortnite* players Zesv, Noble and Alarm.



A maze of flesh and bone representing summer 2020, created by DeuxiemeCarlin.

✦ *MIDI Maze* on the Atari ST (the latter's splitscreen PVP mode allows you to spy on your opponent—when playing with his brother, Swan used cardboard to block the view). He cut his teeth as a designer making games with Sony's Net Yaroze console at university, later gravitating to map creation in shooters like *Quake* and *Counter-Strike*. He also occasionally creates mazes from illustrations drawn by his partner Jodie Azhar, Teazelcat Ltd CEO and a former technical art director at Creative Assembly.

"I was an avid builder in *Minecraft* for many years along with my brother, and we built a maze just like everyone else on our continent," Swan says. "I think *Minecraft* always guides people to mazes as the simple orthogonal nature and procedural scenery looks maze-like to start with."

Talking to Swan reveals the diversity of approaches to maze building, some of which chime intriguingly with more mundane level-design questions. There are 'weave mazes', for example, where the paths loop under or over each other, which is a popular gambit in some multiplayer shooters. 'Braid mazes' have many paths but no dead ends. These can be especially tough for players, Swan notes, because "mentally we never 'close off' parts of the maze as solved". And then there are Recursive fractal mazes that harbor perfect smaller copies of themselves. "I think I've seen this touched on in some games but it can quickly spiral out of control in complexity—I haven't seen such a concept applied to a multiplayer

first-person shooter, but it would be a fascinating experiment!"

For Arin Martinian, a 21-year-old musician, mathematician, and author from Massachusetts, the trick to maze design is giving the player the sense that they're getting somewhere, however sprawling and knotty the structure. Martinian draws a comparison with incremental games such as *Cookie Clicker*. "Even if the entire game revolves around clicking a single cookie and watching numbers go up, unlocking new things keeps the game interesting, and each buy gives the player the same satisfaction as solving a single sudoku puzzle. So when I build mazes, I like to provide

All are designed to teach some measure of spatial reasoning and problem-solving

Shalidor's Maze in *Skýrim*, home to one of the game's Dragonshouts.



landmarks, not just for ease of navigation, but also to capture that sense of progression.”

Martinian has been building *Minecraft* maps since the young age of 13. If you have a poor sense of direction, their mazes may sound like the stuff of nightmares: Highlights include the formidable Prismatic Puzzler, a seven-storey colored glass tower that resembles a Death Star focusing array. But if Martinian’s mazes are mind-boggling they are also considerably built, with bridges providing vantage points and a range of strong landmarks. All are designed to teach some measure of spatial reasoning and problem-solving. “When a maze has you doing this, instead of just blindly hugging the right wall and hoping you eventually reach the exit, I consider that a great success.”

BUILT TO LAST

DeuxiemeCarlin from Louisiana is the holder (at the time of writing) of the world record for *Minecraft*’s largest published maze. His magnum opus, Warped Trails, took around a month to create and has been successfully traversed by just seven out of thousands of players—the fastest run is around seven hours. DeuxiemeCarlin has been captivated by mazes since infancy, and is happy to make them out of anything. “Any material that can be twisted to form paths, I can develop a maze through: Everything from a stack of DVDs to a Discord server to white furniture!” He enjoys mazes both for the joy of solving them and for their visual intricacy. “One theory I’m leaning towards in recent months is that it has something to do with the way my brain works, with high-

functioning autism. And who says it has to be one [reason], but not the others? It could be a multitude of things!”

DeuxiemeCarlin considers maze-making an artform. “The same feeling people get when finishing a painting, or when composing music? That’s the feeling I get when I make mazes.” He emphasizes the importance of variety—Warped Trails consists of 100 regions—and also advocates against repeating patterns or stretching out hallways for the sake of filling space. “Each region must be crafted with care, and attention to detail.”

ELUSIVE WORDING

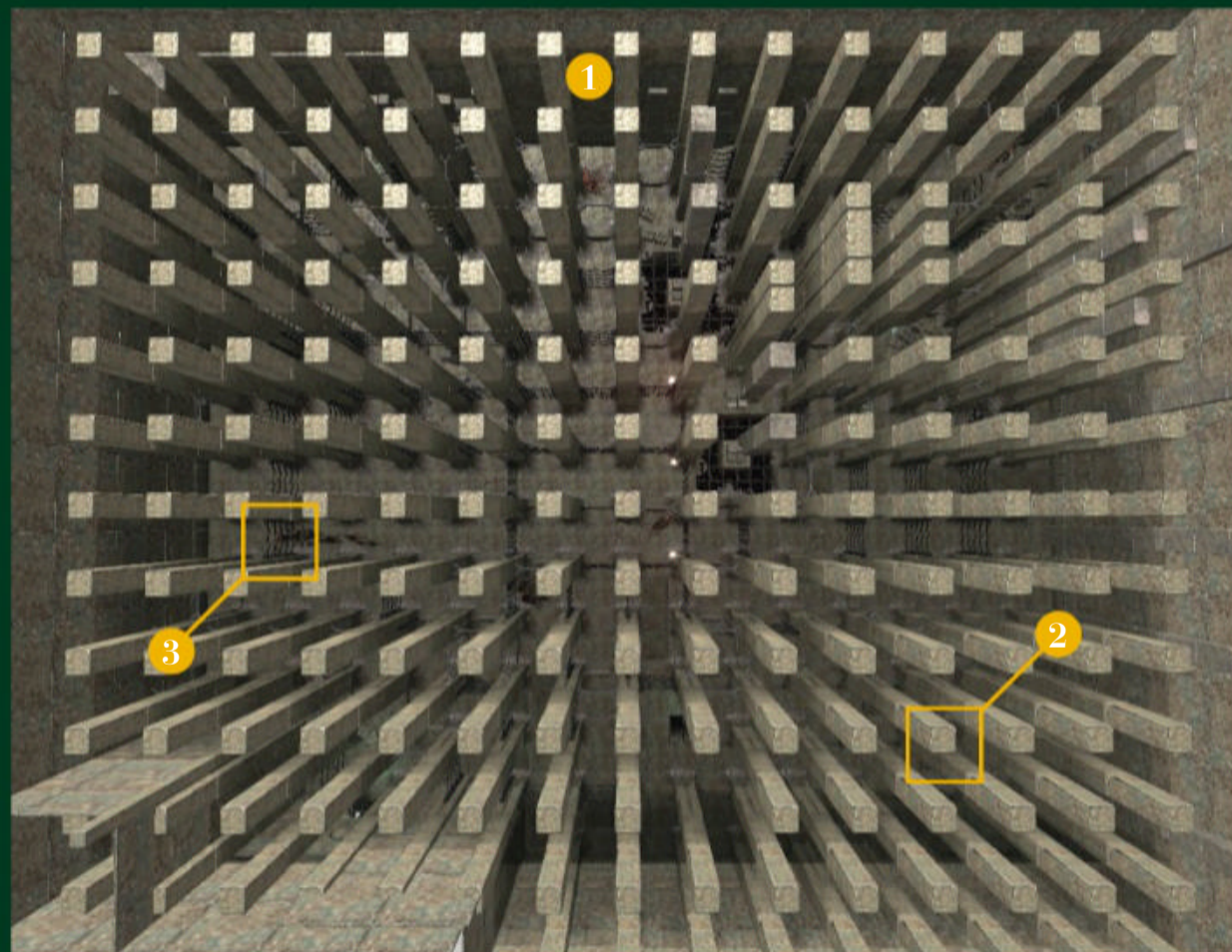
Mazes don’t have to be physical structures or representations, of course. Some of the best are text-based. Itch.io is full of Twine games that are inherently labyrinthine, composed of many branching strands, and playing them is like fumbling around a maze with a blindfold. Sisi Jiang’s *Theseus* seizes upon this comparison, while also embracing the mixed feelings mazes and labyrinths attract. In this retelling of myth, the Greek hero Theseus and the Minotaur are estranged partners rather than foes. Cast as Theseus, you must find your way out of a garishly painted labyrinth while playing out an imaginary argument with your beau.

The maze embodies the parental abuse experienced by both characters (the Minotaur, aka Asterion, is the sort-of-foster son of the king who imprisoned him). “It was meant to give the player tunnel vision, a feeling of a loss of control, and claustrophobia,” Jiang explains. “It was important to me that a bad relationship did not solely involve the actors in the play, but the conditions under which they were meant to forge a connection.”

But the game also presents its labyrinth as “a space for emotional exploration” and “an emotionally secure place for failure”. Each path corresponds to a branch of Theseus’ internal wrangle with the Minotaur, displayed as floating text. ‘Wrong’ paths uncover the tenderness each character still has for the other, together with futile efforts at reconciliation. In the process, something essential is revealed about both human beings and the things we build. “[There are] no consequences for ‘picking incorrectly’ the first time,” Jiang says. “And I think that accurately reflects a lot of our human internal processes—we have to hit tons of dead ends before reaching our truth.” ■

HUNTING GROUNDS

Fredrik Olsson on the making of Amnesia: Rebirth’s fear labyrinth



1 “In an ideal scenario most players would know about the fear production aspect going into the maze [...] having that fresh in your head as you take your first trembling steps into the maze adds another layer to the tension [but] the atmosphere in that section needs to be visceral enough to stand on its own.”

2 “We tried a lot of different versions of a more generic maze approach but we didn’t really have a strong structure to follow, not until the idea of the column structure and gating system emerged. From that point it felt like things started to progress without any major obstacles and it was more about tweaking areas.”

3 “Some testers were too occupied with watching their surroundings, looking out for whatever made the noises around them, to notice the pressure plates. That led us to blocking off the player early on and having them move some debris off a pressure plate to progress—just to force the understanding of that mechanic.”

THE BEST SCHOOLS FOR ASPIRING GAME DEVELOPERS



THE BEST GAME DESIGN PROGRAMS, RANKED BY THE PRINCETON REVIEW.

Even in these ridiculous times, video games are there to comfort, challenge, and inspire us. It takes a lot of work to make your favorite games, though, and a lot of smarts. It's dangerous to go alone, as one famous adventure told us, and that's where these game design programs come in.

The Princeton Review has done all the heavy lifting of researching the absolute best game design programs across North America and Europe. Whether it's the best teachers, the most prestigious graduates, the best facilities, or the highest average salary, you'll find a great school for you.

So take a moment to think about what kind of game developer you'd like to be. Do

Whether you're taking your first steps or refining your skills, there's a game design program for anyone. Check out the 50 best undergraduate and 25 best graduate programs out there.

you want to use your artistic flourish to design fascinating worlds and new characters? Do you want to manage the business of running a studio? Or do you want to get your hands dirty in the coding and programming that makes games run? Maybe you're also looking to master your skill set with a graduate degree.

Every adventurer knows that the first steps can often be the most important. If you're ready to take that leap, read on to find out where you should start your journey.

Want to know more? Check out The Princeton Review's website for further info: www.princetonreview.com/game-design



THE TOP 50 BEST GAME DESIGN UNDERGRADUATE PROGRAMS



1 UNIVERSITY OF SOUTHERN CALIFORNIA

Total Courses: 277
2020 Grads Hired: 90%
2020 Grads Salary: \$65,000
Faculty: Gary Schyman (Composer, BioShock series), Artem Kovalovs (Programmer, The Last of Us)
Graduates: Ryan Coogler (Black Panther), Jeff Kaplan (Overwatch)



2 BECKER COLLEGE

Total Courses: 125
2020 Grads Hired: 54%
2020 Grads Salary: \$62,321
Faculty: Keo Heng (Senior Animator, Sony Computer Entertainment), Christina Alejandre (Director of Publishing & Esports, WB Entertainment)
Graduates: Lawrence Preston (Environment Artist, Sony Bend), Katelyn Anthony (QA Lead, Riot Games)



3 NEW YORK UNIVERSITY

Total Courses: 564
2020 Grads Hired: 40%
2020 Grads Salary: \$55,000
Faculty: Dr. Bennet Foddy (Getting Over It)
Graduates: Carol Mertz (Designer, Exploding Kittens), Robert Meyer (Designer, Just Cause) including Ape Out and others.



4 ROCHESTER INSTITUTE OF TECHNOLOGY

Total Courses: 133
2020 Grads Hired: 90%
2020 Grads Salary: \$65,000
Graduates: Elan Lee (Exploding Kittens), Alex Kipman (Microsoft HoloLens and Kinect)
Fun Fact: Recently launched a new Geogames Lab in partnership with Pokémon Go creator Niantic Game

5. DIGIPEN INSTITUTE OF TECHNOLOGY

Graduates: Kim Swift (Portal, Google Stadia), Adam Brennecke (Pillars of Eternity)
2020 Grads Salary: \$81,500

6. WORCESTER POLYTECHNIC INSTITUTE

Faculty: Keith Zizza (sound designer, BioShock Infinite), Ed Gutierrez (Disney/Pixar)
Graduates: Alex Schwartz (Job Simulator), Michael Gesner (Riot Games)

7. MICHIGAN STATE UNIVERSITY

Faculty: Ricardo Guimaraes (concept artist, Blizzard Entertainment, Ubisoft), Elizabeth LaPensée (Indigenous game designer)
2020 Grads Hired: 81%

8. UNIVERSITY OF UTAH

Graduates: Doug Bowser (President, Nintendo), Nolan Bushnell (Founder, Atari)
2020 Grads Hired: 40%

9. BRADLEY UNIVERSITY

2020 Grads Salary: \$63,683
2020 Grads Hired: 60%

10. SHAWNEE STATE UNIVERSITY

2020 Grads Hired: 60%
2020 Grads Salary: \$59,200

11. LASALLE COLLEGE VANCOUVER

2020 Grads Hired: 69%
Graduates: Greg Findlay (Tomb Raider, Thief), David Larmour (Capcom)

12. VANCOUVER FILM SCHOOL

Faculty: Scott Henshaw (EA), Jeff Plamondon (Capcom Vancouver)
Graduates: Armando Troisi (Narrative Director, Ubisoft), Boris Wong (EA)

13. DREXEL UNIVERSITY

2020 Grads Hired: 50%
Graduates: Anna Nguyen (Injustice 2, I Expect You to Die), Glen Winters (Red Dead Redemption 2)

14. UNIVERSITY OF CENTRAL FLORIDA

Fun Fact: One of 16 Microsoft Flagship Schools
Graduates: Richard Ugarte (Producer, Epic Games), Alex Madeville (Facebook Games)

15. ABERTAY UNIVERSITY

2020 Grads Hired: 40%
Graduates: David Jones (creator of Grand Theft Auto), Timea Tabori (Engine Programmer, Rockstar Games)

16. BRED A UNIVERSITY OF APPLIED SCIENCES

2020 Grads Hired: 60%
Graduates: Jendrik Illner (3D Programmer, Ubisoft), Nathalie Jankie (Level Designer, Remedy)

17. CHAMPLAIN COLLEGE

2020 Grads Hired: 77%
Faculty: Nathan Walpole (Character Animator, Halo, ESO), Christopher Cao (Character Artist, Bethesda)

18. COGSWELL UNIVERSITY OF SILICON VALLEY

2020 Grads Salary: \$62,000
Fun Fact: Recently added a program focusing on business, marketing, and production of games.

19. RENSSELAER POLYTECHNIC INSTITUTE

2020 Grads Salary: 68,400
Graduates: Zach Barth (ZachTronics), Curtis R. Priem (NVIDIA)

20. THE UNIVERSITY OF TEXAS AT DALLAS

Graduates: Matt Charles (Gearbox Software), Ricardo Flores (Animator, Naughty Dog)
2020 Gender Breakdown: 50% Male, 50% Female

21. HAMPSHIRE COLLEGE

2020 Grads Salary: \$60,000
2020 Grads Hired: 60%

TOP 50 GAME DESIGN UNDERGRADUATE PROGRAMS (CONT)

22. SAVANNAH COLLEGE OF ART AND DESIGN

2020 Grads Salary: \$43,667

Graduates: Chad Dezern (CCO, Insomniac), Harrison Pink (Quest Designer, Blizzard)

23. LAGUNA COLLEGE OF ART + DESIGN

Graduates: Greg Baldwin (Character Artist, Insomniac), Nicole Tan (Level Architect, Arkane)

24. HOWEST UNIVERSITY OF APPLIED SCIENCES

2020 Grads Hired: 70%

Faculty: Tristan Clarysse (Artist, Larian, BioWare), Kevin Hoefman (Larian)

25. UNIVERSITY OF WISCONSIN-STOUT

2020 Grads Hired: 85%

Graduates: Mitchel Clayton (Environment Artist, Naughty Dog), Mic Rooney (Gameplay Programmer)

26. MARYLAND INSTITUTE COLLEGE OF ART

2020 Grads Salary: \$64,000

2020 Grads Hired: 66%

27. FERRIS STATE UNIVERSITY

2020 Grads Hired: 80%

Fun Fact: Partners with Michigan non-profits to develop game projects.

28. FALMOUTH UNIVERSITY

Graduates: Rex Crowle (Media Molecule), Sophie Shepherd (Animator, Creative Assembly)

29. ABILENE CHRISTIAN UNIVERSITY

2020 Grads Salary: 70,000

2020 Grads Hired: 71%

30. NORTHEASTERN UNIVERSITY

2020 Grads Salary: \$49,402

Graduates: Alisa Bricker (User Researcher, Harmonix), Zhuo Chen (UI Design, Sony)

31. UNIVERSITY OF CINCINNATI

2020 Grads Hired: 66%

Graduates: Evan Carroll (Animation Artist, Diablo II), Randy Pagulayan (Director of Research, Xbox)

32. NEW YORK FILM ACADEMY

2020 Grads Salary: \$55,000

2020 Grads Hired: 70%

33. NORTH CAROLINA STATE UNIVERSITY

2020 Grads Salary: \$75,000

Fun Fact: Largest provider of graduates to North Carolina games industry, which includes Epic Games, Ubisoft and more.

34. BLOOMFIELD COLLEGE

2020 Grads Salary: \$50,000

Graduates: Josiah Hunt (Sony Santa Monica), Corey Delorenzo (Level Designer, Sony Santa Monica)

35. MIAMI UNIVERSITY

Graduates: Chris Carney (Level Designer, Valorant), Stephanie Tsirlis (Producer, Riot)

2020 Grads Salary: \$52,465

36. INDIANA UNIVERSITY

2020 Grads Salary: \$60,000

Graduates: Kees Luyendijk (Game Designer, Nintendo), Jess Tompkins (User Researcher, EA)

37. KENNESAW STATE UNIVERSITY

2020 Grads Salary: \$60,000

2020 Grads Hired: 40%

38. NEW ENGLAND INSTITUTE OF TECHNOLOGY

Faculty: William C. Culbertson (R&D, Hasbro), Jim McClure (Environment Artist, Sony Online)

Total Courses: 57

39. UNIVERSITY OF TEXAS AT AUSTIN

Graduates: Richard Garriott (Ultima, Astronaut), Warren Spector (Thief, System Shock)

2020 Grads Salary: \$59,000

40. UNIVERSITY OF FLORIDA

2020 Grads Salary: \$55,000

2020 Gender Breakdown: 50% Male, 48% Female

41. DEPAUL UNIVERSITY

42. OKLAHOMA CHRISTIAN UNIVERSITY

43. ACADEMY OF ART UNIVERSITY

44. MARIST COLLEGE

45. UNIVERSITY OF MICHIGAN-DEARBORN

46. QUINNIPIAC UNIVERSITY

47. ART CENTER COLLEGE OF DESIGN

48. CORNELL UNIVERSITY

49. FULL SAIL UNIVERSITY

50. MASSACHUSETTS INSTITUTE OF TECHNOLOGY



HOMEWORK: Amnesia: Rebirth Can “normal” mechanics undermine your vision?

Frictional Games, the makers of Amnesia: The Dark Descent, SOMA, and more recently Amnesia: Rebirth, definitely know their way around horror. But even professionals can fall victim to tropey game design mechanics, get a bit too comfortable, and undercut their own vision. How can you keep gruesome monsters still terrifying without taking your player out of the experience when they get caught?

EXAMPLE: Frictional Games learned from their earliest titles that forcing a player to replay a level after dying only served to reduce the horror and increase the frustration a player might feel. Since Rebirth still incorporated a “fear” system that encourages players to avoid darkness and monsters, they tied that into what happens when a player fails. If the player is taken down by an enemy, the main character experiences an onslaught of cryptic visions, then awakens in a different spot. Failure also impacts the main character’s health, impacting their journey in meaningful ways that an invested player will take care to avoid.

HOMEWORK: If you’re making a game that tells a story or sends a message, consider how the gameplay mechanics we’ve taken for granted might impact that narrative. Part of being a game designer is thinking outside the box, even in a game that might already follow an established formula in many ways. It might turn a gimmick you tossed in into something much more meaningful in the end.

READING MATERIAL: <https://bit.ly/2M7d8VE>

TIPS FOR GETTING INTO A GREAT GAME DESIGN COLLEGE



If you're on your way to graduating high school, or just looking for a new start in education, odds are that imposter syndrome is hitting you hard. Even the brightest and most accomplished students wonder if they've got what it takes to get into a great school. You're in good hands, though. We talked with leaders at some of the biggest game design colleges about what they want to see from applicants.

MAKE GAMES ALREADY

Perhaps one of the best things any potential new student can do is demonstrate a proven interest in making games. Thankfully, no one has to be a master of the craft already to do so. If you've dabbled with Unity or another major engine, great, but schools also love to see students using Twine, Scratch, or even RPG Maker, much more accessible engines that still offer a ton of opportunity for self-expression.

"We're looking for games that have something to say," says Collin Kelly, a program coordinator at USC Games. "Making a Mario clone to show you understand Unity is fine, but we like games that capture who you are."

A VARIETY OF INTERESTS

Go figure, schools like to know that new students will be bringing in a diverse array of lived experiences that can translate to game design, learning, and teamwork. That can come from unexpected places, too. Kelly uses an example of a high school

student who produced speedruns of games and streamed them out to an audience.

"We looked at that applicant and immediately said 'that's a natural-born producer,'" Kelly says, noting the student's ability to organize and see such a technical and community-focused project through to the end.

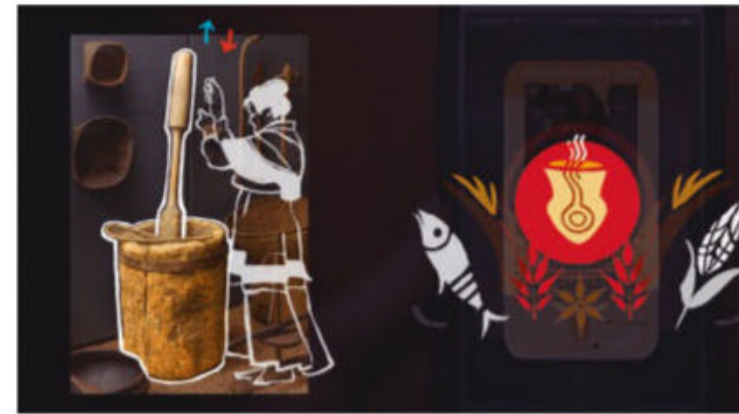
Some schools are really looking for collaborative spirits who can fill specific roles, or even multiple.

"We build our classes kind of like we're designing a studio," says Dylan McKenzie, program coordinator and Incubator director at NYU's Game Center. "So we need programmers, artists, project managers, and designers. So we want to see what you bring to the table because you're working with all sizes of groups and all kinds of people. The more you bring to our group of developers, the more productive you'll be and the more people will want to work with you as a team member. The rising tide of our abilities will raise all boats of the class."

And even if you're looking more towards grad school, or just getting to college later than usual, life experiences are invaluable material to pull from. Previous applicants to NYU's Game Center have used their skills in architecture, fashion, or even baking a cake (and sending it to the school) to show how their creative side works.

LEARN FROM FAILURE, BUT COMPLETE YOUR PROJECT

"I want my students to be centered and confident," says Dr. Alan Ritacco, Dean of Becker College's School of Design and Technology. "If you fail quick, you can iterate faster. No one has ever won all the time."



