

K & A plus #24

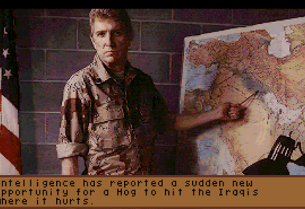
autumn/winter 2023

English edition

Total Militarisation
C64 war games review
My favourite Commando



New course: 6502 assembly
New releases: Absolute Zero, Rocky & Co, SNK vs CAPCOM



Intelligence has reported a sudden new opportunity for a MoG to hit the Iraqis here it horts.





▲ Part of the 'Desert Amiga' photo shoot we publish on page 81

Intro: So let it be war!

A few years ago, the Polish Minister of Culture and National Heritage, assessing the exhibition at the Museum of the Second World War in Gdansk, said that there were too few positive aspects of the war there. Aleksander Tarnawski replied that if he really wanted to find out what war was, he should spend at least 20 minutes in Syria, which was then engulfed in war chaos. He knew what he was talking about because, in addition to his amazing mind, he had a wealth of experience – he was the last living silent and invisible man and ate bread from more than one oven. When it came to war, he would prefer not to experience it. He saw nothing positive in war. We can't see either. We prefer games.

In the 23rd episode of the first season of Star Trek, later called Star Trek Original Series, the inhabitants of two planets decided that war was too terrible and that instead of a destructive process, computers should fight each other in a great simulation. But there was a catch: the computers reported the number of casualties in the battle, and that number had to be destroyed for the war to continue. This is not the kind of game we want.

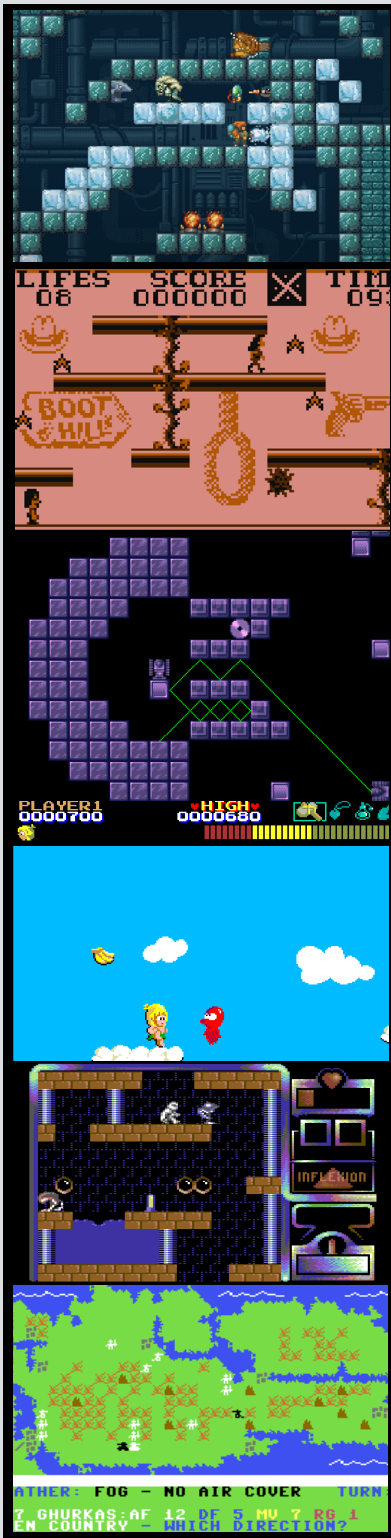
We prefer games in which war is fake, in which – as the anti-war game Cannon Fodder says – "war has never been so much fun", in which no one consciously suffers, in which war game maniacs can practice strategy without casualties. So if there is an armed conflict abroad, we strongly recommend that you fire up your eight- or sixteen-bit machine and send pixel soldiers against other pixel soldiers of a different colour. In this issue, we give you several ways to do this.

Greetings, c00k and the team



CONTENTS

autumn/winter 2023



COMMODORE Plus/4 VIC-20 C16 C64 C128

Gallery: Commodore memorabilia	8	Tomato Worm	26
GO8BG Cartridge Edition #1	10	FIZZ	27
Tut-Tut	15	C64 war games	36
Super Monza GP 2	15	Lemmings	39
Silkworm	16	Dig Dug Revival	40
Deathflood: Dungeon of Doom	17	Tower And Dragon V2.7	41
Scenario	18	Falklands 82	42
Up Periscopel	20	Lazarus	48
Rocky & Co	22	C64 cartridge archiving	58
SNK vs CAPCOM	23	6502 Assembly, Part I	60
Penultimate+2	24	Warrior	63
PETLifter	25	How to create your own game for the C64? Part IV	70
Bill & Ted's Exc. GB Adventure	25	XC=BASIC coding guide, Part V	72
Basic Snake	26		

AMIGA M68k AOS 4.x Aros MOS

Bulbmaster (Demo)	7	Das Boot	30
K&A Plus Amiga Cover CD #24	10	Mega Lo Mania	34
Gulf War Game Review	11	Absolute Zero	47
Laser World	14	Wonder Boy	55
Ooze: The Escape	28	Retrospectives	56
Boxx 4	29	Emulation zone: DrawBridge	67

VARIOUS news editorials reports interviews emulation drawings

Intro	2	With dice and pencil:	
Fresh News	4	HeroQuest: Game system	75
Total militarisation	44	On another subject	76
Defender of the Crown – through the prism of Cinemaware	50	Talking Heads	78
Case Whitening	64	Gallery: Desert Amiga	81
		Johnny presents: The study of Caim	82

COVER DISK

We have prepared two cover disks and both are available in digital and physical form. The first is an Amiga CoverCD containing games, graphics, pictures and music; the second is a compilation of Good Old 8-Bit Games for the C64, released on a cartridge. This is our first approach to this storage medium and if we see the interest, there will definitely be more releases in the future. Both cover disks are described in more detail on page 10.

Komoda & Amiga plus

Commodore computer user magazine

Editor-in-chief: Arkadiusz 'Komek' Kosiarski

Managing Editor: Tomasz 'Tomxx' Ankudowicz

Editors: Rafał 'Don Rafito' Pączko, Ariel 'Ari' Zimny, Marcin 'pnowiec' Królikowski, Tomek 'tommysi' Garbarski, Paweł 'Monka' Marcinek, Martin 'Logiker' Roscher, Agnieszka 'FPWG' Poziomka, Louie Dimovski, Łukasz 'Retro Chłop' Gniedziński, Tomasz 'Razor' Kaniecki, Erik Hoojmeijer, Maciej 'Void' Matecki, Tomasz 'Sleeve' Wiśniewski, Maciej 'Retrobajtel' Szmajloch, Martin 'Logiker' Roscher, Tomasz 'Jackal' Jędrusiak, Marcin 'Tect' Wieczorek, Mariusz 'Ramos' Rozwadowski

Design & DTP: Tomxx, Monka, Razor

Publisher: K&A Arkadiusz Kosiarski

ul. Felińskiego 23/1A, 41-923 Bytom, Polska

NIP: PL6262591695

Cover design: Tomxx, Razor

Editing and rewrite of Polish edition: Krzysztof 'Drakon' Odachowski, Marcin 'Piana' Piana, Jacek 'Deadman' Miśkiewicz, Maciej Sznurkowski, Michał Sobczyk, Łukasz 'Hery' Herman

Translation: Ari, Tomxx, Piana, Monka, Toby, Void, Azu, Krzysztof Drzazga

Editing and rewrite of English edition: Martin 'Logiker' Roscher, Louie Dimovski, Erik Hoojmeijer, Wojciech Bagniewski, Jarek Ratajski

Contributors: Jan 'Johnny' Lorek, Leopold Tupalski, Krzysztof 'Drakon' Odachowski, Mateusz 'Azu' Glenszczyk, Piotr 'c00k' Machnowski, Szymon 'netdemon' Trygar

Fresh News

Amiga AGA

Game.X

hitchkir SoftWorks

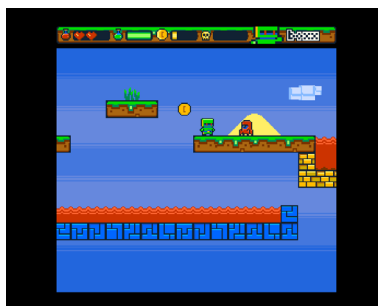


It's so nice to remember the days of arcade cabinets and all those beautiful space shooters. Game.X will help us to refresh such atmosphere. We control a small ship in space, flying to the right, just like in R-Type. Our brave vehicle has to fight its way not only through a waves of enemies, but also through rocks that shatter under the impact of missiles. Throughout the game we will come across special power-ups for the ship, adding missiles and improving the vehicle. This title was ported from the Japanese Sharp X68000 computer to the Amiga with AGA chips. The setting of the game doesn't impress, with no music and only a black screen as background. What Game.X makes up for is smooth animation and fast-paced action. You also don't have to insert coins to play, as you did in the arcades, making this a great title to take you back in time. ■ **Tect**

Amiga

Boxx 1,2,3 Remake

Lemming880



It's been 9 years since the first platformer in the Boxx series saw the light of day. The original was created using Backbone: The Ultimate Game Creator. The author decided to refresh the trilogy by porting the games to the Scorpion engine. As befits a remake, the platformers have been graphically refreshed and given new mechanics and enemies. Our compatriot Koyot1222 helped with this task. The series is now fabulously colourful and brilliantly animated. I highly recommend playing the refreshed trilogy just before the fourth part, which you can read about in this issue of the magazine. ■ **Tect**

Plus/4

The Empire Strikes Back

TCFS and team



It wasn't so long ago that we were raving about the new C64 game titled: The Empire Strikes Back from

Megastyle (reviewed in detail in issue 21). Fellow editors gave the production high marks, and no wonder. This time we're going to rave about the Plus/4 conversion, which looks very good despite some hardware limitations. There is no point in comparing it to the C64 version here, as these two machines have different hardware parameters. All in all, a good shooter faithful to the original version.

PS. Much respect to TCFS, Unreal and Csabo for their commitment to create new games and conversions, because thanks to them the Commodore Plus/4 is still alive.

■ **Komek**

Amiga AGA

Reshoot Proxima 3

Spieleschreiber

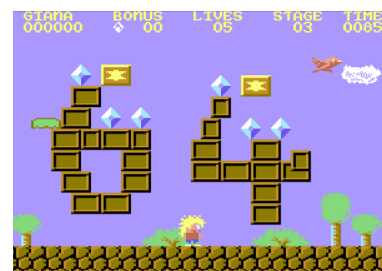


During the Amiga38 event in Germany the game Reshoot Proxima 3 was released. After two parts of the series with horizontal scrolling, the authors decided that this time the gameplay should take place with the screen moving vertically. The game consists of 5 stages, each of which ends with a duel with a boss. This shoot'em up features dynamic gameplay, great graphics in AGA mode and fast electronic music. It is perfect for short but intense space battles. ■ **Tect**

C64

Giana Power Edition 2023

Who Cares



This is a fan-made edition of the classic platform game with 16 new stages. The levels were created by

enthusiasts from the "Who Cares" group using the "Giana Sisters Construction Kit" editor. We will not see many new features in this edition. The music is unchanged from the original. Some characters (such as the owl) have been transferred from the Nintendo DS version, but we could already see this change in the "Giana Sisters 30th Anniversary 1 and 2". However, the authors have not lacked imagination when it comes to creating the new levels. The first stages are short and less demanding, which is not what can be said for the later levels. Completing the later stages is still a lot of fun and can keep the player occupied for several hours. For fans of platformers and the original Giana Sisters, this is a must-have. ■ **Tect**

C64

Tony: Born for Adventure

Monochrome Productions



Tony Halik is one of Poland's greatest travellers and explorers, whose extensive biography would be enough for more than a single movie. He travelled the length and breadth of the world, but was perhaps most fond of Latin America. Halik's legacy has inspired the game Tony: Born for Adventure, in which we take on the role of an explorer as he explores the nooks and crannies of Montezuma's mysterious palace.

The game itself is a platformer where you have to collect items and avoid hordes of hostile creatures. It features great music and animation, as well as a distinctive monochrome art style. Too bad that the C64 version doesn't take advantage of the hardware's graphical capabilities, but that's probably due to the multiplatform nature of this production. K&A Plus editor Marcin Matecki is responsible for the code of the Commodore version, and the demo version can be downloaded from <https://monochrome-productions.itch.io/tony>. ■ **Monka**

VIC-20

Roguish

Marco Giorgini



Dear Readers! Did you know that gold and jewels are now at your fingertips (but so pixelated)? If you feel like collecting some, come with me to Goblin Mountain, because there are treasures hidden there. But don't think it's going to be easy. The menacing green goblins guard their treasures fiercely, so it won't be without its thrills. The game features different rooms (levels with randomly scattered items to collect) and a bunch of ugly creatures. Sometimes it doesn't take much to have a good time, and that's exactly the case here. Play it and you'll probably agree with me. ■ **Komek**

C64

The Holy Cube

la1n



A puzzle game with an unusual concept, great graphics and music. A spinning cube, bouncing off the left and right walls, has to collect colourful finds. A trivial idea, simple in concept, but easy to learn, difficult to master. Using the immovable elements placed on the boards, jumping to higher platforms or avoiding obstacles, we score points by collecting colourful shapes. The next board syndrome is very much in evidence here, as curiosity about what's new on the next screen wins out over the frustration of failure. The difficulty level doesn't shoot off into space like a rocket, but rises slowly, like a march up the stairs, which makes the game fun. I like games like that. ■ **phowiec**

PET

PETSCII Side-Scrolling Platformer

Jimbo

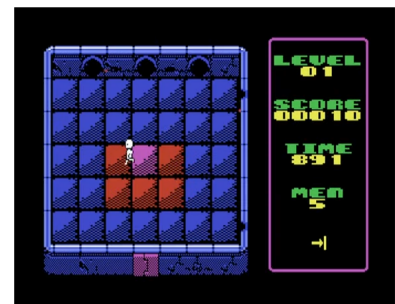


Oh boy, I didn't expect this! From now on, the Commodore PET can boast a platformer in the style of Super Mario Bros. Such wonders can only be performed by Jimbo, who once again breaks the technical barriers and limitations of this hardware. It is astonishing how much detail from the raster graphics can be reflected in the characters. Furthermore, the sound effects, for all their limitations, sound very familiar. It is well worth checking out, even if you are not a Mario fan or a PET user. ■ **Komek**

C64

Laserscape

Vector5 Games

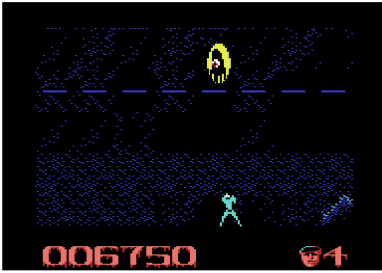


Colourful tiles, deadly lasers, a lonely man. A philosophy worthy of a Cube film. And that's what this game is all about. The protagonist has to survive by not getting cut by a laser. Or not falling down a hole. Or, old school, running out of time to complete a level and having to replay it. The developers' idea is simple. The selected tile must be the same colour as the exit, so that it opens and a way out of the board is unlocked. Standing on a tile changes its colour. Standing on the same tile again will change it to the next or previous colour, so plan your moves carefully. But also be quick, because the lasers shooting from the walls won't let you stay in one place for too long. 20 levels, codes for each level, interesting visuals. And the spirit of the aforementioned Cube film... ■ **phowiec**

C64

Darkland 2

Psytronik



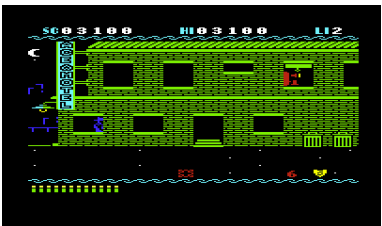
A cosmic cloud has covered the earth in eternal darkness. Red death rains down from it like blood. Monsters from the underworld lurk in the shadows, giving birth to their evil offspring. Fight them with light and fire, find shelter. Survive this unholy night.

Darkland 2 is a simple shooter released on the occasion of Halloween. In it, you travel through the disturbing darkness, trying to survive the attacks of monsters using a gun and a flashlight. Shots only hurt enemies when fired at close range, or when monsters are hit by a well-directed beam of light. The game may not have the most sophisticated setting, but it makes up for it with the idea behind the gameplay and the fun of killing aliens. It is free and can be downloaded from <https://psytronik.it.ch.io/darkland-2-c64-free>. ■ **Monka**

VIC-20 +24k

Midnight Crimes

W.E. de Villiers

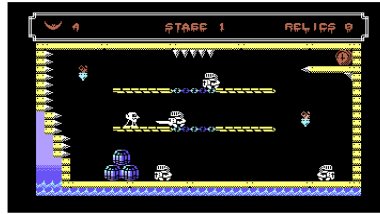


It is 1933 in America and the ban on the production and sale of alcoholic beverages is about to expire. Organised crime syndicates flood the black market with their products one last time. You are one of the the Untouchables, a special, incorruptible law enforcement unit, and you must stop these criminals before they get to you. Loosely based on the eighties arcade game Empire City, this title offers plenty of shooting action! ■ **Erik**

C64

Vampire Vengeance

PATAGONIA



Revenge is sweet – this must be what Count Orlock whispers to himself when his castle is attacked by the Knights of the Order of the Silver Cross. The battle was fierce, but the Count ran out of strength and turned into a vampire and fled to Transylvania. Now he has returned to take his revenge! The original version of the game was released by POE Games in 2020 for the ZX Spectrum computer. Thanks to Juan Castiñeira, it can now be played on the C64. The conversion includes 30 varied levels and a very good soundtrack composed by et1999cc. Otherwise it is still the same good platform game. Courtesy of Juan, the game was featured on our first GO8BG cartridge edition #1. ■ **Komek**

C64

Colossus

Megastyle

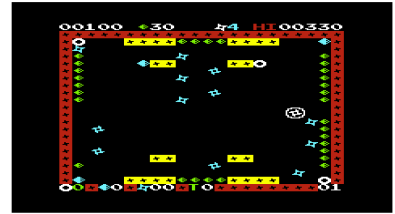


Do you have the courage to face a huge and ugly beast? Or, to put it more colloquially, to jump into its jaws? If so, don your jumpsuit, grab your gun and charge! You'll need to attack its eyes and heart, and then exit through its slimy mouth. Before you can do that, however, you'll have to make your way through a huge maze, with all sorts of bacteria prowling around and coming your way. Never fear, a solid spitball will do the job. I don't know why, but there's something about this game. The graphics are seemingly simple, but interesting. The music and sound effects make a good duo, and the playability is pretty good. So there is nothing left to do but deal with the disgusting beast. ■ **Komek**

PET, VIC-20, Plus/4, C64, C128

Shuriken

Fabrizio Caruso



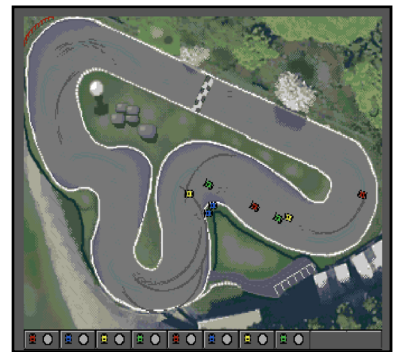
Shuriken, or ninja stars, have appeared in video games more than once. Mostly when the hero was a ninja or shinobi. This time we have something unconventional, as both the hero and the enemies in the game are flying shurikens. All in all, the game is a bit like Pac-Man. One shuriken collects points (diamonds), and the rest fly around like crazy, just waiting to collide with you. Even though Pac-Man is a bit easier, Shuriken is still a lot of fun.

■ **Komek**

Amiga

Rally Cross 1.0

Ozzyboshi & team



Wroom! The loud roar of the engine, the smell of burnt rubber filling your nostrils. What is it? It's a rough ride with Rally Cross, multi-player car racing from a bird's eye view. Hmm... this 'bird' probably flies too high, because the cars look so small. Although the game's design is minimalist, the variety of tracks and locations adds to the quality.

It is also possible to play with several players at the same time, but a dedicated expander (CGA 4-player joystick adapter, eg. the one from Protovision) is required for this. It should be emphasised, however, that Rally Cross 1.0 is not the final version of the game and that an expansion is planned. In the meantime, let's start the engine and get going! ■ **Komek**

Bulbmaster (Demo)



AMIGA



EDITORIAL

■ author: Retrobajtel / translation:

"Electricity doesn't touch the electrician," a buddy's uncle once said shortly before grabbing an uninsulated phase wire....

There may not have been a happy ending, but for a heavily electrifying adventure there were no major losses: a bruised hand, a smashed head, a slight burn and no feeling sensation in the fingers for a month. Anyway, this was supposed to be about the game. These are simply the associations I have when I see "masters" of electricity, or rather "masters" of the light bulbs. Here we are dealing with none other than an electrician, whose job is to screw huge light bulbs into huge sockets (or, to use the professional language, light bulb fixtures).

The mechanics of the game are based on the classic Sokoban, but not entirely, because the authors sprinkled in a little variety and added some challenges. The wooden boxes standing in our way move only by one field, while the big bulbs roll like a perpetual motion machine until they meet an obstacle – only then do they stop, so we have to plan our next moves wisely. Remember, this is 230V AC, not the 12 V DC from your old PIKO trainset.

The game won first place in the gamedev category at the Amiga Decrunch 2023 event. For now we only get a demo version, which is still evolving, but even at this stage you can see that it's going to be a ton of fun. The intro with the title graphics and a great background score, the first levels, the titular Mr. Electrician (or perhaps an employee of my housing association), the distinctive sound of a light bulb rolling around – all this reinforces my belief that this entry will be a hit. Well, will you finally turn on all those light bulbs? Let's see if you're a home-grown electrician or a real wireman who has screwed in more than one bulb in his life. I look forward to seeing the finished product! ■



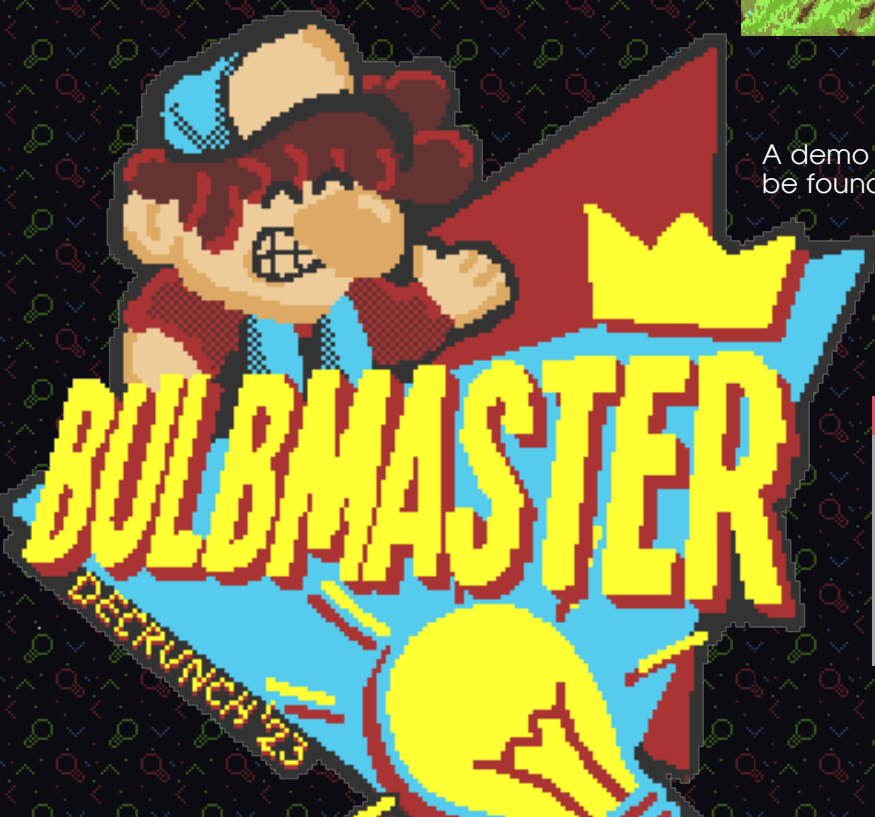
A demo version of the Bulbmaster game can be found on our latest Amiga CoverCD #24.

BULBMASTER

Developer: Neofuturism
Release year: 2023
Platform: AMIGA

We look forward to the full version

DEMO



FRESH

autumn/winter 2023

Gallery: Commodore memorabilia

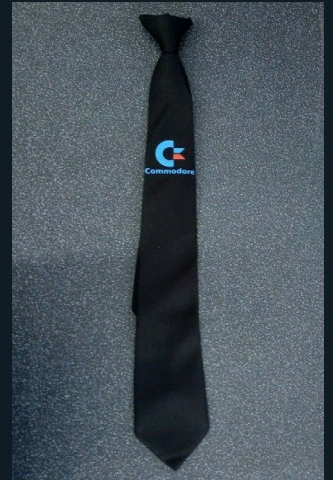
After years of producing calculators and typewriters, Commodore Business Machines entered the personal computer market. This landmark decision ushered in an era that had an extraordinary impact on branding and advertising. One of the most recognisable elements of this story was the signature graphic – the Commodore logo.

The iconic letter C became a symbol of quality and innovation, and the company took steps to expand its presence in the gadget and memorabilia market. Clothing, watches, mascots, mugs and posters bearing the Commodore logo became popular with fans of the brand, and in those halcyon days you could expect Santa Claus to come down the chimney with the CBM logo. Technology history buffs treasure these items as part of the Commodore Business Machines heritage.



Commodore was also active in sport, particularly European football. Over the years, the company's logo has appeared on the shirts and stadiums of Bayern Munich, Chelsea FC, Paris Saint Germain and AJ Auxerre.

Photographs: own, commodore.ca, Commodore Amiga Facebook group. ■ Tomxx



K&A Plus Amiga Cover CD #24

Dear Readers,

In front of you is another cover disk designed for Amiga users. This time Cover CD is dominated by games and music modules. It starts with this year's full version of the game "Ooze: The Escape" by Haplo. The CD also contains a version prepared for the C64, which can be played on the Amiga with the emulators Frodo, MagiC64 or Vice. Among the public domain titles worth mentioning is the Boxx series by Lemming880. Thanks to the author's kindness, the compilation includes not only the original trilogy created in Backbone, but also the latest, fourth part and all the remakes of the previous ones, created using the Scorpion engine and with graphics by Koyot1222. There was also no shortage of games in demo versions. These include Tony, a game about the adventures of the famous Polish traveller Tony Halik.

Fans of music modules will enjoy selected productions by Bartosz "Voyager" Dramczyk (this issue also features a memoir by Bartosz).

Amateurs of rendered three-dimensional graphics will be delighted by the realistic projects of Cem Tezcan, including C64 models. It is worth mentioning that one of his graphics adorned the cover of K&A #20.

