

RETRO

COMPUTING HISTORY
REMEMBERED + REBOOTED

Blowing the dust off cartridges

Is virtual a virtue or would you rather have something to hold? **David Crookes** looks at whether Evercade proves the lure of physical media is evergreen

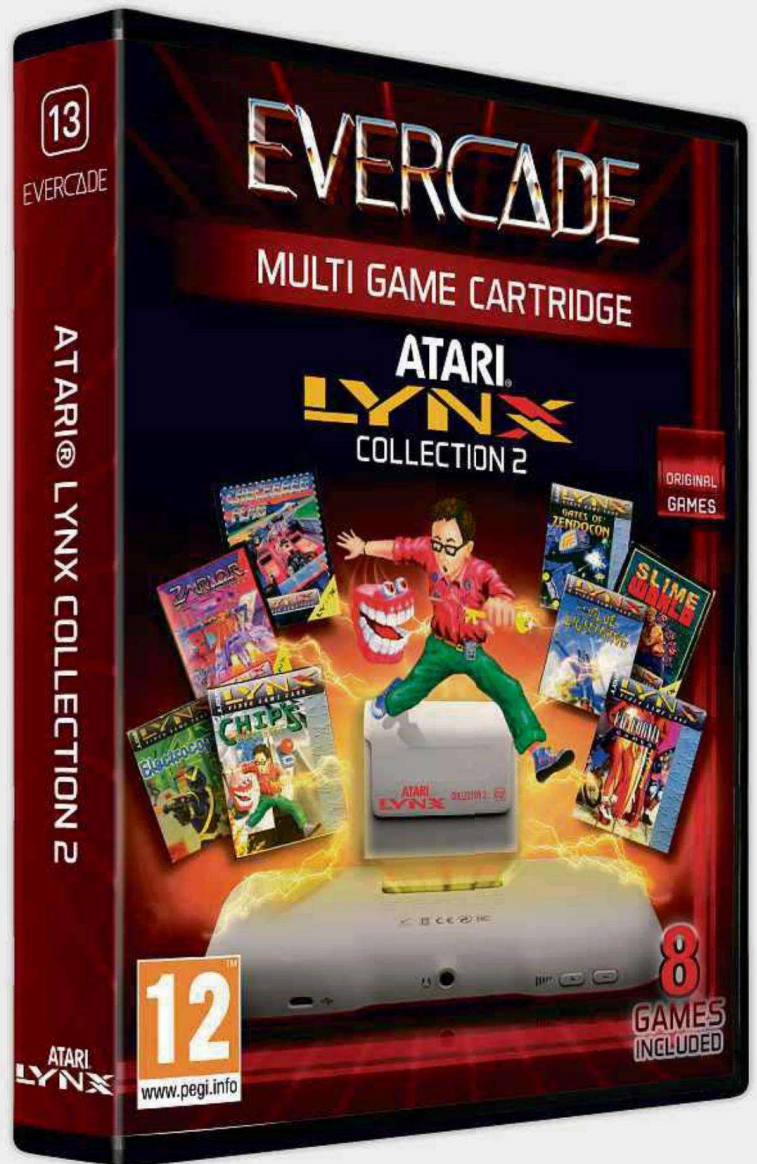
Anyone who has enjoyed a game on an original NES, SNES or Nintendo 64 console will have encountered a non-working cartridge. The traditional first fix has been to pull it out of the machine and blow on the contacts in the hope of removing some dust – a solution that has become part and parcel of gaming’s history, regardless of how effective it has been.

Likewise, pencils would be used to wind spilling tape back into their cassettes, new drive belts would ensure floppy disks could be read again, and some people still squirt toothpaste on to CDs to remove scratches. Given such faffs, it’s fair to say that physical media hasn’t always provided great joy. But it hasn’t stopped modern-day creators from blowing off the cobwebs in



↑ The time-honoured lo-tech way of winding tape back into a cassette

→ The game boxes are individually numbered to appeal to collectors who may want to buy them all



the name of nostalgia, and the results appear to be hugely popular.