Almost anyone in the games industry will tell you that successful, fun games are often the result of countless attempts. Even games that seem perfectly designed at first glance may not look or feel that way until near the end of development. This principle -- of learning from failure, but also being able to ship a finished game, even a modest one -- is indicative of students that colleges love to welcome.

"Even more specifically than just making games, we love to see people making and completing games," NYU's McKenzie said. "The full loop of game design is challenging. If you've got design documents, illustrations, art, that's great. If you've got a prototype, even if it's just made of paper, or the functions of the game are in code, and if you've published it on itch.io, then even better. You know what it's like to build an audience and launch a game. The more that we can help you accelerate your practice and not just start, the better."

"Getting into a great game design college requires passion, curiosity, and commitment. At Becker, we look for those traits first. That cognitive reckoning is what we're trying to get people into. Getting a student to move from curiosity to passion and then a dedicated commitment shows us they've got a lifelong path in this," says Ritacco.

Ultimately, these programs are (usually) part of an art school, and so colleges will want students who want to make the future of video games, McKenzie says. Anyone who has the heart to do something different and do it well will have greater odds at getting into their dream school and going on to create games that last in players' minds for years to come.



THE TOP 25 BEST GAME DESIGN GRADUATE PROGRAMS



1 UNIVERSITY OF CENTRAL FLORIDA

2020 Grads Shipped Game: 87%
2020 Grads Salary: \$73,000
Graduates: Dennis Brannvall (Design Director, EA DICE), Billy Bramer (Lead Programmer, Epic)
Faculty: Benjamin Noel (VP, COO, Electronic Arts Tiburon), Richard Hall (EA Sports)



2 NEW YORK UNIVERSITY

2020 Grads Shipped Game: 73%
2020 Grads Salary: \$72,000
Faculty: Dr. Bennett Foddy (Getting Over It)
2020 Gender Breakdown: 55% Female, 39% Male



3 SOUTHERN METHODIST UNIVERSITY

2020 Grads Hired: 85%
2020 Grads Salary: \$67,400
Graduates: Katie Sabin (Artist, Raven Software), Chris Cole (Technical Artist, Blizzard)
Faculty: Michael Porter (Art and Design, Sierra, Microsoft, Bungie), Elizabeth Stringer (Atari)



4 UNIVERSITY OF SOUTHERN CALIFORNIA

2020 Grads Hired: 90%
2020 Grads Salary: \$65,000
Graduates: Ryan Coogler (Black Panther), Jeff Kaplan (Overwatch)
Faculty: Richard Lemarchand (Game Designer, Uncharted 1-3), Artem Kovalovs (Programmer, The Last of Us)

5. ROCHESTER INSTITUTE OF TECHNOLOGY

2020 Grads Salary: \$70,000
Graduates: Elan Lee (Exploding Kittens, Chief Design Officer of Xbox Entertainment), Alex Kipman (Kinect, Hololens)

6. UNIVERSITY OF UTAH

2020 Grads Salary: \$84,655
Graduates: Doug Bowser (President, Nintendo), John Warnock (Founder, Adobe)

7. BECKER COLLEGE

2020 Grads Salary: \$70,000
Graduates: Matthew Hopkins (Technical Artist, Rockstar), Yuka Ninohara (UX, WB Games)

8. ABERTAY UNIVERSITY

2020 Grads Hired: 65%
2020 Grads Salary: \$68,000

9. DIGIPEN INSTITUTE OF TECHNOLOGY

2020 Grads Salary: \$78,000
Graduates: Luis Villegas (Engineering Lead, Destiny), Arturo Jauregui (Artist, Nintendo)

10. WORCESTER POLYTECHNIC INSTITUTE

2020 Grads Hired: 63%
2020 Grads Salary: \$72,350

11. DREXEL UNIVERSITY

2020 Grads Salary: \$74,000
2020 Gender Breakdown: 75% Female, 25% Male

12. MICHIGAN STATE UNIVERSITY

2020 Grads Hired: 50%
Faculty: Ricardo Guimaraes (Concept Artist, Blizzard), Jeremy Gibson Bond (Programmer/Designer, Maxis)

13. BREA UNIVERSITY OF APPLIED SCIENCES

2020 Grads Hired: 60%
2020 Grads Salary: \$46,000

14. LAGUNA COLLEGE OF ART AND DESIGN

2020 Grads Salary: \$54,000
Faculty: Dave Jaloza (Producer, Bandai Namco), Chris Ulm (Founder, Jam City)

15. THE UNIVERSITY OF TEXAS AT DALLAS

2020 Grads Salary: \$34,000
Graduates: Matt Charles (Producer, Gearbox Software), Ricardo Flores (Animator, Naughty Dog)

16. SAVANNAH COLLEGE OF ART AND DESIGN

2020 Grads Hired: 48%
2020 Grads Salary: \$60,679

17. AMERICAN UNIVERSITY

2020 Grads Salary: \$80,000
Fun Fact: AU's program pushes students to engage with games for change.

18. UNIVERSITY OF CALIFORNIA—SANTA CRUZ

2020 Grads Hired: 75%
Faculty: Robin Hunicke (thatgamecompany, Funomena)

19. NEW YORK FILM ACADEMY

2020 Grads Hired: 71%
Graduates: Jon Webb (Director of Global Product Strategy, PlayStation), Tim Schafer (Double Fine)

20. NORTHEASTERN UNIVERSITY

2020 Grads Hired: 73%
Total Courses: 63

21. BRADLEY UNIVERSITY

22. UNIVERSITY OF MALTA

23. FULL SAIL UNIVERSITY

24. UNIVERSITY OF WISCONSIN - STOUT

25. DEPAUL UNIVERSITY



HOMEWORK: The Pathless Hitting the mark like a pro

Archery and video games go together like peanut butter and chocolate, and plenty of video game protagonists are supposedly perfect shots. But if we're supposed to be heroes, why do games let us whiff so many shots and stumble while aiming, and is there a better way?

EXAMPLE: When Giant Squid made 2020's *The Pathless*, they knew they wanted their protagonist to come across as a fast-paced master archer, able to bound across huge landscapes with the inertia of her bow. But they needed a way to make players believe that fantasy. At first, they came up with the maxim "never miss a shot," but pulled back a little when that got too dull. Rather than focus on aiming, Giant Squid determined that timing your shots (with a generous window) would be the key to traversal. The player needed to be able to miss, but Giant Squid wouldn't make that the default result. The end result was a simple, yet satisfying rhythm to archery that sacrificed none of the thrill of landing a shot while speeding along.

HOMEWORK: Much like the previous example, consider how "standard" game mechanics that have been around for ages might break the immersion a player needs to feel invested in the world you've created. If you tell a player one thing, but punish them for being something they're not in real life (in this case, an incredibly gifted archer), then they might not want to spend time engaging with your world. Don't be afraid to pull away from old ideas even if it means dramatically simplifying something.

READING MATERIAL: <https://bit.ly/38YlpPY>

HOW ESPORTS IS CHANGING GAME DESIGN COLLEGES

Imagine brightly lit arenas, flashy technology, and athletes pumped up to show off all their talent. Only it isn't on a basketball court or football field. It's eSports tournaments played on PCs and consoles, with everything from *Smash Bros.* to *League of Legends*. Colleges of all sizes have realized just how valuable the world of eSports can be for students and academic programs, offering up ways for students to form community bonds and learn valuable business skills and artistic principles in the process.

We spoke with some of the folks leading the charge in competitive collegiate eSports to ask them how it's changed campus culture, and what it offers students. As you can imagine for a multi-million (soon to be billion) dollar industry, it's quite a lot.

FROM THE PC TO THE DEGREE

"eSports is the hardest, newest, and most exciting thing to hit campuses since the internet. From varsity and club teams to the business of esports management, the opportunity has been clearly shown," says Dr. Alan Ritacco, Dean of Becker College's School of Design and Technology.

Esports, like traditional sports, is an entire ecosystem of career paths beyond just being a star athlete. Students also have the opportunity to learn business and team management principles, marketing strategies, and event planning. Becker College's program also includes classes on esports industry trends and community development, something that will help students ensure they can adapt to the constantly evolving gaming landscape.

"You know what sports management is. You're taking care of Tom Brady," Ritacco says. "

"But it's also business, continuity, change management, economics, IT, executive leadership. Now you go to the esports side and it's taking care of [former *League of Legends* pro-turned-commentator] Crumbz."

There can't be any sports community without a little bit of sports

journalism, and colleges like Becker and USC offer classes focused on content creation that forms the backbone of vibrant fanbases.

"What esports means for us is to ensure we're getting students connected with companies that are at the forefront of technology and where we think the industry is going, and making sure we get input from them and update our curriculum for these students' futures," USC Trojan Esports Union faculty advisor Jim Huntley.

In a year where "community" means something very different for colleges, esports has been one of the few bright spots to keep students feeling close.

"It's ironic," Huntley says. "Our medium, from a professional perspective as well as an academic perspective, has been the one thriving because you can develop games and compete and socialize in the medium of games. Aside from the personal drain, our work hasn't suffered."

"There's still so much going on with esports that I think is under-discovered," says Dylan McKenzie, program coordinator at NYU's Game Center. "Our role as a university is to help our students and the public make sense of this either through making new types of games that fit in that or you want to go into casting, YouTube, other stuff. We help you understand how to break it down in a nuanced way."

Whether it's from the bleachers or from behind a PC monitor, esports is almost certainly the future of collegiate competitions. The only question is: Are you ready to play?

FAKE FRIENDS

PERSONA 5 STRIKERS reunites the gang for a bland road trip. *By James Davenport*

This spin-off has all the style and confidence of *Persona 5*, plastered with bold colors and glittery character animations that give each scene the liveliness of a manga panel, down to the menus. A smooth, jazzy soundtrack establishes a psychedelic '70s spy movie energy, even though we're dealing with teens taking on criminals throughout Japan. There's even a 30-hour story with most of the original cast returning. It walks and talks almost exactly like *Persona 5*, a game that isn't even on PC yet.

But *Strikers* isn't *Persona 5*, and the comparison isn't flattering for it. Its social elements and combat aren't as fully-featured or its characters as deeply considered as *Persona 5*'s, so any expectation of parity will lead to disappointment. *Strikers* is a wild but bloated visual novel with almost no room for expression or choice, and with some of the best turn-based combat in existence swapped out for repetitive action game combat. *Strikers* will give *Persona 5* fans some painful whiplash.

In *Persona 5 Strikers* you return as the same nameless high-school student and reunite with the Phantom Thieves, your group of friends that faced down the invisible psychic threats plaguing the Metaverse in *Persona 5*. It sounds complex, but the *Persona* series just dresses up social and cultural issues in surreal fantasy garb. People fight one another with physical manifestations of their psyche, which basically makes it a game of surreal *Pokémon*. I choose you, weird sewer

monster shaped like a penis, also why are you crying?! And so on.

The big bads have shifted from greedy adults to the more intangible effect of social media on young people, with villains building massive dungeons out of ego, from Hot Topic-infused nightmare amusement parks to goofy fantasy castles ripped from the pages of contrived young-adult literature. These scenes, split

between a real-world road trip through Japan, make *Strikers* sound like the ideal side story, a special summer reunion episode. And the story is fine, it's just missing *Persona 5*'s special ingredient.

GHOST TRICKS

In *Persona 5*, the social simulation was the heart of the game. Going to school, plotting out who I'll hang with afterwards, paying attention to what my friends like and what their problems are so when the time arises I know the right thing to say—my schedule, set against the ticking clock, created the tension and forced me to

I choose you, weird sewer monster shaped like a penis

NEED TO KNOW

WHAT IS IT?
An action game sorta-sequel to *Persona 5*

EXPECT TO PAY
\$60

DEVELOPER
Omega Force / P-Studio

PUBLISHER
Atlus

REVIEWED ON
RTX 3080, Intel i9-9900K, 16GB RAM

MULTIPLAYER
No

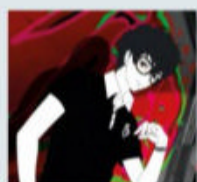
LINK
atlus.com/p5s

make interesting decisions. Do I hang out with Ryuji today, or study for my exams? With limited days between massive, story-altering deadlines, my choices determined who I made lasting friendships with and who I left as casual acquaintances.

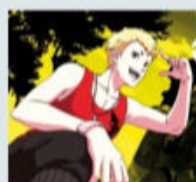
In *Strikers*, the daily rhythm doesn't exist. There are no social links to tend to. I'm just occasionally gifted upgrade points after certain scenes, most of which feed into buffs for the bland combat. Dialogue choices rarely matter, and if they do, there's no feedback saying so. Passing time in *Strikers* gets monotonous, with endless dialogue and scene changes devoid of interaction. It really coasts on the hope that you loved *Persona 5* and have bottomless patience. Besides a few limp character beats, *Strikers* has few reasons to hang around for 30 hours.

The premise might be the only reason I stuck around. I wish I had something so simple and cool to take a dig at the effects of social media and data collection on daily life through the lens of jazz, anime, and street art when I was younger. I mean, the first boss is an influencer who turns into a monstrous rabbit at the center of a deranged amusement park. And the rabbit's big, fluffy tail has a damn mouth. I don't know that it contributes to the theme other than to make *Strikers* more interesting to look at while characters deliver long, moralizing messages to one another about influence and popularity and the true meaning of friendship, but it >>

PERSONA OF INTEREST *Who's who in the Phantom Thieves*



JOKER
You, the player character.



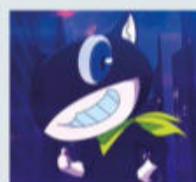
RYUJI
Jock, your best bud.



ANN
Model, eats a ton.



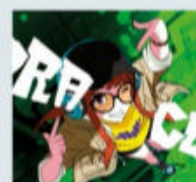
MAKOTO
Prep, rides a motorcycle.



MORGANA
Cat, thinks it's a human.



YUSUKE
Artist, honestly the worst.



FUTABA
Nerd, flies a UFO.



HARU
Green thumb, big-ass hammer.



The perfect selfie.



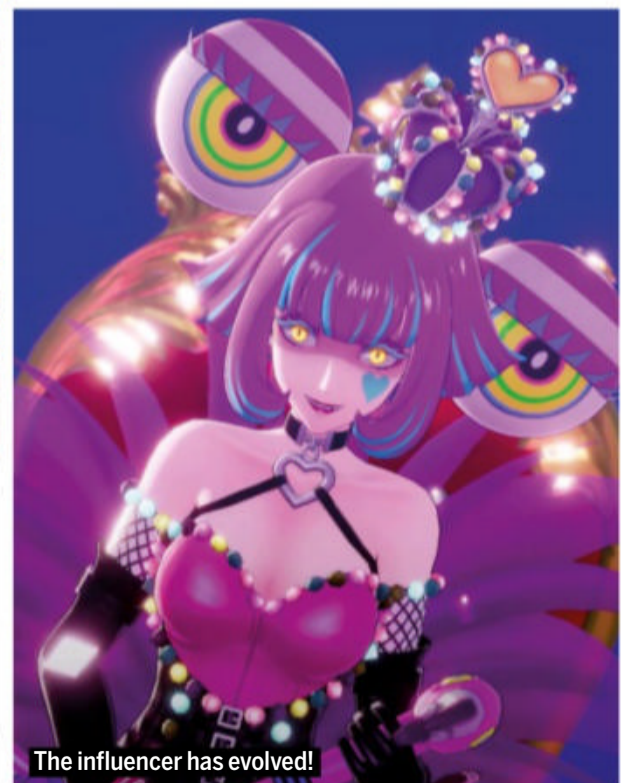
Purple haze (in the Metaverse).



The gang loves to gather around a good meal.

Ryuji

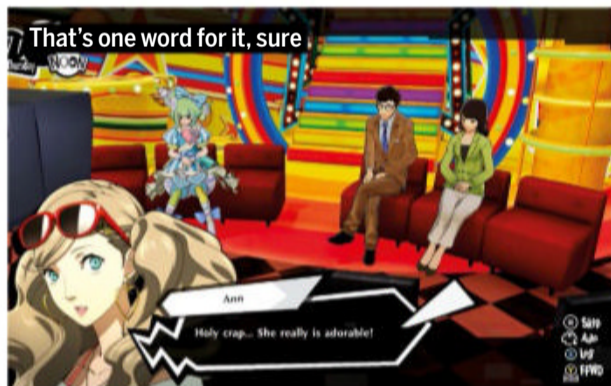
This meat! It's so thick! So soft! Damn, that's good!



The influencer has evolved!

REVIEW

Persona 5 Strikers



TFW you are consuming the anthropomorphized psyche of a teen.

works. Most of my attention was spent waiting to see *Strikers'* next wild monster or trippy environment take goofy jabs at social media.

STRIKE ONE

Nothing about *Strikers'* story is particularly sharp or deep, but for a younger audience, its critiques could feel revelatory. It's an optimistic story, too, a road trip with old friends that encourages action and hope in the face of seemingly implacable, ages-old institutions. *Strikers* can be cute as hell too, but the shine does come off while beating down the same blur of grunts and monsters time and time again.

Koei Tecmo's here with that love it or despise-it-more-than-anything *Dynasty Warriors*-style combat, including the finicky camera that never seems capable of highlighting the guy about to bust out a huge attack just out of sight. Tappa-tappa-tappa. Light attack, light attack, heavy attack, dodge, and repeat, forever. Even the Berserk spin-off couldn't get me to like the stuff. You're not working through massive battlefields, murdering millions for control points this time though. In *Strikers*, combat is often initiated like it is in *Persona 5*, or most other JRPGs. You'll see an enemy wandering around a dungeon, bump into it, and suddenly the room's a fire hazard, packed with dozens of enemies to fight.

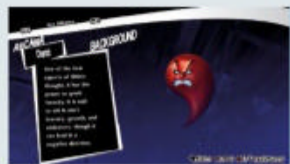
Fights are just pockets of *Dynasty Warriors* action, repetitive melee combat propped up by a Persona summoning system that uses spirit points or precious HP on elemental area-of-effect damage, opening up enemies for special attacks. There's some amount of strategy involved, but the action really amounts to managing a crowd, choosing the most efficient Persona attack to perform critical damage on as many enemies as possible, and repeating. Enemies respawn in dungeons too, ensuring you'll get to know the basic combo just a bit too well.

Strikers never slows down to truly teach whatever nuances there are in the combat, either. Most situations are easy to get through with each character's basic combo and a dodge and elemental Persona attack thrown in for good measure, and there's

**Never slows
down to truly
teach whatever
nuances
there are**

PERSONA NON GRATA

The Personas you don't wanna meet in your mind palace



ARA MITAMA
Punctuation was scary enough already without it coming to life.



MARA
Phallic design is one thing, but that's just a green penis chariot.



SATAN
Yeah, that guy. You know something's wrong when the Devil is on your team.



BELPHEGOR
At least this one is easy to identify with. He's just missing a Switch.

nothing about the flow of combat or the context of most scenarios that specifically calls for, teaches, or rewards more advanced combos and character switching. I got through it all with the same mashy tactics I learned in *Lego Star Wars* 15 years ago. Sometimes I'll stun a group of enemies and get to pull off a special move or an all-out attack, treating me to a cool animation, but then it's back to the mines, hacking away at enemies until there are no more left to hack away at.

Compare that to *Persona 5*, where the streamlined turn-based combat makes meaningful use of every character and their Personas, forcing the player into challenging scenarios to puzzle their way out of. In *Strikers*,

I didn't really need to consider my team composition or think too much about what Personas they were carrying. If I saw a weakness within the smudge of enemies painting the screen, I'd deploy it. If I got too

trigger happy with my Persona abilities and ran out of spirit points, I'd just dip out of the dungeon and back in again to rest my characters without a time penalty. I can remember many distinct fights from my 100-plus hours of *Persona 5*, but none from the slurry of button-mashing to delete legions of mooks in my 30 hours with *Strikers*.

UNDER THE INFLUENCE

It's odd, to make a game so faithful to the style of *Persona 5* only to jam in something so clearly out of place and expect diehard lovers of the social, turn-based RPG to get along with it all like old pals. Something is wearing the skin of my friend, telling me nothing's wrong, that, no, I'm being weird. I worry that the *Persona 5*

evangelizers drawn to *Strikers'* warm, familiar embrace are about to hit a brick wall of boredom.

At least it's a good port, just one clearly anchored to its console origins. The biggest bummer is the 60fps cap, especially for an animation-heavy action game. Textures that look fine on native console resolutions stand out at much higher resolutions on PC, and not always in the best way. Awnings, vending machines, and anything that isn't just lines and color haven't been touched up for higher resolutions. Not devastating, but we like the royal treatment on PC.

Most importantly, it runs well. I stay huddled up against that 60fps cap with ease, my GTX 3080 barely breaking a sweat. In a few hours of play I haven't seen any crashes or hitching. Customizable keyboard controls are there, a nice suite of language options—the works. It's a pretty decent port!

Persona 5 Strikers is a novel spin-off and sorta-sequel to a great RPG that most of my friends can't play yet. But even though it's packing a lot of signature style in mimicking the distinct look and sound of *Persona 5*, *Strikers* is a bone-thin road trip whose charm can't make up for the time and attention it takes to weather the mindlessly repetitive combat and negligible stakes.

There are far better third-person combat games out there. Better RPGs. Better visual novels. None quite look or sound quite like *Strikers*, except for *Persona 5*, but you'll be fine letting the memory of *Persona 5* stand on its own (if you can ever play it). ■

PC GAMER VERDICT

Strikers walks and talks like *Persona 5*, but no social game and bland combat make it one strictly for gigafans.

63

ONI SOULS

It's a yokai for a yokai in **NIOH 2: THE COMPLETE EDITION**. *By Oscar Taylor-Kent*

Stumbling into the first boss after slashing through a riverside village beset by demons, I begin to chip away at a screen-dominating health bar with my looted purple ninja knife. Little falls off before it roars, plunging me into a dark world and then summarily killing me with its saw-bladed cleaver. “Yeah, yeah,” I nod, “I’ve played *Dark Souls*, I know you’re not meant to be able to beat the first boss. It’s just flavor.” Then I respawn, and realize this is just the start of the mountain to come after all.

The large arsenal of possible weapons aren’t your only tools for spilling hot yokai blood. Your custom character is half-yokai themselves. Not only does this mean you can spend meter to enter a powered-up state of demon-slapping fury, but also that you can harvest the powers of defeated enemies to use yourself in battle.

Having access to these super moves is a surprisingly fresh twist on the rock-solid genre, giving you the option to literally press a ‘whack it with a giant hammer’ button if you just want to dish out some easy damage and take a breather. A Burst Counter even gives you the option to parry humongous boss attacks and knock them off balance.

Each weapon can be wielded in three stances, from low to high—dealing heavier, slower hits for more ki (essentially, stamina). Hitting the right button after a combo will perform a ki pulse, restoring a large chunk of meter, and purifying otherwise ki-stifling yokai realm circles. It creates a terrific sense of

rhythm, and really rewards you for learning the feel of your weapon.

Every weapon even has its own skill tree unlocking special techniques and buffs. The more you use it, the more skill points you obtain on your road to mastery.

There’s eleven to choose from (not counting ranged subweapons) including two new to the DLC packaged in the *Complete Edition* and available to use from the start. Fists and the splitstaff join the switchblade and hatchets that were new

to the base game. They feel truly unique, showing the talent Team Ninja has for crafting great melee weapon gameplay. Plus, pummeling evil spirits with your own two hands is just one of life’s little joys.