For those who like the immortal theme of beautifying Workbench, a DualPNG icon pack called Cute Drawers by me has been released. The package has been used for all the contents of this cover disk. To view it properly, you will need the latest icon.library, which can be found on the disc itself or on Aminet.

Finally, we added the following goodies: an alphabetical list of articles from the last issue of the Cover CD, cover graphics, films from Pixel Heaven in CDXL format and a photo report from the editorial meeting that took place in September this year. ■ **Don Rafito**

Good Old 8-Bit Games. Cartridge Edition #1

It is with great pleasure that we present the first edition of our compilation of C64 games on cartridge! The compilation was released under the title "GO8BG Cartridge Edition #1" and is the equivalent of a floppy version of our cover disc, so you will also find 11 games selected by us. The project is the result of a collaboration with Raf (see his article on archiving cartridges in this issue), who converted Tomxx's loader and prepared physical cartridges for us. This does not mean that we will stop releasing games on floppy discs. On the contrary, we intend to expand our publishing projects and offer you something special very soon. More information will be forthcoming. In the meantime, we invite you to check out the following games:

Plekthora, Dr. Mortal Wombat, 2021 - <https://drmortalwombat.itch.io>

Ball & Chain, Dr. Mortal Wombat, 2022 - <https://drmortalwombat.itch.io>

Snake VS Bomb 2, Richard of TND, 2023 - <https://richard-tnd.itch.io>

Latent Fusion, Direct Designs, 1995

BrainWave, Antti Nylén, 1990

Missile Defence, Dr. Mortal Wombat, 2023 - <https://drmortalwombat.itch.io>

Vampire Vengeance, PATAGONIA, 2023 - <https://patagonia.itch.io>

Robots Rumble, Digital Monastery, 2019 - <https://majikeyric.itch.io>

Vortex Crystals, Richard of TND, 2017 - <https://richard-tnd.itch.io>

Kendo Warrior, Byte-Back, 1989

Tritopia, Vintage Computing Carinthia, 2022 - <https://frodewin.itch.io>

GO8BG Cartridge Edition #1 Loader, 2023

Loader that loads games from the collection. Code: Tomxx/Raf, logo design: Katon, music: Andor Cseh – 25 years later.

■ **Tomxx & Komek**

Gulf War Game Review

author: Leopold Tupalski / translation: Tomxx

The day on 2 August 1990, when Iraqi troops invaded Kuwait, set in motion a series of events that changed the face of the Middle East. The invasion launched by Saddam Hussein, then President of Iraq, was met with a firm response from the West. An international coalition led by the United States quickly liberated Kuwait in a campaign that began on 17 January 1991. The blitzkrieg conflict had many consequences, including the subsequent 2003 war, the effects of which are still being felt in the region and in America itself. The military actions of 1990-91 have not escaped the attention of computer entertainment developers.

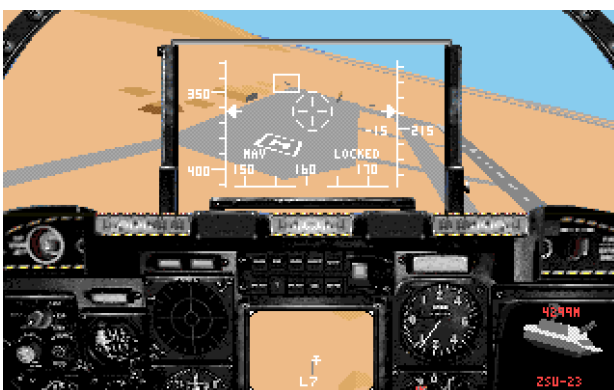


EDITORIAL

The battle for Kuwait formed the basis of many games, including those released for the Amiga. Among them were some unforgettable, if sometimes controversial, titles. Here is a brief overview of selected productions that dealt with the subject of the first Gulf War.

A-10 TANK KILLER V. 1.5 DYNAMIX, 1991

After the rather carelessly received first edition of the Amiga-based 'Tank Killer', Dynamix has returned with an improved version of this simulator. Version 1.5 contains a number of improvements that increase the appeal of the game. From a comfort point of view, it was important to increase the range of graphics settings. These ranged from a poor setting with skeletal models in 16 colours to 64-colour graphics with shading. Thanks to this, the A-10 could finally be launched on weaker Amiga machines, on which version 1.0 ran rather poorly. Owners of more powerful machines were also satisfied, as the game used the capabilities of their hardware.



A-10 Tank Killer (Dynamix, 1991) was expanded in version 1.5 to include a set of seven Persian Gulf missions

The most important change, however, and one that will be appreciated by those who know the modern battle-field, was the introduction of the Persian Gulf campaign, better known by its American codename 'Desert Storm'. It was finally possible to take part in the conflict in which the famous Warthog made its combat debut. The two Central European mission packs known from the original version of this simulator were also retained.

COMBAT AIR PATROL PSYGNOSIS, 1993

For those eagles of the skies who want to fly a little higher than the famous Warthog, there is another desert title for you: Combat Air Patrol. This is a flight simulator from Maverick Simulation. It puts you in the role of a fighter pilot on board the aircraft carrier USS Theodore Roosevelt. There are two aircraft to choose from, which determine the profile of the missions to be flown. In CAP, you can take the controls of the F-14 Tomcat, made famous by Top Gun, or the F/A-18 Hornet fighter-bomber.



Published by Psygnosis, the Amiga version of 'Combat Air Patrol'



The game offers a complete air campaign, with the option of a single mission or a training flight. The game can also be played on two Amigas connected by a null-modem cable via an RS-232 port, allowing one-on-one duels or a joint mission. Combat Air Patrol also allows you to command a land campaign, determine troop movements, conduct reconnaissance or artillery fire, or plan combat flights. A strategy game packed into a flight simulator.

GUNSHIP 2000 MICROPROSE, 1993

Speaking of flight simulators, it is hard to imagine a media event as big as the war over Kuwait being ignored by a powerhouse like MicroProse. In the late 1980s and early 1990s, the company released a number of games that became hits. These included simulators, and one that became hugely popular was Gunship 2000. This was the sequel to the 1986 hit Gunship, a simulator of the AH-64 Apache attack helicopter, which had just been introduced into the US Army's arsenal. The sequel, released in the early 1990s, was much more polished and extensive, with many more types of aircraft to choose from. Like the original, Gunship 2000 features a mission pack set in the Middle East.



Gunship 2000 was released on the Amiga in the OCS/ECS version presented above, and later on CD32

Connoisseurs will be interested in the game's manual, which contains a history of helicopters and a description of their combat missions from the Second World War to the Gulf War in 1991. The manual also includes descriptions of the helicopter models available in the game and their weapons systems. Within the Amiga family, this game was first released for the OCS/ECS chipset to appear on the CD32 console in 1994. In this second release, the dynamic music composed by John Broomhall and Andrew Parton, which plays from the compact disc, can further delight the ear during gameplay.

DESERT STRIKE: RETURN TO THE GULF ELECTRONIC ARTS, 1992

This isometric shooter, in which you fly an AH-64 Apache helicopter, was first released for the Sega Megadrive console, and was later released on other platforms, including the Amiga. The game's plot describes the events following Desert Storm, when one of the wealthy emirates in the Middle East is overrun by the forces of General Killbaba. This unpredictable dictator, who possesses ballistic missiles and weapons of mass destruction, is a threat to the entire world and must be neutralised as soon as possible. So the Americans return to the Gulf, as the game's subtitle says. This time, however, Washington has decided not to launch a full-scale attack, instead entrusting the main objective to an elite helicopter crew from the US Special Forces.



The Amiga port of Desert Strike featured a number of improvements over the console original

Despite this storyline facade, the game's obvious associations with the 1991 Kuwait War could not be hidden. The developers were accused of trying to ignore a conflict that had recently dominated media coverage. Gamers were not too bothered by the turmoil, and the game they loved became a huge hit for Electronic Arts. Desert Strike is almost a must-have in the Amiga list of Desert Storm related games.

WAR IN THE GULF EMPIRE SOFTWARE, 1993

This game is actually the third and last in a series started in 1990 by Team Yankee, developed by Oxford Digital Enterprises (ODE) and published by Empire Software. These productions, which also included 1992's Pacific Islands, were a combination of a tactical game and tank simulator. The first two instalments put the player in the role of a commander of an American tank unit fighting Soviet forc-



es on German soil in a hypothetical World War III ('Team Yankee') and on the fictional Yama Yama Islands in the Pacific Ocean ('Pacific Islands'). Against this backdrop, War in the Gulf looks a little more realistic, although a similar treatment to Desert Strike was also used here. The game depicts a situation in which Kuwait is once again attacked by Iraq, whose forces must be repelled. It is therefore not a faithful reproduction of the events of 1991, although the story does allude to them in some way. Gameplay takes place on a map showing the tactical situation, and on a screen divided into four sections showing the battlefield.



War in the Gulf was the third game in a series created by Team Yankee

The game received positive reviews in the Amiga press at the time, with ratings around 80%. It can be recommended to players who like a more relaxed approach than that of race simulators. There is even a suggestion to play "Team Yankee" as a form of training before *War in the Gulf*.

CAMPAIGN II EMPIRE INTERACTIVE, 1993

The Desert Storm theme also found its way into products aimed at born commanders. One of these was the tactical game *Campaign II*, also published by Empire. While the first part, released in 1992, covered the Second World War, the sequel covered the later campaigns from 1945-91, culminating in the battle for Kuwait. In some ways, the game is similar to the aforementioned *Gulf War*. Again, the player commands armoured units and directs their actions on the map. During a clash, the game switches to a three-dimensional battlefield mode. This is much better than the aforementioned competition. *War in the Gulf*, like its predecessors, features a kind of eclecticism in the form of a 3D environment combined with bitmaps, which were also used in pseudo-3D games. On the other hand, both versions of *Campaign* used fully spatial vector graphics, which were quite detailed for the time and the capabilities of the hardware.



Campaign II covers a series of conflicts from 1945 to the first Gulf War

On the Amiga, however, the game received a slightly lower rating of around 75%. However, Amiga reviewers were much more generous than critics of other hardware platforms, who considered *Campaign II* to be an average game at best. Well, it's probably best to get your hands on this and the other games mentioned here to see for yourself their playability and capabilities, also in terms of replicating the battlefield and the realities of the conflict described.

AFTERWORD

There were at least a few other games that made reference to the war at the beginning of 1991, as it stirred up worldwide public opinion at the time, with reports from the theatre of operations electrifying millions of television viewers in various corners of the globe. The video game industry was not indifferent to these events and quickly began to refer to them in its products. These included the rather serious strategies and simulators mentioned here, as well as somewhat more entertaining releases. To these would probably have to be added *Operation Desertstorm* from 1994, a SEUCK-made shooter in the form of a classic "viewfinder", which, according to the author's instructions, should be seen as a joke, in truth pushing the boundaries of good taste and aesthetics.

The very motif of a war between the West and its Arab allies over Kuwait has long been exploited, to mention Jane's F-15, a flight simulator released for the PC by EA in 1998. The latter were in danger of having to invent hypothetical conflicts after the end of the Cold War or rely on the ingenuity of authors like Tom Clancy to present a modern battlefield. With all these war productions, it is a real paradox that in 1990 the Amiga dominated the Iraqi computer market. However, the history of Amiga Iraq is a subject that begs for its own study. ■

Laser World

■ author: Sleeva / translation: Toby



REVIEW

When it comes to old Amiga games, today we 30 and 40-year-old users of these computers can feel like Indiana Jones penetrating the vaults of the Mayan pyramids. With the slight difference that instead of traversing the corridors underground, we are wandering through old forums, forgotten websites and FTP servers covered with cobwebs. And the treasures we bring to the surface are not made of gold, but of old assembler or C code, in which someone once created real gems.

In 1994 Aleksander Bilinski (Alex), Arkadiusz Waliszewski and Jaroslaw Gruse (Freeman) created Laser World – a port of the well-known 8-bit Atari puzzle game Lasermania. It's a simple (but not easy!) game, where a board with square fields contains a laser ray generator, compact discs to be destroyed, squares reflecting or absorbing the rays (some movable) and special fields like bombs, teleports, capsules with extra time or, finally, the coveted passage to the next stage. The player's task is to steer the tank or, if you prefer, the bulldozer, and rearrange the elements on the board so that the laser beam hits the right place, i.e. first destroys all the CDs and then reaches the EXIT field.

Graphically it is decent. The game boots up even on an A500, so don't expect graphical extravagance. The colors are subdued, the palette refined, the objects on the map simple, but not glaringly underdeveloped. On the plus side, the music made by Alex stands out, consisting of three modules to choose from. It's perfect as background music, even to the point that after writing the review, I left Laser World on so that the music would play in the background while I worked on the computer.

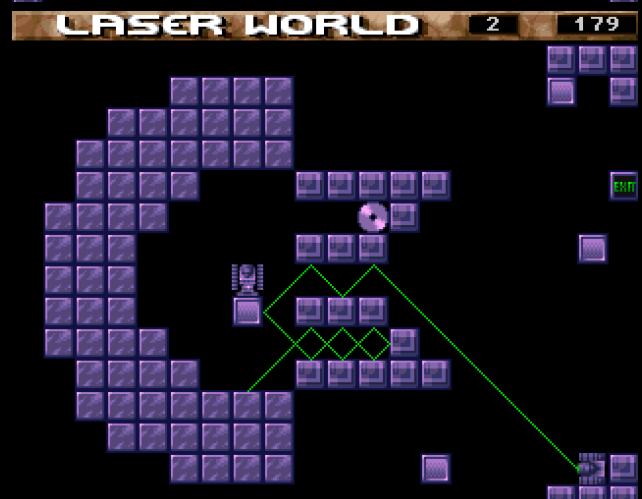
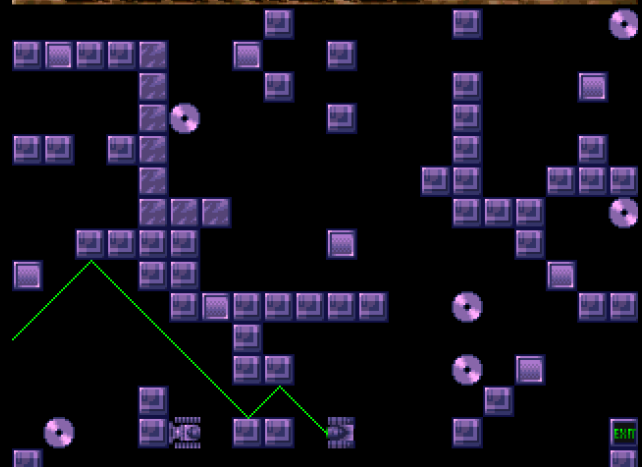
As I mentioned, the rules of the game are simple, but the game itself requires a lot of mathematical and spatial imagination to guide the light beam where we want it. The level design doesn't make it easy for us, and moving a block one field too far may require restarting the entire level. All in all, a typical puzzle game from the 1990s, giving the more sensitive ones bald spots and exposing the plastic of keyboards and joysticks to serious endurance tests.

The producer and publisher of the game, Promic Group, secured the floppy disk against copying. Therefore, unearthing and breaking the game's security features to protect it from oblivion echoed loudly on Polish and foreign forums. Laser World was found, stripped of security features and made available (the floppy disk image can be downloaded in adf format). If someone has a taste for productions that make your brain hurt – with clear conscience – I recommend it. ■

LASER WORLD

Developer: Arkadiusz Waliszewski,
Freeman, Alex
Release year: 1994
Platform: Amiga

An interesting but underrated game





Tut-Tut



author: Erik Hooijmeijer

It's 1921 and you've just discovered the tomb of the Pharaoh. It is rumoured to be full of treasure, but also cursed. As you step through the entrance, a maze of passages unfolds. As you explore, the complex suddenly shakes and you can hear the entrance collapsing. The air becomes stale... and what is that sound behind you?

Tut-Tut started as a type-in listing in Paleotronic Magazine and has since been ported to various platforms, including the Commodore PET. And now, in its most glorious version yet, on the VIC-20!

Your goal as a daring adventurer is to explore the tombs, find treasure and escape before the air runs out. Mummies, not so smart but relentless in their efforts, will try to stop you. Collect keys to move parts of the wall, Sokoban style. Gems, amulets and bracelets give you points.

The game offers a nice combination of action and puzzle solving. You'll have to dash into alcoves to avoid the mummies, which only change direction at the end of a passage. Getting to the exit is another matter; you need to collect the keys and carefully move the walls to continue. Mistakes are easy to make and hard to correct, sometimes the only solution is to try again.

Tut-Tut supports level codes that allow you to skip levels you've already completed. The graphics are nice and colourful and have that Egyptian feel. The sound is unremarkable, but the gameplay is great and addictive. Tut-tut is currently only available on the Penultimate+2 cartridge. ■



TUT-TUT

Developer: **D.Stephenson, D. Curran**
 Release year: **2023**
 Platform: **VIC-20 Cartridge**

These guys just don't give up, do they?



Super Monza GP 2



author: Erik Hooijmeijer

There is nothing faster on the road than a Grand Prix car. The acceleration, the corners and those pesky other drivers trying to stop you from being first. Will you win the race and get the chance to spill the bubbly?

This is an improved and expanded version of last year's Super Monza Grand Prix. Three more famous tracks have been added. Collisions not only cost you speed, but also damage your car, reducing your top speed. Fortunately, damage can be repaired with a pit stop, but this takes time, so it's best not to crash at all!

There are two game modes with three difficulty levels: single race, where you can choose a track and try to win the race, and championship mode, where you have to finish the race on the podium to continue.

The 3D effect is convincing and really captures the feeling of speed. The tunnel at the Monaco circuit is quite spectacular the first time you encounter it. Hitting another car or the roadside shakes the screen, adding to the excitement. Overtaking a car requires good reflexes and knowing where the corners are and is quite difficult. The sound effects are well thought out, crashing, overtaking and being overtaken have their own effects.

Super Monza GP was an achievement in itself and the second edition surpasses it. If you like racing, this is the game to play on the VIC-20! ■



SUPER MONZA GP 2

Developer: **AJ Layden**
 Release year: **2023**
 Platform: **VIC-20 + 35k**

Ready to spill the bubbly!



Silkworm

■ author: Komek / translation: Ari



REVIEW

Someone once said that *Silkworm* for C64 is one of the better conversions. I think so too, so I decided to go back to my youth, when we used to fly helicopters and jeeps and break joysticks in our sweaty palms. The game was developed by Tecmo for arcade machines in 1988. A little later, users of 8/16-bit computers had the chance to play the game on their beloved machines.

The scenario of the game is as follows: We take on the role of two daredevils (Robert and Stacey) who are elite members of the SILKWORM team. Your mission is to lead a G-Cobra gunship and an armed B-Panther jeep to destroy the enemy. Our opponent is MHC2, the artificial brain of the future, who has taken control of the world's armed forces. He's also intimidating and forcing people to worship him like a god. It's time to roll up our sleeves and take on the tyrant.

JEEP-TOP 005000 HELI-TOP 110900
Y&S 000000 Y&S 002200



JEEP-TOP 029200 HELI-TOP 350000
Y&S 029200 Y&S 350000



JEEP-TOP 005000 HELI-TOP 102000
Y&S 007200 Y&S 102000



There may be some of our readers who have not had the opportunity to join the *Silkworm* mission yet, so I will briefly go over some of the details.

At the beginning, we choose between a helicopter and a jeep. We can also choose the option that allows us to use both at the same time. We start the mission over the rocky mountains. Right from the start, a massive attack from enemy helicopters awaits us. Relentless rocket launchers fire missiles like crazy, and bizarre military robots attack all the time. At the end of this and several other levels, a huge armoured helicopter awaits you. You will have to give it your best shot to destroy this piece of iron. Another boss that appears in the later stages of the game is an equally huge tank. We are not afraid of it, however, and we destroy it immediately. In the next stages we have to cross the canyon, the mountains and the riverbank to get to the huge enemy base. There are eleven levels in all, with helicopters, rocket launchers, robots, machines and many other vehicles trying to shoot us down. A flying dragon robot appears in the middle of each stage. Destroying it will earn you special badges and extra points. It's also a good idea to shoot at the flashing platforms that provide temporary cover, or drop a bomb that destroys enemies in our path.



Finally, I would like to add that I was introduced to *Silkworm* missions in the early 1990s by my buddy Wojtek. He was the one who introduced me to the world of C64 games, as he was the first to own one. Thanks for that Wojtek. We must play again sometime and reminisce about the old days. ■

SILKWORM

Developer: The Sales Curve
Release year: 1988
Platform: C64

Let's turn the artificial brain of the future into ashes!

7 5 8

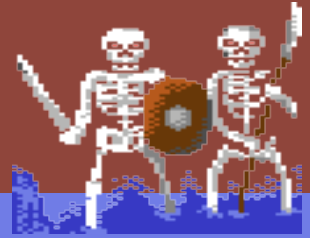




REVIEW

Deathflood: Dungeon of Doom

■ author: Retro Chłop / translation: Toby



Once upon a time, in a land far away, there was a mysterious, dark fortress. It once belonged to a sinister sorcerer who died during one of his dark rituals. Tales of the impenetrable treasury became an irresistible temptation for local adventurers. Never did a brave soul emerge to warn them of the hidden traps meant to deter intruders. Will a deadly flood engulf you, or will you be able to escape with your loot and change your destiny?

Welcome to Deathflood: Dungeon of Doom. In this game, you find yourself trapped in a dark dungeon full of ominous hissing creatures, omnipresent traps and an ever-rising water level. Your goal is simple: survive in this hostile place... However, you will soon discover that your mission may be more difficult than you are prepared for. Hidden objectives, secrets, tricky traps and many impulsive decisions await you.



Deathflood: Dungeon of Doom was developed by Windigo Productions. It's a game that will amaze you with its depth and unusual approach to the genre. The game features three worlds with unique visuals, diverse enemies, varied gameplay mechanics and soundtracks that add depth to the game's atmosphere.



There are 19 extremely varied levels, the vast majority of which contain multiple hidden tasks to complete, ensuring that the gameplay never becomes monotonous. You also get to choose one of two playable characters, each with unique abilities. This choice will affect the way you overcome obstacles and discover the secrets of the dungeon. The game is available for download from the Windigo Productions website at:

<https://windigoproductions.itch.io/deathflood-dungeon-of-doom>, as well as in a boxed version that can be purchased from: <https://www.polyplay.xyz>.



Whether you're a fan of the classics or modern productions, this title will take you into a world of mysterious dungeons and dangerous challenges. Available on the Commodore 64, this beautifully designed game is sure to be one of the most exciting titles of the year. Immerse yourself in the atmosphere of uncertainty and adrenaline as you explore the mysterious corners of Deathflood: Dungeon of Doom, where every decision counts. ■



Scenario

■ author and translation: Monka



REVIEW

The First World War was a very tragic event in human history, claiming millions of lives. It was the biggest conflict since the Napoleonic Wars and the first time that people faced chemical weapons, tanks and aeroplanes on the battlefield.

Scenario is a strategy game with small arcade elements set in the period. While Europe is divided into provinces in the game according to the period, the game starts without specific country borders – the players create them themselves.

At the start of the game, each of the four players chooses their initial province, and if we have no companions, the computer takes the role of the other three. Most of the game takes place on a single screen, divided into two parts. On the right is the current map of Europe, and on the left is the menu of actions we can perform in each turn.

Our task is to conquer the whole of Europe, which means defeating all our opponents. This cannot be achieved without a large amount of money, which we can acquire in a number of ways.

The basic income is a tax that is automatically collected from each province every turn. It is best to invest

this money in mining at least one of the three available resources. The value of coal, iron and copper fluctuates each turn, so it's worth keeping an eye on their prices before you start mining. The amount of minerals in each area is finite and depletes quickly, so it is worth having a dynamic geographical expansion to invest in other regions.

Once the investment has been approved, the multiplied amount can be used in the same turn, but you may find that you have sunk the entire amount because the land is already fully exploited. To prevent this, it is worth keeping track of where and how often you have already invested, or using a province wealth analysis, which costs 250,000.

The last way to get a steady flow of cash is to exploit colonies, but to make this profitable you must have a large fleet of ships and also conquer all the provinces belonging to the country (e.g. central, western and eastern Germany or northern and southern Russia, etc.). Once

Scenario came into my hands in 1993 as one of many games on a pirate cassette. Yes, on a cassette. You could play it and even win at the end. At that time, I did not know that I liked geopolitical games; it was Scenario that awakened this love in me. The pirated cassette version that was available on computer exchanges in Poland had phenomenal music in the menu and the ability to choose the number of players and the level of difficulty. Instead, it cut out the arcade sequences of attacking factories, and after defeating an opponent and announcing which embassy he was heading for, you had to retreat from the province in question and do everything you could to get the surviving opponent to occupy it. Otherwise the game would crash. It was also the longest loading turbo game I know.

Under these uncomfortable conditions, I reloaded it many times and won hundreds of times. I didn't get to know the arcade sequences until a few years later, after having bought a 1541 II drive, which by then was already priced at scrap. At that time, the game was unable to surprise me with anything, not even cheating computer opponents.

Scenario is in my heart, I even love the game. I have played it regularly for over 30 years. In that time it has become schematic, as it could not be otherwise after such a long time, and yet I return to it again and again. I still find it incredibly fun to rule Europe in the 1920s.



In 2023 I still have the strong impression that Scenario was not very popular among the Commodore community. The only review I know of in any magazine from that era is the one in the fifteenth issue of the Polish magazine "Secret Service" from 1995, which dealt with the unofficial, pirated Polish version of this game.



these conditions are met, a selected number of ships can be sent to overseas territories, but they cannot be used for warfare for several turns.

We can also use the money we earn in a variety of ways. Basically, you can build tank, aircraft and ship factories and use them to produce units, which will probably consume most of the money. In addition, we can build bases to prevent enemy attacks on a province (they cost 350,000) or organise an uprising in an enemy-occupied territory.

We wage war simply by moving the appropriate number of units from province to province, keeping an eye on their borders. We also have sea fields on the map, which do not provide any resource benefits and only slow down the movement of our armies. The biggest battles will often be fought on the water.

To make sure that not everything fits into the scheme of things, we have random events every turn. One day the planes will run out of fuel and crash, the next the workers will go on strike and only a limited number of troops can be produced, or mining will have to be reduced. Sometimes revolts in the provinces result in a lack of tax revenue, or gold deposits are suddenly discovered, bringing a substantial sum into the treasury.

As if that weren't enough, from time to time our special forces will be given the opportunity to destroy factories in a selected province, which we can do with our own hands in a short action sequence.

Another action event occurs after an opponent has been eliminated from the game. This is done by conquering all



of his provinces and defeating the rest of his troops. A message will then appear telling you how many rounds it will take and in which city's embassy the fallen ruler will try to flee to the USA. If we control this region, we will be able to demonstrate our own marksmanship and claim the entire amount of money the enemy leader was planning to take with him to North America as a job well done.