“I love the feeling of opening a game case, and seeing the cartridge and manual inside,” says Andrew Byatt of Blaze Entertainment.

His company recently launched a new handheld games console called Evercade, which is aimed at the retro market. Rather than see buyers scurry off to the internet to download digital gaming ROMs for use on the device, Blaze is stuffing curated games collections on to physical carts.

“We began by thinking about something that we would personally want to own,” Byatt says of his device.

“And because we are all big fans of handheld gaming devices, having grown up with the Atari Lynx, Game Boy and Game Gear, we decided to make a new one. We also wanted gamers to feel nostalgic when displaying the carts on their shelves. It lets them have something to keep that evokes the past.”

COLLECTORS’ CORNER

This kind of thinking is by no means new. There’s a reasonable number of consoles out there such as Retro Freak and Hyperkin’s RetroN series of machines, which allow you to play original cartridges without the need

for the original device. Analogue also sells reimagined versions of the Sega Mega Drive and the SNES that are compatible with the thousands of game carts that have been released over the years. They've helped to keep old physical media alive.

But creating a fresh machine to play retro games on new specialised cartridges puts a different spin on things. Certainly Evercade is not, by any means, following the path of the much maligned ZX Spectrum Vega+, whether that's in getting customers to download games on to a removable microSD card or providing tech that can be best described as flimsy. And it's not a machine that pre-packs games into a miniature version of a much loved console, as with the SNES Classic Mini or PlayStation Classic, to name but two.

Instead, it's a handheld that taps into the thirst for collecting as much as anything else and, again, this sets it apart from other attempts. Sega, for instance, recently announced a new range of differently coloured miniature Game Gear consoles to mark its 60th anniversary, each containing four games. But it's a limited run of four units and you can't – legally – add more games to them. In trying to deliver its authentic experience, Evercade offers the potential of discovering something new.

Want a bundle of old Atari 2600 games or a number of classic titles created by Data East, Interplay, Namco or Technos? Then pick and choose the cartridges that take your fancy and you may just find a game that's unfamiliar to you squirrelled away on there. Sure, the cost of buying four multi-game carts will equal the £60 cost of the console itself, but this method puts some money in the pockets of the people who own the copyright to the games.

"A big part of the process of making Evercade is that we can expand the collection over time," Byatt explains.



▲ The handheld Evercade has four face buttons, a pair of shoulder buttons and a D-pad, and it can also be connected to a television

"All of the games are fully licensed so their owners benefit from the cartridge sales. We're also curating what we are offering so that the experience is interesting."

DIZZYING NUMBERS

Buying the games in this way also eases potential retro gamers past the technical hurdles of downloading and setting up emulators, although it has to be said that this is easier today thanks to packages including OpenEmu, RetroPie and browser-based offerings.

There are also streaming services such as Antstream which, like Evercade, help players avoid the legal issues surrounding the downloading of ROMs by offering licensed titles. Those, however, involve delivering games digitally rather than physically.

Not that Byatt believes there is anything fundamentally wrong with that. He accepts that making games available for others online has kept many titles alive.

"Everyone involved in retro has downloaded games from the internet, and it has preserved many games that would be lost otherwise," Byatt affirms.

"But we totally understand why game owners want to protect their games from download and we would

◆ Philip and Andrew Oliver have released a collection of their 8-bit games for Evercade, but they have feet in both physical and digital camps. Their newly redesigned website, www.olivertwins.com, lets you play all of their games online for free

encourage them to make their titles available to companies such as us."

So far, there are 145 8-bit and 16-bit games spread across 13 cartridges, with new collections in the pipeline (the plan is to release between 12 and 20 each year and, since Evercade can be hooked up to a TV via HDMI, they can all be played on the big screen in 720p).

One such collection is a bundle of games by Philip and Andrew Oliver called The Oliver Twins Collection, which brings together the brothers' 11 NES releases. Eight of these are based on the age-old and fondly remembered Dizzy franchise, with the other three being BMX Simulator, FireHawk and Super Robin Hood.