CROSS COUNTRY

The backdrop for all this slaughter is Japan’s Sengoku period. A time of bloody war, it’s a great excuse to send you across Japan. Though the real world setting can feel a little repetitive compared to the fantasy

Each weapon can be wielded in three stances, from low to high

NEED TO KNOW

WHAT IS IT?
Samurai *Dark Souls* mixed with Team Ninja’s weapon devotion

EXPECT TO PAY
\$50

DEVELOPER
Team Ninja

PUBLISHER
Koei Tecmo

REVIEWED ON
AMD Ryzen 7 1700X,
Gigabyte RTX 2080 Super, 32Gb RAM

MULTIPLAYER
Yes

LINK
bit.ly/pcgnioh2

vistas of the *Souls* games. You’ll see a lot of forests, caves, shrines, and forts. Even so, each distinct level is masterfully crafted, multiple paths weaving together alongside shortcuts to Kodama shrine checkpoints (*Nioh 2*’s brand of bonfires, where you revive sans your re-collectible upgrade currency when you croak).

There’s plenty to see, as the game easily took me about 70 hours to beat. Besides main missions it has plenty of side content, reworking previous maps into new challenges that feel fresh. And that’s not to mention the three pieces of bundled DLC that add even more. Little else in the genre has such satisfying gameplay, but there’s a limit to how much repetition you can avoid in a game this long.

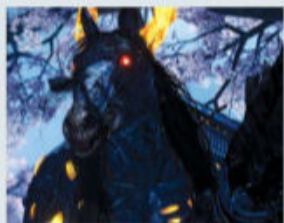
It’s a world as lonely as you want to make it, too. Up to two friends can be summoned in to fight by your side, which makes things easier. Ghost data, previously the reserve of duels with player spirits where they’d been killed, can also be used to summon friendly AI-controlled assistance.

In my experience performance was fantastic, easily handling a smooth 60fps, and even supporting 120fps (which has a tougher time when particle effects are buzzing away). At time of writing, there were issues with the keyboard overlay not displaying, but I have to recommend a controller for this one anyway. Thanks to the quickfire stance shifting and pulse timing, playing this on keyboard is the domain of those who love to touch type business emails directly into cryptographic ciphers. There’s some noticeable pop-in on some far off enemies, and some environment textures look a little dated today, but the character designs and effects are right on point, and its in-depth photo mode is one of the best around. This is a game focused around performance, and it certainly delivers. ■

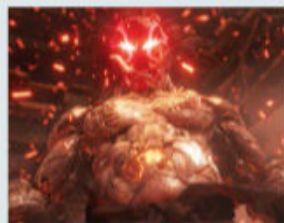
BOSSING IT UP *Your first biggest problems in Nioh 2...*



GOZUKI
This fight is a load of bull, and he’s the second enemy you see. Run past him when you can.



MEZUKI
Go’s coworker isn’t horsing around. Unfortunately, you’ve got to best his cleaver-saw.



ENEREA
Smoking will kill you. Literally, in the case of this ever-smoldering, tornado-spinning demon.



YATSU-NO-KAMI
A real snake, Yatsu will fool you with serpent arms that burst from the ground and poison you.

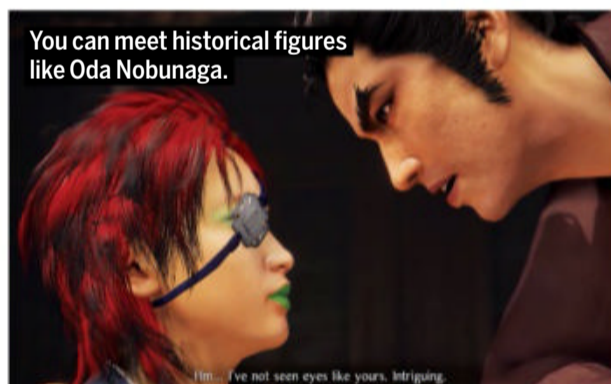
PC GAMER VERDICT

Raising the genre highbar, *Nioh 2* runs and plays beautifully. But perhaps you can have too much of a good thing.

92



Yokai Shift to unleash the demon within and hit harder for a time.



You can meet historical figures like Oda Nobunaga.

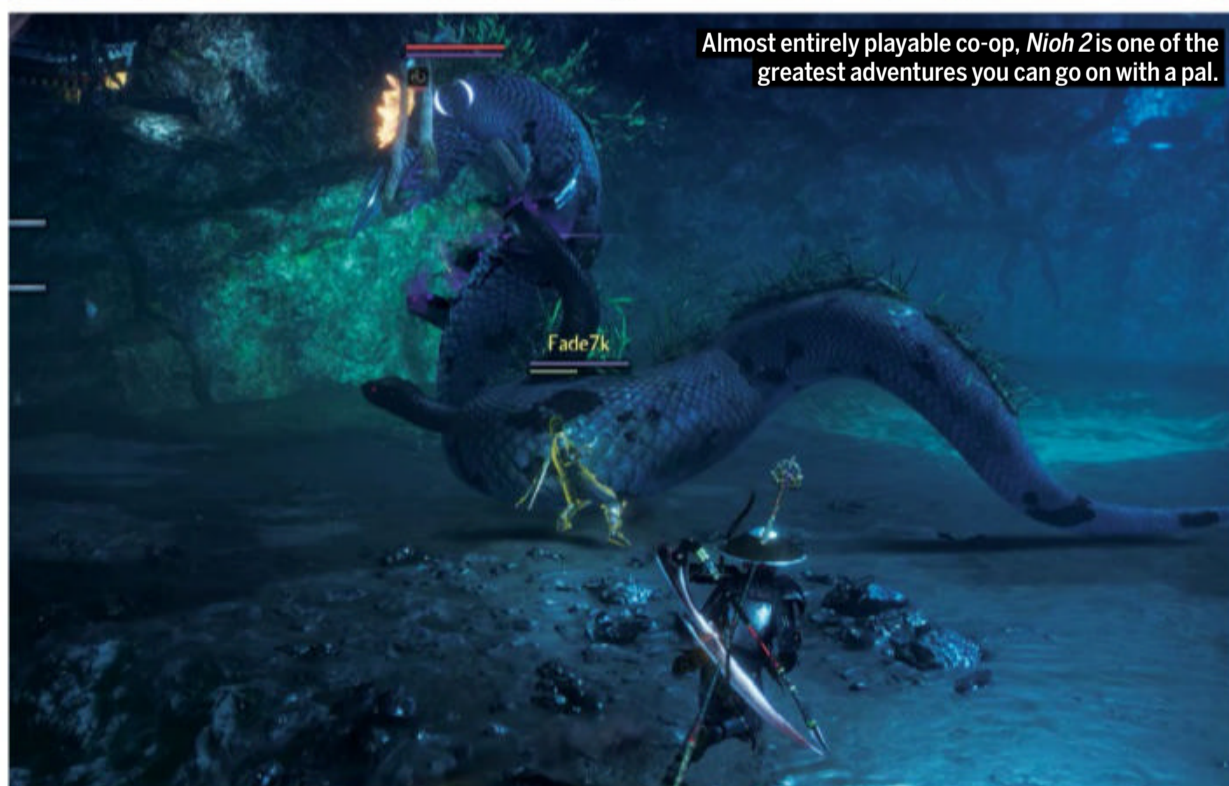
Hm... I've not seen eyes like yours. Intriguing.



Even false walls put up a fight in *Nioh 2*.



Dark Realm areas are completely corrupted.



Almost entirely playable co-op, *Nioh 2* is one of the greatest adventures you can go on with a pal.



Time your Burst Counter with the incoming attack to deal big damage.



Team up with spirit stone merchant Tokichiro.

SHARP AS HELL

THE MEDIUM ferries third-person horror into a new life. *By Leana Hafer*

We're all going to die some day, so I won't waste your time: *The Medium* is one of the best third-person horror games I have ever played. The studio behind *Blair Witch* and the *Layers of Fear* series has completely outdone itself with the brilliantly written, emotionally grounded story of Marianne, a troubled young woman who can see and communicate with the dead.

The Medium plays like an old-school *Resident Evil* game, minus the gunplay. You navigate Marianne around crumbling, abandoned hotels and claustrophobic Cold War bunkers from fixed camera angles. It can be a bit cumbersome, but it's a deliberate and effective design choice. *The Medium* is excellent at making you feel like you're always being watched, and that danger could be lurking just out of view at any time.

The added gimmick here is that Marianne can sometimes see into the spirit world, which is handled by splitting your screen in half, down the middle. All inputs will affect the real and spirit world versions of Marianne identically, but there are often small differences in the terrain or enemies that only exist in one world or the other to complicate things. Unfortunately, Bloober Team definitely didn't push this idea to its limits. Most of the puzzles are fairly simple, and there were only a couple of those *Portal*-like 'a-ha!' moments that made me feel like I'd done something really outside-the-box and clever.

The star, though, is the story. *The Medium* is exquisitely paced and plotted, with multidimensional characters and a complex, but not convoluted, supernatural mystery to uncover. It kept me guessing throughout, but the big reveals always felt earned and well set up. I had several running theories about

The true answer ended up being even more elegant than I guessed

what was going on at the haunted Niwa Resort that all made sense, but the true answer ended up being even more elegant and poignant than I guessed. And yet it doesn't seem to come out of left-field, M

Night Shyamalan-style. Overall, it's some of the sharpest writing I've seen in a videogame in a long time.

MEDIUM RARE

This is supported by a spectacular voice cast. From the intrepid but troubled Marianne to the enigmatic avenger Thomas to a bone-chilling arch-villain brought to life by Troy Baker, every character is realized with exceptional emotional depth and authenticity. The central struggle Thomas faces, in particular, is a heartbreakingly complex story of a

NEED TO KNOW

WHAT IS IT?
A third-person stealth/puzzler horror game

EXPECT TO PAY
\$50

DEVELOPER
Bloober Team

PUBLISHER
In-house

REVIEWED ON
Ryzen 7 3700X, RTX 2060 Super, 16 GB RAM, SSD

MULTIPLAYER
No

LINK
blooberteam.com/the-medium

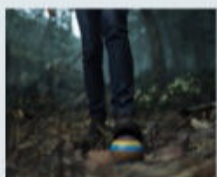
man in an impossible situation, with all of its highs and lows hitting you right in the heart.

It looks pretty stunning, too, with overgrown, post-Soviet ruins in the real world and a macabre, yellow-tinged spirit world as its surreal mirror. When Marianne is split between those worlds, walls of human flesh and spectral moths are juxtaposed with the mundanity of an abandoned classroom on the other side of the screen. It gives the sense that you're never really safe—when the split-screen effect goes away and you're just looking at the classroom, how do you know what's going on over in the other world?

The character models are the one area where detail is lacking. They stand out with a somewhat doll-like appearance, and stiff animations. They won't always connect with the objects they're interacting with. There are also a few performance issues that can drag things down. While I was generally able to maintain a good 45-60fps on my RTX 2060 Super, there is a significant amount of hitching when you first enter the spirit world or transition between gameplay and a cutscene. This took the bite out of some key moments, such as a monster jumping out at you for the first time.

Despite some technical foibles and the simple, unchallenging stealth and puzzle solving, I fell completely in love with *The Medium*. The writing stacks up to the very best in the genre with its well-crafted mystery that explores difficult, often very relatable themes on its way to a satisfying, though not uplifting conclusion. Top-notch actors realize complex and memorable heroes and monsters along the way, and the score, sound design and art are gorgeous, pulling together an unforgettable, cohesive whole. *The Medium* is going to stick with me for a long time. ■

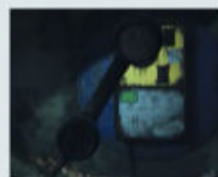
SCARY HOLIDAY *Five signs your spooky resort hotel might be haunted*



1 There is a persistent sound of children laughing and you keep getting toys thrown at you.



2 You pick up a shoe from a discarded suitcase and suddenly hear sounds of many people screaming.



3 The pay phone out front keeps ringing day and night despite not being connected to anything.



4 I'm not sure if this is haunted, per se, but it is really creepy and I think you should probably toss it.



5 This guy shows up. I don't really know if points 1 to 4 were necessary now that I think about it.

PC GAMER VERDICT

A sharply written, thoughtful, and emotional horror game with a clever mind-twisting gimmick.

92



You know, it's probably not too late to just turn around.



On the bright side, I have one way to hurt ghosts.



Marianne?
You good?



I feel like this gift shop isn't making a whole lot of money.



Not ominous at all.



On nothing but a hunch. A call from a complete stranger.



Remember when I said it was maybe not too late to turn around?



It's like a metaphor for something...



Because every game is required to have Detective Vision now.



Uh, hello? Shadow man? We cool?

HARPOON ON

Darkly atmospheric action adventure
OLIJA delivers great grapples. *By Alex Wiltshire*

The grappling hook, which everyone knows is gaming's best mechanic, has a new star. *Olija* features an eldritch harpoon that grapples on to enemies and orange-eyed black tentacles, and you can teleport to it with a slash. It's a simple design which sits at the center of this dark action adventure as both a combat tool and a way to traverse its levels, and which constantly delivers a sense of choice and movement.

It's not without issues. The harpoon can be fiddly because it requires two separate double-inputs, first to throw it, and then to push in its direction while hitting the throw button again to teleport. Hit throw without a direction and it'll return. In battle, it's easy to find yourself fighting without the harpoon, which is your main weapon, or failing to teleport.

Still, the harpoon made me feel powerful, and besides, *Olija's* combat is more about mobility than precision: Harpooning past enemies to get to a more dangerous ranged one, then harpooning out of harm's way. There are subtleties: You can switch between several secondary weapons, including a rapier, crossbow, and a shotgun, which can deliver powerful finishers.

You play as Faraday, a European whaler whose ship has been wrecked. What remains of his crew is now stranded on an island called Terraphage, which lies in seas

ravaged by the demonically infected Clan Rottenwood. Here, once-glorious temples and places of learning are now decaying. Its remaining heroes only speak in gnominically taciturn non sequiturs and the people have fallen to shades.

***Olija's* combat is more about mobility than precision**

You're out to find the three blue keys which will open the Shadow Gate so you can sail home again. But the blue keys lie behind barriers which require two or more yellow keys, which you'll find as you delve into each location. Levels aren't sprawling affairs, but you'll find branching paths which lead to different goals, lending them a sense of depth and choice, and you can generally revisit them to grab materials you can use to craft ability-granting hats.

HOOK, LINE, AND SINKER

Olija only took me five hours to complete, though there's not an ounce of flab. Every moment is

NEED TO KNOW

WHAT IS IT?
An atmospheric action adventure with a grapple-harpoon

EXPECT TO PAY
\$15

DEVELOPER
Thomas Olsson /
Skeleton Crew Studio

PUBLISHER
Devolver Digital

REVIEWED ON
Intel i5-6600K / Nvidia
GeForce 1070 / 16GB
RAM

MULTIPLAYER
No

LINK
olija.com

considered. There are surprising and pace-shaking set pieces which mix up your expectations, and the action flows so smoothly that I could easily have finished it in a single session. In many respects, however, *Olija* is too lean, since it didn't fully give me a chance to explore all of the skills and tools it offers. By the end of the game, I'd only worn a couple of the hats and had barely used two of the secondary weapons. It introduces one powerful new item so late in the storyline that its potential felt unexploited.

Arguably, being left hungry for more is better than being bored with what you have. And it's easy to understand *Olija's* brevity, since it was made by just one person, Thomas Olsson, who also drew and animated its beautiful pixel art and designed its sound. Faraday's boots clunk along wooden boards, his blade schwings, enemies cackle, and bodies splatter, all with heft that gives its world a physicality which pixel games often lack. The music, too: Discordant, smoky saxophones, mournful horns, and strident strings, with a mix which favors subtle bass rumbles which both unsettled and transported me into its world.

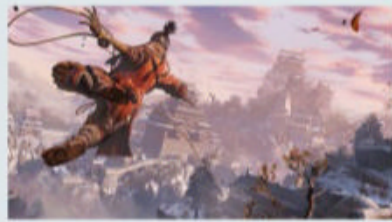
I was bowled over by the level of quality this one person has achieved. *Olija* is clearly Olsson's personal work, and its story, of Europeans lost in mysterious and frightening Eastern waters, in part reflects his own experience of moving from his birthplace in France to Japan to be with his wife. But I felt sometimes a disquieting air of orientalist fantasy, as we encounter a culture headed by the beautiful Lady Olija. But I also loved the clash of rough and ready mariners facing a strange world of corrupted beauty. I only wish it was a little longer. ■

GREAT GRAPPLES *The best things in games that latch on to another thing*



BATMAN: ARKHAM CITY

Bats' grapple is versatile: It lets you haunt buildings' eves, ready to swoop in for a punch, it pulls goons in a ruck, and it pairs brilliantly with his glide to let you fly.



SEKIRO: SHADOWS DIE TWICE

In a game as exacting as *Sekiro* the grapple offers relief, giving you breathing room and opening options as you grapple out of combat and then choose how to re-engage.



TITANFALL 2

Oh, the skill. This tool for traversal has elegant depths you can't imagine when you first use it, allowing the very best tiny soldiers to face its giant mechs as equals.

PC GAMER VERDICT

Made by just one person, Thomas Olsson's *Olija* is a grimly thrilling adventure which is just over too soon.

83



Fights balance platforming and grappling with the actual hitting.



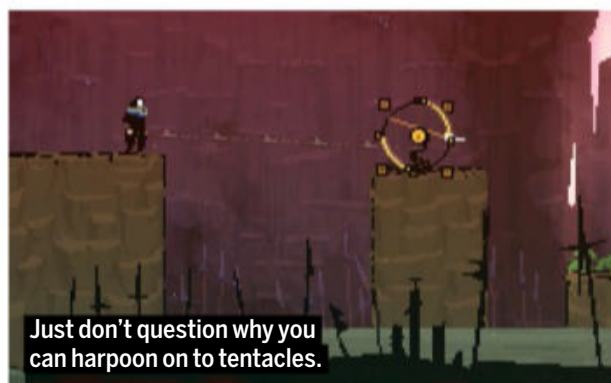
Combo four attacks and your fifth is a powerful finisher.



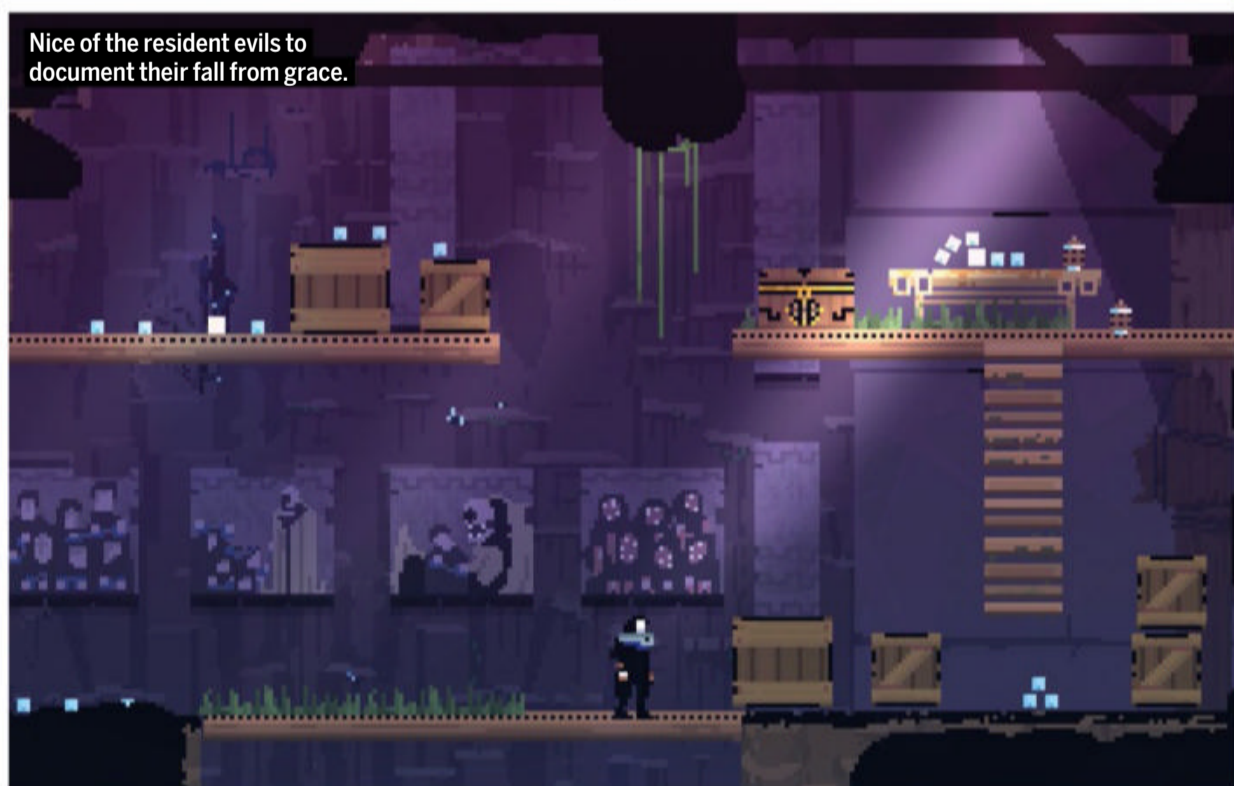
The falling civilization can come across a little orientalist.



Tread carefully in this temple, young man.



Just don't question why you can harpoon on to tentacles.



Nice of the resident evils to document their fall from grace.

BRUTAL LEGENDS

Make your own myths in
GODS WILL FALL. *By Alex Spencer*

With the exception of *Spelunky 2*'s moles, it's been a long time since a game has wrung quite as many swears out of me as *Gods Will Fall*. I've turned the air blue with eulogies to fallen comrades, cursed its pantheon, and sworn my way across its god-infested island. Make no mistake: This is a good thing. Most of the time, anyway.

The main target for this barrage of f-bombs are the ten deities at the game's center—a cruel and unusual bunch who rule over humanity with an iron fist. Time to enact the title of the game, with a plan that has the fatal flaw of involving a fleet sent across the sea to attack a group of celestial beings who *have control over the elements*. And so you wash ashore, an army of thousands whittled down to eight. A little salty language is probably to be expected.

Luckily, these eight survivors are a real bunch of Celts, each handy with their weapon of choice: Twin maces perfect for getting the first hit in, the blessedly long reach of a spear, heavy axes that drag along the ground and release in a killer upswing. You'll likely warm to a particular playstyle, and whichever warriors happen to wield it, something the game smartly doubles down on by giving them a randomly-generated name, look, and story.

And then they start dying. As you wander the island you'll find ten doors, each leading to a dungeon overseen by a different god and themed to match whatever they're god of (war, fertility, all-you-can-eat buffets). Slip up while battling your way through their minions, or the boss fight at dungeon's end, and your warrior will be claimed by that god.

A real bunch of Celts, each handy with their weapon of choice

Back on the island, you can choose to have another try—essentially gambling another of your Celts—or go and see what's behind another door. The latter might be the smart choice, thanks to difficulty levels that vary hugely from god to god—but you never know which ones will be harder or easier, because they're randomized for each playthrough. And besides, if you can make it to the end of this one and slay the god-boss, you'll free any warriors under their thrall. It makes for a proper tooth-grinder of a choice, and some incredible highs and lows. Let me show you what I mean.

NEED TO KNOW

WHAT IS IT?
Face god(s) and walk backwards into hell

EXPECT TO PAY
\$25

DEVELOPER
Clever Beans

PUBLISHER
Deep Silver

REVIEWED ON
Radeon RX 580, AMD
Ryzen 5 2600 3.9GHz,
16 GB RAM

MULTIPLAYER
No

LINK
godswillfall.com

MORRI-GONE

A single Celt stands outside the gates to Morrigan's forge-themed realm. This is Gwenn of Little Kaelaff, and all seven of her compatriots are trapped. Gwenn wields a sword, meaning she's not seen battle so far—which in turn means that she's not picked up any of the buffs or skills that more experienced warriors accrue. Lose her, and it's right back to the start with a new band of warriors.

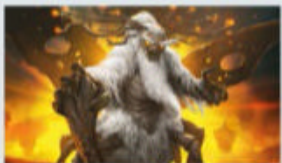
I load Gwenn up with all the equipment gathered from previous realms—throwing knives and spike traps and healing skewers of meat—and take it very slowly, my heart beating so hard I can't tell controller vibrations from my own pulse. Somehow, she makes it all the way to Morrigan, in the form of a giant crow, who turns out to be one of the easier boss fights I've encountered. It helps that I've got a backpack full of throwing knives, of course.