The game has a pretty good graphical design. Yes, most of the game takes place on a static map of Europe, which is easy to read, but it can get monotonous after a while. This is prevented by graphic inserts after conquering entire countries, arcade sections or graphics after completing the game.

Much the same can be said of the soundtrack. The music becomes tiresome as you progress through the game, but now, years later, I can hum it without disgust. The music in the menus, on the other hand, is great, although it does not match the atmosphere of the game at all.



Maybe I'm a little biased, as the boxes attached to this review make clear, but for me this Starbyte production is in the top 3 of all games ever released on the C64, and at the same time is probably in the top 3 of the most unknown and underrated games.

It's a game I've played at least once a year since 1993, and I have to finish it at least once every time. Highly recommended! ■

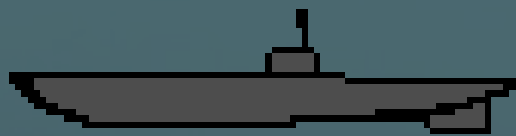
SCENARIO

Developer: Starbyte
Release year: 1992
Platform: C64

Go to battle!



Up Periscope!



■ author: Phowiec / translation: Ari



REVIEW

Attack on America! War! Disgrace! Judgment Day! These were just some of the headlines in our newspapers on the morning of 8 December 1941. I remember the fear mixed with shame. Fear because we had been attacked. Shame because we were attacked! We, the Americans! The banner of glory waving in every courtyard, in every corner of the continent. Undefeated.

Back then, that same banner was associated with powerlessness, with fear, with pain. The Japanese were not afraid of us. They bombed our base in Hawaii with impunity. We wanted to get back at them, to burn down their world. After all, we are the good guys, and those over there are the bad guys. At the time, we were out for blood. We were young, full of hate. "Join the army!", "Your country needs you!", "Become a hero!" shouted the inscriptions on the posters, persuaded the officer at the recruiting station, said the soldier who let us through the gate to military training. I decided to join too. I enlisted. I became a sailor. Infantry die in the field, airmen in the air, at sea you're safe, they said, forgetting to add that at sea I can die from shelling by a destroyer, or a plane, or a dropped torpedo, or from lack of air. Or crushed by the pressure. Or I could just go mad. Yes, I definitely have a better chance of survival than infantry or air force....

Every day it's the same. A deafening wake-up bell, a blinding white light to wake you up, and the shriek of a petty officer. Canned food and tasteless coffee. I don't know if this is the 3rd, 30th or 300th day of action. The same faces, the same phrases, the same sounds. We are hunting Japanese and merchant ships in the Pacific. In the words of Admiral Harold Stark, "Initiate unrestricted air and submarine warfare against Japan", we are to destroy everything that sails under their flag, and the Japs will soon feel our wrath.

Fighting in such a metal can is difficult. You have to remember to scroll through all the available screens, which are toggled by function keys. If you have chosen to go on a training cruise (REFRESHER TRAINING AT NEW LONDON) and something goes wrong, nothing will happen except a wounded pride. However, if you have already sailed on a PACIFIC PATROL or HISTORIC SITUATION mission, be on your guard and keep your eyes

open. Especially if you've chosen a thinner hull type (HULL DESIGN), no safe distance for torpedoes (ARMING RUN) or a convoy that makes evasive manoeuvres (CONVOY ZIG ZAG). Don't forget to select the overall difficulty level (RANK). Then you are on your own. Indicators are working, compass is pointing, water all around. On the surface you can sail thanks to the internal combustion engine (DIESEL), but remember that battery power (BATTERY) is quieter, but it runs out faster than fuel (FUEL and BATT indicators). Batteries are known to be used underwater, especially when radar (RADAR) shows enemy vessels in the area. As you dive, your oxygen level will begin to drop (OXY indicator), and this should also be taken into account. You can swim at periscope depth, which makes it easier to plan an attack. The periscope (SCOPE) has good and distant visibility, but can be spotted. When you are ready to fire, the ship's computer (TDC) will come in handy. It will show the ship's class, distance to it, direction and speed, so firing a torpedo should be well thought out. In case of a mishap, which happens quite often, the enemy will discover our position and either start firing at us or call other units for help. While running, you can hide in the depths. But beware: there is a high probability that our boat will hit the bottom during a fast dive.

Up Periscope is a difficult game, even by the standards of C64 games at the time. It takes some time to learn how to control a submarine. Then you have to master the ability to identify the enemy, aim and shoot. Signals from periscope, sonar and radar have to be recognised and at least two of these devices have to be used to fire correctly. Otherwise, the fired torpedo would be written off and our boat would have to flee to avoid detection. This system, innovative at the time, was designed to add realism to an already difficult game. The result is that you can't fire the same two shots, because for the next target you have to track three devices again, and the TDC





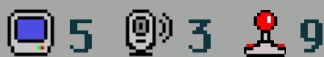
computer has to recognise the enemy correctly. I'm not a fan of simulators, especially naval ones. Playing them is like playing chess. Long planning, slow moves, boredom on the board and a quick finale. And just like chess, graphics, music and sounds are secondary or tertiary. Although here the graphics are well done. The atmospheric title board perfectly introduces the atmosphere of the game. The view of water being splashed by a flowing torpedo is also a very nice element. The enjoyment of the game is also important. This game really is a lot of fun. Following a convoy, watching for ships or sailing between them are just some of the things you can do. But the production also teaches. The manual, which is a pleasure to read (unfortunately I could only read a PDF scan), describes not only the outlines of the naval war between the US and Japan, but also the more important battles. These scenarios can be played in the simulator by selecting the HISTORICAL SITUATION mentioned above. Once we have completed the appropriate tasks, we can play even longer and try to find and rescue downed pilots or unexploded bombs at sea. When we reach the mission goal or someone sinks us, we can check our achievements by selecting SHOW AWARDS AND STATUS. All this is included in this little game.

In conclusion, this is one of the best simulators on the C64. ■

UP PERISCOPE!

Developer: ActionSoft
 Release year: 1986
 Platform: C64, C128

Full speed ahead! Periscope down!



Rocky & Co

author: Louie Dimovski



REVIEW

It's been over 5 years since we last saw Rocky Memphis grace the screens of our Commodore 64. Having survived the ancient temple ruins in North Africa on his hunt for The Legend of Atlantis, the great adventurer has been on the lookout for another treasure hunt and he's finally found one. But he's going to need the help of a couple of friends this time around if he is going to beat his arch nemesis, Russo Baluch, to the fabled treasure known as the Golden Condor.

Rocky & Co is a puzzle platform game that is heavily inspired by the old Datasoft 8-bit title, The Goonies. To solve each of the 12 stages on offer, you will need to use a combination of the character skills to trigger switches and avoid dangerous creatures and deadly hazards, so that all three members of the team reach the exit points.



Many of the stages on offer will require the three characters to work together and use their strengths in the correct way. Rocky has a whip that he can use to eliminate dangerous creatures and activate triggers that are out of reach. Spud is a bit on the weighty side but is as strong as an ox, while Jet is an athletics trainer and possesses great speed and agility. The game does contain a little bit of trial and error element, similar to what you would find in Rick Dangerous, as you try different things repeatedly to solve a stage. While I found the puzzles to be clever – none of them are overly taxing and are quite accessible with a bit of practice.



The main challenge with Rocky & Co is that you start off with 5 lives and there are no save checkpoints and no extra lives to be obtained. Fortunately, a practice mode is included, allowing you to play the first 11 stages in sequential order with infinite lives so that you can learn the tricks to these levels before you embark on trying to complete the game in the normal story mode.

When it comes to the production side of things, there is little to fault. Graphics are detailed and vibrant and you really appreciate the effort that has gone in to make each stage look different from each other. The music soundtrack from Saul Cross, while somewhat reminiscent of his previous work, is a good fit for the game and does enhance the overall experience.

I was quite surprised by how much I enjoyed playing through Rocky & Co. If you like your platform gaming to have a strong cognitive aspect to it then this is quite an easy recommendation. ■



ROCKY & CO

Developer: Icon 64 / Psytronik
Release year: 2023
Platform: C64

To unlock the bonus stage, you just got to whip it!



SNK vs CAPCOM



■ author: Phowiec / translation: Monka



My adventure with fighting games is probably like that of most people who grew up in the previous system in Poland. A smoky room, an underground passage or a barrack. And there, with flashes and cacophony, were the game machines. A video arcade, as it was nicely called at the time, although it had little in common with the arcades known in the West. And the king of those games at the time, Street Fighter 2.

Cartoonish backdrops, catchy music that sticks in your head, sounds and noises that stay with you forever. Crowds of people waiting for their turn to drop a coin, or just watching others play. I was in the latter group. I enjoyed watching someone, choosing Ken or Ryu, punching with their fists, delivering accurate kicks or using special moves to take down one opponent after another. Sometimes I'd play, but I'd get beaten quickly. And that is my history with these types of games to this day. I like to play them, but I am not very good at them, or I have to spend more time than most players to be successful at them. I have a considerable list of such games. And I won't be original if I say that I like SNK

tage. From the first online leaks and short YouTube videos, it was clear that the developers had taken great care. They wanted to capture the spirit and fun of the game as closely as possible. They have succeeded.

Sadly, not all characters are available, and the controls are limited to four directions and two action buttons, but you can't have it all. However, these shortcomings are compensated for in other ways. The game looks and sounds fantastic. There are basic attacks and throws, special moves and combos, two levels of super hits, counter attacks and interruptions (breakers, I think that's what they're called in the original), multiple



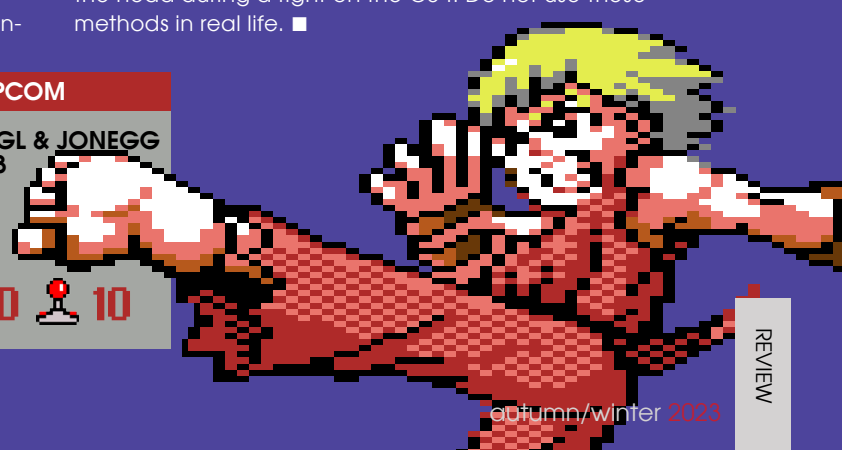
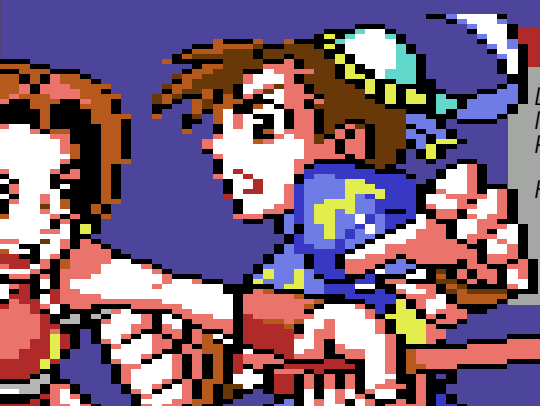
games – King of Fighters, Art of Fighting or Samurai Show-down. I have a particular fondness for the latter series. Maybe one day someone will port them to the C64. In the meantime, we can enjoy another production with the SNK logo. It is a crossover between two worlds – that of Street Fighter and that of King of Fighters.

arenas, bonus rounds, music for all levels, stage selection in two-player mode and full character stories with cutscenes and even end animations. It's all a clear nod to the classic that is undoubtedly the original SNK vs. Capcom series. The hard-to-measure factor that has always been inherent in these games is the sheer enjoyment of the gameplay.

The prototype for the game described here is SNK vs. Capcom: The Match of the Millennium, originally released for the NEO Geo Pocket Color handheld. Jon Eggleton and Gianluca Alberico decided to port this production to our beloved C64. The result is a demake, but one that can be presented with confidence as a technology demo for the Commodore 64. Using their RetroFighter engine, still under development, they created an amazing production. Of course there are limitations, because it's only 64 kB, but it's been known for a long time that enthusiasts can work wonders on the C64. This is the case again. The game was created as an EasyFlash compatible .crt file, so programming tricks could be easily applied and the larger media capacity worked to the production's advan-

The fun you feel from the very first seconds of starting up; the kind of nerve-racking sensation of doing something long forgotten, but which once gave you incredible pleasure. And thanks to these feelings, but also because Jon and Gianluca have done a great job, this production is worth reaching for. A seal of quality is definitely due, and it is already known that the title of C64 Game of the Year will go to SNK vs. Capcom.

And remember, kids: Only use secret punches in the game. You can only use a slap in the face or a kick to the head during a fight on the C64. Do not use these methods in real life. ■



SNK VS CAPCOM

Developer: RETROGL & JONEGG
Release year: 2023
Platform: C64

Fight!

10 10 10

Penultimate+2

author: Erik Hooijmeijer



REVIEW

For the VIC-20, cartridges are a quick and easy way to expand the system's modest capabilities. RAM expansions of various sizes, development tools and games of course! Changing cartridges could wear out the cartridge port. What if there was one cartridge to 'catch them all'?

The Penultimate+2 cartridge, developed by Tynemouth Software and built and distributed by the Future was 8-Bit, attempts to be just that. It's the third in the series and offers around 200 games, every possible memory configuration you could need and a whole host of utilities and development tools, all accessible via an easy-to-use menu.

After inserting the cartridge and turning the VIC on, you're greeted by the main menu, which is easily navigated using the joystick and cursor keys. The first three function keys are bound to commonly used memory configurations and the fourth allows you to easily launch a title from disk or the SD2IEC file browser if you have one.

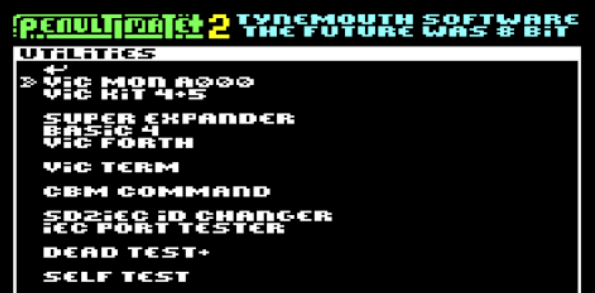
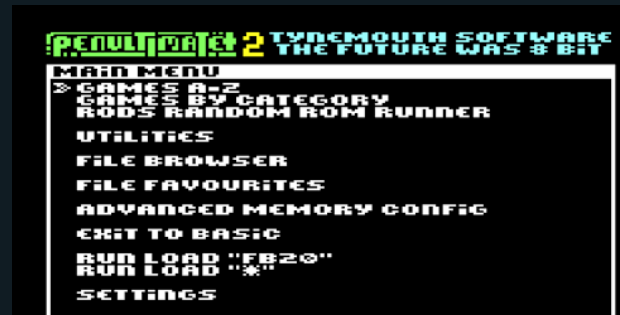
The 200+ games are easy to find and explore as they are organised alphabetically and by category. You can jump to a specific letter in the list by pressing Shift and that letter. Both PAL and NTSC games are supported and for some titles there are two different versions, one for each video system. By default, only compatible games are displayed, but you can press N (or P) to see the specific list. Available titles include modern games from Misfit and Hewco and many games published by The Future was 8 Bit. There is a large selection of classics including most of the Commodore cartridge titles. If the choice seems overwhelming, use Rod's Random Game Runner to select a random game – fun and surprises guaranteed!

On the more serious side, under 'Utilities' there is a machine language monitor, a tape turbo loader curiously combined with an assembler (Stack's Vickit 4+5), BASIC extensions, a terminal program, a disk browser and the deadtest+ test tool, which may come in handy if your VIC has hardware problems.

The settings menu allows you to change the cartridge's boot behaviour. By default, the cartridge will show the menu, but you can also boot to basic and only enter the menu by pressing the menu button on the cartridge. The best option, of course, is to boot into a random game.

The Penultimate+2 cartridge is a polished quality product. It is a great add-on if you use your VIC regularly. It costs about 100 Euros including import duties and shipping, which I think is worth it. If you already have the first Penultimate Cartridge, you may want to consider upgrading. If you have the PU+, the upgrade is modest, mostly more games.

The Penultimate+2 cartridge is probably the last cartridge your VIC-20 will ever need, at least until the PU+3 comes out. Highly recommended. ■



PETLifter



author: Erik Hooijmeijer

Another hostage crisis. It's 1982, and the evil Bungeling Empire has taken hostages and locked them in a barracks. A rescue mission is quickly organised, with one lone pilot, you, trying to evacuate them all to the nearest Red Cross hospital while battling tanks and fighter jets. Yes, it is Choplifter! and it has returned for the Commodore PET!

The rescue mission begins when you take off from the hospital's landing pad and fly left across the border towards the three barracks. The hostages in the first barracks have already escaped and would be easy to pick up were it not for those pesky tanks in the way. In the original game, the tanks can only fire at the ground. This time, however, they are equipped with anti-aircraft guns, making your life a lot more dangerous! Fighter jets will also fly by and try to shoot you down (or collide with you).

The game is presented in glorious PETSCII graphics that can only be fully appreciated when you see them in motion. Statically, as in the screenshots, they look rather boring, but with the game in action, they look great! The control of the helicopter is good and there are some interesting moves you can make, such as sliding along the ground and picking up hostages as you go. All of the major actions have sound effects, but they don't go beyond the usual blibs and bloops. In short, this is a wonderful action game for your PET that you should give a try! Get it at jimbo.itch.io. ■



PETLIFTER

Developer: **Endurion**
Release year: **2022**
Platform: **PET**

Where is Colonel when you need him?

7 6 7



REVIEW

Bill & Ted's Excellent Game Boy Adventure



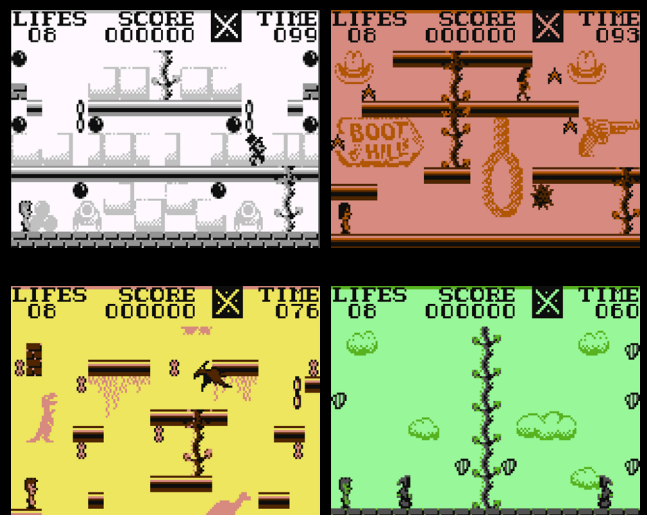
REVIEW

author: Retro Chłp / translation: Toby

It is a conversion of a classic title from the Japanese GameBoy console. However, this game is much more inspired by the film.

Bill & Ted's... is a platform game in which players take on the role of Bill and Ted as they travel through different historical eras, solving puzzles, overcoming obstacles and acquiring items necessary to complete their missions. Their faithful travelling companion is a phone booth, with a special phone number that acts as a time machine, allowing them to jump through time and space. The Commodore 64 version of the game also offers a choice of ten levels, which can be explored in any order. Each level consists of a number of boards, each filled with different adventures and dangerous enemies. Interestingly, the developers have also gone to great lengths to include an option to change the colour palette of the graphics, allowing you to customise the look of the game to your own liking.

The porting of this fascinating game to the Commodore 64 is the work of Roman Werner, known for successful productions such as Marble Boy and Babylon's Ark. Werner has ported this title to the new platform, retaining the original charm of the game, but making a few changes of his own. This is yet another interesting entry for fans of both platform games and films, providing an unforgettable experience on the C64. The release of the game in 2023 is a breath of fresh air for classic game lovers. It offers them the chance to relive the adventures of Bill and Ted in a whole new light. The game guarantees a high quality conversion and captures the spirit of the original. The game is available at: <https://romwer.itch.io/billandted>. ■



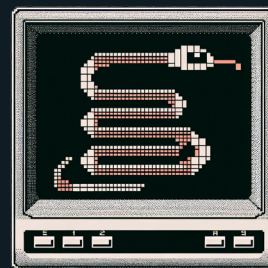
BILL & TED'S ADVENTURE

Developer: **Roman Werner**
Release year: **2023**
Platform: **C64**

An entertaining journey back in time

5 5 6

Basic Snake



■ author: Komek / translation: Ari



REVIEW

Well, the tomato-eating "snake" is gone, and suddenly a new one has crawled in with a taste for shiny diamonds. Wealth is what he craves. If he collects them all, he'll be the richest snake in the world. So what do you say, will you help him?

In each level, you must collect a certain number of diamonds and lead the snake to the exit. Due to the confusing maze, the placement of the diamonds, and the time limit, you won't always be able to collect them all. Throughout the game you will also come across simple mazes that will give you a moment's respite. Remember, though, that you really have to try to get a high score.

As the title suggests, the game is written in BASIC. At first I approached it with reservations, but after a few minutes I was pleasantly surprised. The minimalist, colourful graphics,



which have their own atmosphere, a funny snake character and a large, pixelated font between levels are worth mentioning. Also, each maze looks different, so the game doesn't get boring too quickly.



The author, Steveboy, has written many other successful games in BASIC. We are looking forward to more interesting productions! ■

BASIC SNAKE

Developer: **Steveboy**
Release year: **2023**
Platform: **C64**

Why do you need all these diamonds?



Tomato Worm

■ author: Komek / translation: Ari



REVIEW

I can't remember the last time I played Snake, but whenever I've had the chance to eat dots and grow my tail, I've had a lot of fun. That's the charm of this game, which has seen so many iterations it's hard to count.

This time we have a version, or rather a conversion, of Tomato Worm for Commodore 16 and VIC-20, the original of which was published by Guerra Games for the Pico-8 virtual console in 2018. The protagonist of the game is a friendly worm who loves to eat juicy tomatoes. Well, it's not hard to guess that our hungry little guy has to eat them all, and in the meantime he's getting longer and longer. Just like in Snake. In addition, during the game we will encounter various obstacles and sometimes find ourselves in a confusing situation. It is very good that the author of the conversion has not forgotten the important option of being able to stop and restart the game at any time. This is because the program remembers the last level completed and stores this information on a floppy disk (or disk image). This is a great solution as the game consists of many levels.

Tomato Worm is an addictive variation of Snake, with some pretty cool and pixelated graphics. It's just a shame that there's no sound, but the gameplay is so good that you won't notice it after a few minutes.

See for yourself. ■



TOMATO WORM

Developer: **Javierglez**
Release year: **2023**
Platform: **C16, VIC-20**

Give me all the tomatoes here!



FiZZ



REVIEW

■ author: Agnieszka FPWG / translation: Krzysztof Drzazga

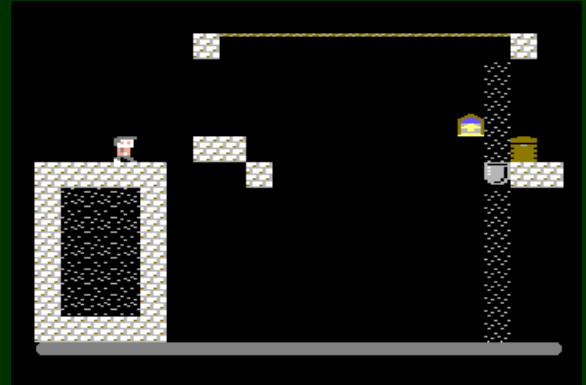
People of all ages play logic games to improve the state of their minds and slow down the ageing process. Scientific research shows that logic games can improve concentration, memory, reaction time, reasoning and many other cognitive functions.

The video game industry loves originality as much as gamers do. Thinking outside the box can be risky, but for many indie game creators it is their only chance to showcase something unique. FiZZ is a fascinating game that combines simple rules with endless possibilities.

Whether you are a puzzle enthusiast or new to the video game genre, FiZZ offers a wide range of challenges – from brain-teasing puzzles to more accessible levels suitable for all players. The game is full of different puzzles for the player to solve. Most of them are based on the power of our character, which is really gravity. We can use laser-powered portals to move through complicated mazes. In FiZZ, we can also move our grey cells together with friends in cooperative mode.



I get a headache just thinking about this game, but it is very interesting and well worth trying. The mechanics of the game are so addictive that it provides the player with great entertainment and interesting experiences. This game is addictive! ■



FiZZ

Publisher: **fleischgemuese**
Release year: **2023**
Platform: **C64**

It's more eggshell than ninja turtle.

4 4 8

#!//ALX

21 YEARS OF EXPERIENCE IN TRAINING FUTURE IT EXPERTS

YOUR PATH TO TECH SUCCESS
STARTS HERE

www.alx.pl



OOZE: THE ESCAPE

author: Tomasz "Jackal" Jędrusiak / translation: Ari



REVIEW

"What is it like to be a glut? Is it good? Neither good nor bad, in my opinion. If I had to say what I value most, I would say the extra lives and the freedom to move around on the ceilings. If only they could feed me better in this lab..."

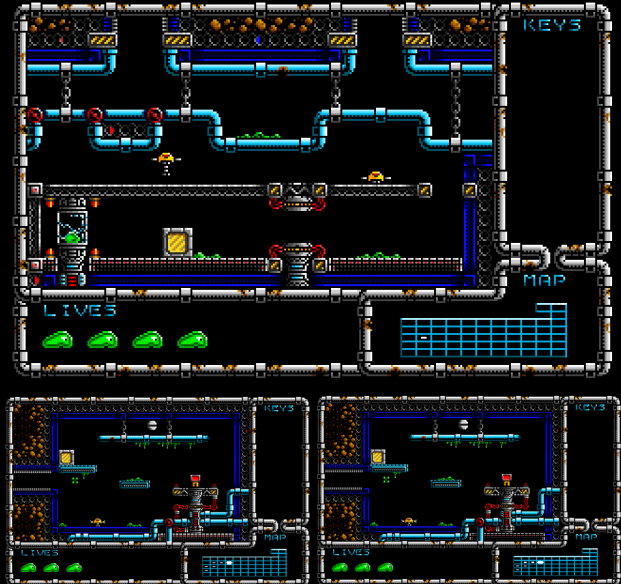
It was an undisguised pleasure when I ran Bubblesoft's (Andy Johns) 8-bit production, titled *Ooze: The Escape* – originally released on the ZX Spectrum in 2017. Ali Pouladi (Haplo) is responsible for its conversion to the Commodore 64, and an Amiga port is also available.