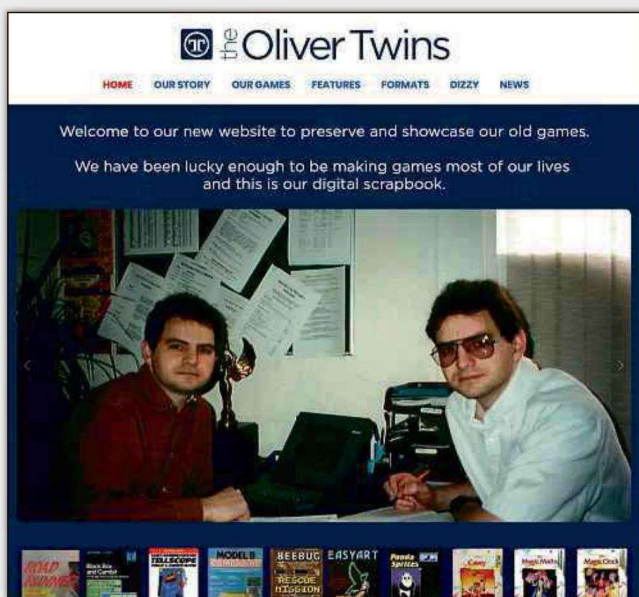
"There's something very special about being able to hold a high-quality box, a cartridge and a manual and then be able to put it on a shelf to remind you of the great time you had with that game," says Philip Oliver.

Indeed, the Olivers are no stranger to physical releases, and that's not entirely because their original games were sold on cassettes, discs and cartridges back in the 1980s and 1990s.

In 2015, the brothers came across code for the previously missing Wonderland Dizzy and released it for free online, before approving a cartridge-based version for those who wanted to play the game on the original NES.

"We're brilliant hoarders and we kept the code, never knowing that one day there would be a chance to have the game finally published," Philip says.

"Wonderland Dizzy was really well received, so we went back to the loft and found three more unreleased games: Dreamworld Pogie, Mystery World Dizzy and Panic Dizzy. These had limited, very collectable, production runs too."





◆ New cartridges have been devised for the Evercade system, each containing a collection of games

and were able to master them in a format with a nice menu, ready for cartridge production.”

GOT THE LOOK

Anyone wanting to start a collection of Evercade games is aided by a decision to number each one. The idea is that gamers may be tempted to snap them all up for the sake of completeness – something we’ve already seen with past budget releases published by the likes of Codemasters and

the Ocean label, The Hit Squad, which have caught the imagination of modern collectors.

Byatt says they’ll also be rewarded by the look of the boxes and the inclusion of manuals.

“The manuals and boxes were a big part of this project for us, and we loved making them,” he explains.

In each case, the manuals refrain from detailing exactly how the games should be played.

“But they show the controls and they are more like little love letters to each game,” Byatt adds.

◆ Psytronik is one of a number of companies releasing games on cassette

Getting the look right is important. Just as with vinyl music releases, gaming aficionados say they enjoy the artwork, screenshots, wordings and any accompanying little quirks of physical releases. In fact, the love for boxes is so strong, you’ll find many homages to packaging online, whether that be via the impressive videogames database MobyGames (www.mobygames.com), which covers multiple formats, or on sites that are dedicated to particular systems.

One such example is *bigboxcollection.com*, a website recently created by Benjamin Wimmer. His site showcases more than 650 PC videogame boxes, all scanned in 3D and viewable from the front, back and sides. You can zoom in and out for greater detail, and print the boxes if you wish to make a miniature papercraft model.

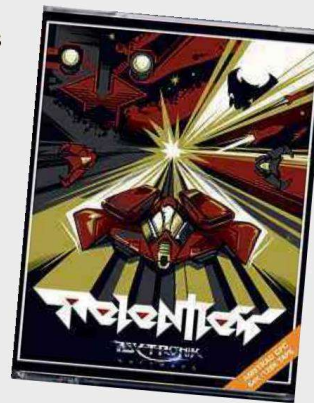
“There was nothing like that on the net and I thought I’d give it a shot,” Wimmer says.

“I experimented with 3D photos beforehand, but it turned out that rendering my boxes in real time only required a couple of lines of code.”