Her wings harden into stone, then crumble... and Gwenn stumbles into the light with an entire troupe of Celts. Obscenities are yelled, but cheerfully. It's the single most exhilarating moment I've had in a game so far this year.

Like *Dark Souls* and *Spelunky* before it, *Gods Will Fall* is a game that runs on frustration. It's less punishing than those games, and considerably shorter than your standard *Souls*-like—a successful run should take around eight hours. But you'll still step away with war stories that feel hard-fought—albeit ones that, with no inns or taverns to tell them in right now, might never leave your bedroom. But it doesn't matter all that much, because most of these stories can be summed up in a single word. Specifically, the type of word with four letters. ■

A GODKILLER'S GUIDE

The mythological origins of Gods Will Fall's exceedingly big bads



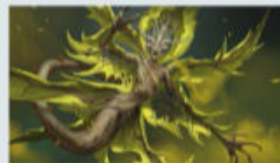
BELENOS
A Celtic sun god, though here he seems to have nicked the wicker-man gimmick from Taranis, god of thunder and fire.



MORRIGAN
A war goddess plucked out of Irish myth—and gods-as-popstars comic *The Wicked + The Divine* (where she is less birdy).



OGMIOS
The real Celtic equivalent was able to bind humans to himself with mighty powers of persuasion. Here, he uses his tongue.



BREITH-DORCHA
Pretty sure this one's made up, but her name literally translates to 'Dark Birth' in Irish. She's all about poison and decay.

PC GAMER VERDICT

Gods Will Fall is an inventive *Souls*-meets-roguelike that frustrates and delights in pretty much equal measure.

84



Killing minions chips away at each god's life bar.

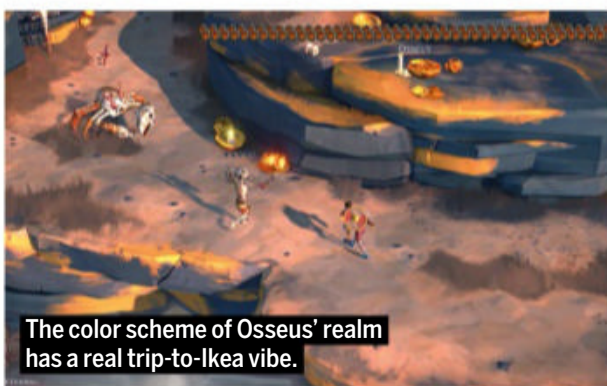
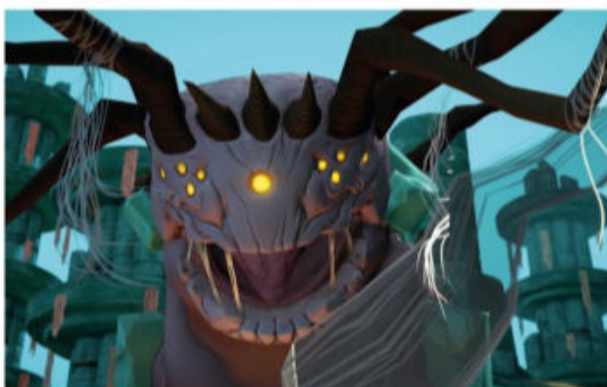


Morrigan's forges have a chance of upgrading your weapon—or breaking it.



You can regain health using Bloodlust, a bar that charges with each attack.

METHIR-SHIRRAIDH



The color scheme of Osseus' realm has a real trip-to-Ikea vibe.



Some of the gods are just pigs. Big ol' pigs.

RUTHLESS

DEAD BY DAYLIGHT offers up the most interesting cat-and-mouse multiplayer on the market. *By Luke Winkie*

The *Dead by Daylight* premise is simple: Four players take the roles of survivors in a Saw-like bloodsport, fixing generators to power an exit gate before hightailing it to safety. The fifth player is a killer who has to prevent the survivors from escaping, impaling them on meathooks and leaving them for an eldritch force. In 2016, it was received as a way to indulge in a brief blood orgy before migrating to more refined multiplayer games.

What I don't think anyone saw coming was for *Dead by Daylight* to mature into one of the best multiplayer experiences you can play, with razor-sharp mechanical intrigue, an ultra-complex web of versatile builds and strategies, and a diverse suite of characters. What was a comedy-horror romp mutated into something much closer to *League of Legends* in terms of depth. It may be bewildering to consider that hardcore players can spend months scrutinizing the relative power-level and optimization path for Ghostface from *Scream*, but that's where *Dead by Daylight* finds itself at the start of 2021: An esports-worthy venture hosted by Freddy Krueger, Bubba Sawyer, and Michael Myers.

Dead by Daylight launched with three distinct killers and a quartet of survivors. Their unique abilities dripped with character, but the inflexibility of the roster ensured that the gauntlet played out in predictable ways. But as of this writing, *Dead by Daylight* includes 22 killers and 24

survivors, each of whom offer radically different toolkits.

HOPPING MAD

Load up a match against The Huntress, a killer in a bloodstained bunny mask, and expect to dodge the twirling hatchets that she can chuck across wide swathes of the battlefield. Or perhaps you will face off against the famous Pyramid Head—yes, that one, from *Silent Hill*—who

Perhaps you will face off against the famous Pyramid Head

can banish his prey to Cages of Atonement, which are particularly annoying to escape from. There are also complex perks and inventory add-ons, and at a high level of play, *Dead by Daylight* is full of the same jostling, hedging, and pre-match sizing-up of an uber-competitive MOBA or FPS.

There's a great deal of skill and strategy to it. During a match, the killer plays in first-person with a limited field of vision. Clever survivors, who are all equipped with third-person cameras, know that the best way to evade them is to find

NEED TO KNOW

WHAT IS IT?
A slasher simulator with surprisingly deep mechanical chops

EXPECT TO PAY
\$30

DEVELOPER
Behaviour Interactive

PUBLISHER
In-house

REVIEWED ON
Windows 10, GeForce GTX 1070, Intel Core i7-9700, 16GB RAM

MULTIPLAYER
Yes
LINK
deadbydaylight.com/en

what the community calls a 'loop'—a structure or clutter on the map that allows the players to hop through windows and dart back around through open doors over and over again without ever running into a dead end. The killer chases them through that loop in vain, realizing that for all their might, they will always be just out of reach. Eventually, though, killers learn to feint and double back, attempting to catch a survivor mid-loop.

It's funny: *Dead by Daylight* is a horror game, but at that level of play, it becomes a test of skills and tactics rather than anything scary. What you get depends on who you play with, and that's part of the beauty of *Dead by Daylight*. For as much praise as I've heaped on the competitive scene's exhilarating cat-and-mouse dynamism, it's equally enjoyable among a bunch of idiot friends—people who might be playing for the first time—who only want to run away from Leatherface on a Saturday night. In that case, competitive intrigue becomes a distant afterthought, and the only thing that matters is the hushed tones between you and your brother as you slip by a murderer undetected.

I can't think of many other games that possess both sides of that dichotomy. *League of Legends* and *Overwatch* are far too steeped in stately precision to ever be charitable to bad play, and it's impossible to bring a newcomer into *DotA 2* without forcing them to watch an hour-long tutorial video. *Dead by Daylight* brilliantly has it both ways, never abandoning its gory slasher-flick joys while still laying claim to a rich competitive environment. It's both Halloween pastiche and Hereditary psychodrama. ■

BIT LATE Why we're reviewing *Dead by Daylight* in 2021

Waiting nearly five years to review a game is a little unusual, but *Dead by Daylight* has only become more relevant since 2016, evolving into one of the best multiplayer games you can play today. The only thing stopping us from examining that evolution in a (very late) scored review was convention, and *DbD*'s enduring popularity made bypassing convention an easy decision in this case.



PC GAMER VERDICT

It's shocking how much depth *Dead by Daylight* packs into its systems, but it's testament to how the game has evolved.

88



Daring survivors can rescue hooked buddies.

Rescue the hooked Survivor.

UNHOOK
M1 UNHOOK



Find and hook the Survivor.



Fix that generator like your life depends on it.

Repair the generator.

Mysterious Note
"In my explorations, I found that these strange machines were the key to my survival. The more light they produced, the closer I became to my freedom."

REPAIRS
+29

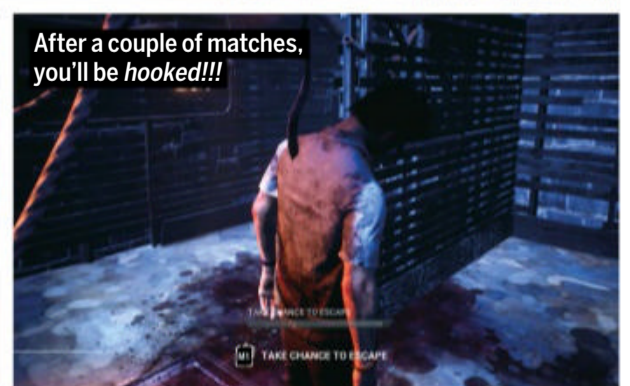
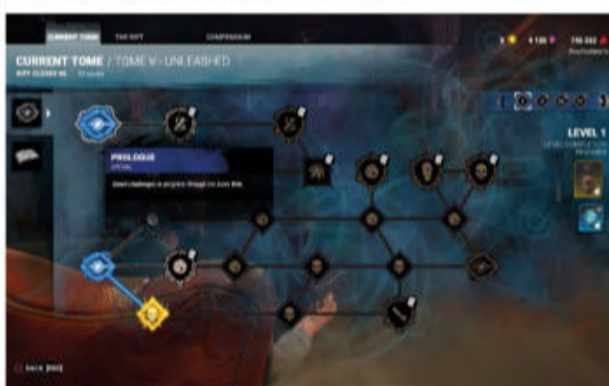
REPAIR
M1 REPAIR



Slashers are powerful, but slow and have limited vision.



The roster goes deep. You can even play as Michael Myers.



After a couple of matches, you'll be hooked!!!

TAKE CHANCE TO ESCAPE
M1 TAKE CHANCE TO ESCAPE



How I react when I see any of my 'friends'.

RELATIVE UNCERTAINTY

Unearthing forgotten things in **WHAT REMAINS OF EDITH FINCH**

The Important Writer sat in an inflatable chair in the glittering Citadel of Games Opinions. At his feet, captivated thralls hung on his every word. “Of course,” he said, taking a long drag on his bubble pipe. “The real star of *What Remains of Edith Finch* isn’t actually any of the people... but the house itself.” His audience wept with joy. Darkness turned to light. The flow of time stopped. He’d saved games journalism again.

There are two problems with skewering this take. Firstly, I’ve definitely done it in an attempt to dodder towards my word count. Secondly... the house in *Edith Finch* really is very good. It feels like a place people lived in. Or, more accurately, died in. It’s the sort of building that makes me look at my own home and wonder if I could install a hidden passage to my reviewtorium (office). And while it’s obviously a fantasy, purely on the grounds of the planning permission required for a sixth-story homeschooling room you can only reach via acrobatics and riddles, the entire building is convincing enough that it feels like distinct people occupied each area.

Those people, too, feel gruellingly real. The flawed, doomed Finches might be the best realized family in

all of gaming. That’s perhaps a low bar, given the industry’s fascination with warring dynasties who kill each other with volcanos, but any one of the characters here has enough depth to warrant a game of their own.

The Finches might be the best realized family in all of gaming

Which they sort of get, to be fair—more on that in a bit. It’s an especially raw game to play if you’re a parent, or indeed a human being with empathy. A thick blanket of heartbreak muffles most of the game. For

the most part, this is the same kind of sad as a child watching their favorite balloon float away, rather than screaming, hair-tearing despondency, but it leaves a mark.

HOUSE RULES

In fact, things are so bad for the Finch family that it almost becomes blackly comic. And the brief snippets

NEED TO KNOW

- WHAT IS IT?**
The family tree that toppled and crushed your favorite aunt
- EXPECT TO PAY**
\$20
- DEVELOPER**
Giant Sparrow
- PUBLISHER**
Annapurna Interactive
- REVIEWED ON**
Intel Core i7-7700 CUP @ 3.60GHz, 16 GB RAM, NVIDIA GeForce GTX 1070, Windows 10
- MULTIPLAYER**
No
- LINK**
bit.ly/3psX5QS

you experience detailing the last moments of their lives are so imaginative that they must make all the other games feel stupid and clumsy and worthless. One moment you’re experiencing the action in a perfectly-pitched horror comic, the next you’re taking photos of a feted wilderness excursion, complete with a timed snapshot of your own death.

It’s magnificently conceived and executed—everything here feels like story working in perfect harmony with play, whether it’s the thoughtful way the game fetters your abilities to distinguish each family member, or something as simple as floating text keeping you on the correct path. Just inhabiting a space as interesting as the Finch house would have justified this game’s existence. But when that detail is combined with systems that constantly challenge and surprise, it becomes something more than that—a walking simulator that plays with all things you’ve learnt in a lifetime spent playing games. ■

PC GAMER VERDICT

What Remains of Edith Finch has a tendency to tug on your heartstrings throughout its captivating story.

90

SWARM WELCOME

Family matters in **A PLAGUE TALE: INNOCENCE**

The most doomed thing you can be in a videogame is a tutorial dad. If you're a father reading this and you've recently taught your child how to shoot apples or duck under fallen logs, take out life insurance immediately—you're never making it into act two. This is how *A Plague Tale* begins, and, unfortunately, for the first hour, it feels cloyingly familiar. You watch your family get butchered. The baddies are cartoonishly bad. And you can only escape by scampering around the Inquisition's inept search team.

It's a shaky start, and one that highlights the game's absurd stealth mechanics. Three people can become invisible by squatting in a thicket mere inches away from the elite soldier hunting them. Once you get over that, however, *A Plague Tale* clicks. There are a few reasons for this. The first is the two lead

characters: Amicia is bold, believable, and just helpless enough for you to feel in genuine peril. And her brother, Hugo, who could have been an intolerable nuisance, turns out to be rather charming. Nothing indicates a decent upbringing like the ability to remain impossibly polite when rats are trying to devour your eyes. I admire the developer's belief in the world, too. In the wrong hands, 14th century France might have felt like edutainment—and when we want that we go to *Total War*, not third-person action games. But in *A Plague Tale* it feels like a holiday from edgy sci-fi or bleak fantasy. And then we have the rats! The lovely rats. What felt like a gimmick upon release now feels like a way of providing welcome variety. In another universe this is a Warhammer game in which you escape skaven slavers, but *A Plague Tale* is a solid alternative. ■

72



When you cheated on the Henchman 101 exam.



There's something more undignified about only having your legs devoured.

NEED TO KNOW

EXPECT TO PAY
\$45

DEVELOPER
Asobo Studio

PUBLISHER
Focus Home Interactive



No you wasted minutes weighing the bridge down with sheep.

BROTHERS—A TALE OF TWO SONS

This is one of those games that feels like it shouldn't work, but does. How can I play as two characters at once? The answer, it seems, is by making sure that they always remain on the corresponding side of the screen to the thumbstick controlling them. The moment they swap I become paralyzed with confusion. But this just serves to make the multitasking elements of *Brothers: A Tale of Two Sons* more satisfying. Even simple puzzles feel like some sort of minor triumph. It feels like an odd thing to celebrate such solitary victories in a game about the power of teamwork, but here we are. ■

82



Like looking in a hairy mirror. Except I'm already hairy.

DREAM DADDY: A DAD DATING SIMULATOR

We're nearly at the end so let's look into something that breaks the trend of dads that are dead or death-adjacent, and instead look at some that are alive and awkward and slightly thirsty. There are an almost overwhelming number of dads here—it's like being hit by a wave of Old Spice and air guitar. And while bits of it feel knowingly wry, there's something pleasingly celebratory about *Dream Daddy: A Dad Dating Simulator*. It doesn't so much poke fun at the dad-ness, as reverent the ability to be yourself, no matter how husky or unfashionable or aggressively proud of your daughter you are. ■

71



Reading by the fire > dying in blasphemous dungeon.

CHILDREN OF MORTA

Ican't imagine many things worse than coming home from a bad day at work—usually, in this case, one resulting in my death—only to find a distant relative hidden in the crawlspace of my home. But in the case of *Children of Morta* it's a positive thing, because it usually signifies the necessary upgrades to progress slightly deeper into the horrible dungeon that festers in your basement. Combat is simple and sharp, and the unfolding narrative takes the edge off your inevitable failure. ■

78

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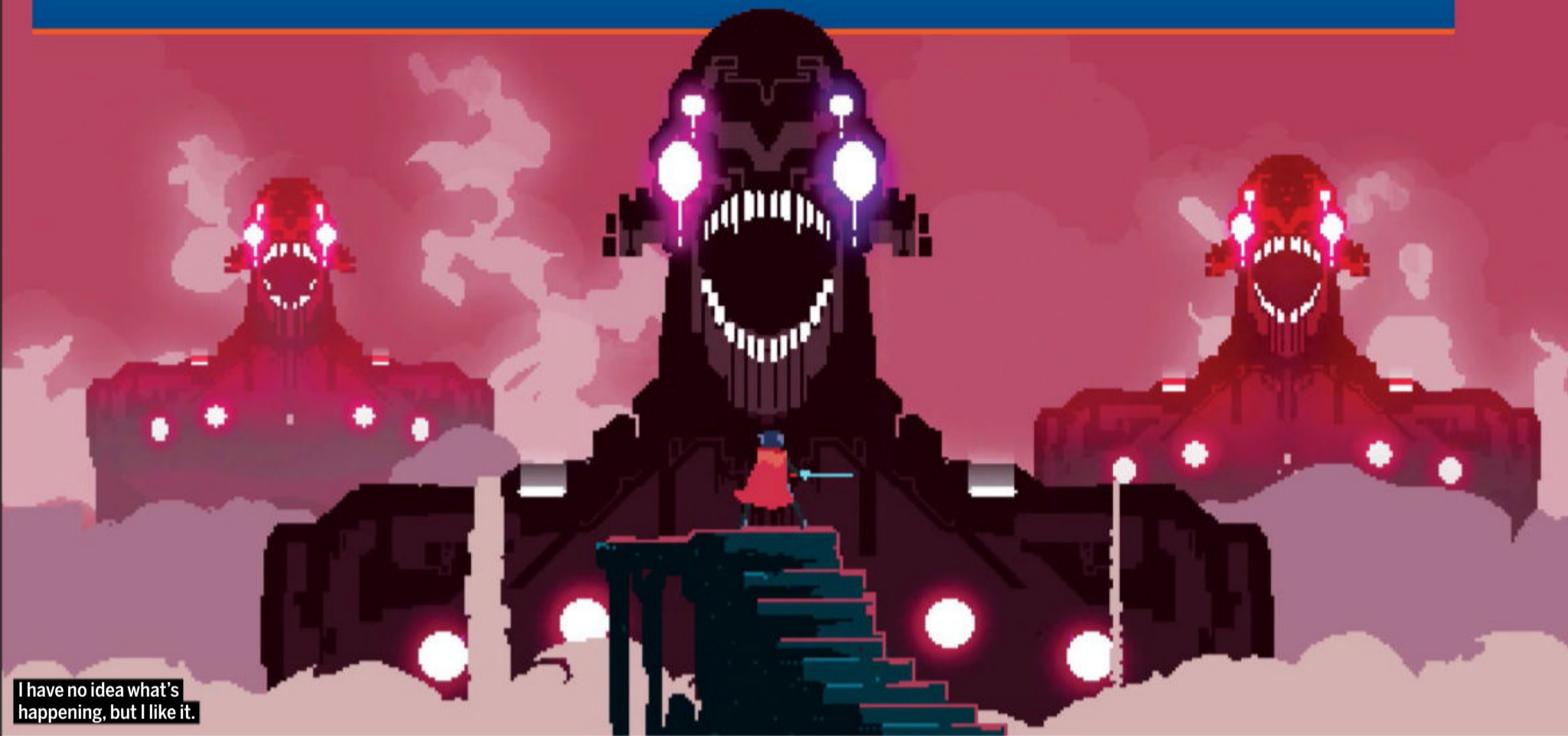
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CONTINUED ADVENTURES IN GAMING



I have no idea what's happening, but I like it.

“It’s not an easy game to fall in love with, but now it’s a game I love a lot”

Enigmatic and unrelenting, **HYPER LIGHT DRIFTER** takes patience

I have played close to 20 hours of *Hyper Light Drifter*, and I still can’t tell you what the story is about. Whatever narrative is lurking in this fever-dream action RPG is so obtuse that I’m not convinced it isn’t just a bunch of striking images strung together by sparkling synth music. The intro cinematic jumps between statues with glowing eyes, a Neon Genesis Evangelion-esque apocalypse, and giant fleshy corpses. It’s impenetrable yet undeniably captivating—but, my god, it’s taken me a few tries to get into it.

Though it was released in 2016, it’s taken me this long to beat *Hyper*

STEVEN MESSNER



THIS MONTH
Ran errands for a cosmic dog... I think?

ALSO PLAYED
League of Legends,
Everspace 2

Light Drifter because I kept bouncing off it. I love nearly everything about it—the ambience, aesthetic, and combat—but a few hours in I’d be going in circles trying to get to the next area with no concrete idea of what I was even looking for. It was maddening.

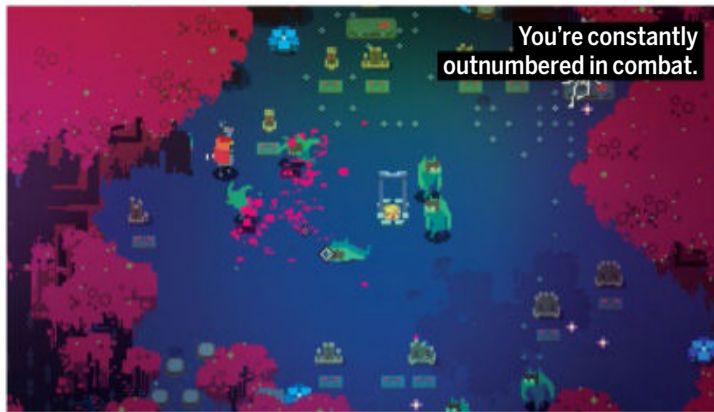
Structured similarly to old *Zelda* games, *Hyper Light Drifter* has a simple overarching objective: Go to the four zones on its map, kill a boss,

and collect glowing bits of geometry that unlock a fifth location. In order to get to the boss, though, you need to explore each zone looking for different glowy bits that, when you have enough of them, open a door. The problem is that most of these glowing bits are hard to find, and the in-game map is all but useless.

LIGHT ENTERTAINMENT

The first few times I tried playing *Hyper Light Drifter*, I simply didn’t have the patience. I’d spend a few

**I’D SPEND A FEW HOURS
BASHING MY HEAD AGAINST
A WALL AND GIVE UP**



hours bashing my head against a wall and give up. But this most recent attempt, I was committed to actually pushing through. I'm so glad I did. *Hyper Light Drifter* is not an easy game to fall in love with, but now it's a game I love a lot.

The issue with its hard-to-find objectives is a temporary one. After an hour spent examining every pixel of the map looking for clues, I realized that secret passages are subtly marked with a tiny symbol. And almost instantly the entire game opened up to me. All I had to do was keep an eye out for that little symbol, and I'd be able to easily find most of the hidden items needed to progress.

It's not exactly good level design, sure, but *Hyper Light Drifter* is still great in spite of it. The world you explore and the subtle clues as to its origins, are captivating. I'm a sucker for games that have an undeniable sense of place, and the creative vision behind *Hyper Light Drifter* is riveting.

You sure have to work for it, though. Figuring out the signal for hidden passages was one thing, but practically every element of *Hyper Light Drifter* has no explanation. It took me ten hours to realize I could chain dodges together, gaining speed with each successive dash. These design choices can create a lot of frustration, but they also enhance the alien-ness that makes *Hyper Light Drifter* such a weird and captivating game. I'm glad I pushed through and completed it after so many years. ■

A protagonist who deserved better.