The game is a classic platformer telling a story of a sludgy creature who longed to break out of a secret underground laboratory. Inside this lab, a whole bunch of not-so-pleasant experiments would surely await him. The problem, however, is that the road to freedom is full of hostile robots, burst pipes emitting lethal fumes, faulty installations flaunting electricity, guard drones or machines trying to squash him. Undoubtedly the facility was unattended for a long time, resulting in its dire condition. In order to get out of this deadly trap, we have to gather several keys and break through dozens of rooms, many of which are complex puzzles requiring quick fingers and a fair amount of intuition.

From the very beginning, it is obvious that the game was originally created for smaller computers, and the atmosphere of the 1980s pours out of the screen. I praise this conversion. Completely new graphic effects, animations, sounds and excellent music have turned a typically ZX Spectrum work into a full-blooded Commodore production. An almost doubled map size compared to the original, new enemies and obstacles in the way of our adorable glut, and an added minimap that allows you to follow the rooms you've already visited, show that the creators have taken a very serious approach to this version, enriching it considerably. You can feel the atmosphere of *Montezuma's Revenge* combined with *Benefactor* and *Bruce Lee*, with a slight hint of *Nodes of Yesod*. It is a very rewarding sentimental trip back in time.

The game itself draws you in quite quickly, although the game requires precision and you will see the "game over" sign many times. It is easy to die here, while the obstacles are numerous. Passing a more difficult room, however very satisfying, it is quite easy to make friends with the main character, so we are pushed forward by sympathy to our hero in addition to the desire to improve the result of the previous session. With curiosity we visit successive locations on the way to our goal, and since the game encourages you to create some strategies to get through the board, it's better not to act without a plan, especially since this is mercilessly punished by the loss of one of our glut's lives. I would emphasize that the glut has the ability to move on ceilings, and this mechanic strongly revives the classic platformer model.

The color scheme of the rooms has been heavily toned down compared to the original, which, in my opinion, has a positive effect on their realism and aesthetics.



I can only complain about the fact that we can't have music and sound effects in the game at the same time. We can switch them at any time, but I honestly point out that without a catchy song playing in the background the game becomes a bit flat and loses its rhythm. On the other hand, the lack of sound effects does not bother so much, nevertheless I hope that the developers in the next version will add the possibility to enjoy the game without making this difficult choice.

The feel of the game is very pleasant, once you get into the flow of the game all the stresses disappears, movements become intuitive and overcoming successive challenges even relaxes you. *Ooze* is devoid of frustrating elements, puzzles that can be overcome with a bit of stubbornness, and it is a good choice for a fan of this type of entertainment. By no means it is a simple game but the length of the single playthrough is a pleasant diversion after demanding strategies, rpgs and soccer club managers.

Game can be downloaded from: <https://vwguy16.itch.io/ooze-the-escape-amiga>. When downloading, you can support the creators with a small amount of money to reward their work, which I strongly encourage you to do. ■

OOZE: THE ESCAPE

Developer: **Bubblesoft**
Release year: **2023**
Platform: **Amiga (also C64)**

Very good platform game



Boxx 4

AMIGA



REVIEW

■ author: Krzysztof "Drakon" Odachowski / translation: Azu

Boxx 4 (as the name suggests) is another edition of an arcade platformer for Amiga computers. The game runs on all Amigas with at least 1 MB of memory and Kickstart version 1.3.

The latest Boxx, unlike its predecessors, was made using the Scorpion engine developed by Earok. The main programmer, Lemming880, has abandoned Backbone, which was used to create the previous games, in favour of a newer engine. And it was a change for good.



The visuals also bring a lot of freshness to the Boxx series, thanks to the excellent work of two graphic designers: Krzysztof Matys (known as koyot1222) and Jonathan Dodd (Dulcahn). The musical score was created by Mr Roland Voss (Triace) and Johan Letfors (Vedder), who you probably know by now.

As is often the case with these types of games, there is a plot, but not much to say about it. In a nutshell, you control a box with the graceful name of Cubo, whose mission is to restore peace and tranquillity to his homeland, which has been attacked by the evil robot witch Cyrce, and to free his countrymen.

The gameplay itself is fairly straightforward – to complete a stage, you need to get to the end, where you'll face a boss, which, once defeated, will drop the key to the next level. Along the way, of course, there are plenty of obstacles to keep our hero alive. To get to the end of the level, we need to collect a certain number of gold coins, which are placed along the way and also fall out of defeated enemies. In the beginning we can deal with them simply by jumping on them, while in the middle of the first level we can find a weapon.

Some logical elements have been added to the game, such as switches that open trap doors, allowing you to slip through a previously closed passage. The bottles regenerate our health, which is useful as our Cubo is a little sluggish and it makes the controls a little difficult for the untrained. Personally, I see this as a plus, as it makes such a simple game a little more challenging.

Of course, the further you go, the more varied the levels become and the more different elements and enemies appear, which just makes you want more. I would like to add that in one of the next stages of the game we will be able to jump into... a spaceship and the game will temporarily turn into... a shooter.

I think that every lover of arcade platformers will find something for themselves here – the game uses a handful of tried and tested ideas from the classics of the genre (for example, teleports from pipes, known from the Mario series). Despite the sluggishness of the main character, which can be disconcerting at first, there is something about it that makes you want to keep going. This is something I really recommend, as the game becomes more and more interesting, something that is unfortunately quite rare these days.

The game has a code system for levels, and we can also turn on a cool jukebox to listen to all the songs in the game. As you can see, the Scorpion engine is not that scary, and if you use it properly (and of course have a good team behind you) you can create something that will not scare you, but on the contrary – it will look nice, sound interesting and most importantly, it will draw you in.

The game was presented at this year's Revision Party and won first place in the gamedev category. It is free and can be downloaded from <http://lemming880.itch.io/boxx4> and <https://www.retroguru.com/boxx4/>. The authors have also announced the release of a physical version.



I highly recommend it. ■



BOXX 4

Developer: **Retroguru 2023**

Release year: **2023**

Platform: **Amiga 1MB**

Adventures of the Box Man



Das Boot

■ author: Tommysi / translation: Tomxx



FELIETON

'Das Boot', directed by Wolfgang Petersen, is one of my favourite war films. The story of a German submarine and the hardships of life on board and the struggle to survive has always captured my imagination. As a viewer, I look for positive impressions in films, which can include many elements of artistic craftsmanship. This film, even after many years, is considered a legendary work. So the accumulation of positive impressions here must be above average. Wolfgang Petersen, one of the world's great directors, certainly knew the way to be remembered and to develop his status as a cinematic legend.

The history of conflict has fascinated people for centuries. From the point of view of the average cinema-goer, for whom the most important thing is the pleasure of watching, World War II, as presented on the screen, should come down to good writing and acting. You might think that the experiences of the average soldier are relegated to the background. Who would care about them when explosions and daring actions are more fascinating? It turns out, however, that war cinema is not necessarily reduced to spectacular battle scenes. There are subjects whose originality, combined with appropriate filmmaking, will attract viewers regardless of the number of fireworks and special effects.

The plot of 'Das Boot' is very simple, at least at first glance. A few dozen sailors from a German submarine set sail on their next mission. Together with them, we go underwater and enter the extraordinary world of submarines. It's 1942 and the German submarine offensive is in full swing; the Allies, on the other hand, are becoming more and more prepared to fight the U-boats. Not only are they familiar with the tactics used by the Kriegsmarine (e.g. wolf packs), but they also have better equipment (radar, tracking, breaking the Enigma code), which enables them to put up an even fight. The U-96 embarks on a solo voyage, during which the crew is accompanied by Lothar-Günther Buchheim, a war correspondent who reports on events from aboard the ship. His experiences inspired the filming of the fascinating story of a land rat trapped in a metal can tens of metres below the ocean's surface.

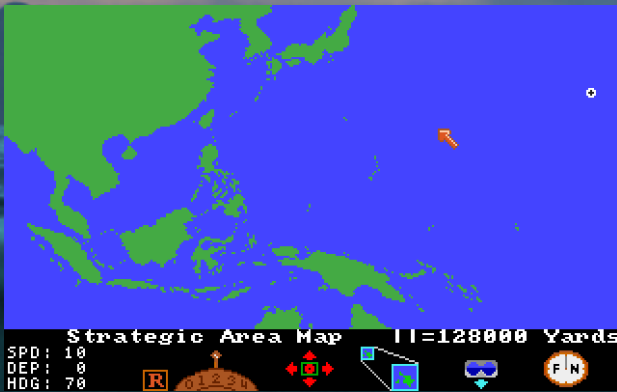
The greatest value of Wolfgang Petersen's film is that it captures the reality and atmosphere of a months-long voyage in a cramped metal ship. And it was an atmosphere that was, to put it mildly, unfavourable to human

beings. The all-encompassing cramped, stuffy atmosphere, the stench of acid from the batteries and the stench of the shipmates, whose faces became increasingly overgrown, earthy and pale green as the voyage progressed. The atmosphere of dread was heightened by the constant tension of knowing that the ship could be detected at any moment by enemy ships or aircraft.

Since our magazine is about retro computer games, I have to ask the question: how did the games of the time deal with capturing the atmosphere and realities of underwater warfare? To make the answer easier, I will use a concrete example. The natural choice for me was Sid Meier's Silent Service by MicroProse Studio. This is because it was released in 1985 and Petersen's film not much earlier, in 1981. It seems that Sid Meier, like Wolfgang Petersen, set himself the challenge of portraying the realities of submarine warfare as faithfully as possible. However, it should be remembered that Petersen had much more freedom to choose the means of making his film, and the modest set design and lack of special effects were dictated by his artistic choice rather than a limited budget. The opposite was true of Sid Meier's Silent Service. This filmmaker was largely limited by the capabilities of 8-bit computers. He was unable to focus on the plot or the atmosphere of the stuffy ship. Even if he had wanted to, he was limited to text and simple graphics. Meier realised that the story and atmosphere presented in this way would not encourage many players to pick up his product. He therefore focused on other, more technical aspects, which I will discuss in more detail later.

As you already know, Silent Service was released in 1986 by the American company MicroProse Software. The company had been founded four years earlier by Sid





Meier and Bill Stealey. Initially, the company focused on developing games for 8-bit computers. A few years later, as 16-bit machines became more common, the company focused on them as the platform for its productions. In its early days, MicroProse made a name for itself among gamers with strategy titles that reflected the reality of World War II. Games such as *Conflict In Vietnam* and *Crusade In Europe* incorporated variables such as terrain and weather conditions into their gameplay, despite being decades old. Over time, MicroProse added simulation titles to its catalogue of games. The company was keen to reflect reality. Each game became more elaborate in this regard, and the complexity and depiction of reality became MicroProse's trademark. Games such as *F19 Stealth Fighter*, *Gunship* and *F15 Strike Eagle* won acclaim and popularity around the world.

But MicroProse is not just about strategy and simulation. It is impossible to talk about the company without mentioning a title like 1987's *Pirates*, which cleverly mixed genres (including arcade elements) and brilliantly captured the pirate atmosphere of the Caribbean. The game was a huge commercial success and became

an unrivalled model for other productions of its kind. It should also be mentioned that Sid Meier's genius manifested itself in the creation of economic games. Just think of *Railroad Tycoon* or *Civilization*, considered the greatest game of all time.

However, the history of MicroProse is not one of uninterrupted success. Sid Meier left the company in 1993, shortly after it was bought by Spectrum Holobyte. MicroProse's troubles began when the company, riding the wave of *Civilization's* success, released other very similar productions. The market was already saturated with such games, and each successive MicroProse title sold less well. The company also tried its hand at arcade games, but these always failed. The genre was clearly not in the blood of Sid Meier and the rest of the company.

Let's go back to the beginning of MicroProse's history and the first simulation games it published. Before describing the diversity and richness of this genre, I must mention that *Silent Service* was characterised by an unprecedented (especially for 8-bit computers) complexity of gameplay and a dedication to reality. I would





also like to remind you that the game was released in Europe in 1986, while in the USA it was released in 1985. Furthermore, this title only required 48 kB of RAM to run on an 8-bit Atari.

What did this release have to offer? First of all, by way of encouragement, I would like to mention the changing weather conditions, the day and night system, the variable targeting and torpedo firing parameters, and the use of the many measuring devices on board the ship. The merchant ships we choose to sink react accordingly when they detect our presence, for example by changing course to 'zigzag'. Merchant convoys are often protected by escort destroyers, which will do their best to sink our ship. To protect ourselves from the destroyers, we will often flee into the depths of the sea. There, in turn, enemy ships will try to track us using sonar and other systems. The changing temperature of the deep sea will make it difficult for enemy destroyers to track our position. When submerged, however, we must be mindful of the energy consumed by our batteries, as we will only be able to recharge them with diesel engines when we surface. What I am writing about here is not only the basics of how a submarine operates in wartime, but also elements of the gameplay mechanics of *Silent Service*.

Depending on the computer we had, we could buy the game on cassette or floppy disc. The game came with a short introductory manual and a main manual of several dozen pages, in which we could find all the ship parameters, how they worked, battle tactics and maps. The introductory manual, on the other hand, contained all the keyboards and basic technical information needed to start the game. The box also contained a book with descriptions of all the games released by MicroProse, as well as a special card that allowed us to order the titles by post. Whenever I'm confronted with a MicroProse game, I'm always struck by how lavishly the boxes were filled. This is an incredible contrast to today's digital distribution or boxed releases that only contain a code for digital distribution. We now call games released in this way collectors' editions, but it used to be the norm. Such content-rich editions promised many hours of interaction with the product, hours filled not only with computer entertainment, but also with reading and learning more about WWII submarines or the battlefield handling of modern fighters. It's a shame those days are gone. The lavishly produced game was worth every penny spent on it.

Before the game starts, we have the opportunity to select several options that affect the game. These are:



limited visibility – if the ships disappear beyond the border of the patrol map, they will be invisible on the map. Zigzag convoy – as you can easily guess, a zigzag convoy is harder to hit; this is an important element of realism; Repairs only in port – if our ship is damaged during battle, then – with this option set – the damage will remain until the end of the mission, otherwise the damage will be repaired by the crew after some time; experienced (expert) destroyers – some of the escort carriers can be particularly skilled (relentless) in hunting down submarines (it is harder for them to escape); convoy search – probably thanks to this option during the game we will always come across a convoy and not just individual units of enemy ships; angle of torpedo launch – this option allows you to independently take into account the course, speed and distance to the target when launching torpedoes.

The next menu allows us to select the type of game we want to play: Training, where we practice torpedoing enemy ships moored at the base on Midway Island, Attack on Convoy, which is also a training option, and Pacific Patrol, which is the actual game.

If you choose the Patrol option, you will be presented with a choice of five missions, each with a slightly different name. Patrol 1: June 1942 – Midway, this is the time when electric torpedoes were introduced. They do not leave a bubble trail in the water, making it difficult for destroyers to locate our ship. However, electric torpedoes have a shorter range of about 2,500 yards, compared to the 1,000 yards of the traditional hydraulic torpedoes. In both cases, it must be remembered that the minimum torpedo attack distance is 400 yards, otherwise the torpedo fuse will not work. Patrol 2: November 1943 – Freemantle patrol, at this time all enemy convoys already had destroyer escorts. Our ship, however, has improved endurance and can dive to a depth of about 320 feet. The quality of the torpedoes has also improved – there are fewer defective (non-explosive) torpedoes. Patrol 3: August 1942 – Brisbane, no changes were made during this period. Patrol 4: October 1942 – Freemantle, we're still in 1942, so we won't see any differences here, just a reminder that in the early stages of the war submarine operations are characterised by more defective torpedoes and the possibility of the ship diving less. Whether a ship was too deeply submerged was mainly checked by listening to the stresses in the hull (see 'Das Boot', W. Petersen). It is also important to note that during this period the convoys were escorted by destroyers, but only modestly. Patrol 5: October 1944 – Midway, by this time the Allied destroyers protecting the convoys





were already equipped with radar, making it easier for them to detect submarines effectively and harder for us players to play effectively.

The view in the game is a series of screens that we can switch between at will. One of the screens is the map, which we can zoom into or out of. The patrol looks like this: we move a black dot around the map of the Pacific basin. We move to areas where the presence of Japanese convoys is most likely. When we encounter one, the screen turns black. Pressing fire will cause us to go into direct action. A map will appear with our ship visible and the white dots of the convoy ships.

The engine room screen gives you all the information you need to know about your ship's technical status, such as draught, number of torpedoes available, battery charge, diesel fuel level and damage to various parts of the ship. In the engine room, we can also view the log-book, which keeps track of our successes. In the engine room we can also find information such as speed, water temperature, water depth under the ship, compass, engine speed, time and torpedo status.

You can control the periscope by switching to the sail display. This optical instrument, basic on every submarine, gives us a lot of information about the enemy fleet and also allows us to carry out combat operations (combat periscope). When the ship is on the surface, we can go out on the bridge to assess the weather conditions. Visibility is important when planning a surface attack. Also, a periscope on the surface is more difficult to see in poor visibility. We fire torpedoes by taking into account the distance to the enemy ships, their speed, the course of our ship, the angle of torpedo fire, and the course of the enemy ships. Note that when looking through the periscope, we may be looking in a different direction than the bow of the ship.

As you can see, the nuances that affect the gameplay in Silent Service are numerous. This testifies to the greatness of the game and the genius of its creators. Of course, the title is not without its limitations. You don't have to look far to find them, suffice it to mention the lack of variety in enemy ships, the fact that you can only fire five torpedoes at a time (when you fire another, one of the previous ones simply disappears) or the tragically low effectiveness of depth bombs. The game will also feature several bugs that will help us outwit the computer opponent. One of the most interesting is the one that allows us to use the periscope at night. All you have to do is extend it before nightfall and not stow it away again.



Despite these imperfections, I rate the game as almost excellent, as it should be taken into account for the time in which it was created. In the mid-1980s, Silent Service was something special – it was several lengths ahead of other simulators and was in a class of its own. Despite the rudimentary plot, the game managed to create an atmosphere of adventure and the thrill (mainly fear) known from the film "Das Boot".

At the outset, I suggested that Sid Meier, like Wolfgang Petersen, had set out to recreate the realities of underwater warfare as faithfully as possible. Both men achieved this brilliantly. Although they were working in two different fields, their paths crossed for a moment through warships. Undoubtedly, they also shared a creative genius, thanks to which we can still enjoy their works more than thirty years on. ■





■ author: Tomasz "Jackal" Jędrusiak / translation: Ari



REVIEW

Somewhere on the edge of time and space, where new celestial bodies are being formed, a game is being played involving gods and rulers from across the known universe. At stake is the control of the new worlds and the creatures that inhabit them. The battle is brutal and merciless, no less than the famous Mortal Kombat tournament. Welcome to Mega Lo Mania.

In 1991, when no gamer had yet dreamed of Dune 2 or Settlers, a little-known studio – Sensible Software (soon to become a tycoon known for the immortal Sensible Soccer, Wizkid and Cannon Fodder) under the aegis of the mighty Virgin Interactive – a brand that would later become well known to every Amiga gamer – was tempted to release a highly innovative and well thought-out game.

It was certainly inspired by another work of the visionary creator Peter Molyneux – Populous. Mega Lo Mania, however, went much further, taking the god game to a higher level. When you start the game for the first time, it is impossible to shake off the feeling of completeness. The intro, the graphics, the music and sound effects, the mechanics used, the world created and even the length of the game itself are so perfectly integrated that they give the impression of an inseparable work in which each element has its proper place.

Created by John Hare (of Cannon Fodder fame) and Chris Yates, this action RTS was the first to use digitised voices, created by the late musician Richard Joseph. The uplifting music in the intro, the ambience of the menu and strategy screens, and the energetic, battle-ready jams in the tactical levels themselves make for an above-average mix. The world created, the graphical effects and the choice of colours are a real masterpiece. The game has stood the test of time and even after 30 years there is no fear of rejection.

Our main goal is to take our tribe to the final battle, the mother of all battles, which is the culmination of a long journey and requires the mastery of nine eras, each consisting of three battles. The first important decision is to choose our hero from the four characters available. They differ in character and in the way they act, but after a few battles it will be easy to see which of them is treach-



erous, which prefers methodical and planned action, and which seeks the quickest possible victory, risking more than enough. A good method is to choose the character who will cause us the most trouble in the game, effectively eliminating him as an opponent.

The game board is an island, or an archipelago of islands, occupying a maximum area of 4 by 4 squares. Each square is a sector and can only have one owner and is developed separately, with its own population, limited resources and level of development. In Mega Lo Mania, we start with 100 natives, which we then assign to a battle/mission. The more we use them to occupy the map, the easier the task will be. This strategic part is very important, as you should try to complete the mission with as few people as possible, saving them for future battles. In each epoch we get 100 more, and we keep the ones we don't use. And just as it is easy to win with a small number of subjects in the beginning, it gets harder the further into the game you get – human supplies from previous eras come in handy.

When you select a map, you will be confronted with the remaining opponents – initially one, but later all three. It is possible to make short-term alliances, in which case it is possible to attack together and pass through the ally's



lands without fighting to occupy an inaccessible sector. However, remember that such an alliance only lasts for a certain amount of time, so do not rely on it too much. Often our ally will stab us in the back at a crucial moment and cut off our army from its base.

The fields on a given map may have a single owner who fills them with various buildings – we have a laboratory, a factory, a mine, etc. Their construction requires a certain number of people, as does scientific research, the extraction of the raw materials from which we make armaments, or the production of direct coercive and defensive measures themselves. Without going into too much detail, because discovering them is one of the great pleasures of the game (as is watching more weapons being invented and the appearance of buildings and our people changing as they evolve), the whole knot is about properly allocating people to work. The more we keep them engaged in scientific research, the faster we will acquire new, more powerful weapons. At the same time, if we fail to keep a significant proportion of our people unemployed for procreation, we will be unable to recruit an army, despite having heaps of modern weapons in stock. In the same way, the latest scientific discoveries will not allow the creation of armed forces capable of conquering more sectors without a sufficient amount of raw materials being mined. The enemy does not wait passively, but moves quickly. In some maps, he will persistently send successive waves of untrained and unequipped subjects to their doom, occupying our attention and resources while he expands to destroy us at the crucial moment with a prepared and rearmed modern army in a matter of moments. In other cases, it will simultaneously saturate its sectors with defences and build up a reserve of troops in the rear, so that we will lose all our resources in an attack and will be unable to break through, inevitably suffering defeat. The introduction of nuclear weapons adds a great deal of tension to the game, as a single nuke can destroy any sector, making it inaccessible for reoccupation, which, combined with the shape of the island, can sometimes make it impossible for us to get to the enemy without a large air force. Sometimes we get into an arms race to the point of exhaustion, building defences to absorb incoming nukes and praying that the enemy runs out of resources before we do.

Around the seventh and eighth epochs, we gain the ability to freeze a sector with the people within it. Such an area is indestructible, and the hibernated subjects will await the final battle where we will face the remaining

opponents and the ultimate victor will emerge. In order to have an advantage over the other lords/gods, we must prepare a large number of subjects for hibernation (perhaps one in ten will survive). Finishing the game can therefore be easy if we have managed our resources well.

The game mechanics and world rules are simple, well thought out and very consistent. The game requires a lot of attention, watching your opponents' actions and thinking ahead. There are many ways to win, all accompanied by excellent graphics and sound design. Watching the struggles of little people gives great satisfaction and excitement, because often victory and defeat are separated by an unlucky decision or a combination of circumstances that we did not take into account. Success in the game is satisfying, but defeat is not frustrating either, because we understand why we suffered it. As the game progresses, the level of difficulty increases with more enemies, more challenging sector settings, and more aggressive enemies. Each successive era raises the starting level of player development, so that we don't have a tedious stage repeating itself in every battle, while at the same time increasing the number of new solutions, types of weapons and defences, and the pool of buildings to build, keeping our attention at a high level at all times. Despite the seriousness of the situation, there is always a smile on our faces because, as in Cannon Fodder, it is impossible not to sympathise with our busy little characters.

When I play Mega Lo Mania, I can't help but admire the creators every time, and despite the passing of the years, it's a pleasure to go back, especially since it's not an insane amount of time to get to the final battle, and you absolutely don't have to sit for hours over the game, re-playing a level over and over again. For me, this is one of those games that shows what a perfect, timeless gaming machine the Amiga is. ■

MEGA LO MANIA

Developer: **Sensible Software**
Release year: **1991**
Platform: **Amiga**

A brilliant RTS



C64 war games

Waldemar Czajkowski's *Cassette Compilation No. 36* review

■ author: Tomasz "RAZOR" Kaniecki / translation: Tomxx



EDITORIAL

There have been so many war games made for the C64 that it's sometimes hard to find the right one, the one that will keep you playing for a long time and not scare you away with its complexity. This time we will take a look at some of the games on *Compilation No. 36*.

A word of explanation is due here to our readers from outside of Poland. In the 90s in Poland it was possible to buy compilations of games that were hardly available on our market. Their author was Mr Waldemar Czajkowski and obviously they were illegally distributed on the black market. But that's a subject for another article. Let's get back to the contents of the cassette.

Games on Compilation No. 36:

Battle of Midway
Bismark German
Battalion
Battle of Britain
Okinawa
Ogre Strategy
Iwo Jima
Falklands
Annals of Rome
Rome & Barbarians
Night Patrol
Forever Road
Omaha Beach
Night St. Ann
Up of the beach
Up of Achen
Ardene Dawn
Roehr cross
Strategy
Eng civil war

Some of the titles (misspelled, by the way) don't tell you too much about what's underneath the named items on the counter, so I've decided to go through them one by one and tell you which ones are worth your time.

1. BATTLE OF MIDWAY (1984)

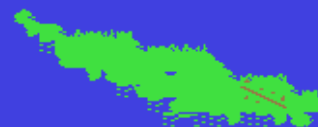
The first game on the compilation greeted me with a screen for selecting the control method (keyboard or joystick) and the difficulty level. The game puts us in command of the American fleet in the Pacific during the famous Battle of Midway. We send our squadrons out in search of enemy ships, while defending our ships and airfields on occupied islands. As well as the strategic operations, there is also an arcade element in the form of targeting and shooting down the Japanese planes that

THE BATTLE OF MIDWAY
 A COMPUTER WARGAME FROM P.S.S.

PRESS 'S' FOR JOYSTICK
 PRESS 'K' FOR KEYBOARD

U.S. BASE MIDWAY ISLAND

AIRCRAFT 28F 34D 6T 21HB 30R
 AIRFIELD OPERATIONAL



are attacking us. I found it quite fun to play, the computer is a bit predictable to say the least, but if you are interested in the Japanese-American conflict it is worth playing.