PACKAGE TOUR

“Odd-shaped boxes are a challenge and showing the boxes’ contents is on my to-do list,” Wimmer continues.

“But I do enjoy the packaging. Today, it’s all highly professional artworks, and everything’s slick and polished. Back then, there was a more honest approach: just find an artist that could turn pixel



The proceeds of those games went to charity and that’s going to be the case with the Oliver Twins’ latest release. Their deal with Evercade came together in March, and it was agreed that the profits and royalties would be given to the National Videogame Museum in Sheffield.

This will help to preserve a wider physical collection, especially given that the museum’s bosses are worried they may have to close the doors. The items they usually display to thousands of visitors have gathered dust due to the restrictions imposed by Covid-19, and they’ve received little to no outside help.

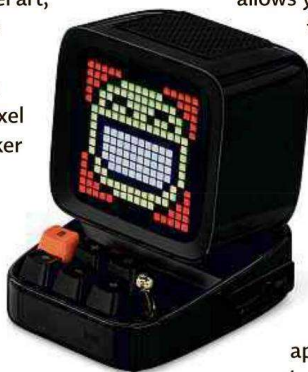
“For us, it was an easy process. We just gave Evercade our final NES ROMs and their engineers took care of the rest,” says Philip.

“I imagine they dropped them into software libraries they had already developed

news

● **DISPLAY PIXEL ART ON A MINI COMPUTER**

If you haven’t yet woken up to the delights of pixel art, then a fun bedside gadget by Divoom may be the fix you need. The Retro Pixel Art Portable Speaker is a Bluetooth device that looks like a miniature all-in-one PC and, as well as being able to display 16x16 pixel art on its tiny LED screen, it doubles as a smart alarm clock.



Available from Amazon for £70, it comes in a range of colours and has six keyboard-like keys alongside a miniature joystick. The speaker pumps out 10W of audio via its amplified DSP processor, and the device allows you to play MP3s from a microSD card, as well as streams from internet radio stations and services such as Spotify.

Its main pulling power, however, is the ability to use an accompanying app to create pixel art or make use of images crafted by others. The app includes a scrolling text editor

and an ability to convert pictures and GIFs. You can also get daily reminders, view social media notifications, check the weather, and play mini retro games such as Tetris and Snake.

● **PAC-MAN RECREATED USING AI**

Pac-Man’s designer Toru Iwatani needed a nine-man team to develop Pac-Man, the iconic game that’s currently celebrating the 40th anniversary of its original arcade release. But a new version has been created without any human intervention.

Instead, Nvidia Research has trained a powerful artificial intelligence model called GameGAN on 50,000 episodes of the game and the result has been a fully functioning

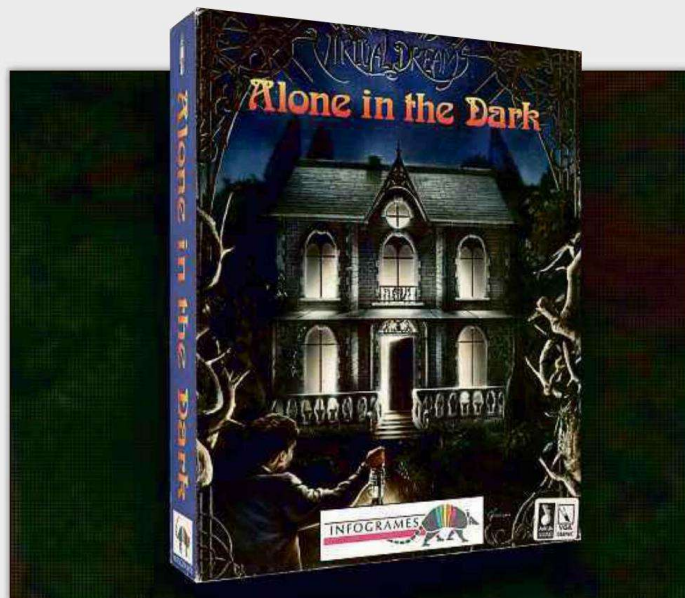


re-creation that follows the same fundamental rules.