“The story takes a baffling turn..”

The nauseating carelessness of **THE MEDIUM**

▶ ROBIN VALENTINE



THIS MONTH
Found out how long an eight-hour game can feel.

ALSO PLAYED
Unavowed,
The Blackwell Legacy

Over its first couple of hours, I was quite charmed by *The Medium*—I liked its throwback fixed camera angles, its grim post-Soviet atmosphere, and its endearingly worn-out protagonist. I was intrigued to see where its horror mystery would take me.

It seemed to be spinning a fairly standard but compelling yarn about a mysterious series of killings at a remote holiday resort. But at about the two-hour mark, the story takes a baffling turn that leads it down more and more uncomfortable paths. Warning: Big spoilers ahead.

A flashback scene that puts you in the shoes of a different, rather less endearing protagonist serves to kick off a grim deluge of hot button topics. With no focus, care, or sensitivity, the game invokes domestic abuse, rape, alcoholism, the Holocaust and Nazi experimentation, Soviet authoritarianism, and more, in

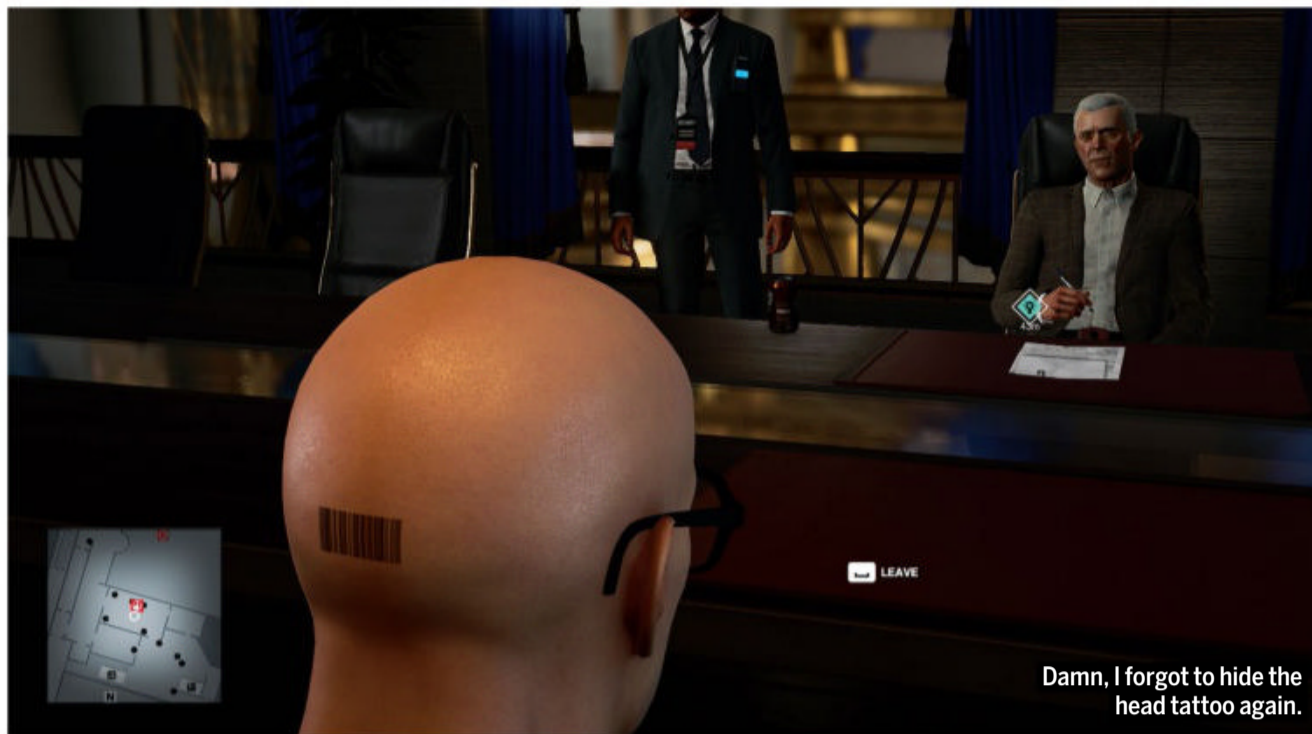
rapid succession. Whether trying to shock or affirm its own seriousness, it becomes completely incoherent in its rush to throw out as many edgy topics as it can muster—and blunders into such gross narrative beats as a lengthy sequence exploring the life and motivations of a child molester.

VIDEO NASTY

The throughline is trauma, as all of these things exist in the plot in order to provide damaging moments for each of our key characters. Trauma makes monsters out of innocents, *The Medium* asserts—both figuratively and literally. These monsters traumatize other innocents, who become monsters themselves.

There's truth to the idea of toxic cycles of abuse and violence, but the way *The Medium* approaches that = is totally alienating to any player who has suffered traumatic experiences. It displays sympathy, but its overall thesis is that there is no true recovery, no way of processing or moving on. It hinges its entire finale on the idea that the only solution is suicide.

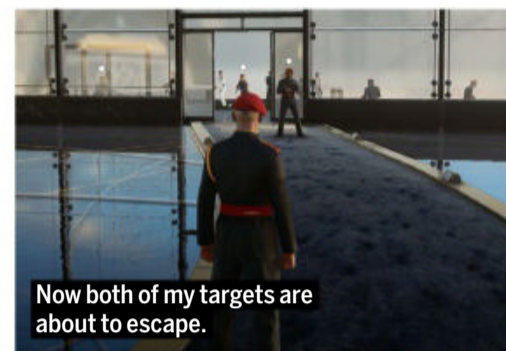
Needless to say, that's an unbelievably irresponsible message. Using real-world tragedy as a prop is bad enough, but *The Medium's* prehistoric perspective on mental health has the potential to do real harm. I'm left feeling horrified for all the wrong reasons. ■



Damn, I forgot to hide the head tattoo again.



It all went downhill from here.



Now both of my targets are about to escape.

“In the highest building in the world, I was well out of my depth”

Roleplaying Johnny English rather than Agent 47 in **HITMAN 3**

And it was all going so well, too. I didn't expect my first foray into the stealthy, outfit-swapping world of *Hitman* to be so composed as a beginner assassin, but while I'm surprised at the decent start I made to life as Agent 47, I was devastated to discover quite how badly my mission could go wrong.

So, yes, *Hitman 3* is the first game I've played in the series. I've always found the idea of them a little intimidating, actually. I didn't believe I had the patience, nor the creativity, to pull off a satisfying kill undetected. I'd heard about the best *Hitman* levels—beautiful, intricate mazes with opportunity waiting around every turn—and felt impressed, but put off. So, I wondered, with Agent 47's trilogy set to finish in bombastic Bond style, did I have the quick thinking necessary to execute my targets while making the most of the exquisite new set of sandboxes?

In short, no. But, as I said, I got off to a good start. Perhaps racing through the tutorial—hand gently held by the game throughout—lulled me into a false sense of security, but it was as I took my first tentative

▶ HARRY SHEPHERD



THIS MONTH
Got over excited. Forgot to assassinate two targets.

ALSO PLAYED
Assassin's Creed Valhalla,
The Medium

steps into the flamboyant luxury of a Dubai skyscraper that I started to feel a bit more positive. That probably had something to do with Agent 47's dramatic skydiving entrance and suave outfit change into a smart suit. With orchestral music swelling and the sun's rays shining, I felt ready.

DUBAI-OUS

So I started my mission in Dubai slowly, trying to soak in my surroundings by picking up nuggets of intel from NPCs and exploring every corner of this resplendent palace. Then, I saw a strangely dressed man arguing with the guards. Assassin instincts I never knew I had

kicked in: I waited until he was alone, knocked him out, and stole his outfit. Strolling past the guards, I pinched one of their colleagues' clothes—what was I ever worrying about?

I picked up more intel, and felt the consummate professional. But, importantly, I discovered a code which revealed an evacuation key card, and then found another the next floor up. I learned that both need to be activated in a short period to initiate the evacuation protocol. Excitement built. I thought my current target, Carl Ingram, could be vulnerable as he escaped. The trouble is, that doesn't really count as a plan.

So, amid my newly discovered hubris, I initiated the protocol, and everything went to pot. Every guard, obviously, goes on high alert. Even worse, not only was Ingram escaping, but my other target, Marcus Stuyvesant, was too. I did have my security uniform on, but with so many enforcers milling around that could see through my disguise, it wasn't much use. In the highest building in the world, I was well out of my depth. Impotently, I watched both targets parachute away, surrounded by bodyguards that were armed to the teeth. Oh well, it's back to basic training for me, then. ■

I STARTED MY MISSION IN DUBAI SLOWLY, TRYING TO SOAK IN MY SURROUNDINGS

“The land we’d reclaimed from the wilderness began to resemble a home”

How I found a home in spite of the deadly wilderness of **VALHEIM**

Above the noise of voice chat, I hear the tell-tale buzzing sound a moment before I see what it’s coming from. Despite that momentary warning, I barely have time to react before I’m skewered through the back by a roided-up mosquito. It’s the latest in a series of threats that my party and I are unprepared for; in the last few minutes, I’ve been picked off by an undead but eagle-eyed archer, gutted by a goblin, and flattened under the hooves a buffalo. After I rise from the bed in our hastily-assembled shack for the umpteenth time, I insist that my fellow adventurers and I head home.

After a stretch in the wilderness, that ‘home’ feels almost palatial in comparison to the lean-to shelters we’ve been throwing up as a desperate defence against the worst of *Valheim*’s fauna. When we first started building, our little slice of the afterlife was barely more than a renovation of those hastily-assembled shacks, but over time we carved out a larger space for ourselves, nestling in on a quiet hillside near the sea shore.

ALI JONES



THIS MONTH
Found out what it takes to be a Viking.

ALSO PLAYED
Hitman 3,
Apex Legends

We scratched out a farm to grow carrots, and built a cooking station to turn them into soup.

IT TAKES A VILLAGE

Eventually, the patch of land we’d reclaimed from the wilderness began to resemble a home, and then an entire settlement. Now, bees buzz noisily around a collection of hives, pumping out honey that goes to our fermenter, bubbling away in an outhouse to create mead. Metalwork rings out from the forge, while a kiln and smelter churn out the ingredients needed to run it. A longship sits bobbing gently by the

THE PEACE OF OUR LITTLE HAMLET SEEMS ANTITHETICAL TO THE REST OF VALHEIM

dock that we built over the harbor that we dug painstakingly out of the bedrock beneath us.

The peace of our little hamlet seems antithetical to the rest of *Valheim*, a world that’s harsh, unpleasant, and filled with monsters. Driving rain and bitter cold sap my strength as I try to gather even the most basic resources while remaining unmolested by the creatures of the forest, forever on my guard for the distant tremor that denotes an approaching troll and another fight (or more likely flight) through a dark and unforgiving forest.

But when a storm is raging overhead, returning home and shutting the door against the tempest outside—no matter how exhausted I might be—brings an immediate sense of homely tranquillity in spite of the crashing thunder or howling wind. And when the sun rises from across the lake the next morning, casting a soft light across the lush grass of our meadow, the grunts of foraging boars and barks of nearby deer echoing across the field, it’s possible to forget that this world is out to get me, and bask—if only for a very brief moment—in the idyllic sanctuary that I’ve created for myself. ■



TOTAL WAR: WARHAMMER II

The epic fantasy wargame has grown into the best *Total War*. *By Fraser Brown*

Despite *Total War: Warhammer III* coming soon, I'm still obsessed with its predecessor. After more than three years, I'm still conducting my glorious wars, wiping out empires, and telling my little goblins that I love them dearly. And it's just kept growing, transforming the already beefy game into a life-consuming behemoth. It's magic.

With the first *Warhammer*, and the historical *Total Wars*, Creative Assembly created lots of mini-campaigns, but for *Warhammer II* the studio adopted a different approach. After introducing two new races, the Tomb Kings and the Vampire Coast, it focused solely on fleshing out its existing ones with new lords, as well as bringing races from the previous game into the Vortex campaign.

This has left *Warhammer II* feeling absolutely massive, but not bloated. The arrival of each new lord has brought with them whole new systems, new units, and interesting starting locations, so there's never a dearth of novelty, but they always build on what already exists. Bringing the older races into *Warhammer II* has also given Creative Assembly the opportunity to fiddle with stuff and create the absolute best versions of

NEED TO KNOW

RELEASE September 28, 2017	DEVELOPER Creative Assembly
PUBLISHER Sega	LINK totalwar.com

the greenskin and wood elf factions, for instance, both of which already had a lot going for them.

The lords packs are good value, and always more than they seem, but for those looking to save their cash, there are just as many free lords and even more significant free updates. Last year's *The Warden & The Paunch* DLC coincided with a substantial greenskin update that transformed how the WAAAGH!-loving orcs and goblins worked.

IT'S EASY BEING GREEN

Now my armies full of angry boyz live up to their reputation as a terrifying green tide, overwhelming their enemies through brute force and intimidating numbers. Their unrelenting aggression is thematically appropriate and perfect for *Total War*, and it's rare for a turn to go by where I'm not directing them towards a ripe new target or throwing them into a massive brawl. All this builds up the faction's reputation, and when it's high enough, that means it's time for a big WAAAGH!, which can be activated at the touch of a button. You pick a

specific target, and then have a limited time to conquer or destroy it, netting yourself some rewards.

The real benefit of a WAAAGH! is that it doubles the size of your forces. Previously, it would spawn some AI-controlled armies that could lend a hand, but now each of your armies gets a full stack of reinforcements attached to it, dramatically increasing their effectiveness and giving you lots of troops to play with.

All the additional lords and factions will appear in your game as potential allies and enemies even if

EACH LORD HAS BROUGHT WITH THEM WHOLE NEW SYSTEMS

you don't purchase the DLC, while race-specific updates still make a difference if you've got access to the Mortal Empires campaign.

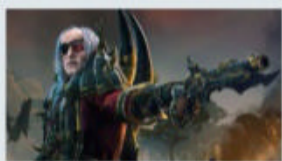
Mortal Empires might be the most impressive thing Creative Assembly has ever made. Separate from the Vortex campaign, it combines the maps, races, and factions from both games into one mega campaign, and it's incredible. When it first launched, the long wait between turns and battles meant it was really just for the hardcore, but some significant engine improvements have really upped the pace. The sheer number of factions means that there's still a bit of waiting around to do once you hit 'End Turn', but it's blisteringly fast compared to what it used to be like. With *Warhammer III*, it's going to be even larger, so let's hope the engine will be able to handle it.

Creative Assembly has promised more DLC and updates before the launch of *Warhammer III*, so this is still a great time to grab *Warhammer II* or give it another shot. And if you're interested in Mortal Empires, you'll definitely want to own the entire trilogy. ■

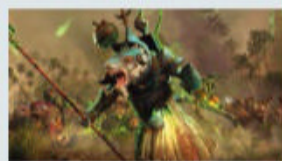
GOOD LORD Which DLCs should you grab?



RISE OF THE TOMB KINGS
This undead Egyptian analog nets you four legendary lords and one of the coolest races, letting you batter enemies with walking corpses.



CURSE OF THE VAMPIRE COAST
Vampire. Pirates. Really, do I need to say more? From shipwreck golems to gnarly sea monsters, the creativity of this faction is wonderful.



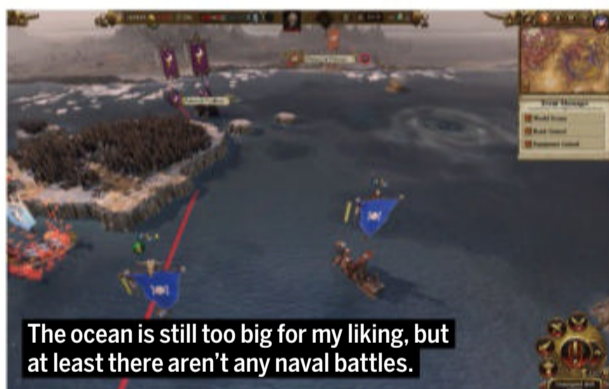
THE PROPHET & THE WARLOCK
Beefing up the skaven and lizardmen roster, this DLC is great if you're a fan of the rats. Clan Skryre's Ikit Claw is one of the best legendary lords around.



THE WARDEN & THE PAUNCH
Grom the Paunch is obsessed with eating, and comes with a neat cooking system that you'll use to make your orcs and goblins more effective.



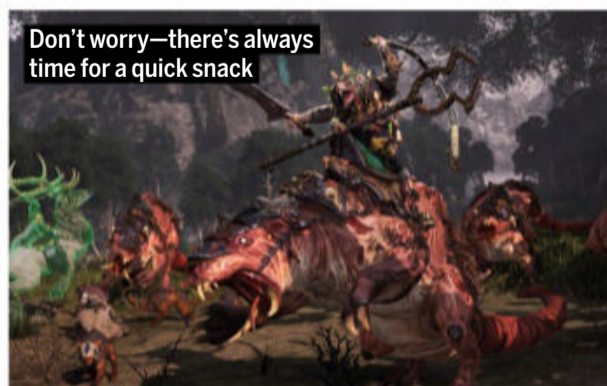
These desert brawls really do play havoc on your skin. Don't forget to moisturize!



The ocean is still too big for my liking, but at least there aren't any naval battles.



Some of the new battlefields are almost distractingly beautiful. That's my excuse.



Don't worry—there's always time for a quick snack



Frisk suspicious people before arresting them.



Sorry to interrupt your dinner, but you're coming with us.



RED DEAD REDEMPTION FIRST RESPONSE

Be the law with this *RDR2* mod. *By Christopher Livingston*

It's not that it's impossible to do some good deeds in Rockstar games like *GTA V* and *Red Dead Redemption II*. It's just that more often than not, you're on the other side of the law. Doing crimes. Getting chased. Fighting the cops. Being an upstanding citizen isn't really the aim of any of Rockstar's playable characters. (And, really, most of Rockstar's law-enforcing 'good guys' are just as terrible as the crooks.)


But in worlds built on crime and criminals, it can be fun to play from the other side of the handcuffs from time to time. *Red Dead Redemption First Response (RDRFR)* is a mod that lets you play as the law. Be the sheriff in a small town. Serve as marshal and hunt down outlaws. You can even be a copper in the city of St Denis. It's similar to the mod for *GTA IV* and *V* that let you fight crime as the police.

And conveniently, once installed, you can choose to activate the mod whenever you want in your

singleplayer game. Just walk into the sheriff's office in any town to begin your shift. Also inside the sheriff's office you'll see a wardrobe you can use to change your clothes into the sheriff's uniform you like most, from the classic St Denis cop uniform to a marshal's outfit to just normal cowboy clothes. You can even change your character model, if you want to get into the roleplaying a bit more, and cycle through randomized lawmen until you get one you want. When you go off duty, your character will switch back to Arthur Morgan.

I DECIDE TO BEGIN MY LAW ENFORCEMENT CAREER IN THE TINY, DUSTY TOWN OF TUMBLEWEED

I decide to begin my law enforcement career in the tiny, dusty town of Tumbleweed, imagining I'm a brand new deputy with no experience. And if I do some good, I'll eventually promote myself to a nicer and bigger town. I walk into the jail, activate the mod using the ledger on the sheriff's desk, then visit the wardrobe to choose my lawman, finding a scruffy old coot with a moustache. Perfect! I look like the least-drunk of the town drunks, the guy a sheriff would swear in as a deputy simply because he was the best out of a bunch of awful choices.

As I stroll around town, a citizen runs up to me to report a crime. That was quick! A horse has been stolen, and my first job is to recover it. Thus begins my career in law enforcement, 



MOD JOBS

Other professions I'd like to see in *Red Dead Redemption II* mods



FARMER

Just let me pitchfork poop and carry hay bales all the live-long day, and I'll be happy as a clam.



STAGECOACH DRIVER

A ticking clock, a nervous passenger, and lots of ground to cover.



POSTMAN

Can't think of a better way to explore the world than with a big sack of mail and a list of addresses to visit.



PHOTOGRAPHER

I'm obsessively taking pictures in *RDR2* anyway. It'd be nice to be able to frame 'em and sell 'em.

» which results in an entire day chasing one damn horse all over the map. I'm not sure if it's the mod or if it's me, but the act of calming the horse isn't working. When I get anywhere near the horse, it bolts. I try riding my own horse after it, I try sneaking, I try walking slowly and calmly, I call to it, but it's so skittish I simply can't catch it. This isn't the sort of crime I'd pictured myself facing when I signed up. Chasing horse thieves down, sure. Following a runaway horse? No. I eventually give up, go back to the jail and go off duty. Not a great first day.

The next day is more promising. Another citizen runs up just as I go on duty, telling me there's a wanted killer in town. The map shows a search area, which covers almost the entire town, as well as a few small pips on my minimap indicating citizens who might have some information. I stroll around, ordering people to stop what they're doing and talk to me through a new interface added by the mod. Sometimes they'll give me information about what the fugitive looks like. Other times they'll give me a location. Sometimes they'll refuse to help even if I threaten them. But once I have two pieces of information, they're revealed on my map, and I can chase them down.

GRAVE MISTAKES

I locate the first fugitive thanks to a woman standing in the town's graveyard. It seems a bit rude to interrogate a mourner, but the law doesn't sleep. She tips me off to a guy near the saloon. But as I creep around the back of the building, he comes down the steps and pops me in the dome. I'm dead! My career as a lawman consists of failing to catch a horse and getting shot in the face.

After respawning, I take another shift, and use another feature of the

mod: The ability to recruit a partner. I walk over to a fellow sheriff and tell him to follow me as we begin searching for another fugitive in town. This time I narrow down the culprit's location to the graveyard, and wouldn't you know it? It's the same woman who gave me the tip about yesterday's fugitive. She opens fire when we get close, so I sprint around the corner and get out my lasso, determined to make my first arrest. I nab her with my rope, but my partner didn't get the memo. He keeps shooting and kills her.

Cloaked in failure, and feeling Tumbleweed is a bit too small to fight crime when there's only a handful of people who can turn out to secretly be villains, I head to Blackwater,

MY CAREER AS A LAWMAN SO FAR CONSISTS OF FAILING TO CATCH A HORSE AND GETTING SHOT

more of a proper town. Maybe here I'll get more action and a chance to actually arrest someone properly. The fates aren't with me, however. A woman runs into the sheriff's office to report a fugitive, and I start interrogating the locals. One fella won't cooperate, but two more give me the perp's appearance and location. This turns out to be across the street from where I'm standing, and he opens fire. I ready my lasso to arrest him, but some enterprising citizen takes out a gun and shoots the suspect in the head. Sheesh! With citizens as trigger-happy as that, does the town even need an extra sheriff?

The next crime is a group of armed outlaws, who strangely spawn

in the water and slowly swim to shore while I patiently wait for them with my rifle. It's a decent gunfight, and I manage to lasso the final outlaw and ride him back into town on my horse. I throw him in a jail cell, but having failed to frisk him, he stabs me. I want to be very clear that my intent was to punch him. And I do punch him! Unfortunately, I am *also* holding a knife, so my punch kills him. Whoops. I lock the cell door and slink away, with yet another arrest that's been utterly tarnished.

ARCANE LAW

OK, enough small-town blues. It's time for the big city—St Denis. I have in no way earned my promotion, but I'm taking it anyway. And here, things finally begin going my way. Another fugitive investigation leads me to find the suspect calmly eating dinner in the saloon, and me and my partner get to approach his table with our guns drawn, tell him to put his hands up, frisk him for weapons, then tie him up and call for backup to take him away on their horse. It's like an episode of Law and Order, except the cops on that show use handcuffs instead of lassos and usually don't take suspects away on horseback. But most importantly, I've finally arrested someone and there wasn't any bloodshed! Chalk that one up!