2. BATTALION COMMANDER (1985)

A very interesting game from a well-known studio (SSI) dealing with strategies. Before choosing a side in the conflict (Russia, USA, China), one of the 40 maps and the ratio of forces, we decide which scenario we want to play (skirmish with the enemy, defence, attack, reconnaissance). We start on the green map with our units spread out. They can come under fire from enemy mortars, they can surrender if the enemy is too strong, they can move and, of course, they can fight. Joystick and keyboard control is simple. The game is a typical strategy game, there are no distractions or unnecessary embellishments. The game once received very good reviews, which noted the good reproduction of terrain conditions and the strengths of individual units. I can recommend it with a clear conscience.

```

SELECT A GAME:
(1) NOVICE
(2) PURSUIT AND EXPLOITATION
X(3) MEETING ENGAGEMENT
(4) ATTACK
(5) DEFENSE

YOUR NATIONALITY:
(1) SOVIET UNION
(2) CHINA
X(3) USA

ENEMY'S NATIONALITY:
X(1) SOVIET UNION
(2) CHINA
(3) USA

NUMBER OF TERRAIN MAP (1 TO 40): 27
RELATIVE STRENGTH (1 TO 5): 5
  
```

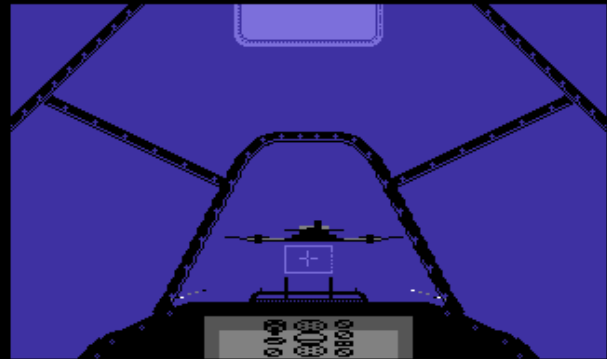


3. BATTLE OF BRITAIN (1985)

A simple wargame in which we defend Albion against Hitler's temptations. We have RAF units and anti-aircraft de-



fences. I liked the way the air battles are shown from the perspective of an aircraft cockpit (the smoky RAF planes look cool). We repel air raids on cities with a 'targeting gun' by firing anti-aircraft guns into the sky. It may not be an outstanding strategy, but I had fun playing it.



4. IWO JIMA (1985)

The PSS company used to go crazy, releasing new strategy games for geeks all the time. They were practically impossible to play without instructions, with each key being a different command. The compilation included Iwo Jima. It will come as no surprise when I write that in the game we fight for the titular island. The game is bursting with statistics. It tries to combine economics with such niceties as training soldiers, their fuel supply, etc. Opinions vary, but for me PSS games were associated with board games transferred to the computer. Check it out for yourself.



5. ENG CIVIL WAR '41 (198?)

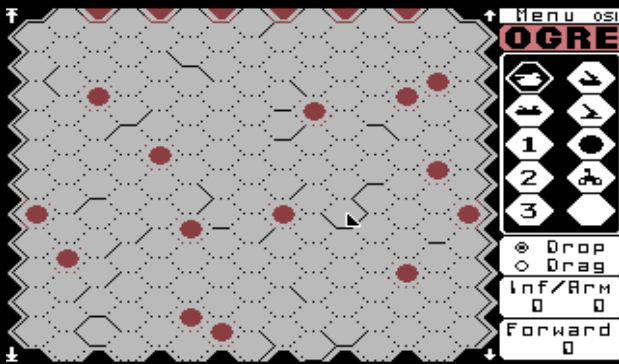
I wasn't supposed to write about this game at all, but the seemingly lame title, for which it's unknown exactly when and who made it, began to appeal to me. Despite its



undeniable ugliness and lack of instructions, it turned out to be something that might appeal to casual strategy fans. We have a fort, we have artillery, and our goal is to destroy the enemy units before they destroy us. We can configure the map by adding or removing forests. It is in vain to look for unit descriptions here. One of them is a "monster" with a yellow board, a bit like checkers.

6. OGRE (1986)

A game from Origin Systems, based on a board game popular in the 1980s. Porting board games to the computer can be a tricky business, but this time it went very smoothly. The ogre of the title is a very well armoured enemy tank and our task is to neutralise it with our own vehicles. The game can be played with the computer and another player. Set in an apocalyptic future, the game reminds me a little of another strategy game called "Empire", which I used to play passionately on a computer with a 286 processor in my school laboratory. Very cool release. Recommended.



In conclusion, the games I have described are only a tiny fraction of the strategy games that can be played on our hardware. Many of them were difficult or even unplayable for us at one time, mainly because we did not have access to instructions, but it is worth revisiting them now to face battles, those of the past and those of the future, as a mature player. ■



Games not included in Compilation #36 cassette, but worth mentioning (and playing):

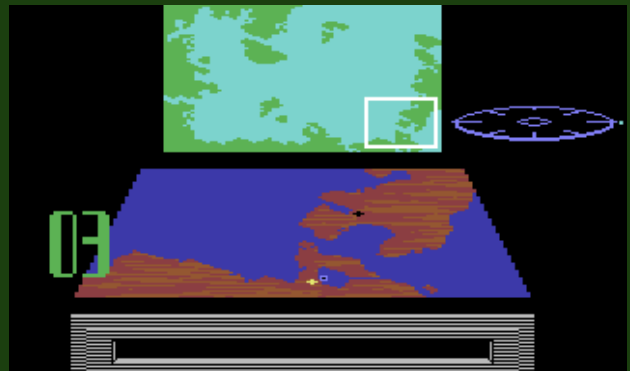
BATTLE FOR NORMANDY



BLITZKRIEG



CONVOY RAIDER



DNIEPER RIVER LINE



Lemmings

■ author: Komek / translation: Ari

Over 30 years! That's how long Commodore Plus/4 owners had to wait for the full version of Lemmings, one of the best games of the first half of the 1990s.



This title has a record number of successful conversions, and no wonder, as these little creatures with amazing abilities have become addictive for many gamers. I don't think anyone needs to be introduced to Lemmings, as they're well known to all gamers, so let's get down to business.

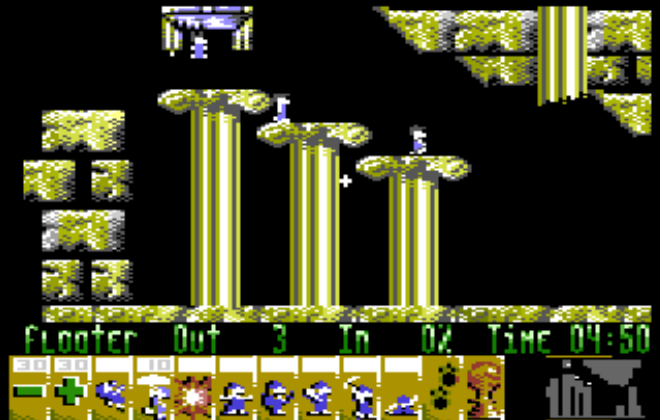
I would like to thank TCFS (coding), Csabo (music) and Unreal (graphics) for a solid piece of work. Gentlemen! It is partly thanks to you that the Commodore Plus/4 is still alive. You continue to break hardware barriers and accomplish impressive things, dedicating much of your precious time to the cause. We gamers appreciate it and look forward to more surprises. ■

In general, it is not often that a conversion of an old game makes my jaw drop, but in this case it did. What was the main reason? Hmm... there are a few key things that make this conversion simply outstanding. The first is the graphics, which look impressive for the Plus/4's capa-



LEMMINGS - PRESS THE FUNCTION KEYS TO

abilities. I am fully aware that it is no easy feat to render 16-bit graphics so well in 8-bit mode. All the lemmings move smoothly and perform their various tasks as they should. The level design is also faithful to the original. The great soundtrack should also be praised. The melodies are modelled on the original version, which adds to the gameplay. As for playability, the first time I played the game I was sucked into the world of these friendly creatures for several hours, so I don't think I need to say much more.



LEMMINGS

Developer: TCFS, Csabo, Unreal
Release year: 2023
Platform: Plus/4

Lemmings have landed on Plus/4



Dig Dug Revival

■ author: Agnieszka FPWG / translation: Krzysztof Drzazga



REVIEW

Every retro gamer believes in the Namco Trinity: Pac-Man, Galaga and Dig Dug. These games often appear together when Namco wants to show the power of nostalgia. However, Dig Dug is unique among the three, as it combines features of the other two: a labyrinth (which requires some thinking) and also fast reaction gameplay.

I must admit that I am quite impressed that the authors of the conversion have managed to keep all the elements of the original game intact. All the rewards: fruit and vegetables are there. Even the levels and colours seem to match the original version from the arcade saloon. The player is an underground miner looking for fruit and vegetables as trophies. But Dig Dug has to be careful. There are two types of enemy you can encounter while digging: Pookas and Fygars. The player's goal is to eliminate the enemies on each screen by digging in a certain way to cause stalactites to fall on the enemies' heads. The digger has a pump that can be used to destroy the cave monsters. They can simply be blown up and burst like a soap bubble. It's definitely one of those early, brutal games that allows you to drastically eliminate your opponent, which is very satisfying.

The graphics are very colourful, and the original details of the opponents have been retained. Some colours are quite contrasting, but that's the same as in the original arcade version. The Commodore 64 version looks more blocky due to the lower resolution. I know there are several things that could be improved in these graphics. The colours of the fruit and vegetables are rather pale in comparison to the rest. On the other hand, the animation of the monsters is detailed and everything looks right. I was impressed by the Fygars' fire, as it was more than just a single colour and resembled dragon fire quite well.

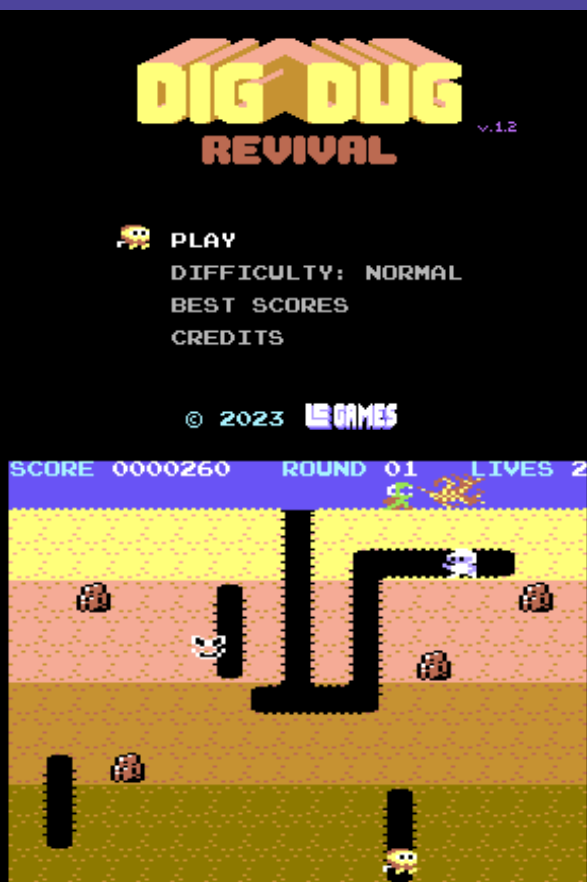
Dig Dug's gameplay is very pleasant, and each of the digger's steps is accompanied by a nice tune. If it takes too long to clear the monsters, the enemies become faster and more aggressive, which is signalled by a short sound.

Everything we loved about the arcade DD version is here. Dig Dug is an arcade game that is great for players who are focused on progress and high scores. It is a lot of fun and requires the same skills and tactics as the classic arcade version. The Commodore 64 controls are identical to the arcade machine. If you are a fan of the original, you must give this port a chance. ■

DIG DUG REVIVAL

Developer: **Namco/LC-Games**
Release year: **1982/2023**
Platform: **C64**

Even more fun



Tower And Dragon V2.7

■ author: Phowiec / translation: Krzysztof Drzazga



This title has a size of 8 KB, which is less than the review you are currently reading. Why do I mention this? We are all fans of retro hardware and know exactly how much it costs. However, sometimes my articles are read by my children, and in keeping with the goal of 'education through entertainment', I decided to add such a comparison here to show that 8 KB is enough to have a lot of fun.

The game I am describing is a tribute to another production – "Dungeon" from 1979. This title inspired Jason Cook to become a programmer. He decided to create a similar game for CBM PET, also using 8KB of memory, to give credit to the authors of that roguelike game. As he said, PET turned his life upside down. Before that, he had seen huge computing machines at his father's workplace, and computers on the covers of popular science magazines or in sci-fi films. In 1979, his parents bought him a Commodore PET as a home computer. From then on, he spent all his spare time in front of a keyboard and screen. At first he copied programs from computer magazines. Later, he used the built-in tape recorder to save and copy programs from his friends. Then he started writing his own programs to play the games he created.



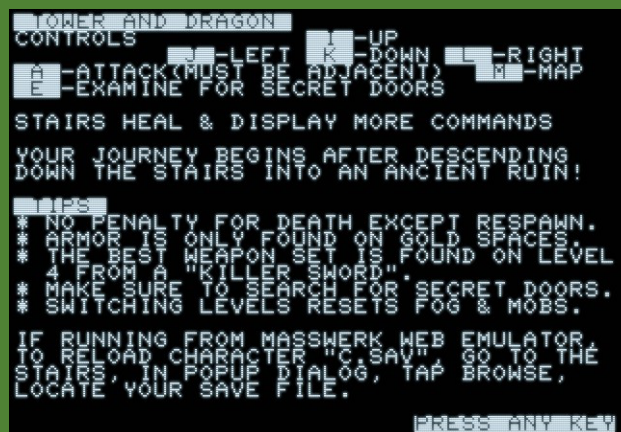
And here we come back to the game mentioned in the title. Tower and Dragon is a classic (if a Commodore PET game can be called that) dungeon crawler. The player has a basic weapon, a secondary weapon and armour. There are quests to complete, moving walls, magic and teleportation. The game also has unique tiled walls and unique monsters for each level of the dungeon.



The game starts similarly to other games of this genre. You find an entrance to the dungeon and decide to enter it. You leave your boat floating on the water behind you

and set off on your quest for glory and praise from the lips of future generations. Hey you! What are you waiting for? Forward! Adventure awaits!

Some pretty nice music greets us on the title screen, although it is a combination of typical PET squeaks. However, due to hardware limitations, there is no music in the game and only a few sound effects are played. Anyway, nobody plays the lute harp among forgotten ruins, so there is no need for music.



The first level of the game is a sort of trainer, and finding the key to the ruins is necessary to complete it. This allows you to learn the keys needed to play the game.

Most of the screen is taken up by the game map. We can move around it in all directions. When something important happens, a message will appear on the right side of the screen. It also displays the hero's statistics, such as health and armour status, the strength of the weapons used, and the amount of gold in their pockets. You can switch to a mini-map view at any time if you accidentally get stuck in a passage. It is worth exploring the dungeons to discover hidden doors. In newly discovered locations, you may find treasures, better weapons or encounter ghosts or monsters. Killing them will increase your experience, but will also reduce your health.

Is there anything else to add? It's only 8 kB and hours of fun. Everyone should play it. You can play it on physical hardware, but also in an emulator or online via the game author's website.

And now, fellow travellers, see you on the other side of the underworld. To battle! ■

TOWER AND DRAGON

Publisher: Jason Cook
Release year: 2023
Platform: PET

See you on the other side of the underworld!

9
 6
 10

Falklands 82

■ author and translation: Leopold Tupalski



REVIEW

The Falklands War was a now somewhat forgotten conflict fought between Britain and Argentina in the spring of 1982. At stake was control of the Falkland Islands archipelago and adjacent islands, located in the South Atlantic, less than 500 km off the Argentine coast. Due to historical developments, Argentina began to lay claim to this island region, culminating in this short-lived war. The military action in this remote corner of the world, which ended in victory for the United Kingdom, became the main theme of the game Falklands 82, released on the Commodore 64 and ZX Spectrum.

In Falklands 82, the player takes on the role of the commander of the British landing force, whose aim is to rid the Argentine forces from the disputed archipelago. The area of the clash is narrowed down to the northern part of the island of East Falkland. As an introduction to the game, it is worth reading the manual, which is available when you start the program. Once you have selected the difficulty level, you need to decide which of the 15 available vessels will support the ground forces with artillery fire and which will be protecting the aircraft carriers HMS Hermes and HMS Invincible. Then a landing site should be chosen, selecting one of the four available locations, after which the actual game begins. This can only be played for a certain number of turns, depending on the level of difficulty: from 25 for level 1 to 30 at level 5. The conflict can be ended earlier by eliminating all enemy units. A less violent ending is also possible, consisting of entering every settlement on the island. In doing so, it is not necessary to leave your forces in the individual places. It is sufficient that the last unit to arrive at a given location is a British one.

The game considers the impact of a number of factors on the course of the battle. Among these is the effect of terrain characteristics on the pace of movement and the amount of losses sustained on combat capability. For part of the campaign, it is also not possible to use air and naval support due to bad weather, which can also delay the landing of reinforcements.

Practical tip: it is worth saving the special units, namely the Special Air Service (SAS) and the Special Boat Service (SBS). Although they are not very suitable for attacking, due to the small number of AF (Aggression Factor) points they have, their advantage is to carry out reconnaissance (Reconnoiter). This allows us to locate enemy units before they get in the way of our forces. On the other hand, units weakened as a result of fighting are worth withdrawing. Despite their deteriorated parameters, they can be useful for guiding air strikes against enemy units outside their range, expressed by RG (Range Factor) points. It is better to leave direct combat to front-line forces with a high AF level.

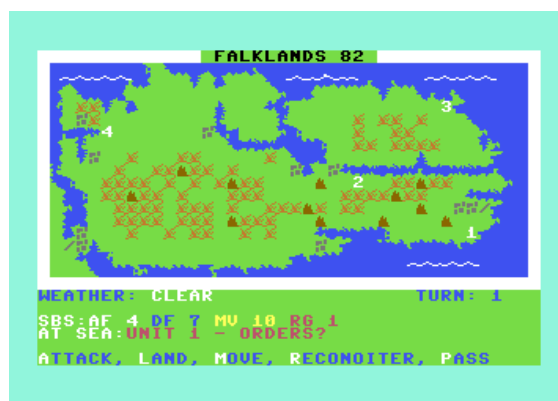
A CRITICAL VIEW

Those familiar with tactical and strategic games may be struck by a number of simplifications and limitations when playing Falklands 82. These include, for example, moving a unit only in the main directions (N, S, E, W). There is no possibility to move diagonally in intermediate directions (e.g. SE). There is also a lack of freedom to change the order in which units move. This sometimes leads to the loss of turn for a particular unit that is going to move while, at the same time, it is blocked by another one. In such a situation, often all that is left to do is to skip the turn (Pass).

The graphics and sound, even for an 8-bit program, could be better, although they are sufficient for the criteria prevailing in



▲ A British soldier from the Scots Guards regiment at the time of the Battle of Mount Tumbledown in June of 1982 during the Falklands War (historical reenactment impression)



▲ Selection of a landing site. The area around Port Stanley, the capital of the archipelago (in the southeastern corner of the island, marked with '1'), is where the largest enemy forces should be expected



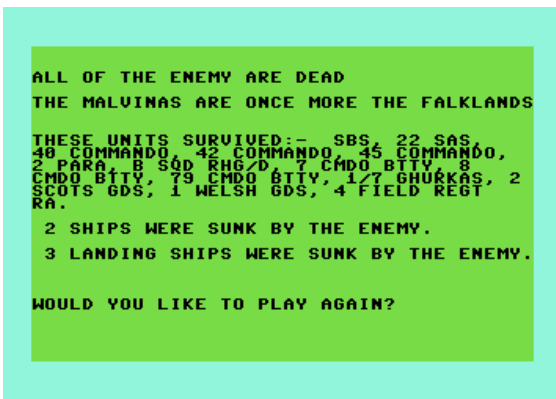
▲ Just like during the 1982 campaign, poor weather conditions can also affect military actions



▲ This time the warring factions are hampered by fog



▲ Air and naval support is one of the keys leading to victory



▲ Enemies are defeated...

such a genre. What is important, is that everything that comes from the screen is clear, and the symbols visible on the map are unambiguous, and understandable even to laymen who have never heard of the existence of military symbology in the NATO APP-6 standard. However, it would have been helpful if settlements had been additionally marked with the national colours of the units controlling them. Falklands 82 also lacks any music, which is to be regretted, as it would be nice to express the key stages through melodies. There could be many more potential improvements, although, to be fair, this game was released several years earlier than such titles as Warlords, which, incidentally, came out for 16-bit machines.

The game lacks the option to choose a side of the conflict, which should be considered a disadvantage. Being able to command the Argentine forces would have given an insight into the conditions under which this side had to operate. It would also have allowed a scenario straight out of alternate history, in which the Sun of May looks after the islands, eventually renamed Malvinas, from the Argentine flag flying above them. Another feature missing is duelling with a second player, even on a hot seat basis. Such a gameplay variant would probably increase the attractiveness of this product, which was also criticised as being too easy.

When Falklands 82 was released in the mid-1980s, it seemed a surefire hit. After all, it was the work of Personal Software Services, a company experienced in developing games of this type, which had shortly before got well-deserved laurels for Theatre Europe, the best strategy game of 1985. Falklands 82, however, got a poor reception with the average rating close to 4/10, coming out pale against its award-winning and much more complex predecessor. On the other hand, the simplicity of the gameplay, considered as a flaw by skilled strategists, was considered an asset by some reviewers. The uncomplicated mechanics meant that Falklands 82 could be considered a good introduction to war games. I agree with this opinion as, along with North & South, it was one of the first of this family of games I encountered and contributed to my interest in computer-based wars and battles. It is also certainly worth recommending to those with a passion for the history and actions of Her Majesty's Armed Forces, as it depicts perhaps the last glimpse of the power of the former British Empire. This is reflected in the program's subtitle (The Empire Strikes Back), an obvious reference to 'Star Wars', which was inspired by the cover of Newsweek magazine from April 19, 1982, featuring the aircraft carrier HMS Hermes steaming towards the Falklands. ■

Function	Keys
Attack	A
Landing	L
Movement	M
Selection of movement direction	N, E, S, W
Reconnoiter (only the SAS and SBS)	R
Skip a turn	P
Confirmation of action	Y
Cancellation of action (in case of attack, switching to another target)	N

FALKLANDS 82:
THE EMPIRE STRIKES BACK

Developer: **Personal Software Services**
Release year: **1985**
Platform: **C64**

Como está, amigo?

6
 5
 6

Total Militarisation

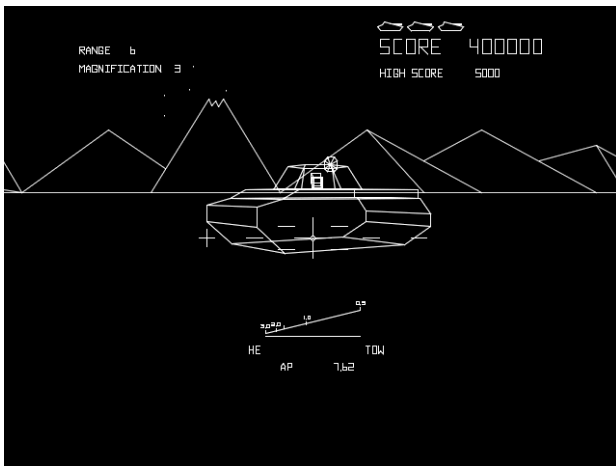
author and translation: Leopold Tupalski



EDITORIAL

Computers in the service of the military is a topic inseparable from the history of digital machines. After all, ENIAC itself, one of the first computers, was used to perform calculations related to nuclear weapons and ballistics. Hardly surprising, anyway, since its construction was funded by the U.S. Army Ordnance Corps. However, the interest of the servicemen did not end with such monumental machines with relatively strong computing power at the time, because personal computers, home computers and even video consoles also found usages in armed forces. And vice versa: computer games created for entertainment also took full advantage of the military and the history of war. There were even times when this seemingly innocent form of entertainment stirred up controversy, even at the state level. In the following article we will try to take a closer look at these issues.

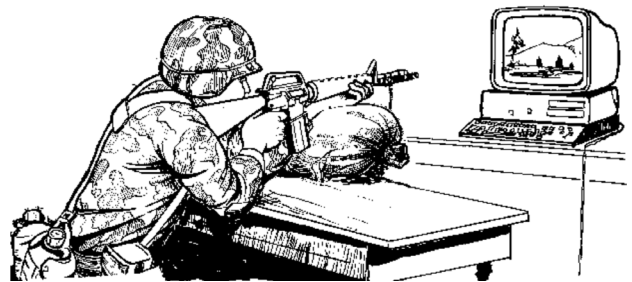
Battlezone, released in 1980 by Atari, is one of the undisputed hits of the golden age of arcade video games. It's also one of the first examples of incorporating the idea of VR, which caught the attention of a think tank run by a group of former military officers. They approached Atari with a proposal to develop a simulator for the crews of the new M2 Bradley infantry fighting vehicle that was going to enter service with the U.S. Army at that time. This is how The Bradley Trainer, a Battlezone-based military simulator, was created.



The Bradley Trainer (1980). Image by U.S. Army (Public Domain)

But even this early marriage between the military and video games ran into a problem. Ed Rotberg, the programmer and co-creator of the aforementioned arcade hit, had clear objections to participating in the whole endeavor due to his pacifist beliefs. In the end, Atari executives persuaded him to take part in the project, promising him that he would never again be directed to an assignment made for the military.

Another example of video game technology being used for military training was MACS, a system that was discussed in more detail in issue 10 of K&A Plus. It was a shooting trainer based on the Commodore 64, developed in the mid-1980s for the US Army to improve skills with the M16 rifle. A later version, used by the U.S. National Guard, was developed for the SNES console. Essentially, the idea behind the system was similar to that of the Bradley Trainer, to create a device that would allow soldiers to train in conditions that would be safe for them, while avoiding the costs associated with using real equipment and ammunition.



An illustration showing the Multipurpose Arcade Combat Simulator (MACS). Source: U.S. Army FM 23-9, M16A1 Rifle and Rifle Marksmanship (Public Domain)

Other machines known for their everyday use have also made their way into armed forces. One 1990-91 Gulf War veteran recalled that while serving in the U.S. Navy at the time, he ran payroll on an IBM computer with an 8088 processor, while an Amiga was also on board the vessel. Also noteworthy is an Amiga-based helicopter simulator, which was shown in apparently prototype stage on the U.S. program "The Computer Chronicles," in the "The New Amigas" episode aired in June 1989.