The model makes use of generative adversarial networks, or GANs, to emulate the game engine by simply monitoring what was happening on the screen. It’s also possible for new screen layouts to be generated and the hope is that the AI will become sufficiently



↑ By providing a complete package of box, manual and media, Evercade is hoping to persuade people to ditch digital downloads



↑ Take a look at old PC game boxes in 3D at bigboxcollection.com

graphics into a nice cover, then try to describe the game and its features, rather than merely stating marketing slogans.”

Wimmer asks that visitors to his site don't print and sell replica boxes.

“They're for personal use only,” he says.

This is a reaction against those who peruse other printable libraries of game boxes and abuse the system, going against the more noble cause of wanting to create a new home for your loose physical media – perhaps to replace any missing or battered packaging, or to produce an everyday box for when you want to carefully store the original.

“I miss browsing through big box PC games,” Wimmer reflects.

“Today you just scroll down a long list of titles and screenshots, but when the

offer was more limited to shelf space, it was easier to get an overview.”

NEW FOR OLD

It's for precisely that reason that some gamers prefer to always go physical rather than digital whenever the opportunity arises. Catering for them are publishers of newly made games for retro platforms such as Cronosoft and Psytronik, whose boxes are reminiscent of the oft-spoken 'glory days'.

We've also seen many digital releases for old computers accompanied by physical versions that appear to attract greater attention on social media, with buyers proudly photographing their purchase or videoing themselves unboxing the game.

But is Evercade purely about playing older games? Byatt says it isn't.

“We have the new titles Xeno Crisis and Tanglewood coming on a cart, and we love the Mega Cat Studios cartridge [from a company that develops new games for original hardware] so more of this can be expected from us. We definitely think Evercade is a fit for modern retro and homebrew titles that might not see a physical release,” he adds.

As it stands, it's mainly being aimed at those who like to reminisce about the titles that gave them tingly feelings whenever they sought to have a blast many years ago. But is there any danger that the carts won't work and will need a big blow to get them going?

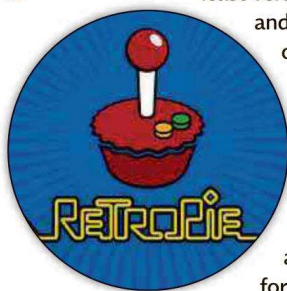
“That always helps,” laughs Byatt. “But our cartridges should be pretty reliable.”

advanced to aid modern day developers in their work.

Nvidia Research intends to make the game available to play on AI Playground (tinyurl.com/391retro1) later in the year, but you can visit the site to view the research paper and resources today.

● EMULATE RETRO SYSTEMS ON A RASPBERRY PI 4

The open-source operating system RetroPie now works with the Raspberry Pi 4, so you can quickly set up a system packed with emulators of past consoles



using the latest and most-powerful device.

With 4GB of memory, a 1.5GHz quad-core ARM Cortex-A72 processor and VideoCore 6 graphics, the single-board computer is perfect for even the most demanding retro machines. It also means less advanced consoles will run without a hitch.

Just make sure you have at least version 4.6 installed and maybe even go online for ideas of how you can create the ultimate arcade setup (there are loads of projects that re-create arcade cabinets, for instance).

Incidentally, RetroPie now works using the latest version of the Raspbian OS, Buster, too. Go to retropie.org.uk for the latest image.

● GET THE SOURCE CODE FOR GW-BASIC

Microsoft developed the programming language GW-Basic in 1983 and bundled it with the MS-DOS operating system. The interpreter introduced many people to coding on IBM PC compatibles, and it became hugely popular as a result, allowing for the development of simple apps and games.

Now the tech giant is open-sourcing GW-Basic's code, and says it is doing so purely for educational and

historical purposes. As the website for the code explains, GW-Basic can be traced back to the very first Microsoft product, which was written by Bill Gates and Paul Allen: a Basic interpreter for the Altair 8800.

Written in 100% assembly language, it may come in handy for any retro projects you fancy making, or you could simply reminisce. Read more at tinyurl.com/391retro2, and find the code on GitHub at tinyurl.com/391retro3.