Not all suspects go so quietly, and there are still a few shootouts that day. But one crook leads me on a nonviolent chase through the city, letting me sprint down the sidewalks knocking people out of my way until I finally put a single round in his leg, and then tie him up. That was fun!

The shootouts in St Denis are usually exciting, too. With so many (relatively) tall buildings, narrow alleyways, and gated areas, the crooks can appear on rooftops, behind fences and inside buildings. It's fun racing through the city while my partner follows, taking cover and trading hot lead with the outlaws because you never know exactly where they'll appear. I'm killed once, my partner is killed once, and a few times we wind up with wounds but still come out ahead.

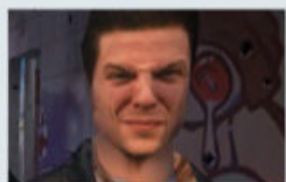
So if you try *RDRFR* yourself, I'd definitely suggest the St Denis beat. It just works much better there than in the smaller, scruffier towns. Just stop by the sheriff's office and go on duty for a few hours. And when you're done, you can go right back to being the outlaw in the equation. ■

POLICE SQUAD: IN COLOR

Our favorite video game law enforcers



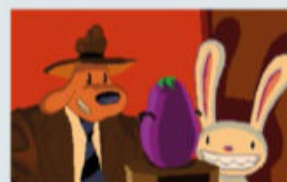
HARRY
DISCO ELYSIUM
This detective who can die from kicking a mailbox won a place in our hearts.



MAX PAYNE
MAX PAYNE
He's incredibly expressive yet only has the one very pained expression.



PHELP
L.A. NOIRE
Who could dislike the star of the 'Doubt' meme and his rubbery face?



SAM & MAX
A BUNCHA GAMES
The freelance police always tackle the biggest and strangest cases.



Play the Imposter in AMONG US

Deceive your friends with impunity as a clandestine killer. *By Harry Shepherd*

NEED TO KNOW

DIFFICULTY
Easy

TIME
One hour

VITAL LINKS
Crossplay walkthrough:
bit.ly/3hOS2Ht

Error codes list:
bit.ly/2XaDmsD

Map guide:
bit.ly/3ocvt1T



KEEP CALM

1 Resist the urge to shift the blame off yourself straight away once your victim's corpse has been found. The only thing more sus than not speaking up at all is someone either claiming innocence, or blaming someone else, too quickly.



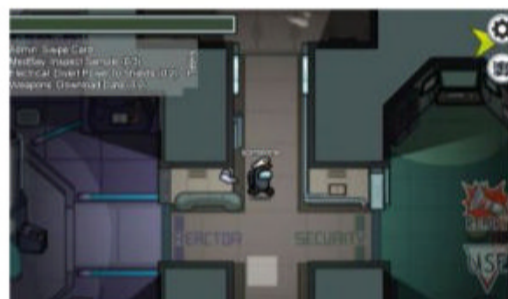
PICK YOUR BATTLES

2 Pick your moment to strike carefully. Don't rush and end up executing a crewmate in a compromising position. Keep an eye on the top-left green bar so you know how much time you have, and wait for just the right moment.



HONOR AMONG FIENDS

3 It's vital for your crewmates to see you as an ally. Complete tasks (or at least pretend to) and calmly participate in Emergency Meetings. You can even denounce another Impostor if your game has one. It's every murderer for themselves.



WARNING SIGNS

4 Before you're about to make a move, make sure someone isn't watching you first. Keep an eye out for the flashing red light that indicates you could be being watched by a security camera. Relax and evade its gaze.

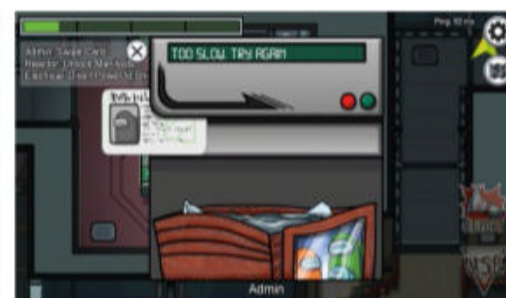
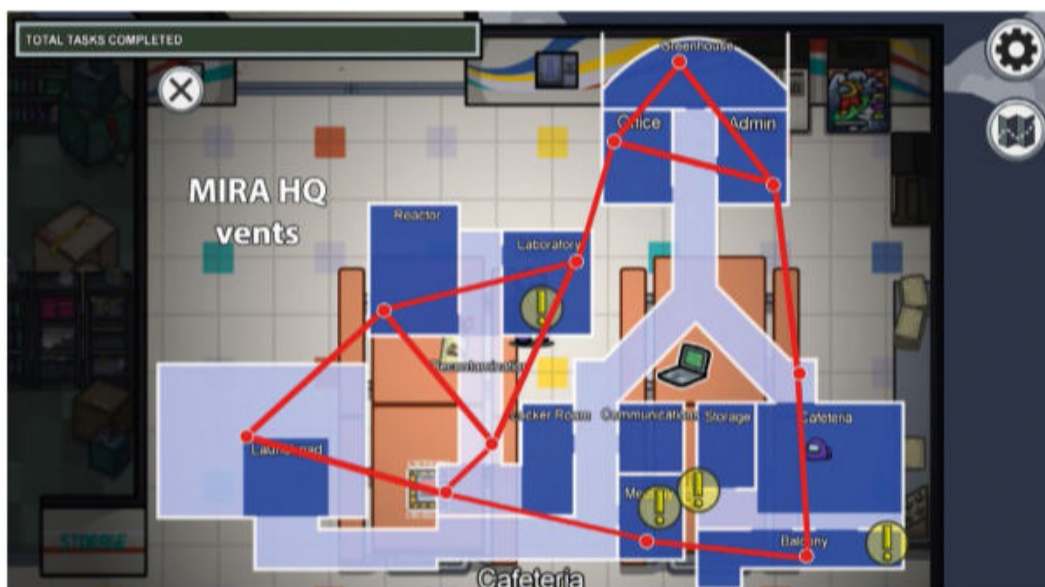


ASSURED DESTRUCTION

5 It's important to choose the right time to sabotage your enemies. Switching off the lights is useful, but also consider breaking and then fixing something to gain some trust.

MAP MASTER

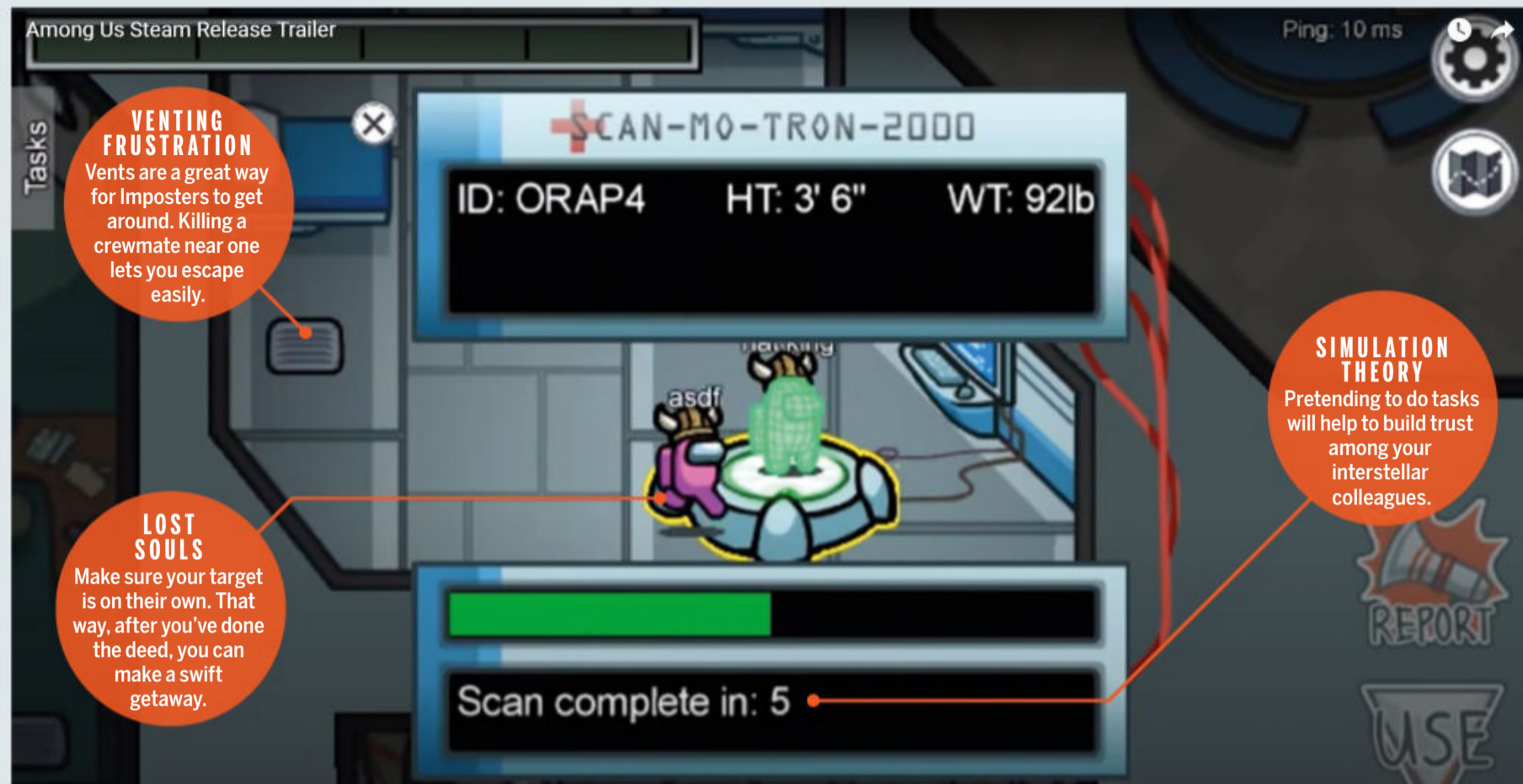
6 It's best to learn each map as intimately as possible. Not only is it worthwhile memorizing vent locations to help you get around quickly, but it'll also help you formulate quick, confident alibis.



MOVERS AND BREAKERS

7 Try to keep tabs on as many of your Crewmates' movements as possible. Refer to time spent 'doing tasks' near others or moments when you've encountered players and not offed them. They can then back you up to boost your credibility.

MURDER MYSTERY *How to best choose your next victim*



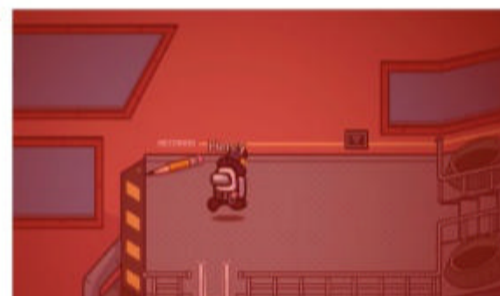
SHOW TRIAL

8 During Emergency Meetings, attempt to assess where the wind is blowing: If players start suspecting someone besides you, subtly join in, and keep the pressure on them. If you're successful, that's one less person to eliminate.



COOL YOUR JETS

9 Spotted two good opportunities back to back? Remember, there's a cooldown between murders. That means you shouldn't hop to your next kill before your previous victim is cold: Following someone isn't just sus in *Among Us*.



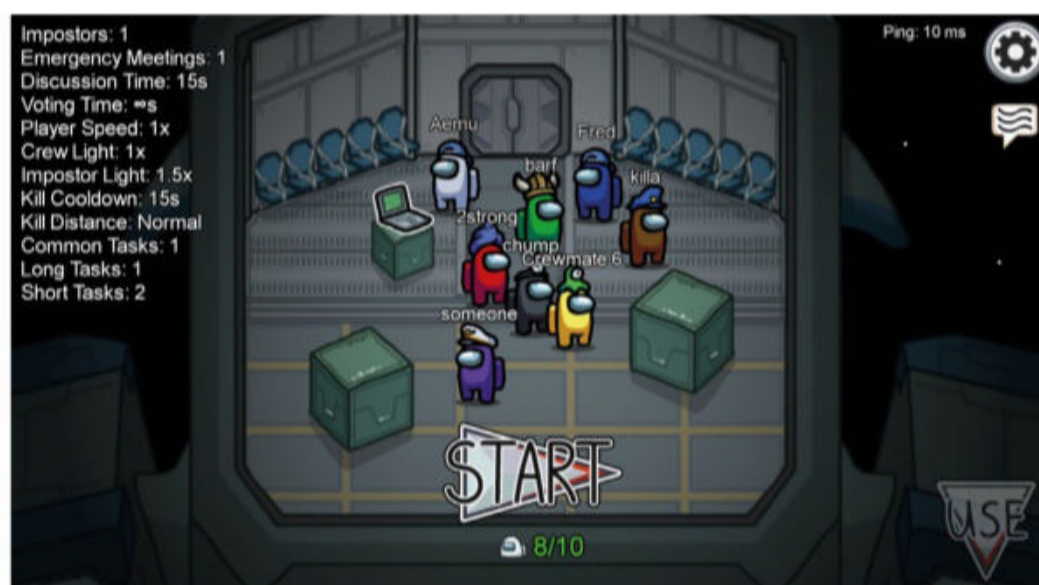
TRAP TIME

10 If you don't need to be seen fixing your Sabotage in order to raise your trustworthiness, slink off to hunt down other Crewmates in quieter parts of the map as many others rush to repair your dastardly deeds.



WAR OF WORDS

11 In the right situations, it is feasible for you to commit a crime or emerge from a vent in plain sight. If it's just one other person seeing you, and they call an Emergency Meeting, it's only their word against yours.



PLAYER COUNT

12 Imposters win if they equal the number of crewmates, so keep an eye on how many are left. If there's only one more innocent than there are murderers, you can win the game by offering your next target in plain sight.



DIARY

TRYING TO STAY
ALIVE IN

GTA V: CHAOS MOD

PART I

It's already pretty hectic out there—let's turn it up to eleven. *By Rick Lane*

THE RULES

- 1** Every five minutes, a random event will occur.
- 2** Random events must be played through.
- 3** No reloading except upon death.

Iwouldn't describe *Grand Theft Auto V* as a serious game, but it does take its silliness very seriously. Yes, it has absurd crime capers, ridiculous NPCs, and, of course, Trevor. But it's also strict about the rules of its world. If you want to fly, for example, first you must get on a plane, while its missions are rigid in terms of what they allow and don't allow the player to do. Go exactly here. Do exactly this. Under no circumstances stray from the objective.

I've often wondered what *GTA* would be like if it truly let its hair down, allowed its meticulously crafted simulation to run wild. Enter the *Chaos Mod*. Created by a modder known as pongo1231, this mod adds 250 random effects to the game that trigger at set intervals. Some of these effects are small, like adding a random weapon into your inventory. Others are... well, let's not spoil the surprise, eh?

My plan is simple. Take *GTA V*. Take the *Chaos Mod*. Then smash them together like a Ferrari crashing into a van full of clowns. I'm going to play the main campaign as you would normally, and see how many giant shoes and red noses fall out in the process.

First though, we've got to put the clowns in the van. Simple to install, the *Chaos Mod* lets you adjust the length and frequency of its random events. By default, a new event will trigger every 30 seconds. I don't want to blow all the game's randomness within the first couple of hours, so instead I set the event intervals to five minutes. As for event duration, the mod has two settings, both of which I set in ratio with the default settings. "Short events" are set to last five minutes, while "long events" will run for fifteen.

An event won't trigger until the first five minutes have passed, so *GTA V* kicks off as it always does, with aggressive style. Michael, Trevor, and Barry are robbing a bank in snowy Yankton, holding the staff hostage while

they blast the vault door off with C4 explosive. They grab the loot, but the cops show up, culminating in a bloody shootout outside the bank. When the last cop falls, we make our way to the getaway car whereupon the event meter fills for the first time, and the game spawns a tugboat that lands on Michael's head.

Oh, this is going to be good.

RANDOM HOUSE

Miraculously, Michael survives being flattened by several tons of barnacled steel, and the three men make their doomed getaway. Fast-forward nine years, and Michael, now in witness protection, brays at his therapist before story duties switch over to lovable small-time gangster Franklin, who's in the process of repossessing a couple of cars with his pal Lamar.

Vehicles acquired, we're racing back to the car dealership when another event triggers—Spawn Deadly Agent. At first nothing happens, and I

wonder whether the mod is still working. But then several new 'speed holes' appear in the back of my car. I look around to see an Aston Martin DB5 hurtling toward me.

That's right. I'm being attacked by James Bond.

This is a problem. I imagine being attacked by James Bond is always a problem. But it's especially inconvenient for me as I don't have any weapons. My only choice is to floor it. Racing to the dealership, I seek sanctuary in the warm, reassuring embrace of a cutscene. I'm hoping that by the time the cutscene has ended, Bond will have gone off to wash his tuxedo or act inappropriately towards a woman, or whatever else 007 does in his spare time.

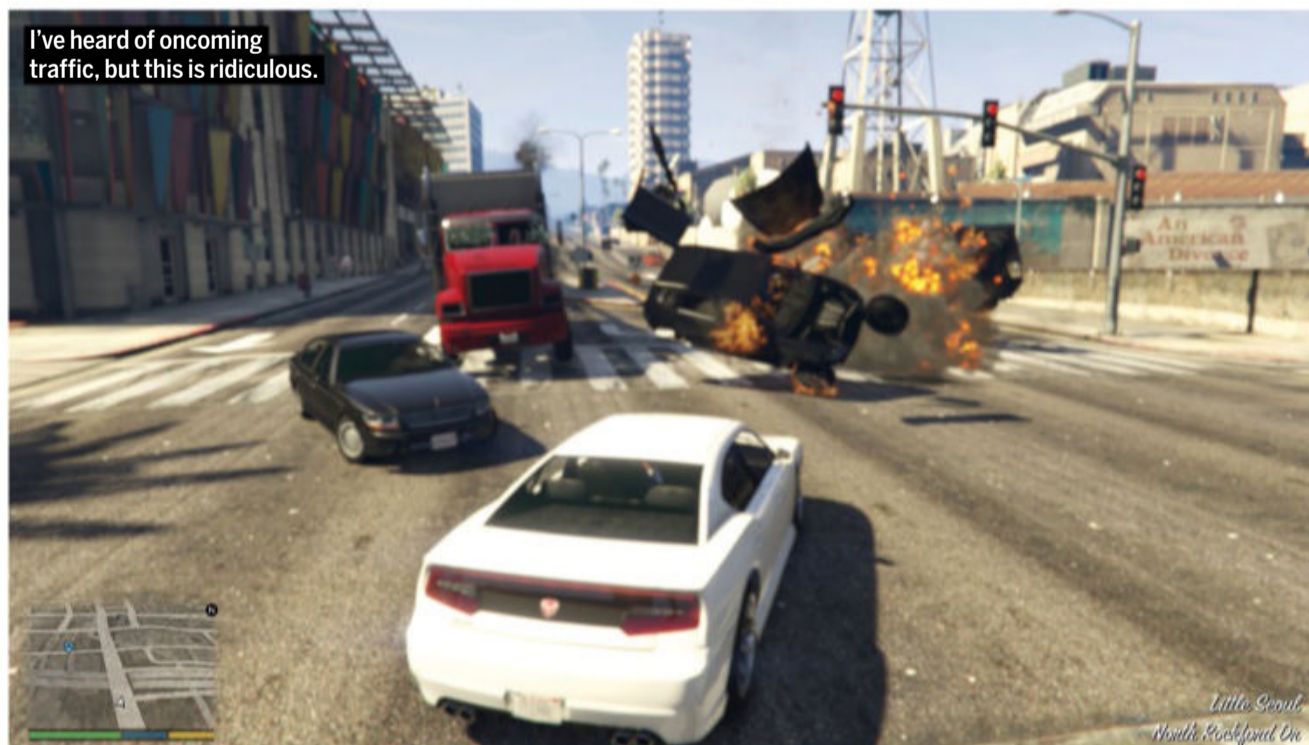
After a scene in which Michael's son Jimmy is accused of being a massive racist, I head outside to drive Franklin and Lamar home. The moment we do, however, Lamar crumples to the ground, and the mission fails. At first I think some new *Chaos Mod* effect, but after it happens a second time, I peek around the corner of the rear exit to see Bond waiting for us. Crafty git. It's almost like he does this for a living or something.

Now I'm in trouble. I can't get to the car without Bond shooting either Lamar or Franklin dead. So I do the only thing I can, which is run straight out of the door and punch the living daylights out of 007. He goes down disappointingly easily, but just to make sure I stomp on his head a few times. I don't expect you to talk. Not without your teeth.

Franklin and Lamar head home. Franklin is berated by his aunt for the crime of existing, and is then immediately snuffed out of existence by Jimmy, who has appeared in the doorway wielding a shotgun. Guess he really didn't like being called a racist, but I'm not sure how his response does much for his argument.

I respawn and give Jimmy a taste of the Bond beaters, before moving

WE'RE RACING BACK TO THE DEALERSHIP WHEN ANOTHER EVENT TRIGGERS



➤ on to the next mission, repossessing a bike from a garage in Vespucci Beach. Unfortunately, the bike belongs to a local gangster, and the job quickly turns into a shootout. The good news is that Lamar gives me a gun, meaning I can now defend myself properly from whatever the *Chaos Mod* throws at me. That's what my idiot brain thinks about five seconds before the world explodes.

DEATH FROM ABOVE

There's no other way to describe it. All around me explosions start going off, transforming a gang war into an actual war. The *Chaos Mod* appears to have triggered an artillery bombardment, although I can't know for sure because, just before this, I switched off the names of the effects to stop them clogging up the screen. I

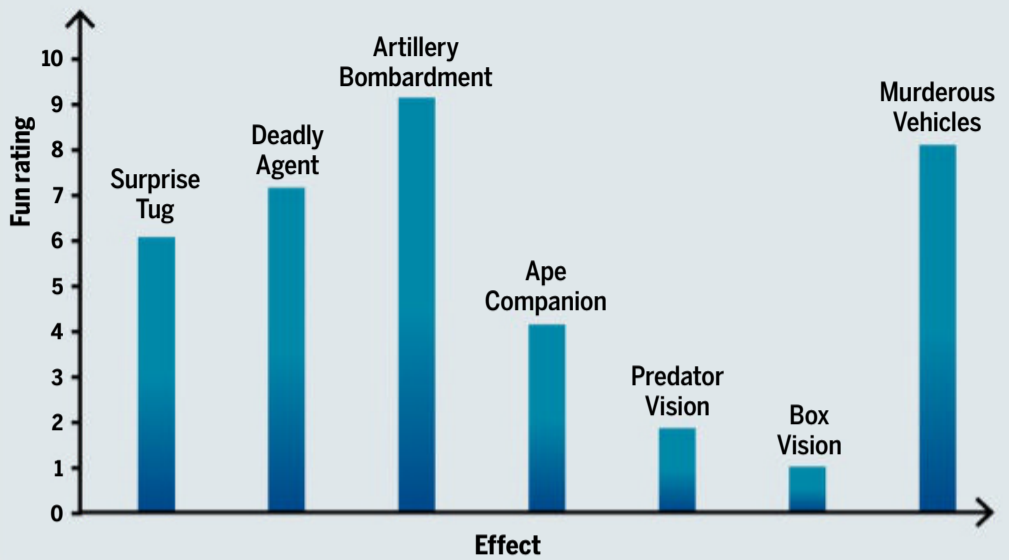
go through the alley to see the owner of the bike ride off on it. Great, now I have to chase him through the Blitz.

I'd like to say that I swiftly and dashingly navigated the bombardment and retrieved the bike with ease. I did not. Everything that could have gone wrong in this scenario did. Franklin exploded. Lamar exploded. My car exploded, forcing me to steal another car which also exploded. At one point I managed to shoot the rider off the bike, but both the rider and the bike exploded, as by this point the *Chaos Mod* had added another effect giving me exploding bullets.