Capt. Walter F. Huebner (150 TFG, New Mexico Air National Guard) at an Apple II during exercise Bright Star '80 in Egypt. Intended for home use, the computer was used to plot aircraft load planning for airplanes returning home after the exercise. Photo by SSGT Bill Thompson / USAF (Public Domain)

The military did not shy away from computer games, especially those that offered a high degree of realism. This was reflected in articles published by Secret Service and PC Gamer US in the first half of the 1990s. According to these, Harpoon, a computer naval warfare game released in 1989 by Three-Sixty Pacific, found its way to the U.S. Naval Academy in Annapolis, as well as other military academies around the world. More recently, comput-

er games have been openly used to promote military service and recruitment. A prime example is America's Army, a series of games released in 2002-22 under the banner of the US Army. The product was a combination of a first-person shooter with a recruitment platform and a guide for those who wanted to serve Uncle Sam. A wave of criticism hit the brand, accusing it of being a propaganda tool, despite similar ideas being implemented in other corners of the world, even by irregular forces.

THE WAR GAME

War has proven to be a rewarding theme for games of all genres. Shooters seem to have dominated, and some of them have become timeless hits. Examples include Commando (released six months before the film of the same name), Operation Wolf, Contra and Cabal, which were the epitome of the "Rambo cult" that took hold in the 1980s thanks to action films. The protagonist of such a production was a special forces soldier with extraordinary skills, the archetype of the perfect soldier who laid waste to hordes of enemies. Could there have been anything more appealing to the masses of teenage gamers than the chance to play as such a hero? However, not everyone was keen on computer war games, even when they were fought for a just cause by knightly warriors. The problem was recognised fairly quickly at a governmental level, where officials reacted appropriately to reports of a disturbing pastime being indulged in by adolescents. Perhaps the first victim of such intervention was good old River Raid, created by Carol Shaw and released by Activision in 1982.



River Raid (Activision, 1982) became one of the first games to be banned in Germany by the BPJS due to its promotion of militarism and violence

Despite the downright symbolic graphics and fairly conventional violence, the title did not sit well with officials from West Germany's BPJS (Bundesprüfstelle für jugendgefährdende Schriften; now Bundeszentrale für Kinder- und Jugendmedienschutz, BzKJ), the federal office that censors media for content inappropriate for young people. The game was banned from advertising, selling to minors and from being publicly displayed. So what was so outrageous about River Raid? According to the German authorities, the juvenile player took on there the role of an uncompromising fighter pilot wreaking destruction, while the entire gameplay was a form of paramilitary training. Eventually, at the request of the publisher, the ban was lifted in early 2003.

The list of titles on the so-called BPJS index is long, although when discussing wargames it is worth adding that

A-10 Tank Killer also landed on it. Developed and released in 1989 by Dynamix, this simulator of the A-10 Thunderbolt II attack aircraft had an uphill battle with censors. According to the latter, the game allowed destroying buildings that are usually inhabited by people, who could thereby suffer death. As such actions are classified as crimes against humanity under German law, the game was also banned there.

Ironically, the 1988 peacefully-minded Microsoft Flight Simulator 3.0, whose package cover text encouraged players to arrange air races between the World Trade Center towers, did not raise any concerns at the time.

IN BAD TASTE

Games with a military theme were sometimes considered extremely tactless, even leading to their boycott. One example is Theatre Europe, a 1985 turn-based strategy game developed and released for 8-bit machines by Personal Software Services. Its plot was set in a hypothetical conflict that was to be fought in Europe between NATO and the Warsaw Pact. The game's creators made efforts to show such a war in a realistic way and thus they obtained relevant data from the British Ministry of Defense and the USSR Embassy in London. The game received high acclaim, also being praised for showing what an escalation of Cold War tensions could lead to. Theatre Europe was also named the best strategy game at the 1985 Golden Joystick Awards. However, not everyone shared these favorable opinions. The Campaign for Nuclear Disarmament (CND), a pacifist non-governmental organization, one of whose goals was unilateral nuclear disarmament by the United Kingdom, branded the title's developers "in bad taste," which was also echoed in The Sun tabloid. The attacks lashed by the CND on the game resulted in Boots and John Menzies store chains refusing to sell it. It was of little use, however, as Theatre Europe proved a success, and in 1989 it received a new edition in the form of Conflict: Europe, released for 16-bit machines.



Theatre Europe (Personal Software Services, 1985) for Commodore 64

Another example of a game that was badly received was Desert Strike, a 1992 big hit from Electronic Arts. The subtitle "Return to the Gulf" was no accident here, as the production alluded to the aforementioned Gulf War. Admittedly, the gameplay was originally intended to be set in the realities of the 1975-90 Lebanese Civil War, but its theme was changed to one that was more current and closer to Western audiences with the beginning of Desert Storm, the campaign culminating in the liberation

of Kuwait. This was the storyline that allowed one sitting at the controls of an AH-64 Apache attack helicopter to demolish the armies and installations of general Kilbaba, a despot and madman who had militarily overrun a small but fabulously wealthy Middle East emirate. However, the story did not please some reviewers and communities. There were claims in the computer press that the game was an attempt to exploit the conflict, briefly publicized in the media beforehand. Computer and Video Games said its subject matter was in bad taste, although the magazine also appreciated Desert Strike's qualities. There were also claims that some Desert Storm veterans publicly burned copies of this game.

Tellingly, the discussion around Desert Strike has found a further continuation in the arts. Fatima Al Qadiri, a Kuwaiti artist who experienced the 1990-91 conflict as a child, released a music album in 2012 entitled precisely "Desert Strike". Through her songs, she attempted to reflect how the wartime experience mixed in her mind with the impression of playing the eponymous production a year later. A shooter based on a conflict that Qadiri directly felt, even years later, was a source of many negative emotions for her. In an interview, she said that it was cruel and disturbing that such a momentous event as war was later turned into something as trivial and fake as a video game. Undoubtedly, this is a very remarkable opinion from a person who has experienced war both in the real world and in the form of a computer impression.



Desert Strike: Return to the Gulf (Electronic Arts, 1992). Overt references to the 1991 Gulf War contributed to the game's popularity, but also to the controversy surrounding it

Today, however, it is increasingly difficult to find similar voices, as Desert Strike is remembered with great fondness by people from different countries and regardless of the computer platform they once owned. After all, the title received high praise from the moment of its release, winning over masses of gamers and becoming Electronic Arts' best-selling product at the time.

There are many indications that a similar mechanism, as in the case of Desert Strike, worked also with Harrier Assault, an AV-8B flight simulator, which was released at a similar time by Domark, or with a contemporary FPS game entitled Six Days in Fallujah, set during the 2004 Battle of Fallujah. Both of these titles came under criticism from circles who pointed out that the subject matter of these games could be offensive to participants in real events. Harrier Assault, whose plot centered on a hypothetical conflict between the U.S. and Indonesia

over East Timor, was said to potentially offend Timorese who experienced brutal Indonesian occupation from 1975-99. On the other hand, Six Days in Fallujah, which was originally supposed to be released by Konami back in 2010, was unanimously protested by representatives of US veterans, Iraqi civilians and anti-war organizations. As you can see, certain events need time for the emotions associated with them to subside, which also allows a once hot topic to be addressed by the entertainment industry.

When describing the controversy surrounding war games, it is impossible not to mention Cannon Fodder by Sensible Software. This big hit from the 1990s came under fire even before it was released. According to the Royal British Legion (RBL), a British charity supporting veterans, the very idea behind the said production was "sick and degenerate." The RBL's efforts to get Cannon Fodder banned from distribution ultimately had little effect. The game's developers merely removed the poppy from its cover, which in British and American culture commemorates the fallen soldiers of war and is also a symbol of the RBL. The authors of Cannon Fodder alluded to a rebuke of their title in one of its initial screens. In it, the statement could be found that "his game is not in any way endorsed by the ROYAL BRITISH LEGION". To be fair, it should also be mentioned that some commentators recognized that under the surface of brilliant action and black humor lies a very strong anti-war message, exposing the nonsense of killing and conducting military operations.

Incomparably more controversial was 1984's Raid over Moscow, originally developed for the Commodore 64 by Access Software. This eminently anti-Soviet shooter became the subject of debate in the Finnish parliament, and even led to a crisis in relations between the USSR and Finland. While the turmoil surrounding this game deserves a separate article, it is worth mentioning that it apparently helped its promotion. Indeed, Raid over Moscow was the best-selling C64 game on the Finnish market for many months of 1985.

"IN THE NAME OF AN ARMS RACE THEY TEACH HIM TO SHOOT..."

The cited stories make it clear that the melange of the military with video games has had a huge emotional charge since its inception. For some, it is a passionate conglomerate, often a source of excellent fun, which sometimes allows the realization of secret dreams of heroic deeds in a virtual world. Others, on the other hand, consider such a combination to be a praise of militarism or an attempt to prey on human tragedy, which should not be accepted. Certainly, much depends on the individual value system, as well as the distance from the conflict in question, both in terms of time and space. The ways of perceiving such a war game and the factors that determine it could probably be studied by specialists in psychology, sociology or other fields. However, it is best to form your own opinion on the matter, especially since the issue is by no means clear-cut, as the fate of some of the computer programs presented above also shows. ■

Absolute Zero

■ author: Retrobajtel / translation: Toby

AMIGA



REVIEW

It seems to me that our world owes us a great debt of gratitude for the many times we have come to save it... This time is no different.

As a fearless researcher and explorer called Corben, we are going to save our beautiful planet from completely freezing over. You may ask: why is it slowly turning into a ball of ice? Well, it's because someone, for some unknown reason, turned off the climate reactors and the temperature began to drop rapidly, heading towards absolute zero. If we're not to face another Ice Age, we need to turn them back on and restore balance to the planet's climate.

Armed with a melter-freezer, we take turns building and removing blocks of ice to pave the way for the aforementioned reactors. These, in turn, require power, so we also need to install batteries. These can be found scattered around the tunnels of the complex we're exploring. Of course, in all the strenuous work of the reactor electrician, we will be disturbed by various strange and curious characters. Robots I can understand, but shooting fish heads or a Neanderthal? What? Have they thawed him out? Not everything has to make sense, let's just get back to rebalancing the planet's climate. In the complex we'll also find reservoirs for recharging our cannon, so in case of emergency we can treat one or more miscreants with a focused beam of energy. The adventure takes us through partially glaciated chambers where we search for batteries and activate more reactors. From time to time, we'll have to carry out our search in almost total darkness, with only a torch in hand.

Absolute Zero is a typical platformer with puzzle elements. You have to think about which blocks of ice to melt and which to use as platforms to reach your goal, while avoiding the hostile "guests" of the complex. The game won the Posadas 2023 competition in the Best Independent Production for the Amiga category. From a technical point of view, it presents itself very well. One of my colleagues aptly called it a side-scroller Solomon's Key, because the principles are practically the same, and in addition we have a fully scrollable level, which adds freshness and dynamism to the game. Combine this with the interesting effect of a slightly darker background, made up of industrial accents such as pipes, cables and switchgear, and the whole thing makes a really good impression. Graphically, it may not be outstanding, but it's certainly very good; musically, it's just as good, in my opinion. The soundtrack that accompanies the game is pleasant, interesting and never gets boring, or at least it never bored me.

It should be mentioned that the game was created using the RedPill tool, a "game creator" for the Amiga. If you've got a cool idea and don't want to get a PhD in assembler or some other C, just get caught up in the whirlwind of creativity and write your story, just like the capable and imaginative creators of Absolute Zero did. They have given us a great game and certainly deserve this first place in the competition. Highly recommended! ■



ABSOLUTE ZERO

Developer: **GUS Entertainment**

Release year: **2023**

Platform: **Amiga**

Let's not turn our planet into a block of ice



8



9



9



autumn/winter 2023

REVIEW

Lazarus

■ author and map: Uka / translation: Ari



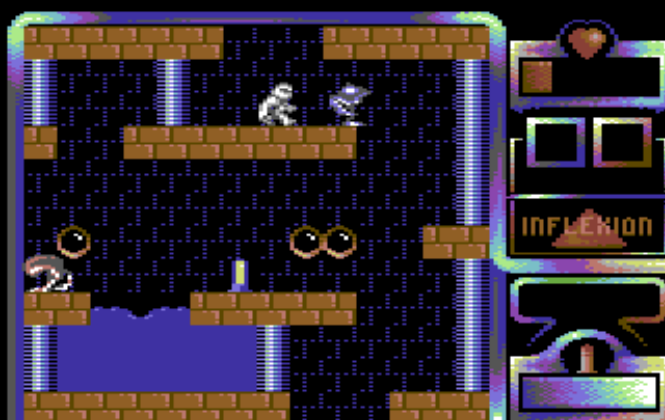
REVIEW

Somehow in a distant galaxy, in the indefinite future, there was a war. It's hard to say who or what the heroic Earthlings were up against (the authors don't specify), but war never changes.... On the planet AN-ALFA-BETA (not a bad joke in Polish, where it simply means "an illiterate") there is a base abandoned by humans, and inside it are five items essential for victory. The mission to retrieve them is called Lazarus. One man has been assigned the task – Colonel Colonel. So much for the plot of the game.

Your task is to direct the actions of the "warrior" so that he returns in one piece and the mission is successful. You have to find all the artefacts and bring them to the teleport. It won't be easy. The corridors of the base form a rather elaborate labyrinth, and they have been overrun by dangerous robots. A good memory (or a map) will come in handy, as will quick reflexes. After all, the rank of Colonel is an obligation! Luckily, the Colonel is not a random guy, and he can also make use of his arsenal. One shot is all it takes to turn an enemy mechanoid into a pile of iron, and if he happens to run out of ammo, Colonel is also an excellent jumper. However, everyone has their weaknesses – the Colonel's heavy military suit can literally drag him down.

The military base is made up of several levels, which can only be accessed using the main teleport (the one you use at the start of the game). Each level has an item that you must use to return to the teleport, and if you succeed, you will be given the password to access the next sector of the base. All this fun adds some variety to the gameplay, but if you're counting on the codes to start the game at each level, I'm afraid you'll be disappointed: teleportation will work, but we'll still be forced to bring items from all five sectors. As a consolation, the game's difficulty is not high, and the effort is rewarded with a nice outro.

Lazarus resembles Inflexion Development's previous production – Castle – in many ways. Identical interface, similar rules and another maze to explore. I'm only writing this because it's the only thing I can complain about. Zephyr's graphics have always been on a high level, and when Shogoon appears in the credits, you can't be dissatisfied. ■



LAZARUS

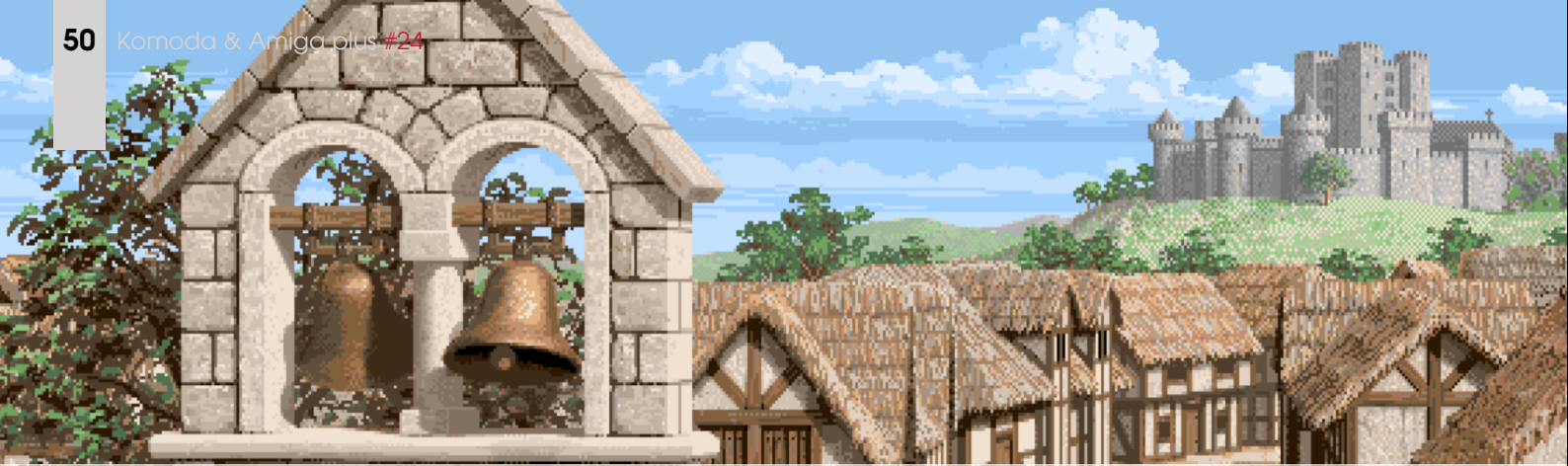
Developer: **TimSoft**
Release year: **1994**
Platform: **C64**

Colonel, save us!



▼ Cover and media of the original C64 release of Lazarus in 1994. Photo: <https://www.mobygames.com>





Defender of the Crown *through the prism of Cinemaware*

■ author and translation: Tomxx



EDITORIAL

These days many light-hearted retrospective commentaries of well covered retro gaming topics fail to add value as any new material used will often be inconsequential, adding nothing to the content or, alternatively, the information that has already been covered by someone else in the past so many times prior. However, from time to time, I do come across something new and special that draws my attention, wanting to discover more. One such instance was when I recently uncovered an internal memo from Cinemaware, accompanied by a synopsis and preliminary artwork for Defender of the Crown. In the letter, studio founder Robert 'Bob' Jacob instructs colleagues to review the documents and provide feedback directly to their author, Kellyn Beeck. He also stresses that the company's message is to create interactive films and that he believes DoTC fits the bill and could become a 'classic'.

MASTER DESIGNER SOFTWARE MEMO

FROM: Bob Jacob

TO: Doug Sharp
Jerry Fournelle
Bruce Webster
Bill Williams

Day Slips

SUBJECT: DEFENDER OF THE CROWN

Our colleague, Kellyn Beeck, formerly the acquisitions manager at Epyx, now weekend weathercaster at KDYN TV in Portland has graciously allowed me to distribute his game design for (trumpet fanfare) Defender of the Crown, a game which I believe is destined to become a CINEMWARE Classic.

I would encourage you to send plaudits and criticisms to Kellyn on our private DESIGN conference on BIX.

Let's continue to keep in mind that we're designing Interactive Movies, not (shudder!) computer games. I believe that Kellyn has come very close to capturing the essence of the CINEMWARE experience. You could not go wrong emulating his example.

Bob Jacob

Driven by my detective instincts, I seeked out and obtained the full versions of these documents and decided to write an article about the process of creating a game that holds a special place in our hearts.

Tracing the events of the past years, however, I quickly realised that it was impossible to talk about the development of Defender of the Crown without delving into Cinemaware's history as well. The threads of visionary ideas, technological breakthroughs and intersecting entertainment genres are as intertwined in this story as peanut butter and jelly, yin and yang or Trinidad and Tobago. So I invite you to join me in a long but very passionate story of a group of people who wanted to create a piece of work that was unique in its time, and who made it happen.

EXPERIENCE

Bob Jacob, the founder of Cinemaware, had a passion for cinema from an early age. After selling his company in 1982, he moved from Chicago to Los Angeles to be closer to Hollywood – the people, the cinema and the environment. The early 1980s were a period of rapid

development for personal computers. Bob was fascinated by the new medium and became obsessed with arcade games. He befriended teenage programmers from local computer clubs and, as a skilled salesman, quickly found his own place in the new industry – becoming an agent for software developers. Over the next few years, he bridges the worlds of home-grown coders (and independent studios) with the powerful publishers of the day, such as Epyx, Activision, Spinnaker Software and Mindscape, with skill and honesty for both sides. As he said in an interview with Gamasutra years later: "It was a situation back then when you had a programmer and maybe an artist, and you could do a game. So I would fund a game on the Commodore 64, maybe throw 10 to 15 thousand (dollars) into it, and then sell it, which I did successfully." The agent's experience in producing these (still) primitive games would later help him combine his two greatest passions – computer games and cinematography.

TECHNOLOGY

The next step, however, required a technological breakthrough. And such a breakthrough came in July 1985 with the launch of the Amiga 1000. Our protagonist gets to know the new platform before its official launch and senses that a revolution is coming. The agent's experience instinctively tells him the impact the Amiga can have on the future of multimedia and computer games. He decided to take a risk and change his role from agent to independent developer. Founded in 1985/86, Master Designer Software is designed to respond to changing trends and consumer expectations. Jacob rightly concludes that the consumer of a computer costing \$2,000 at launch will no longer be a teenager, but an older person or professional in their 30s or so; that with significant technological capabilities will come significantly higher software requirements. Applications, multimedia, office packages and games were about to enter a new era. The consumer now expects more than simple arcade and text-based adventure games, which, with no interface or audio-visual environment, were a treat only for the most hardened connoisseurs of the genre. Jacob's vision was

to simplify and embellish multimedia gameplay – to give the viewer a deeper and more sophisticated experience, like television or film, to build a story and communicate it in a friendly way. Jacob's vision was bold and original; no one had ever attempted such an ambitious task.

IDEAS

Cinemaware, as the company became known in the months that followed, was the realisation of this vision. In fact, achieving this should not have posed a challenge for a team guided by a visionary leader like Bob Jacob. As a passionate cinephile, he wanted to translate the concepts developed by the cinema over the years into the binary language, and to draw unscrupulously from this endless well of ideas. Bob describes himself as "smart enough and cynical enough to realize that all we had to do was reach the level of copycat, and we'd be considered a breakthrough." He no longer referred to his productions as games, but rather interactive films, as he reminded his colleagues in the letter quoted in the introduction.

The "right way to do it" is to have a strict script based on a specific film genre that "tells the story" and to complement it with arcade mini-games that have a more or less strong influence on the plot. In addition, the games should offer a low barrier to entry, dynamic action that imposes some time pressure, and beautiful graphics that reflect the style of a particular era or film genre. Although there is some inspiration from individual films in Cinemaware's games, none of them is a carbon copy of a Hollywood film – the games are not intended to be an adaptation of a single work, but a representation of film genres. The theme, themes, characters, dialogue and, above all, the narrative direction were to be modelled on the film. However, it is easy to relate individual titles to their cinematic originals. For example, *The King of Chicago* is a gangster story set during the Prohibition era in the USA, *Sinbad and the Throne of the Falcon* is an Arabian legend and fairy tale, *Wings* is the emotional story of a soldier experiencing the drama of war, *S.D.I.* is an alternative history of the Cold War, and *Lords of the Rising Sun* and *Defender of the Crown* are medieval chivalric epics. Some genres are more accessible to a global audience (as in the case of *It Came from the Desert* and *Rocket Ranger*, which deal with international conflicts, especially those involving nuclear weapons and radioactivity), others less so (*The Three Stooges* game, for example, is based on the comedy group of the same name, which may have escaped the notice of Europeans).

All of Cinemaware's projects are well thought out and well designed. This article could go on and on, as there are exceptional people behind each title (chronologically, the first four games were created by external contractors, and the subsequent ones by Cinemaware's internal team). However, I will stick to the promise made in the introduction and talk about *Defender of the Crown* – a game that is unique, historically first and sets the standard for the studio.

DotC DOCUMENTATION

The preliminary design of the game, dated 3 March 1986, still shows its provisional name: "Ivanhoe / Robin Hood Game". The document is modelled on film synopses and explains in short, factual paragraphs the main assump-

Ivanhoe/Robin Hood Game Preliminary Design by Kellyn Beeck March 3, 1986

The Theme: You are swept into a time of legends and become a character in a dramatic, action-packed medieval romance. Based on the characters and time period of Sir Walter Scott's *Ivanhoe*, this software project is less a computer game than it is an "interactive movie" -- a work of entertainment that draws you into an animated world of castles and kings, valiant knights and bold adventures. At another level, it seeks to involve you emotionally in the story and characters for an experience more like that of seeing a movie than playing a computer game.

The Setting: Medieval England after the Norman Conquest. The geography, costumes, weapons and castles will belong to the Early Middle Ages period, 1066-1307 A.D. The graphics should resemble the illustrations in the 1913 edition of *Ivanhoe* (published by Houghton Mifflin) and *Arms and Uniforms: The Age of Chivalry* (Prentice-Hall, 1983), but the colors should have the appearance of the rich primary colors on film in the Errol Flynn classic, *The Adventures of Robin Hood*. Graphic realism is essential to the success of the project, and care must be taken to avoid a "cartoon" look in all artwork. This can be accomplished by including considerable detail in all screen images and digitizing shapes from photographs when necessary.

Credits: The title and credits will appear at the beginning, scrolling up from the bottom of the screen like motion picture credits, listing the stars (Robin Hood, Ivanhoe and a cast of thousands) and everyone involved in the project from producer to packaging designer.

Demo Mode/Trailer: After the titles and opening scenes, at the first pause for user input, the game will go into a demo mode if left unattended. This will be a 30-60 second repeating "commercial," resembling the trailers for 1940's-era motion pictures. It will show several scenes from the game, with words like "ADVENTURE," "SUSPENSE," and "ROMANCE" splashed across the screen.

The Story: (The game opens with a series of scenes introducing the characters and setting. Travel is portrayed with galloping horses and a cloud of dust moving across a map of England.) The King and his knights have just returned from the Crusades. His Royal Majesty has promised to reward the six great warriors who carried him to victory in Palestine. (Here you are given a choice between the six characters; each is rated in five areas -- leadership, swordsmanship, jousting ability, fame and income -- on a scale from one to ten.) In a throne room scene replete with colorful pageantry and trumpet fanfares, the King makes you a lord of the realm, granting you lands and the entitlements of nobility.

tions of the production: from the theme and background of the whole story to the summary of the script and the gameplay assumptions. The focus is on the multitude of assumptions and details that determine the "soul" of the production – what the game is supposed to be, what experience it is supposed to guarantee, and what it should avoid. Not all of the assumptions made in the design will make it into the final version of the game (especially for the Amiga), but the strict rules of the game will be maintained. In an interview with Matt Barton on the Matt Chat channel, Jacob sums up the idea for the game as follows "The concept behind DotC was straightforward. While I didn't design the game itself, the original idea was mine, and I had a clear vision for it. Essentially, I drew inspiration from the game Risk, which I loved as a child, particularly the aspect of conquering territories. What I wanted to do with DotC was to replace the conventional dice rolling with action sequences that determined your successes and failures within the game. Up until that point, action sequences in games were isolated and didn't contribute to the overall narrative. So, if there was something groundbreaking about DotC, it was the notion of integrating actions that directly influenced the story's progression based on your successes and failures".