Clearly the barrage counts as a long effect, and let me tell you, 15 minutes is a long time in a videogame, especially when that videogame has dedicated all its resources to blowing you up. I begin to think it might be impossible to complete this mission, when the *Chaos Mod* introduces a third effect—bullet time. This new effect does two things. Firstly, it makes driving through Los Santos during an artillery strike look cooler than a penguin wearing Ray Bans. Secondly, it makes weaving through

RAISING THE FUN BAR

The Chaos Mod is chaotic, but does it make the game more fun?



traffic much easier, enabling me to get to the bike and shunt the driver off. I leap out of the car and clamber onto the bike. Now to take it to safety without being killed.

Unfortunately, alongside the *Chaos Mod's* absurdity, *GTA's* regular systems remain very much in play, and clipping another car as I turn a corner sends Franklin flying across the asphalt. In addition, the police are on my tail, believing that I'm somehow responsible for turning downtown Los Santos into Verdun. Now I'm in a treacle-speed gunfight with the cops while trying to make my way back to the bike before it's consumed by hellfire.

Somehow, I manage to take out the police in the immediate area, clamber onto the bike and give the fuzz the slip. By the time I arrive at my destination, both the bombardment and the bullet-time have stopped, while Franklin's character model has vanished, making it appear as if the bike is driving itself. Fair enough, to be honest. I think I'd want to disappear up my own arse after going through all of that as well.

Slowly, I make my way to the next mission. This is partly because I need a break, and partly because the *Chaos Mod* has disabled my ability to move sideways, making it impossible to drive. Indeed, it's worth noting not every effect the *Chaos Mod* throws at me is spectacular, or even fun. One spawns an ape that follows me around, which is certainly odd, but not exactly the height of anarchy. The mod also has a propensity for annoying screen effects, like a high-contrast Predator vision and reducing the visible display to a square box that dances around my screen. The worst effects, though, are the ones that disable parts of your controls. That isn't chaotic, *Chaos Mod*, that's just mean.

I manage to complete the next mission—which sees Michael take revenge on the dealership for taking advantage of his son—without incident. I wonder if the *Chaos Mod* is giving me a break, but instead it's



Weeeeeee!

EXTRA LIFE



XXXXXXXXXX
XXXXXXXXXX

biding its time. I exit the dealership, and see a blimp float down onto the buildings next to me. I assume the mod has spawned a blimp, but then a helicopter does the same thing. Is air-traffic falling out of the sky? And that's when I notice the cars careering toward me at very high speeds.

MAXIMUM OVERDRIVE

It appears the *Chaos Mod* has turned Michael into a universal vehicle magnet.

Cars and trucks smash into each other as they scramble to be the first to run me down. Before I can react, I'm punted across the road by a black saloon. Climbing to my feet, I spy a ladder, and figure it would be wise to get off the road.

Ascending to the rooftop, I take a minute to admire the chaos below. Then I hear an engine behind me. Turns out this 'rooftop' is in fact a car park with an on-ramp. I go back down the ladder, and leap into the nearest car, which at least provides some protection from the vehicular hordes. With a moment to think, I reckon my best bet is simply to head home. Michael's house is

walled off, and the next mission starts there anyway. Can I make it back without incident? No.

Driving while every vehicle in *GTA* is trying to ram you off the road is almost impossible, while stepping out of a vehicle is like throwing a side of beef into the lion enclosure at the zoo. I die so many times I lose count. At one point I end up trapped under a bus, while I can hear the sound of cars exploding in sequence, getting louder. I

succeed in making it home once, but I'm killed by some crazed jogger who spawns and shoots me, catapulting me back to the hospital. Eventually, I make it back by driving so fast the other cars don't have time to turn into my path. The random assassin is swiftly dealt with by the grille of my SUV.

DRIVING WHILE EVERY VEHICLE IS TRYING TO RAM YOU OFF THE ROAD IS IMPOSSIBLE

I feel like I've had enough of the chaos for now. I've barely scratched the surface of the mod and already I've had enough shenanigans to fill an *ITV 2* sitcom for its entire run. I leave Michael where he is, lounging by his pool with a whiskey in hand. For once in his life, he's really earned it. ■



My eyes!



MA

HITMAN'S STAGGERING VARIETY OF OBJECTS TO HIT PEOPLE WITH

Household items have so much violent potential. *By James Davenport*



RIGHT: A kettlebell seeks its target.



Here are just a few of the objects you can seriously harm someone with in the recent *Hitman* games: a blueberry muffin, a cannonball, a cheeseburger, a feather duster, a frying pan, a bone (the meat still on), a snow globe, driftwood, a cowboy bust, a bag of sugar, a wet floor notice, an android arm, a dead fish, a didgeridoo, a Maori paddle, and the classic, everlasting brick. Remember, we're just scratching the surface of smack-a-dude tech. When you get to expired-can-of-spaghetti levels of blunt force trauma, you'll know you're playing *Hitman* for real.

I've yet to see what *Hitman 3* adds to the mix, but in catching up on the *Hitman 2* DLC levels before wrapping the trilogy, I fell into an inescapable vortex of desire, the desire to bash people over the head with everything I possibly could. I've gotta smash 'em all, and there are so many good things to smash 'em with.

But let's examine the act of bashing someone over the head with A Thing first. IO figured out how to make it feel good and precise without indulging in wild knockout animations or burdening the player with the need for a perfect setup and execution. When you move to knock someone out with a blunt object, Agent 47 either bops them over the head if they're close, or hits them from across the room with the aim and velocity of an MLB pitcher.

When the rotating aiming reticle pops up and locks onto an enemy's head, so long as the cursor is within a couple feet of their skull, and the arc projects the object's journey—that's the moment *Hitman* hands you a 20

NEED TO KNOW

RELEASED
November 2018

EXPECT TO PAY
\$50

OUR REVIEW
84%

LINK
hitman.com

DREAM OBJECTS

Stuff I'd love to maim with

GAMING KEYBOARD

It leaves Alt+F4 imprinted on their forehead.

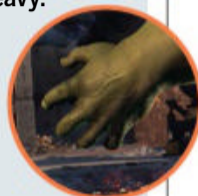


JAR OF PENNIES

River City Ransom vibes.

AUTOPSY REPORT

The clipboard is super, super heavy.



NOVELTY HULK HANDS

Just imagine 47 saying "Hulk smash".

HITMAN ACTION FIGURE

It's not a toy, dammit!



GAMING PC

Talk about a hard reset.

THEIR OWN FIST

Stop hitting yourself!

A 3D PRINTER

When you need a hammer five hours from now.

AN OSMIUM PELLET

Heavy metal, man.

dollar bill and says get yourself a treat, have some fun, I'm just a videogame. Agent 47 wouldn't miss, so neither will you. He never smiles either, but the arc every object travels on from 47's abyssal pockets to some dope's dome forms a big grin from some angle. I mean, here's an austere meat machine born to kill pulling a ceramic cowboy bust, a banana, and a pool ball from his pockets and knocking out three trained mercenaries in under two seconds.

OBJECTIFICATION

I'm always hoarding objects, walking around with eight gold bars, three wrenches, a couple muffins, and whatever else Agent Roomba hoovers up just in case I need to put a room to sleep with some explosive juggling. I like to imagine Agent 47, total confidence and assertion in his perfectly measured gait, walking around a secret island resort for rich criminals with bananas, ancient

burial knives, and Fabergé eggs spilling out of his cargo shorts. There's no avoiding the physical comedy meta either: Your most essential tools often double as melee weapons. They're great panic buttons, especially if someone catches you loosening a valve with one. But I look at wrenches differently now, and that's a problem. I perceive all plumbers as threats.

Even if most of *Hitman*'s blunt objects function similarly, they each carry immense thematic weight. There's not a single target that can avoid my desire to knock them out with something perfectly ironic, which has evolved into its own list of personal, vindictive objectives for me. Sometimes you'll get a nod in the massive list of challenges associated with each mission, but I love how I'm compelled to bash my targets over the head with something thematically appropriate, even without the guiding hand of an overt mission objective. I took out Milton-Fitzpatrick Bank CEO Athena Savalas with a gold bar, of course.

I LOOK AT WRENCHES DIFFERENTLY NOW. I PERCEIVE ALL PLUMBERS AS THREATS

Druglord Rico Delgado went down with a cocaine brick. Each implement must be joined with the head of a given monster with the utmost care and consideration.

Hitman's head-bashing mechanics aren't complex. They're nothing new in videogames, violent verbs from the earliest days of PC gaming. But they're a perfect example of how visual and thematic variety can give the impression of many possibilities, even if the only possibilities are to concuss professional bodyguards and elite criminals. I can't wait to see what everyday objects I can take out the worst people alive with when I get started with *Hitman 3*. ■



RIGHT: The face of a man that knows a fish is coming.





Now that's dynamic lightsaber combat.

STAR WARS: KNIGHTS OF THE OLD REPUBLIC

Revisiting the RPG in a time when Star Wars is everywhere. *By Andy Kelly*

Like many people, I recently finished season 2 of *The Mandalorian*, and was left with a hunger for more Star Wars in any form. I rewatched the original trilogy, read a selection of graphic novels and books (including Steve Perry's brilliant *Shadows of the Empire*), and—and best of all—decided to replay BioWare's classic Star Wars RPG *Knights of the Old Republic*.

The last time I played *KOTOR* was around the time of its UK release in the autumn of 2003, and it was the perfect antidote to the disappointing

prequel trilogy. George Lucas was two films deep by this point. *Attack of the Clones* was released the year before, and I was not a fan, to put it mildly. But here was this videogame, set 4,000 years before Luke Skywalker, Darth Vader, and the Death Star, reminding me of why I loved Star Wars in the first place. A rare, thrilling chance to explore the ancient, unseen history of my favorite fictional universe.

Today, after years spent drifting in the pop culture Dune Sea, Star Wars is in a very different place. A whole new film trilogy has been and gone, along with several spin-offs. The series successfully made the jump to

the small screen, including the aforementioned *Mandalorian*, which is the most I've enjoyed a Star Wars thing in ages. And owner Disney just recently announced a galaxy's worth of new movies, books, and TV shows. Honestly, it's a bit much.

The Force Awakens landed so perfectly because it had been years since the last good Star Wars film. *Rise of Skywalker*, by most accounts, did not—not only because it was a cowardly retcon of *The Last Jedi*, and ultimately just a bad, confused film, but because people were sick of Star Wars, at least in its traditional form. I went to a midnight screening of *Awakens*, and I didn't even bother seeing *Rise* on the big screen. They lost me. So as much as I enjoyed *The Mandalorian*, which reignited my passion for the series in a big way, I wondered if by installing *KOTOR* I was at risk of reaching Star Wars overload once again.

NEED TO KNOW

RELEASED
2003

DEVELOPER
BioWare

PUBLISHER
LucasArts

LINK
bit.ly/starwarsknights



Rocking the double lightsaber 4,000 years before Maul.



You'd be furious too if you had to live on Tatooine.



Technically most of this isn't canon these days.

But what sets BioWare's game apart, even after all this time, is where it sits on the timeline. Most of the Star Wars stories being told today revolve around the Skywalker clan and other events from those nine films. Even *The Mandalorian*, which did a good job of carving its own path through this galaxy, succumbed to the temptation—particularly in the latter half of season 2. But by throwing you back to the days of the Old Republic, *KOTOR* gives you a fresh perspective on this universe, letting you witness its rich and storied history first-hand.

GOLDEN AGE

When the game begins, the Republic is at war with the Sith, led by the evil Darth Malak. The Jedi have been left scattered and vulnerable, with many turning to the Dark Side and joining Malak's growing army. And that's where you come in, a hero with a mysterious past who joins the dwindling Jedi Order and embarks on a quest to stop Malak and his powerful Sith fleet. Those are the broad strokes, but things get a lot more complicated—especially when the protagonist learns, in a very Star

Wars plot twist, a shocking truth about their shadowy past.

Of course, there's the question of canon. It's a great story, but did it 'really' happen? Another big change that occurred between *KOTOR*'s release and now is that the events of the game may no longer be part of the main Star Wars continuity. When Disney snapped up Star Wars it categorized this game, and countless other Star Wars spin-offs from the so-called expanded universe, as 'Legends'. That said, some things BioWare created for *KOTOR*—the planet Taris, card game pazaak, and the Selkath race, to name just a few—have appeared in projects that are considered canon. So the whole situation is a little unclear. There's also a rumor that screenwriter Laeta Kalogridis is working on a *KOTOR* movie for Disney, so maybe this story, if the film sticks closely to it, will be canon after all.

Really, though, it doesn't matter. Just because the classic short story anthology *Tales of the Bounty Hunters* is as non-canon as it gets, doesn't mean it isn't still a fun collection of Star Wars yarns. And even though we now know it was

PARTY ON

Best to worst companions

- 1  **CARTH ONASI**
Soldier, hero, nice guy, handy with a blaster.
- 2  **HK-47**
Assassin droid who despises all organic life.
- 3  **BASTILA SHAN**
Powerful Jedi, knows her way around the Force.
- 4  **MISSION VAO**
Tough-willed teenage Twi'lek with an attitude.
- 5  **CANDEROUS ORDO**
Cranky Mandalorian with a very large gun.
- 6  **JOLEE BINDO**
Wry old Jedi who straddles the Dark and the Light.
- 7  **ZAALBAR**
Likeable Wookiee, but never has much to say.
- 8  **JUHANI**
Kinda boring Jedi you can save from the Dark Side.
- 9  **T3-M4**
Astromech droid with no actual personality.



Mandalorians weren't always as stylish as Pedro Pascal.



The Ebon Hawk is very much a proto-Normandy.



About to drop the freshest album this side of the Rim.

➤ Rogue One's Jyn Erso, not Kyle Katarn, who stole the plans for the first Death Star from the Empire, *Dark Forces* remains a superb Star Wars game. Some fictional universes benefit from a consistent, traceable timeline, but Star Wars is like a myth, a fairytale, and that makes this less important. Who really knows what happened 4,000 years ago? *Knights of the Old Republic* is just one possible version of those events.

However, despite the chronological gulf, *KOTOR* still has plenty to scratch any Star Wars itch you might develop. If anything, BioWare made its take on the universe a little *too* similar to classic Star Wars—especially considering the amount of time that's supposed to have passed between this game and the original trilogy. But I'll let it slide, because the established language of Star Wars—blasters, speeders, astromech droids, cocky smugglers, pious Jedi, and so on—lays a familiar foundation to tell this new story on. BioWare could have created something completely different and alien, and I'm sure they would have done a great job of it, but it might not have felt very Star Wars.

And even though some of the lore has since been contradicted by Jon Favreau and Dave Filoni's TV show, a heavy Mandalorian presence makes *KOTOR* particularly enjoyable if you've just finished watching the adventures of Din Djarin and his tiny green Force-sensitive friend. At this point in time the Mandalorians have just lost a war, scattering their clans around the galaxy. You run into a few of them, including a gladiator named Bendak Starkiller (no relation to the hero of *The Force Unleashed*), and Sherruk, the powerful leader of a

gang of raiders who loves nothing more than killing Jedi and collecting their lightsabers as trophies.

You also party up with a Mandalorian: a grouchy war veteran named Canderous Ordo, whose Dark Side alignment makes him an ideal companion for anyone role-playing as such. And if you're not, then he always has a sarcastic remark ready when you follow the Jedi Code and deny a reward for doing a good deed. Turning down credits gets him particularly hot and bothered. I also really like BioWare's take on what

OUTER WORLDS *A selection of the planets you visit in KOTOR*



DANTOINE

A quiet, remote world where the protagonist learns the ways of the Jedi, and tests their new lightsaber out on a group of Mandalorian raiders.



TARIS

A planet-sized metropolis. The upper city is safe, relatively speaking, but the dangerous lower levels are ruled by crime-loving swoop-bike gangs.



TATOOINE

A barren desert world you may have heard of before. When the protagonist arrives, the Czerka Corporation has laid claim to the planet.



MANAAN

A vast ocean-covered planet. The protagonist visits its capital where they uncover an evil Sith plot to brainwash children who are Force sensitive.

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Why do Star Wars games always make you fight so many animals?

KOTOR IS SET IN THE OUTER RIM—THE WILD, LAWLESS PART OF THE GALAXY

Mandalorian armor might have looked like thousands of years ago. It's actually quite different, but the T-shaped visor is a nice visual link to the Beskar gear that we're used to seeing being worn by the likes of Boba Fett and Bo-Katan.

OUTER SPACE

And like *The Mandalorian*, most of *KOTOR* is set in the Outer Rim—the wild, remote, often lawless part of the galaxy where all the best Star Wars stories take place. Taris, the first planet you visit, is like a rougher Outer Rim take on Coruscant—a planet-sized metropolis plagued by crime and ruled by ruthless swoop bike gangs. You also get to visit the quiet agrarian planet of Dantooine, which Princess Leia mentions briefly in *A New Hope*, and find it besieged by



Mandalorian raiders looking for something to do now that they don't have a war to fight. And, of course, there's a stop at Tatooine, the most significant planet in the entire Star Wars mythology, whose desert surface is being strip-mined by the Czerka megacorporation.

But is it still fun to play? *KOTOR* regularly makes lists of the best Star Wars games, but I often wondered how much of that was fueled by nostalgia. So I was glad to discover that, while rough around the edges, it remains a great RPG. The environments are nicely varied, with compelling self-contained stories relevant to each world's politics and history. The personal journey of the hero, and how they handle that big revelation, is well written and emotionally impactful. The companions are memorable; both in their interactions and how they respond to your decisions. It's still clunky, with a messy UI and stiff animation, but the challenging combat, reactive quests and strong writing absolutely hold up.

It's also interesting, as a *Mass Effect* fan, to see the genesis of that series here. The first *Mass Effect* is

basically a refinement of *KOTOR* minus the Star Wars stuff. Flying between planets, chatting with companions aboard the Ebon Hawk and facing tough moral choices in quests, I can't help but think of Commander Shepard and the gang. *KOTOR* is BioWare's first really successful transition from 2D games like *Baldur's Gate* to three dimensions. Although interestingly, the combat is still rooted in *Dungeons & Dragons*, borrowing its d20 system—although the developer does hide this here more than it does in its Infinity Engine games.

And the good news is, it runs fine on modern PCs. To play in higher resolutions you'll need to do some modding, so check out the game's entry on the PC Gaming Wiki for instructions. It's worth reinstalling, even if you're burned out on Star Wars. *KOTOR* is detached enough to still feel like a fresh take on the material—which is a weird thing to say about a game that came out when George W Bush was president. But with Disney still sticking closely to that familiar pool of characters and events, *KOTOR*'s distance from them is worth celebrating even more. ■

LAUREN MORTON



I am living proof that loudly yelling about your favorite RPG characters is an acceptable substitute for a personality. I played my first *Yakuza* game in April 2020, and I've barely played or talked about any other games since. Did you know they're all on PC now?



YAKUZA 0

yakuza.sega.com/yakuza0

→ The newer *Yakuza* games are great, but the 2015 prequel is easily the best place to start the series, which I believe so wholeheartedly that I can't stop buying it for any friend who expresses the slightest interest in buff guys wielding traffic cones and delivering heartwarming monologues about family.



YAKUZA KIWAMI

yakuza.sega.com/kiwami

→ Welcome to the original *Yakuza* remaster, a game about a man with a face like granite who's never met a problem he couldn't pummel. Punch your enemies. Punch your best friend. Punch those buttons to sing beautiful karaoke. The only dilemma you can't deck is the young girl you've accidentally adopted.



YAKUZA KIWAMI 2

yakuza.sega.com/kiwami2

→ *Kiwami 2* is a real looker of a remaster—all the better to spend your time playing darts, hitting the batting cage, and helping every single civilian you encounter with their problems before going back to stopping a clan war from consuming the streets of Kamurocho. Priorities matter to real yakuza.



YAKUZA 3

yakuza.sega.com/remastered

→ At long last, Kiryu Kazuma can retire from gangster life to pursue his hobby of raising nine children in his new orphanage. This one gets started pretty slow, but don't you worry. There's always just enough crime and political intrigue to drag Kiryu back to Kamurocho where his fists belong.

MUST

★

PLAY

A PERSONAL LIST OF THE BEST GAMES YOU CAN PLAY RIGHT NOW

by Lauren Morton



YAKUZA 4

yakuza.sega.com/remastered

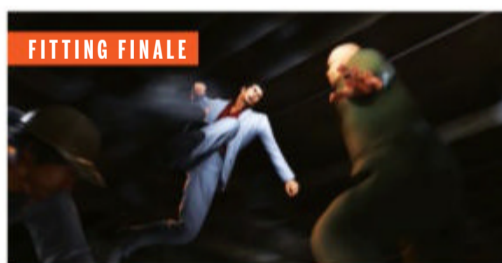
→ Did you think two protagonists were a lot to juggle in the prequel? Now you have the RPG protagonist variety pack with all four of your favorite flavors: sarcastic slob, quiet giant, rookie cop, and Kiryu Kazuma. Oh what, the kids at the orphanage? Stop worrying about them. They're fine.



YAKUZA 5

yakuza.sega.com/remastered

→ There are five playable characters this time. Yes, you read that right, five. One of them is Kiryu's adopted daughter Haruka. Really. You have to help her become a pop idol and, I could not be more serious, it is great. Don't worry if that's not your thing, there are also the usual fist fights and monologues and minigames.



YAKUZA 6: THE SONG OF LIFE

yakuza.sega.com/yakuza6

→ At long last, this is the final chapter of Kiryu Kazuma's saga and the last to arrive on PC. As ever, this beat-'em-up is a tearjerker about family that will make you brawl and bawl at the same time. RPG in peace, sweet punching prince. It's not the end of the franchise though—it lives on in my next entry...



YAKUZA: LIKE A DRAGON

likeadragon.sega.com

→ Forget everything you know about *Yakuza*. Ichiban Kasuga is your new protagonist. Turn-based combat is cool again. Oh, but it's still 40% minigames, 40% side quests, and 20% heart wrenching drama. Forget I said anything, this is still *Yakuza*—except now all your friends follow you around like a proper party RPG.

HARDWARE

GET THE HARDWARE GAMES DESERVE



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GROUP TEST

The best external SSDs for PC gaming.

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TECH REPORT

Exploring the power of quantum teleportation.



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BUYER'S GUIDE

Three great builds to get you started no matter your budget.



GROUP TEST

EXTERNAL SSDs

Running out of bytes? It pays to pick up one of the best external SSDs. *By Jeremy Laird*

If you want speedy storage performance on the go or between devices, your best option is an external SSD with plenty of bandwidth. That'll net you the enticing possibility of actually running your games from a portable drive, which is not only great for laptop gamers, it's a must-have with the latest generation of consoles, too.

The best USB Type-C drives deliver performance well beyond internal PC SSDs from just a few generations ago. Some external SSDs now crank out as much as 2Gbps of raw bandwidth.

Admittedly, that's a long way off the latest PCIe 4.0 M.2 drives for PCs, let alone the crazy-quick integrated storage in the new Microsoft Xbox Series X and Sony PlayStation 5. But it's enough for reasonably nippy game loads.





SE800 1TB

ADATA **\$182**

Fast. Bomb proof. Affordable

1 NVMe inside? Yep. TLC NAND memory? Yes. IP rating for increased robustness including water proofing? Check. All for an attractive price? Confirmed. The ADATA SE800 Ultra FAST 1TB does have quite a bit going for it.

It starts with that M.2 NVMe drive, bridged to a USB interface. In this case, it's a 10Gbps USB 3.2 Gen 2 interface rather than a 20Gbps USB 3.2 Gen 2x2 connection. But this drive is still claimed to be good for 1Gbps data transfers in both directions. Lest you have forgotten, that's around twice as fast as any SATA-based drives.

It's also nice to see that ADATA has equipped the SE800 with TLC rather than QLC NAND memory. All very nice, but what is really unusual is the SE800's IP68 rating. It means the drive is rated as impervious to dust ingress and can survive immersion in up to 1.5 meters of water for 30 minutes. That makes it unique among these SSDs and, what's more, given the competitive pricing you're getting that IP rating effectively for free.