The second document, dated 9 March 1986, is entitled "Design Abstract #1: Visual Objectives" and focuses on historical background and visual values. The recreation of the realities of the Norman invasion of England (1066) and the reign of Richard the Lionheart (1189-1199) form the canon of the story, although such a large time span and the mixing of real and fictional characters in DotC clearly breaks with historical fact and gives the game a story background. Most important, however, is the recreation of historical details: castles, armies, weapons, customs, costumes, etc. The document "forbids" the use of fantasy elements in the game, including shiny armour and hel-

ments. Inspired by the set design of the 1952 film *Ivanhoe*, Kellen Beeck relies on the historical realism familiar from films, novels and paintings.

"DEFENDER OF THE CROWN"
DESIGN ABSTRACT #1
Visual Objectives

3/9/86

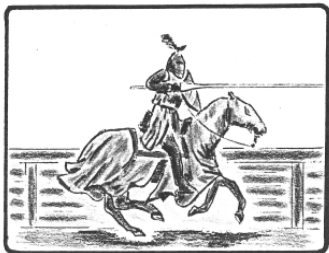
The primary visual goal of this project is to recreate the look of the motion picture *The Adventures of Robin Hood*. The movie *Ivanhoe* will also be used as a reference for its portrayal of a tournament and a siege. The books cited in the preliminary design report will provide visual references for the costumes, weapons and chain mail armor of the subject period.

The films mentioned above are classics, and gave life to legends by making the characters and settings seem real. Through careful attention to historical detail, these films realistically evoked a romantic era. Everything on the screen from the clothing to the weapons came straight out of paintings and history books of the period between the Norman Conquest and Magna Carta. Specifically, the movies take place during the reign of Richard Coeur de Lion, 1189-1199 A.D.

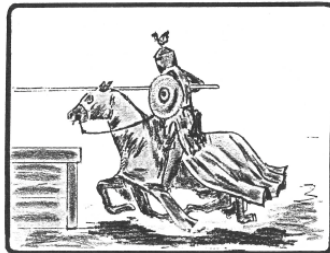
"Defender of the Crown" will follow Hollywood's example, faithfully recreating the time period of King Richard's reign. The style and appearance of the clothes, hair, facial hair, weapons, helmets, banners shields and chain mail should accurately reflect that time period. Use the films and books listed above as sources for this information.

The helmet worn by Hollywood's *Ivanhoe* in the tournament at Ashby looks beaten and battered. "Defender of the Crown" should have that same look of reality. The user should be led to believe that the story could have happened, even though its characters and events are legendary or fictional. The game should not have the appearance of a fantasy--there should be no shining, highly-polished armor (in fact, there shouldn't be any suits of armor--historically, plate armor didn't appear until the 13th and 14th centuries, which is the reason you don't see it in the *Ivanhoe* and *Robin Hood* films).

"DEFENDER OF THE CROWN" SKETCH #5 JOUSTING SEQUENCE



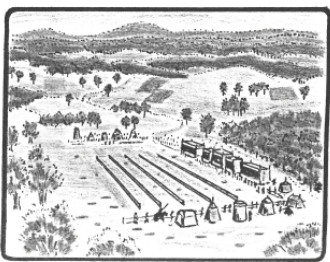
a) KNIGHT #1



b) KNIGHT #2



c) FIRST-PERSON



d) JOUST AERIAL VIEW

```
UNTIL collision point is reached (when enemy reaches max size);
  Read mouse and change position of lance;
  Enlarge enemy knight to next size;
  Move lance away from center of shield by a factor of
    (10/jousting rating) positions on screen.
```

```
IF position of lance = center of enemy shield, THEN user wins;
  ELSE user loses.
Display screen 4c.
IF user = winner, THEN display sprites showing Knight #1 falling;
  ELSE show Knight #2 falling.
Initialize sound driver/turn on crowd reaction exf.
Load and display screen 4d.
IF stakes = fame, THEN add/subtract 10 fame points
  to winner/from loser;
  ELSE transfer ownership of loser's poorest territory
  to winner.
```

The third documentary, "Joust Module Design", dated 26 March 1986, is devoted entirely to the knights' jousting tournament as an example of a mini-game. As in the film script, it takes the creators step-by-step through the opening, running and closing scenes of the tournament. The author uses some IT acronyms here, describing the scenes in terms of pseudocode, loops, variables and time periods. This text is complemented by a series of illustrative drawings that look as if they have been taken straight out of the game.

PRODUCTION

In early 1986, Jacob signed a deal with Mindscape to distribute the game. The Amiga version would be released on 15 October 1986, a deadline if they wanted to be in time for Christmas. The development of the game was given to Sculptured Software in Salt Lake City, a company well known in the market for porting games between platforms. The studio received the aforementioned design documents and got to work (in parallel with the development of Cinemaware's other game, *S.D.I.*).

James D. Sachs, using the alias Jim Sachs – an artist well established in the world of C64 and Amiga games, has been contracted to do the artwork. Sachs was given access to a pre-release Amiga 1000 and the images he created at the time highlighted the computer's incredible capabilities and were copied by early users. He worked at Graphicraft, then Aegis Images, but spent most of his Amiga time pixelating in Deluxe Paint. *DotC*'s unique visual style is a credit to him. Sachs does a lot of the graphics himself (including the static images displayed between in-game events), but his main contribution as Art Director is to control the style of the entire project and give consistency to the work of other artists. In an interview with Kamil Nieścioruk of PPA.pl in March 2009, the artist summed up this period as follows: "I intended for the look to be revolutionary, with far more detailed graphics than had been attempted before. (...) Later, when I complained about the small amount of money I received for the project, they said, "But we had no idea you were going to do such a good job!" *DotC*'s graphics – its framing, its depth, its compositions, its colours, its rendering of the atmosphere of medieval England – are indeed groundbreaking, and for many Amiga players it was a confirmation of their choice of platform.

A set of assets was delivered to the developers at Sculptured Software in June 1986, but after several months of work, they have yet to produce even a fraction of a working game. Concerned, Jacob flies to Salt Lake City and learns that the studio has nothing to show for its efforts – both games in development are in total disarray. For the October deadline, this is a disaster.

Subsequent events follow quickly. Cinemaware hires John Cutter (the company's first employee after Bob and his wife Phyllis), whose main task is to get out of the deal with the developer. Jacob then calls Robert J. Mical – the only person who he felt could do the job at such short notice. Mical worked for Commodore from 1984 to 1987 and became famous for creating the *Intuition* application – the native windowing system and user interface of the first AmigaOS. Again Bob Jacob: "I called RJ at the beginning of July and told him that I would pay him \$26,000 if he wrote the game before October 15th. This was a lot of money in 1986. He replied: 'I'm your man'."

Mical created DotC for the Amiga almost from scratch in three and a half months, although rumour has it that he almost paid for the contract with his life, working more than 100 hours a week and in seriously declining health. Like Sachs, he feels cheated by the project and the amount of work that should have gone into it. The game is finished, but it is not a masterpiece on the scale of the programmer's ambitions – not only is there not enough time to polish the whole thing, but there are many valuable details that have a huge impact on the playability of the Amiga version (more on this later). Years later, in an interview with retrogamesmaster.de, he addresses the matter diplomatically, but with deep regret: "I don't talk about my experience with the development of that game, except to say that Kellyn Beck the game designer and Jim Sachs the artist were geniuses. Alas, the publishing company cheated me and I was too inexperienced at the time to do anything about it. I took my name out of the in-game credits, but I couldn't stop them from putting my name on the box, so people know I worked on it, but the story stops there. For more details, you'll have to ask the scoundrels who ran the company at the time." Both Sachs and Mical would never work with Cinemaware again.

American composer Jim Cuomo was commissioned to write the music. The classically trained artist, who specialises in the saxophone, is in his 40s in 1986, but only occasionally creates music for games. In an interview with Ben Greyson in November 2017, he admits that the people at Cinemaware suggested he create something along the lines of a Hollywood track from one of the Robin Hood films. However, the musician himself, severely limited by the capabilities of Paula chipset, opted for a decidedly simpler, albeit catchy, main theme. Drawing on the works of Claudio Monteverdi and Frideric Handel, he aims for dramatic and period-appropriate music, although he is aware that players don't care what period the music comes from, as long as it sounds good. The credits of the original version also list Bill Williams as 'orchestration', presumably to transfer the composition to the Amiga tracker. I don't know if Cuomo could compose on a computer, but the result of the collaboration between the two men is very good (Cuomo himself would later describe it as something like 'French Baroque') and would often be replicated in the following years when DotC was ported to other platforms.

THE RELEASE

Years later, Jacob will claim that almost every early adopter of the Amiga owned the game. Even if this is an exaggeration, it does illustrate the scale of its success. Back in 1986, 20,000 boxes of the game were confirmed to have been sold, with an estimated 100,000 Amigas on the market, followed by a further 230,000 copies the following year. DotC in all its versions is estimated to have sold around 1 million copies, thanks to the 'wow effect', the good initial reviews of the Amiga version and the significant improvements made to the ported versions. Such a staggering number of copies sold may seem astonishing, but I trust the information in the January 2001 article "Cinemaware Return from the Dead" by Mark Hill, from which these figures are taken. A satisfied Jacob later summed up his first product by saying: "That was the gift that kept on giving. I don't think it was our best game, but it was a phenomenal success. You can't control those things, you just ride them and you get carried away with it - and it was fun."

But a sobering moment came a little later, from the bottom up, from the players themselves. The Amiga version is underdeveloped, and after the initial enthusiasm (even if it lasted for months or even years), people began to point out its shortcomings. And there are quite a few: the lack of tactical options for army management, the buggy jousting duel system (with the cursor in a certain position, the player always wins), the randomness of a sword duel (no health indicator and no influence on the course of the battle), the primitively easy to use catapult system, and the simplistic, almost childish level of the computer players. All these shortcomings underline that the Amiga DotC is really more reminiscent of today's PlayStation couch productions, where the story weaves itself, than of the traditional computer game of the time. The first version didn't use many of the graphics that were already finished, and the game has bugs that affect the gameplay (the bug that doubles the balance of our army, or the annihilation of our team when the AI captures one of the player's extra castles). We now look at all these imperfections through the prism of time, and we have very different requirements – the fact is that they hardly bothered anyone at the time.

PORTED VERSIONS

Cinemaware possesses a magical goose that lays golden eggs and will do everything to extend its lifespan. Fortunately, almost all subsequent versions, even those for 8-bit platforms, are better games than the Amiga original! In many cases, the beautiful graphics are correctly converted to other resolutions and palettes, so that this production advantage is maintained in many cases (apart from MS DOS, which still looks awful!). Significant improvements have also been made to improve gameplay and enjoyment. The vast majority of these fixes should have been included in the original release, as evidenced by the documentation cited above, but better late than never.

The C64 version, released a year later, is a very good game – beautiful, atmospheric and fun. It's still easy to win (we've all done it many times, the final sunset scene seen from the castle walls is epic!), but the improved mini-games are more satisfying. Oh, and the sight of princesses from defeated enemy lords losing their gowns, is one not to be missed! The SID music was created by the late Richard Joseph, who would go on to become famous for creating the soundtracks for over 60 games, including those published by Sensible Software and Bitmap Brothers. The NES version, on the other hand, added new mini-games (crossbow shooting, chain mace), but took a more light-hearted approach to the graphics and removed erotic scenes to adapt the product to the Japanese market. The best port, however, is the Atari ST version, as it retains the Amiga graphics layer with a lower colour count, and makes all the necessary improvements. So in the end it is the Atarians who are laughing the loudest. I haven't played the other classic versions (DOS, Macintosh, Apple II, Amstrad CPC, ZX Spectrum, even GameBoy!), but if you are interested in them, I refer you to the YouTube channel "ByCrom! Retrogamer", where the author has undertaken the ambitious project of completing DotC on most retro platforms.

The versions for the Amiga CDTV and CD32 deserve a separate mention. I deliberately use the plural here because there are two different games released for these

platforms. The first is a slightly modified original Amiga version released on the CDTV in Compact Disc Interactive format (the second game ever released on CD, after *The Manhole!*). It adds the voice of a narrator to accompany all the events in the game. The British voiceover is a nice addition, but this version offers nothing else, so watching the clip on YT should be enough to familiarise yourself with this product.

THE LEGACY

Released in 1993 on the CDTV and CD32, *Defender of the Crown II* is a completely different, slightly more convoluted story. Cinemaware went bankrupt in 1991, and 7 years after its release, Commodore Electronics (a subsidiary of Commodore International) decided to release the final version, tweaked and streamlined to the max. For the project, they hired Jim Sachs himself, who single-handedly created the new product. He writes a new script and uses his graphics from the original version, although he streamlines most of them considerably. He adds very good animations, localises the game into five languages and even writes his own music track. The problem is that, with only basic programming skills, he uses *The Director 2* software to create *DotC2*, which makes it easy to code certain graphic sequences, animations and effects, but is not well suited to writing complex computer game algorithms. The game is made, but shortly after the tiles are pressed, CBM declares bankruptcy and Sachs never receives the money he was owed. Apparently, all he is paid for is... 12 boxes of the game.

The game is relatively unknown, so as an Amiga CDTV owner, I burned this version to a CD to convince myself of its quality. I experience bittersweet feelings. On the one hand, I praise the audio-visual layer – there are nicer graphics, those known from the original version are improved, the animations – even phenomenal. On the other hand, we have the narration from the CD, completely new music and completely new gameplay. With the intention of creating a sequel, Sachs is presenting the player with a new challenge. We are no longer uniting England, but raising money to free King Richard I the Lionheart from slavery. So, on the same map, with the same mini-games and almost identical gameplay, we fight for a completely different goal. I have a strange feeling of *déjà vu*, but it is a subjective one and perfectly acceptable. Unfortunately, the level of logic is completely lacking, as the game is completely unplayable. The AI is very weak and rarely makes rational moves on the map, fencing duels are impossible to lose and princesses are impossible not to defend. The catapult always hits and there is no need to tear down the walls to get into the castle. All this means that quite quickly you will conquer the whole map and will have to spend the next few hours (yes, the game lasts that long) patiently collecting ransoms.

Granted, I would still call this “production” a sequel rather than an updated version of the original or a “deluxe edition”, but I rate it very low and I doubt anyone would want to play this game again after finishing it. If I had to give it a traditional score, it would be 10 for graphics, 6 for sound and 2 for playability.

In the years following Cinemaware’s bankruptcy, the rights to its portfolio and the brand itself have been bought up by various companies, but for the most part

this has not resulted in re-releases of classic games. The exceptions are 2003’s *Robin Hood: Defender of the Crown* and 2007’s *Defender of the Crown: Heroes Live Forever*. The former is the work of Cinemaware Inc, founded in 2001. The game is available for PC, PS2, XBoX and mobile platforms. It received mixed reviews. A year later, the same company released remastered collector’s editions of the original Cinemaware games for Windows and MacOS, including *DotC*. 2007’s *Heroes Live Forever*, on the other hand, is the product of Cinemaware Corporation, founded in 2005 to continue the tradition of creating narrative games. *Heroes Live Forever* looks nice, but for 2007 it doesn’t stand out and isn’t very successful. In 2014, remastered versions were released separately on Gog.com and Steam as the *Cinemaware Anthology: 1986-1991* bundle. *DotC*’s last commercial release is a limited edition (300 copies) for the Atari Jaguar console, released in 2018. As of May 2016, the rights to the Cinemaware portfolio and games are owned by Swedish developer Starbreeze Studios.

EPILOGUE

Cinemaware was only around for five years, but in that time the company and its founder managed to leave their mark on the 16-bit computer games industry. In terms of production alone, the company was ahead of its time. While others were still writing code in the privacy of their bedrooms, Cinemaware was working on film industry principles, with story outlines, schedules and scripts. Jacob made ambitious, high-budget games and planned them accordingly, because failure to plan would have resulted in disaster. He believed in the Amiga as the best possible platform to present an interactive film. His attachment and love for the Amiga was probably the reason for the demise of his studio.

Each generation of computers in the past has been characterised by a title that has been described as a ‘killer app’, a game that demonstrates the capabilities of the next generation of hardware. I think the original *DotC* was to 8-bit gamers what *PC Doom!* was to Amiga. The phenomenon of the game was summed up perfectly by Jimmy Maher on his website *The Digital Antiquarian*: “No one comes to *Defender of the Crown* to play a great strategy game. They come to immerse themselves in the Merry Olde England of bygone Hollywood.”. And on this optimistic note I will end. I wish you many more reunions of the *Crown* and many more sunsets to watch from the towers of your castles. ■

Sources

- The Future Was Here: The Commodore Amiga. By Jimmy Maher (EN) https://www.gamasutra.com/view/news/117527/Interview_Bob_Jacob_On_The_Cinemaware_Era.php
- <https://www.gamedeveloper.com/business/the-replay-interview-s-bob-jacob>
- <http://www.retrogamesmaster.co.uk/rj-mical>
- <https://www.filfre.net/2015/04/defender-of-the-crown>
- <https://youtu.be/l5yYO4hrZ-A> – Matt Barton’s interview with Jacob
- <https://www.zx-spectrum.cz/data/info/DefenderOfTheCrown.txt>
- https://youtu.be/_NJal9iz8vl?si – an interview with Jim Cuomo (games are discussed from the 43rd minute)
- <https://www.discogs.com/artist/76090-Jim-Cuomo>
- <https://web.archive.org/web/20110819062742/http://kamilin.pronet.lublin.pl/kn/materialy/jimsachs.htm>
- <https://myheadisretro.wordpress.com/2014/02/12/defender-of-the-crown/> (PL)

Wonder Boy

■ author: Tomasz "Jackal" Jędrusiak / translation: Ari

It has been 36 years since Amiga owners have had to wait for a conversion of Sega's hit game about the adventures of Wonder Boy – a game that remains iconic to this day and, despite its uncomplicated mechanics and effects from the early days of electronic entertainment, provides entertainment at the same high level.

I was eagerly awaiting Acidbottle's release of this side-scrolling platformer, in which we play a blonde cherub with a bit of a caveman look who must rescue his girlfriend Tina from the captivity of a Dark King. Expecting a rather poor conversion, I was pleasantly surprised by the quality of both the graphics and all of the game's mechanics, as well as its playability.

As a result, I found myself stuck in a loop for a good few hours, trying to perfect skills I'd forgotten for years, because while the game's failures are not too frustrating, Wonder Boy doesn't lead by the hand, and it's not an easy game (if you want the satisfaction of getting through the levels and dying relatively rarely).

Wonder Boy's journey to his beloved takes him through seven countries. Each of them consists of four levels. In the course of the game, before facing the main villain and rescuing Tina from his paws, the hero will have to make his way through many dangerous enemies and numerous obstacles (aggressive bees, burning fires, rocks, rolling stones, moving shelves, etc.), skilfully jumping on platforms, eliminating enemies with axe throws and using a skateboard to move faster. Wonder Boy can occasionally be aided by an angel, whose presence allows you to destroy enemies for a while, like Pac-Man's ghosts after collecting boosts. You'll come across equipment, power-ups and collectible characters along the way, but some are cleverly hidden.

The game uses a diminishing vitality level that needs to be replenished with food you find, so if you give up collecting fruit, your character will quickly die and the game will end.

And how does the game play in practice? I'll admit it was difficult at first, until the muscle memory of Moon Patrol came back and my fingers started to remember how to make jumps, shoot enemies and plan moves in advance. Then I felt the same as I did with Super Mario Bros – the game is highly addictive, and the more perfect our reactions, the more satisfying the gameplay becomes.

Wonder Boy is a classic. A simple but well thought out concept with good graphics and sound effects (the much better music in this version compared to the original deserves respect – you know, Amiga rules!). If you're looking for entertainment that will challenge you, remind you of the days of coin ups and those unforgettable thrills, and at the same time not annoy you but force you to improve your score, you've come to the right place.

The conversion is almost perfect and there is nothing to complain about, especially as the author is still developing the game and we are waiting, for example, for the addition of hidden stages. The game is completely free and can be downloaded from this address: <https://acidbottle.itch.io/amiga-wonderboy>. ■



WONDER BOY

Developer: **Sega (original version)**
acidbottle (port)
 Release year: **1986 / 2022**
 Platform: **Amiga / CD32**

Excellent port, great evening entertainment



REVIEW

Retrospectives *or a lifetime of digital music*

author: Voyager / translation: Tomxx



EDITORIAL

In my case, the road from being a musician to trying to build something of my own was paid for by several years of arduous (though enjoyable) study, although I am by nature not one to overwork myself, and my innate tendency to laziness tends to lead me to take shortcuts (with the consequences, as when walking through the woods, even if the road seems straight, both branches and stumps quickly make me reconsider whether the shortcut is really a shortcut). But enough of these digressions – it's time for another straightforward and rather typical musical story.

Reaching deep into my memory, I will not answer exactly where my interest in sounds came from. Perhaps from my mother, who played the violin, but I couldn't remember any sounds when I was a child. Maybe it was spending time in front of the control panel of a ZRK ZK-120 (or ZK-140) reel-to-reel tape recorder, recording sounds from the microphone and radio. It wasn't until my primary school music teacher put me on the right track, first noticing that I could sing (yes, I admit it, I was in the school choir) and then suggesting that I take up an instrument. My parents decided to send me to lessons, not on the fashionable guitar or accordion, but on a much better equipped beast with strings and sound box. That's how I got stuck in front of a piano keyboard for a couple of years, and a massive wooden box with the Legnica logo turned up in the family home.

I'll master one of those multi-channel engines in Beepola in PWMs for the buzzer). The Wham! tracks I lost on forgotten tapes. The next step in the career of a budding computer musician was as obvious as the decisions and steps taken in "To be on Top" (C64 games with excellent music by Chris Huelsbeck): to buy the right computer for my interests. In the dying days of communism, this was not as simple and obvious as it is today with a few clicks in an online shop plus a stock of money in your account. Choosing a computer in the late 1980s was a rather arduous task of gathering information from the paper magazines, comparing prices, comparing parameters and, above all, trying to find a way to afford something that at the time probably cost as much as so-called polish cars – "Syrena" or "Maluch". I was a bit lucky: thanks to my parents and their work (indirectly related to per diems and trips abroad), I managed to find the money to buy an 8-bit machine. However, choosing a machine was even more complicated than I had expected. The obstacle was not only the limited access to computer knowledge, but also the lack of opportunity to see how the chosen machine worked. There were no computer showrooms in small towns, and the internet had not yet appeared.

The second stroke of luck was a computer course at the local branch of the Supreme Technical Organisation (NOT – Naczelna Organizacja Techniczna), which led to weekly visits to an unofficial computer club. There I got to know the Amstrad CPC 664 and 6128 (with their excellent BASIC dialect), around which Kassoft (transferring music from the Amstrad AY to the Spectrum AY in hexes) revolved. It was there that I first saw a somewhat lonely C64 connected to a colour TV. The C64 with a floppy disk drive was perfect for playing Impossible Mission, but writing code that would unlock the machine's dormant graphics and audio capabilities required knowledge.

My first contact with the C64 was probably typical: I was jumping around with seemingly basic BASIC commands like BORDER, PAPER, INK.... I borrowed the original textbook and decided to tame this pesky beast. The goal was obvious – it was enough to listen to the sounds of the C64 once to forget the colours of the Atari or the grandeur of Locomotive BASIC on the Amstrad. I had to wait a little longer for my own Commodore, although a combination of circumstances led to the import of the truest C64G with cartridge and joystick (I had to wait for the Datasette). Other events led to me travelling from a small town to the capital to get photocopies of books dedicated to the C64 and issues of 64'er with listings. It was from these photocopies that I acquired my first music editor: an in-



▲ Living with Amigas, around 2002

These few years gave me the basics in theory and practice, but also inspired my own attempts, written down somewhere on forgotten scraps of paper in staves. The second stage came suddenly, in the same primary school that indirectly sent me to practise on a piano keyboard. There was another keyboard in the school, locked in a safe in the evenings. On the pitch-black box was written 'ZX Spectrum Plus'. Many hours and weeks spent in front of a ZX Spectrum and Timex 2048 screen (in the nearest computer club, in the basement of one of the blocks of flats) led to the discovery of a creation called 'Wham! The Music Box' – an editor for composing music on two channels of a single buzzer (in the spirit, I promise myself that one day



dustriously typed in 8 kB of digits that eventually became Sound Monitor by the aforementioned Chris Huelsbeck. The resulting code produced more columns of numbers, between which the notes appeared. After much trial and error, the first compositions were recorded on a 1541 floppy disk drive borrowed from a nearby computer club. Unfortunately, none of the compositions survived – I lost the floppies, and the remains of the musical experiments were printed in C&A (on the occasion of the Sound Monitor tutorial).

I was finishing high school at a time when socialism was giving way to a predatory free market economy. Computer flea markets were springing up in the big cities, and a mate of mine from the local computer club had traded in his Timex for an A500 (a second-hand one, repainted silver). What a machine it was, and what amazing things you could run on it.... I'm not talking about games, I'm talking about SoundTracker, Noisetracker and Startrekker – the big three did things with samples that even a re-worked sampled Sound Monitor (aka demoscene's Rock Monitor and other variants) couldn't match. Then came ProTracker 1.1. For me it was a signal that after the C64 it was time to move on to the Amiga.

In the early 1990s I moved to Warsaw to study. It was there that I started working for C&A. In the editorial department I met Rafał Piasek and Robert Chojecki (RCH), among others. The first one persuaded me to go to a demoscene party in 1992 where I unsuccessfully tried my hand at modules (rejected in the selection process), the second one discovered that we read the same books (by Tolkien) and learned to compose: me on Amigas and ProTracker, Robert on Atari ST, MIDI, Roland SC-55 controlled by PC-200 MKII and Cubase. Then came the idea of making a joint CD under the Michel Delving banner and in MIDI, which required some work to convert the four channel modules of ProTracker into a format compatible with MIDI sound modules. OctaMED, with its support for MIDI commands, and a standard MIDI interface to which we connected the Amiga and Atari ST via a MIDI cable, proved invaluable in this task. We then uploaded everything into Cubase. It worked, the album "Władca Pierścieni", released by Digiton, was released on cassette tape in mid 90s. Apparently we were the pioneers of symphonic electronic music in Poland...

During my cooperation with Polish magazines of C&A, Bajtek and Top Secret, at the suggestion of Przemek Cieślak (Sunday Driver), I wrote the music used in the demo "C&A Demo" and prepared the soundtrack for the game "Kręta". My life began to revolve more and more around the demoscene and music created for stage competitions. I slowly acquired MIDI toys (the Roland Sound Canvas SC-55 and PC-200 bought from Robert are still around) and computers – music composition software. I tried such music editors as MED Soundstudio, Symphonie, the great StoneTracker, THX (now AHX) until I discovered and bought DigiBooster Pro. In the slowly dying Amiga market of the late 1990s, I managed to put together my dream setup: first based on an A1200, converted into a Micronik tower with CyberVision 3D, Toccatà and 040 PPC on board, then (already in a more organised form) – on an A4000T packed into a Micronik tower, with a similar set of cards, but replacing Toccatà with Sunrize AD516 (it turned out to be a bull's eye).