PC GAMER VERDICT

- Fast NVMe technology
- Competitively priced
- IP68 dust and water proofing

SPECS STORAGE: 1TB / **CONNECTIVITY:** USB 3.2 TYPE-C / **SEQUENTIAL READ:** 1GB/S / **DIMENSIONS:** 73 X 44 X 12 MM / **WARRANTY:** 3 YEARS

Black P50 Game Drive 1TB

WD **\$250**

The fastest USB Type-C gaming drive in town

2 If you're looking for fast USB-powered external storage for games, this is currently as good as it gets. At least, it is in theory. The WD Black P50 Game Drive, tested here in 1TB format but also available in 500GB and 2TB flavors, is a rare breed of USB Type-C external SSD. That's because it supports the very fastest USB 3.2 Gen 2x2 20Gbps interface. Which is why it's capable of read and write speeds up to 2,000MB/s.

Of course, to achieve those speeds, you'll need a PC or console that supports USB 3.2 Gen 2x2. The former remains rare, the latter is entirely

non-existent. Still, the fact that the P50 Game Drive is essentially an NVMe M.2 in a ruggedized enclosure bodes well. What's more, WD has gone for TLC rather than slower QLC memory, which no doubt contributes to the excellent five-year warranty coverage.

Our only reservation, out of the box, is that the rugged looks don't come with a formal IP rating for ingress protection, which is a bit of a pity.

PC GAMER VERDICT

- USB 3.2 Gen 2x2 connectivity
- Up to 2GB sequential performance
- Few PCs support full performance

SPECS STORAGE: 1TB / **CONNECTIVITY:** USB 3.2 2X2 TYPE-C / **SEQUENTIAL READ:** 2GB/S / **DIMENSIONS:** 118 X 62 X 14 MM / **WARRANTY:** 5 YEARS



CRUCIAL CLAIMS AROUND 1GBPS FOR SEQUENTIAL READS AND WRITES

33

X8 2TB

CRUCIAL \$280

A great-value NVMe-based external SSD

3 If you want it all, you're going to have to pay for it. So, sometimes it makes sense to compromise. Enter the Crucial X8 2TB USB Type-C SSD. It's not the absolute fastest external SSD on Earth. But it is quick. It's extremely capacious. It's built into a really solid-feeling metal case. And it's attractively priced.

Like the WD SSD, the Crucial X8 is essentially an M.2 NVMe drive behind a USB bridge, in this case a Crucial P1 with a hefty 2GB of DRAM. One difference is that where WD has used TLC NAND memory, Crucial has gone for cheaper, slower, and less durable

QLC NAND. Another really critical contrast, of course, is USB 3.2 Gen 2 versus USB 3.2 Gen 2x2.

If that seems like an esoteric distinction, it means the WD supports 20Gbps data transfer, over twice the speed of this 10Gbps Crucial drive. Still, Crucial claims around 1Gbps for sequential reads and writes. So, the X8 is theoretically twice as fast as SATA-based drives. But it is still on the high side when it comes to the price.

PC GAMER VERDICT

- Strong NVMe performance
- 2GB DRAM cache
- Healthy 2TB of storage

SPECS STORAGE: 2TB / CONNECTIVITY: USB 3.2 TYPE-C / SEQUENTIAL READ: 1,050 MB/S / DIMENSIONS: 110 X 53 X 12 MM / WARRANTY: 3 YEARS

X6 2TB

CRUCIAL \$190

The toughest external hard drive on the market

4 There's a fine line between compelling and compromised when it comes to external USB Type-C SSDs. But for our money, the Crucial X6 falls on just the wrong side of that divide.

Even at normal prices, it's only slightly cheaper than its X8 sibling of the same 2TB capacity. The extra money doesn't feel like all that much to pay for literally double the sequential performance with the X8. The Crucial X6, you will therefore have guessed, is based on a bridged SATA interface where the X8 rocks NVMe. One of the knock-on implications of that architectural

difference is that the X8 has fully 2GB of DRAM cache where the X6 has none at all. The X6 also lacks a USB-C to USB-A cable, which seems particularly miserly.

That said, the X6 does support features like TRIM passthrough, which isn't always the case on cheaper USB drives and ensures that performance should be sustained in the longer term. It's also very compact for a 2TB drive, measuring just 6.9cm by 6.4cm by 1.1cm. It's tough, too.

PC GAMER VERDICT

- Lots of storage
- X8 a worthy upgrade
- No USB-A cable included

SPECS STORAGE: 2TB / CONNECTIVITY: USB 3.2 TYPE-C / SEQUENTIAL READ: 540 MB/S / DIMENSIONS: 69 X 64 X 11 MM / WARRANTY: 3 YEARS

WHAT TO LOOK FOR

Performance-wise, your choice is between a drive based on the SATA interface with a bridge to USB, or an NVMe interface, again behind a USB bridge. SATA-based USB Type-C drives top out at around 540MB/s peak performance, while the NVMe options up the ante to a maximum of 2GB/s.

To achieve those peak speeds, you'd need a USB 3.2 Gen 2x2 port with 20Gbps capability.

Features like controller specification and the type and quality of NAND flash are also important, though it's not always easy to identify the finer details. Many manufacturers are reluctant to quote full specifications. Drives with four-level QLC NAND memory, for instance, will tend to have worse underlying performance than those with triple-layer TLC memory.



Barracuda Fast SSD 1TB

SEAGATE \$182

A slightly underwhelming SATA-based SSD

5 This is not the fastest USB Type-C SSD you can buy for gaming. But then, it's far from the most expensive. Compared, say, to the WD Black P50 Game Drive, the branding of the Seagate Barracuda Fast SSD 1TB looks like a bit of stretch. Rated at 540MB/s for reads and 500MB/s for writes, it's simply nowhere near as quick.

The Seagate Barracuda Fast SSD 1TB is essentially a SATA SSD behind a USB bridge, which means performance is limited to 6Gbps despite the drive's 10Gbps USB 3.2 Gen 2 interface. Arguably even more

problematical is the existence of NVMe-based drives for similar money. The ADATA SE800 Ultra FAST 1TB, for instance, is around twice as quick for peak sequential performance. It's pity because the Seagate Barracuda Fast SSD looks slick with its sleek enclosure and LED status light. And Seagate's file syncing and backup software is handy. Unfortunately for Seagate, there's better performance to be had elsewhere.

PC GAMER VERDICT

- Good software package
- Slim chassis
- Mediocre performance

SPECS STORAGE: 2TB / CONNECTIVITY: USB 3.2 TYPE-C / SEQUENTIAL READ: 540 MB/S / DIMENSIONS: 93 X 79 X 9 MM / WARRANTY: 3 YEARS

Portable SSD Touch 500GB

VAVA \$90

Great security, but suboptimal for gaming

6 As a pure gaming drive, the Vava Portable SSD Touch is a little overqualified. The product of a crowd-funding exercise, its main claim to fame is to cram AES 256-bit encryption with fingerprint activation into a very small footprint. That makes high levels of security very convenient. But it also adds to the cost of the drive. It's unlikely most gamers will demand that level of security for their libraries. So, putting that added investment towards more storage space and raw performance as opposed to data protection will probably make more sense. That said, if you're

looking for multi-purpose USB storage, the Vava has plenty going for it. That includes compact proportions and a robust build, thanks to an aluminium and zinc alloy frame.

What it's not, is particularly speedy. That's largely down to the drives underlying SATA interface, which claims peak performance of 540MB/s read and 480MB/s write. In practice, Vava actually slightly outperforms those claimed sequential speeds.

PC GAMER VERDICT

- Encryption and fingerprint security
- Quality alloy chassis
- Expensive for the performance

SPECS STORAGE: 2TB / CONNECTIVITY: USB 3.2 TYPE-C / SEQUENTIAL READ: 540 MB/S / DIMENSIONS: 100 X 30 X 9 MM / WARRANTY: 3 YEARS

The future of transferring information is quantum teleportation.

QUANTUM LEAP

How teleportation is powering the internet of the future

We like phat pipes, and we cannot lie. And over the past 20 years we've seen internet connections change from dial-up to ADSL over copper wire, to today's fiber-optics. So what's next for how we transfer data?

Imagine a network that, instead of using pulses of light to send signals, uses the properties of photons themselves. This is a quantum network, and it relies on something Einstein wasn't very fond of: Quantum entanglement. Decried as 'spooky action at a distance' by the moustachioed relativity-theorizer, entanglement means creating a pair of photons in such a way that, when you measure the quantum state of one, you immediately know the same property of the other no matter how far apart they are. Transferring information in this way is known as quantum teleportation, but rather than men in red shirts doomed to die, what's teleported here is the quantum information. If you're really clever, this is enough to build an internet.

Such really clever people include graduate student Samantha Davis and Dr Raju Valivarthi, who both work in the Division of Physics, Mathematics, and Astronomy at the California Institute of Technology. They published a paper in 2020 detailing how, using "state-of-the-art low-noise superconducting nanowire single-photon detectors" (and off-the-shelf optics) they were able to teleport qubits at a wavelength commonly used in telecommunications down

optical fibers, with a fidelity of 90%. Clearly, with an error rate of 10%, they're not quite there yet, though work on this is ongoing both at Caltech and Fermilab.

What's perhaps most interesting about the Caltech work is the way it uses common networking components, and can interface with today's internet.

Davis, thankfully, lays it out simply for us, "Let's say that Alice wants to send a qubit to Bob. The problem is that we want to send it over optical fiber or even through free space, so there's going to be a lot of loss as qubits are very, very sensitive to their environment." Qubits need to be kept isolated, otherwise they decohere and lose their overall usefulness. "This is a very big problem if you want to create a scalable network, so what you can do is use quantum teleportation, which leverages quantum entanglement to enable sending qubits over longer distances."

Back to Alice and Bob, "A third person called Charlie is halfway between Alice and Bob," says Davis, "and what happens is, since we have these three nodes, Alice will send her qubit, which is encoded in a photon, to Charlie." OK, I'm with you so far. "Bob creates a pair of entangled photons, keeps one, and sends one to Charlie. So now Bob has one member of the entangled pair of photons. Charlie has Alice's photon and the other entangled photon from Bob. Charlie performs a special measurement called the Bell State measurement on these two particles that he has, and sends the results to Bob, who uses the information from Charlie to recreate Alice's qubit.



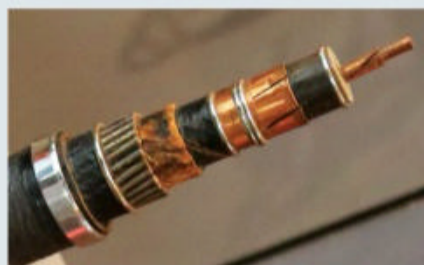
Sending signals

Zhenda Xie at Nanjing University in China and his colleagues, meanwhile, have been beaming their qubits between drones a kilometer apart. One photon was sent directly to a ground station and the other to a second drone a kilometer away via a relay drone. Measurements showed that the photons remained entangled throughout the process. Drones at a higher altitude, it's hoped, could boost this to 300km.

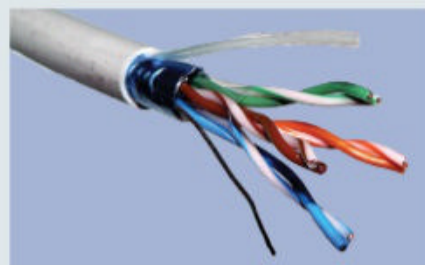
NETWORKS OF THE PAST *We've been shunting data around networks for a long time, here's how*



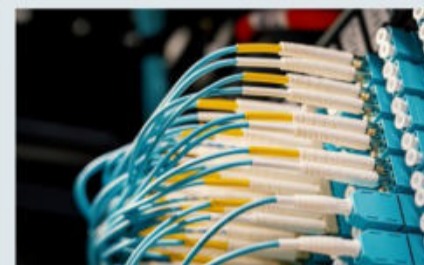
1 MODEMS These analogue modems hooked up to your telephone line, stopped anyone else using it, and ran up your bill. Still, great days...



2 COAXIAL CABLE A line up the middle is surrounded by a layer of shielding—or more than one, in the case of this co-axial undersea cable from 1956.



3 TWISTED PAIR Inside your Ethernet cables are wires like this, arranged in twisted pairs to decrease crosstalk from the unshielded wires.



4 FIBER OPTICS Optical cables transfer info at the speed of light in glass, up to 200,000km/s. Multiple lines are often bundled together in the same cable.

“The idea is that Alice only sent her photon half the distance, but the information was sent over double that distance. So it's the teleportation of information.” Well when you put it like that, it sounds like it's moving faster than light. Are you breaking physics here? “No.” Right then. “You need to still send the state completely,” says Davis. “You have to communicate classically, so it doesn't violate any of the laws.”

“A quantum internet has several nodes,” says Valivarthi. “And they all have some sort of quantum information processing power. They're all connected to each other, and what that means is they're able to communicate quantum information between each other. Once you're able to do this, you will be able to do some cool things.”

We like cool things. “Let's assume that these nodes are really far away in a city or some kind of network, so this kind of communication is secure. Nobody can hack it,” continues Valivarthi. Quantum networks are inherently secure, because any attempt to eavesdrop changes the signal that's received at the other end. As Chairman Mao said, probably not about quantum mechanics, “If you want to know the taste of a pear, you must change the pear by eating it.” If your information ends up at the receiver with a bite out of it, you know you've got a huge state intelligence agency on the line.

“Whereas [with classical encryption] we're relying on something that's very, very hard but not physically impossible to solve, such as factoring huge prime numbers, with this quantum communication we're relying on something that's physically impossible to solve,” says Davis. “So as long as the laws of quantum mechanics are valid, we have secure communication. Quantum theory is the most well-tested theory of physics, so we're pretty confident.”

ENTANGLED UP IN BLUE

There's more to this than keeping the spooks out of your OneDrive. “There are applications like a network of telescopes that are like entangled with each other,” says Davis. “That can enhance your

ability to detect astronomical signals, for example. There's a close relationship between quantum mechanics and gravity, so there are proposals for a space-to-ground network, so you can study the effects of gravity on qubits.”

And what is the effect of gravity on a qubit, those pesky quantum bits that can be 1 or 0 or both at the same time and which are essential for quantum computing to work? “We don't know exactly!” exclaims Davis. “This is very much on

the frontier, but it's been proposed that an effect of curved spacetime could affect the strength of the entanglement.”

This sounds like one of those technologies, like nuclear fusion or quantum

computers themselves, that's perpetually ten years away from the mainstream. Quantum networks, however, are almost here: “Right now the typical quantum communication experiments are in a range of 50 to 100 kilometers of fiber optics,” says Valivarthi. “We need quantum repeaters to scale it up. We proposed a plan to create a quantum internet backbone connecting the 17 national labs in the US,” says Davis, “and these testbeds are going to be part of that.” ■

Ian Evenden

“CURVED SPACETIME COULD AFFECT THE STRENGTH OF THE ENTANGLEMENT”

BELOW: Caltech graduate student Samantha Davis analysing CQNET's quantum teleportation fidelity data using real-time data acquisition software.



BUYER'S GUIDE

Build the best PC for your budget



KEY

Budget build

PC gaming is for everyone. Pick the parts you want to build a new, well-rounded PC for a good price.

Mid-range build

You want to run every new game at 1080p 60fps. This recommended build will see you through.

Advanced build

You're looking for the best PC on the market and superior components. But you still want to spend smart.

BUDGET BUILD

Enjoy 1080p gaming without breaking the bank



TOTAL
\$882

MOTHERBOARD

**B450-A Pro Max**MSI **\$100**

A healthy dose of ports and PCIe SSD support has this B450 at the heart of our budget build.

PROCESSOR

**Ryzen 3 3300X**AMD **\$120**

AMD has packed its latest Zen 2 architecture into a speedy four-core package, and that's great for gaming.

GRAPHICS CARD

**GeForce GTX 1650 Super**Gigabyte **\$160**

The GTX 1650 Super is much more than a rebrand of the GTX 1650, securing it the budget crown.

COOLER

**Wraith Stealth**AMD **Free with the CPU**

Gone are the days when a stock cooler was little more than a bonus paperweight. AMD's Wraith Stealth delivers.

MEMORY

**Vengeance 8GB DDR4 (2x4GB)**Corsair **\$51**

The new norm for gaming is 16GB, but dual-channel 8GB memory is enough to get by for most.

POWER SUPPLY

**CX Series CX550**Corsair **\$70**

Corsair's reputation for quality PSUs precedes them. You know you're in safe hands here.

SSD

**WD Blue SN550 500GB**Western Digital **\$70**

Just because it's a budget SSD, doesn't mean it has to be slow, as the WD SN550 proves with its speedy NVMe connectivity.

HDD

**WD Blue 1TB 7200rpm**Western Digital **\$43**

You don't necessarily need a HDD in 2020, but if you're a virtual hoarder, this'll give you loads of useful extra space.

CASE

**Neos**BitFenix **\$65**

You'll want to minimize how often you rebuild your PC, so make sure to give it a good home. This case'll do nicely.

DISPLAY

**GW2280**BenQ **\$113**

A 1080p60 VA monitor will see you through in style and, once you upgrade, will make a superb second monitor.

KEYBOARD

**G213**Logitech **\$60**

It may be a membrane switch board, but it's stylish, and well-built. Sometimes that's worth more than cheap clicky switches.

MOUSE

**G102**Logitech **\$30**









A classic shape delivered in a sleek shell, this mouse fits all hand sizes and grips. A solid option for the money.

MID-RANGE BUILD

Our recommended build for playing the latest games



TOTAL
\$1,497

MOTHERBOARD		B450 Tomahawk Max MSI \$115 A reliable platform for your build, the Tomahawk Max also comes in black to complement any style.
PROCESSOR		Ryzen 5 3600X AMD \$210 This CPU is one of the greats, and uses the Zen 2 architecture to dominate in gaming and productivity.
GRAPHICS CARD		GeForce RTX 3060 Ti Founders Ed. Nvidia \$399 The RTX 3060 Ti is a little overkill, but we're willing to make sacrifices elsewhere to make it work.
COOLER		Wraith Spire AMD Free with the CPU We love a freebie, especially one as capable as the cooler included with the 3600X. This'll keep your machine running smoothly.
MEMORY		Ballistix 16GB DDR4 (2x8GB) Crucial \$80 With plenty of capacity at 16GB, this unembellished memory has everything you need for gaming and more.
POWER SUPPLY		CX650M Corsair \$108 The heart of your gaming PC is your PSU, and this 650W Corsair promises to keep your rig ticking nicely.
SSD		S70 1TB Addlink \$44 Building on a budget doesn't mean sacrificing speed—the Addlink S70 proves you can indeed have both.
HDD		WD Blue 1TB 7200rpm Western Digital \$43 Just like in the budget build, this HDD isn't strictly necessary, but for a pretty low price it's nice to have plenty of extra space.
CASE		Eclipse P400S TG Phanteks \$90 An ATX case is all you need for this build. We like this one because it's simple, functional, and really nice to look at.
DISPLAY		AOC G2590FX AOC \$236 Everything a PC gamer could want: 144Hz refresh rate, 1ms response time, and it's AMD FreeSync and Nvidia G-Sync compatible.
KEYBOARD		Alloy FPS HyperX \$97 As the name suggests, this keyboard is built like an absolute tank, with a steel frame and Cherry MX switches.
MOUSE		Model O- Glorious \$75 Lightweight and responsive, the Model O- has made a name for itself among streamers and pros thanks to its clever design.

ADVANCED BUILD

Go above and beyond with a PC powerful enough to end worlds



TOTAL
\$3,639

MOTHERBOARD



MPG Z490 Gaming Carbon WiFi

MSI **\$270**

A heady mix of enthusiast motherboard functionality and build quality that stops short of god-tier motherboard pricing.

PROCESSOR

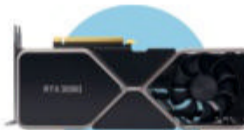


Core i9 10900K

Intel **\$529**

If you want the fastest gaming CPU, look no further than Intel's flagship Core i9.

GRAPHICS CARD



GeForce RTX 3080 Founders Edition

Nvidia **\$699**

The RTX 3080 is the flagship graphics card of an entire new GPU generation.

COOLER



Kraken X63

NZXT **\$150**

One of the most stunning AIO coolers rebuilt with an updated pump and, of course, RGB lighting for more pizzazz.

MEMORY



Vengeance RGB Pro 32GB DDR4 (2x16GB) @ 3,200

Corsair **\$164**

If you truly want to show off, even your system memory should be aglow in RGB.

POWER SUPPLY



SuperNOVA 1000 G5 Gold

EVGA **\$214**

This calibre of gaming PC draws a lot of power. Thankfully, this PSU can handle it with high efficiency.

SSD



WD Black SN750 1TB

Western Digital **\$189**

Western Digital are back on Samsung's heels with this brilliantly fast, yet affordable, 1TB M.2 NVMe SSD.

HDD



860 QVO 2TB

Samsung **\$243**

Built on QLC flash memory, it's not the quickest storage around, but it's a speedy alternative to a HDD.

CASE



600C

Corsair **\$149**

If you're going big on parts, you should grab a case that has plenty of room for upgrades down the line. This one will do just fine.

DISPLAY



Nitro XV273K

Acer **\$650**

This one's an easy choice—4K and 144Hz for under \$1,000 is an offer we can't refuse, and neither should you.

KEYBOARD



G915 Lightspeed

Logitech **\$245**

Low-profile mechanical switches are just the icing on the cake that is the superb, wireless Logitech G915.

MOUSE



G502 Lightspeed

Logitech **\$137**

With a lengthy battery life and a phenomenal sensor to keep you gaming at your best, the G502 is undoubtedly one of the finest.

AVAILABLE NOW
ON PC!

DEVOLVER

LOOP HERO



The world has been thrown into a timeless loop, plunging its inhabitants into never ending chaos. Wielding an expanding deck of mystical cards, position enemies, buildings, and terrain along the path of each unique expedition to piece together your brave hero's memories and restore balance to the world.

Recover and equip powerful loot for each class of hero for their battles and expand the survivors' camp to reinforce

each adventure through the loop. Unlock new classes, new cards, and devious guardians on your quest to shatter the endless cycle of despair.

SECRET TIP: A hero that empties the bookery of its cards casts a dark light upon its walls. If vampires were to take up within the fall of its shadow, a new foe with a rare trophy may appear.



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Email: contact@myfavouritemagazines.com | **Tel:** 844-779-2822 | www.myfavouritemagazines.com

DISTRIBUTED BY Marketforce, 5 Churchill Place, Canary Wharf, London, E14 5HU | **Tel:** 0203 787 9001 | www.marketforce.co.uk

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ISSN: 1470169

IT'S ALL OVER...

OVER **2** YOU

Has *Back 4 Blood* got you itching to make your own *Left 4 Dead* spiritual successor? Of course it has—so just pick one of these pre-approved titles, gather a few million in funding, and get cracking!

FLOWERS **4** ALGERNON
GLUTTON **4** PUNISHMENT
UP **2** SOMETHING
FOUR **20** SOMEWHERE
GET **2** THE CHOPPER
UP **4** ANYTHING
BLOWN **2** HELL
TWO **4** ONE
STARTER **4** TEN
DESMOND **2** TU
PUSH **2** TALK
JUST **1** MORE

SOMETHING **4** NOTHING
HELL COMES **2** FROGTOWN
TOOTHPASTE **4** DINNER
UNDER **30** CRUISE
BACK **2** LIFE
BACK **2** REALITY
SEVEN **8** NINE
TEA **4** TWO
OUT **2** LUNCH
HOT **2** TROT
A **10** SHUN
ONE **2** MANY

...UNTIL APRIL 20

Meanwhile in Canada...

Vancouver Film School

#1 Game Design School in Canada

The Princeton Review



Vancouver Film School
AFLOAT
Best Student Project



VFS VANCOUVER
FILM SCHOOL

GAME DESIGN

Vancouver Film School
The Cluckening
Best Student Project



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VFS Indie **ARCADE**

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