The changes around me and the growing dominance of the PC made the next stages of development obvious. I experienced a brief fascination with the Rebirth RB-303 (I even released a couple of songs at a party where the competition was cancelled due to lack of work), one of the songs called DarkLight MinDerEor is still circulating on second edition techno compilations from the 1990s and 2000s.

My world was filled with PCs, Renoise, FL Studio, Komplete, IK Studio Max, Synth1 and dozens of VST plug-ins whose names I can't remember. But there is also a large catalogue dedicated to stage classics and synthesis: from Vortex Tracker to GoatTracker, Raster Music Tracker, PT2 clone and other music editors. I even learned to compose on PSP and PSPSeq (a very interesting tracker) and a Korg DS-10 (on a 3DS, it has a cool 3D oscillator on the screen). I have dozens of different sound "teasers" around, from HardSIDs in PCI and Quattro versions, to SIDBlasters, Sammich SID, MIDI-Box SID... I'm not even counting all the modular Korg's Volcas (Beats, Bass, FM, Kick, Modular, Drum etc.), Audiothingies P6, Kaossilators, Kaoss Pads, Tenori-ons... My latest great discovery is the British Novation Circuit Tracks. If they worked together, there would be no desks nor cables at home to fit them all. I'm slowly starting to learn to play the guitar (a MIDI one), I'd like to learn to play the didgeridoo, invest in a handpan and eventually build an 8-SID MB-6582.



▲ C&A editorial office in Warsaw at 7 Wasilkowskiego Street, around 1993

A few years ago I released the album "Scraps of Demoscene". What's next? I don't know yet. Maybe something in PWM, maybe a Christmas song on AY, maybe something on some factory installed SIDs, maybe I'll finally master OPL3 or some softsynth. Maybe I'll dust off my ACE Tracker skills, maybe I'll go back to ProTracker.

All these classic machines have given me a lot of opportunities, the demoscene has taught me humility and tempered my ego. And although music is just emotions written in mathematical formulas, and most composers only do something for themselves (because it tickles their ego), you have to grow up with a hobby (and spend money on it), right? ■

C64 cartridge archiving

why and how to do it?

■ author and translation: Rafał Szyja

Every C64 user in Poland knows the Black Box cartridge, and some readers even know the Warsaw Basic. Their history has already been described in interviews and analyses (in 2023 I appeared several times in public speaking about these cartridges both in Poland and abroad), but so far no efforts have been made to preserve the memory contents of various cartridges developed and cloned in Poland, many people have reservations about borrowing or disassembling the cartridge for more or less valid reasons (they don't want to share, they want to keep the originality of the cartridge, "because someone could make money with it", etc. etc.). This text briefly covers the broad topic of self-archiving ROMs without desoldering the cartridge, using a port splitter/expander, or slightly modifying the C64.

The Cartridge Port Expander has switches (typically POWER, IO1, IO2, ROML, ROMH, EXROM, GAME) that allow the coexistence of several cartridges (which allows, for example, the simultaneous use of a card with a ROM and the RS232 interface), but we are definitely interested in the possibility of blocking the cartridge start by "raising" the ROML line (if it is a cartridge such as the FANATIC game cartridge, which has a standard autostart (signature in the ROM, visible on the C64 as CBM80 @ 0x8004) and does not output to BASIC, like all "turbo" cards such as Black Box, PLUS, etc.)

```

.M 8004
.:8004 c3 c2 cd 38 30 00 00 00 CBM80...
  
```

Optionally, skipping the cartridge start can also be ensured by a similar modification of the computer instead of an extensive splitter with switches or an alternative KERNAL (e.g. EXOS has a bypass autostart function if CTRL is held down during reset). In the case of BB2/3 and other simple 4-8k carts, a simple BASIC program of my own will suffice for dumping:

```

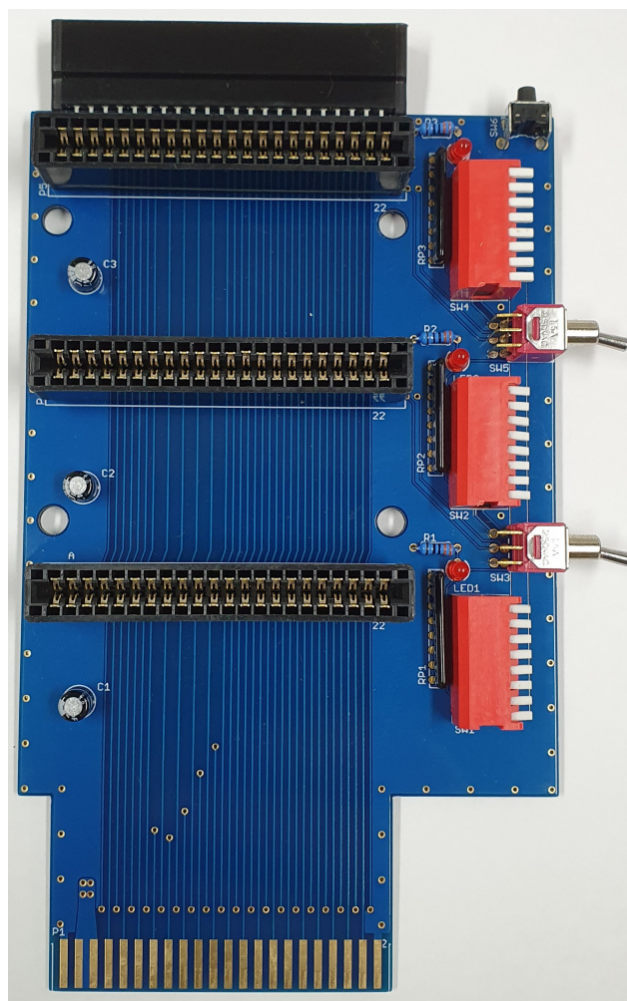
0 POKE53248+14*256,0
10 POKE43,0:POKE44,128:POKE45,0:POKE46,1
60:SAVE"DUMP6",8
READY
  
```

It sets the memory start and end vectors to 0x8000-9FFF and writes such a block. In line 0 there is also a call to enable ROM visibility for the CPU, in this particular case for the original BB v6. For 16k cartridges (and larger, paged 16k cartridges) you have to write in e.g. assembly language, because the ROMH (A000-BFFF) is "banked" instead of BASIC ROM. For a multi-bank cartridge, you also need to write a loop to "dump" the entire ROM. BB4 has one 16k bank and BB7/8 has two 16k banks, so I wrote archivers for them in C (as a test of the Oscar64 compiler, which passed).

If the cartridge has autostart to e.g. the menu and we cannot exit to BASIC, only disabling ROML will allow access to the ROM from BASIC when we turn ROML back on after rebooting.

Fortunately, several people, encouraged by my attempts to preserve rarer Polish carts, felt a calling after I made them available to the public, and thanks to my programs, they rip and share ROMs of modules such as X, EXTRA TAPE, exotic versions of Black Box clones or BB8 modifications from the MIAN electronics workshop.

My dumpers can be found on CSDb: <https://csdb.dk/scener/?id=6095>.



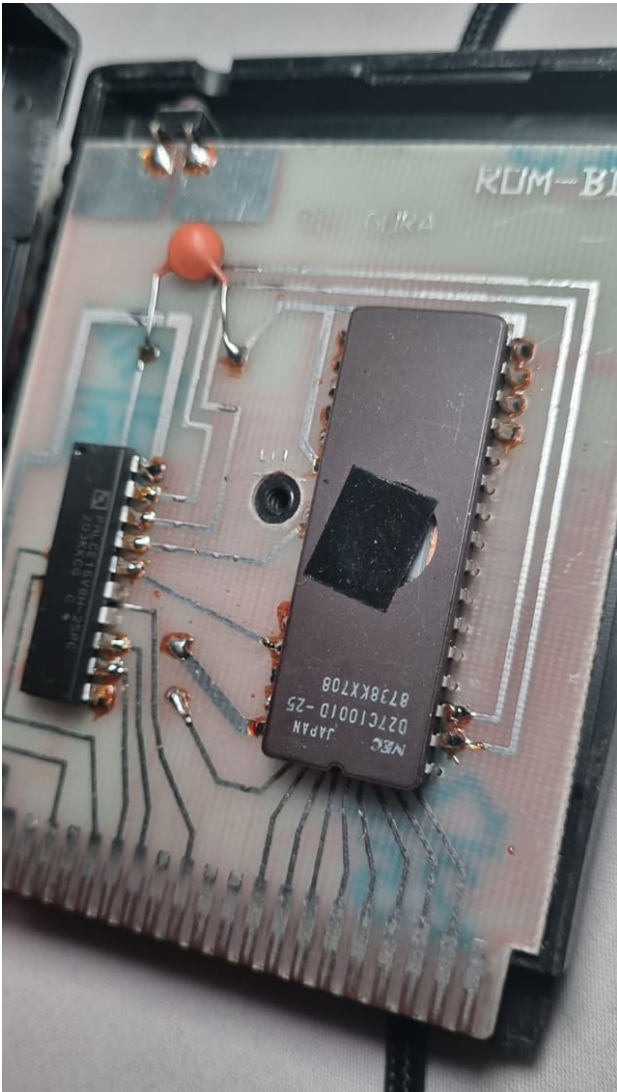
▲ X-Pander 3, photo: <https://www.go4retro.com>

If you have other cartridges that are not available on the internet, I encourage you to save them, and I will be happy to help if you have any problems.

Unfortunately, due to the limited space for an article in the magazine, I cannot expand this topic to a satisfactory length (it is a topic for a book, or at least a large chapter), but people interested in cartridges or archiving the history of Polish computer science are encouraged to read the following content: KERNAL EXOS, worldofjani blog, controlling the GAME and EXROM lines in the cartridge port, descriptions and programs by Markus Brenner and articles and electronic projects by Sven Petersen. Happy oldschool hacking! ■



TUTORIAL

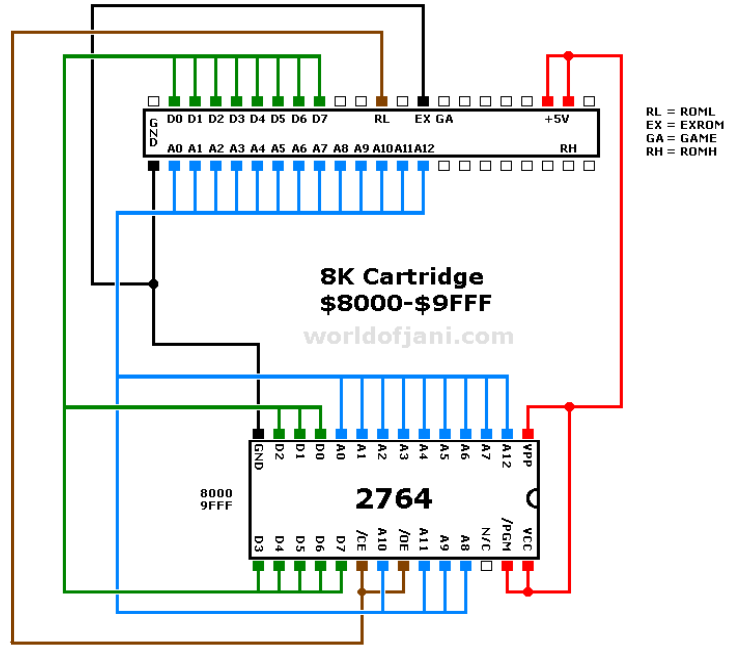


▲ GAME-BOX 1 with ROM-BIT – an example of a cartridge from around 1994, which is very rare and its memory has not been preserved yet, the cartridge itself has the same PCB as Black Box 9



Content to build your own knowledge

- <http://tech.guitarsite.de/cbm80.html>
- <http://markus.brenner.de/cartridge>
- <http://blog.worldofjani.com/?p=879>
- https://www.c64-wiki.com/wiki/Bank_Switching
- <https://rr.pokefinder.org/wiki/Exos>



▲ Schematic diagram of the most basic standard 8K cartridge

CART ROM HI	F000-FFFF	RAM	KERNAL ROM	I/O 2	DF00-DFFF
	E000-EFFF	RAM		I/O 1	DE00-DEFF
	D000-DFFF	RAM	CHAR ROM	CIA 2	DD00-DDFF
	C000-CFFF	RAM		CIA 1	DC00-DCFF
CART ROM HI	B000-BFFF	RAM	BASIC ROM		DB00-DBFF
	A000-AFFF	RAM			DA00-DAFF
CART ROM LO	9000-9FFF	RAM			D900-D9FF
	8000-8FFF	RAM			D800-D8FF
	7000-7FFF	RAM			D700-D7FF
	6000-6FFF	RAM			D600-D6FF
	5000-5FFF	RAM		SID	D500-D5FF
	4000-4FFF	RAM			D400-D4FF
	3000-3FFF	RAM			D300-D3FF
	2000-2FFF	RAM			D200-D2FF
	1000-1FFF	RAM		VIC II	D100-D1FF
	0000-0FFF	RAM			D000-D0FF

▲ Generic C64 memory map with bank placement options

6502 Assembly *Part I*

author and translation: Void



Assembly and machine languages are hallmarks of early computing. They were the first programming languages available to early programmers, and knowing both well was a must for anyone who wanted to become an IT specialist. Nowadays, it is enough to know one or a few high-level languages, and the general understanding of how the computer works inside has almost disappeared. Is that a good thing? I don't think so, so let's try to fill this gap with some basic information about computer architecture and the internal language that every computer understands.

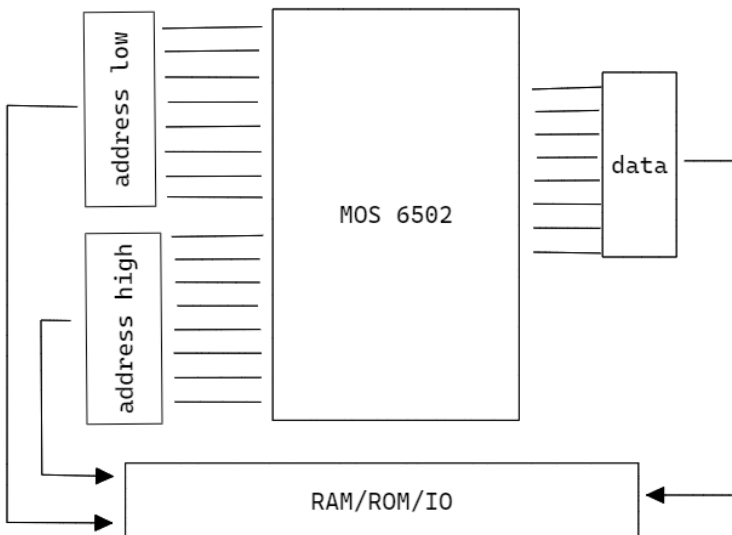
THE HISTORY OF MOS 6502

The history of the MOS 6502 began in the early 1970s when Motorola began work on its first microprocessor design, the 6800. The Motorola product, like its Intel counterpart, was a little expensive – just over \$300. The reluctance of customers to buy such an expensive product was quickly noticed by one of the engineers, Chuck Peddle. He proposed a much simpler design, with fewer registers, fewer instructions and a simplified internal architecture. This proposal, which could reduce costs by a factor of ten or more, was briefly rejected. As a result, Peddle and other engineers left the company to form MOS Technology, and their new design was quickly introduced as the MOS 6501 and later the MOS 6502.

A 6502 ARCHITECTURE

The MOS 6502 was designed to manage up to 64KiB of memory. It is an 8-bit processor, meaning that its internal registers and data bus are 8 bits wide. It uses two 8-bit addressing registers to access any addressable byte. Interaction with the memory is very simple: each time the CPU needs to read or write to the memory, it must first set its address using the two addressing registers and then read or write to the data bus.

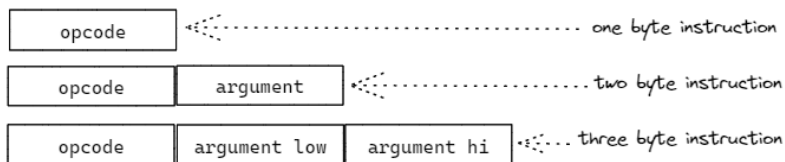
For simplicity's sake, the designers of the 6502 decided that the addressable space would be reused either for RAM and ROM memory, or for IO chips such as graphics, sound or peripherals. In other words, you talk to devices using the same instructions as you talk to memory.



MACHINE CODE

What is machine code? It is a language that the CPU can understand and execute. And what makes computers useful is that they execute machine code very quickly. All computers based on the 6502 use what is called a Von Neumann architecture, which means that all the data and the machine code are stored in the same memory. We already know how the 6502 talks to memory, so it will be easy to understand how the processor fetches, interprets and executes machine code instructions.

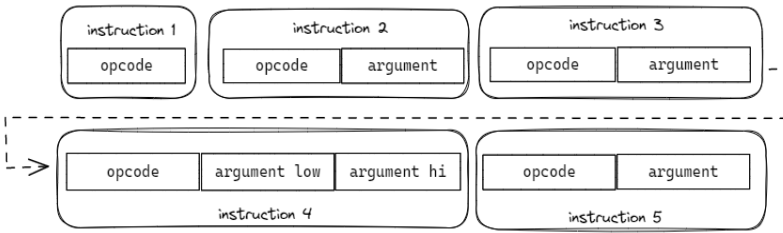
An instruction is a sequence of bytes that tells the machine what to do. Instructions in the 6502 can be 1, 2 or 3 bytes long. The first byte of each instruction identifies the instruction itself and is called an opcode. The next byte or two, if present, identifies an argument of the instruction and is called an operand. There are, of course, instructions that do not require an operand, and such instructions occupy only one byte.



Let's have a look at what a machine code program looks like. Yes, indeed, it is a sequence of instructions. So a machine program is just an array of bytes. Since each instruction can vary in length, the CPU must somehow know what length to assume for each instruction.

This kind of reasoning is very simple – an opcode, being a 1-byte number, determines the exact length of the instruction. That is, each opcode determines the length, and because the opcode is always the first byte in the instruction, when the CPU (actually an instruction decoder) fetches that byte, it already knows how many extra bytes it needs to fetch to have full scope.

We know how the program is coded in memory. That's right, as we said, the code is in RAM, somewhere. But how does the 6502 know where to find it? There is another internal register for this, called the "Program Counter" (PC). It's two 8-bit registers that store a full 16-bit address. The PC is linked to the address register each time the CPU needs to fetch the next byte from the program. The "Program Counter" indicates the currently executed machine code instruction. We will return to this point in the next parts of the cycle when we discuss "jumps".



ACCESSING THE MEMORY

Let's start with simple but useful operations that we can code in machine language. One of the functions that every machine language provides is reading from and writing to memory. This is no different in the case of the 6502. Let's say we want to copy a memory value from address \$d021 to \$d020. Unfortunately, the MOS microprocessor does not provide an instruction to perform such a transfer. We have to use the CPU registers. The 6502 has another internal register that can be used for this purpose – it is the accumulator.

The accumulator can, no surprise here, store a value from the data bus when reading memory, and then "return" it to the data bus when writing to another location in memory. And that is what we are going to do now.

We will use the "\$ad" instruction (also called "lda", LOad Accumulator). This instruction is a 3-byte variant – a two-byte argument contains the size and memory location from which to feed the accumulator. When we execute "lda \$d021", it means "fetch a byte located in memory at address \$d021 (which is 53281 in decimal notation) and place it in the accumulator".

Once the accumulator is filled with a value, we can store it somewhere else. To do this we will use the "\$8d" instruction (also called "sta", STORE Accumulator). This is also a 3-byte variant, and the argument has the same meaning as for the "lda" instruction – it is an address where the value from the accumulator will be stored. So if we execute "sta \$d020", it means "store value from accumulator to address \$d020 (83280 decimal)".

Our first program consists of only two instructions:

```
$ad $21 $d0
$8d $20 $d0
```

And indeed, a value is copied from \$d021 to \$d020. Note that the order of the bytes in the two-byte argument is reversed. That's because the MOS 6502 is a little-endian processor, i.e. it always stores less significant bytes before more significant ones in a two-byte value.

MACHINE CODE AS BASIC TYPE-IN

Most of us probably remember a type-in program that was published in a printed magazine. You probably also remembered that a large part of these programs contained long sequences packed into the DATA lines. Well, that was it: a machine code using a BASIC program as a "loader". Once the code is loaded into memory, a BASIC program can just jump in and execute it.

Since the BASIC dialect supported by the Commodore 64 does not understand hexadecimal notation, we first have to translate our machine code into pure decimals.

```
173 33 208 141 32 208
```

We will add another instruction at the end of our little program: \$60 (96 in decimal, this is an "rts" instruction – ReTurn from Subroutine). We want to run our machine code from BASIC using the RUN instruction, this last "rts" is needed to return to the BASIC prompt after execution. Note that "rts" is an example of a 1 byte long instruction.

The last question we want to answer now is, where can we put our machine code? Fortunately, the designers of the Commodore 64 foresaw the need to have a dedicated memory for this purpose, it is exactly 4KiB located in the \$c000-\$cfff range (49152-53247 decimal). Now let's have a look at the complete BASIC program:

```
10 FOR X=0 TO 6:READ A:POKE 49152+X,A:NEXT
20 SYS 49152
30 DATA 173,33,208,141,32,208,96
```

You can type this program, but check it before you run it, especially the start address and the numbers in line 30. Any error there is likely to lock your computer.

After running it with RUN you will notice that the border colour has changed (it is now the same as the background colour), but your Commodore is still ready for work.

Why has the border colour changed? This is because the memory addresses \$d020 and \$d021 have a special meaning. They are not mapped to RAM, but to some

internal registers of the VIC-2 video chip. They are responsible for the border and background colours respectively. Our first machine code program has just copied the value of the background colour into the register that controls the border colour and the effect we see on the screen.

OK, NOW SHOW ME THE ASSEMBLY

Using only numbers to write code is not very convenient. While numbers are perfect for machines to execute the code, it is a rather cumbersome way of writing for humans. That is why we have assembly language – an idea very close to machine code, but using some easy-to-learn symbols. Let's have a look:

```
*= $0801 "Basic Upstart"
BasicUpstart(start)

*= $0810 "Program"
start:
lda $d021
sta $d020
rts
```

This program is written in KickAssembler. As you can see, we can use hexadecimal numbers as well as symbolic names of instructions ("lda", "sta", "rts", also known as mnemonics). When using assembler, the layout of our program in memory is usually different, and this is the case in our example. The part called "Basic Upstart" simply generates

a tiny BASIC program consisting of a single SYS instruction. This instruction, once executed, will jump to \$0810, where our machine code resides.

As KickAssembler is written in Java, you need to have Java (or more specifically the Java Virtual Machine) installed on your system. There are links at the end of this article. Once you have Java installed, download and unzip KickAssembler. All you need is a kickass.jar file, use Java to run the assembler and compile your program:

```
java -jar kickass.jar 01setcolors.asm
```

KickAssembler creates a 01setcolors.prg file that can be run directly, e.g. with the Vice emulator. Have fun with it. ■

Useful links

- <https://jdk.java.net/> – download a recent Java installer, needed to run KickAssembler
- <http://theweb.dk/KickAssembler> – a homepage for KickAssembler, download the tool from here
- <https://github.com/ka-plus/mos6502-assembly-course> – a source code repository containing all the assembler-coded examples from this course





WARRIOR

author: Komek / translation: Tomxx

A long time ago, somewhere at the edge of the world, there was an evil land. Legend has it that a powerful warrior was imprisoned there in the form of a statue. One night, out of nowhere, a great bolt of lightning struck the statue, shattering the stone and freeing its body. The mind comes to itself and thoughts begin to pile up. A moment of concentration and you know only one thing – you must get out of here at all costs.



REVIEW

The Evil Realm consists of five regions. I will list them one by one and tell you a little bit about them.

THE FORGOTTEN CITY

A strange city full of dragons, monsters and bats. Beware! Drops of poisonous liquid fall from above, and horrible clawed hands come out of the ground. A mutant wasp awaits you at the end of the city. Destroying the giant insect will take you to the next region.



ATHENS

These Athens are very haunted, no one would want to visit such places, he, he, he... There are birds of prey, dragons, spear-throwing natives, etc. It's just thick! The end of the area is a fight with a huge mutated fish (probably a panga that escaped from an artificial farm).

EVIL FOREST

There is no rest here either. We are attacked by creatures with clubs, large ants, bats, bird dragons, all of which take their toll. For dessert they serve a slimy jellyfish, which you know what to do with!



AN ANCIENT CEMETERY

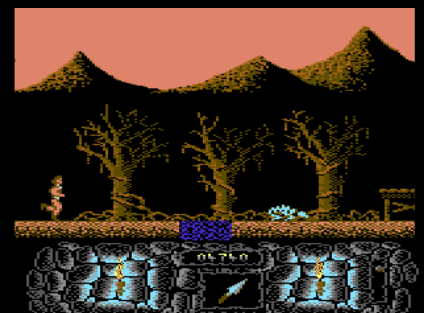
It's very spooky here, with bats, zombies and other strange creatures. Hot steam comes out of the ground and sharp stakes appear. Damn it! It's almost like hell! We end our adventure in the Spooky Region with a battle against the terrible Eye.

IN THE CASTLE

What have we got here? Full of dragons, monsters and other miscreants – standard. At the very end, there's a giant bat. Of course, you take matters into your own hands, slap it and the problem is solved. Congratulations, you are out of the evil land, but wait until the very end, you will see something interesting.

The game offers several options to change the weapon the warrior is using (the centre of the icon at the bottom of the screen). The F1 key is a spear, the F3 key is an axe and the F5 key is a dagger, which can be collected during combat. Collecting the shield will replenish your energy, while the Fire +

Down option will allow you to use the bomb you have acquired. We've already covered all the essentials, so let's get down to my personal thoughts. The graphics and animation of the sprites look decent, something changes from time to time and generally there is a lot going on. The music and sound effects, on the other hand, are of an even higher standard which can be heard from the first minute of the game. The action is also fast and fluid, in the vein of Greystorm or Hawkeye. You could even say that it is similar to them.



In conclusion, Warrior is a little known and underrated game. So it is worth going back to the 90s and helping a brave warrior escape from an evil land. ■

WARRIOR

Developer: Living Colors Software
Release year: 1990
Platform: C64

An interesting but underrated game



Case Whitening

author: netdemon / translation: Tomxx



TUTORIAL

Many enthusiasts of retrocomputing and of refurbishing old electronic equipment, will have come across the phenomenon of yellowing plastics (more than once). The vast majority of old computers had cases and keyboards made of white plastic, which unfortunately makes the effect very visible and annoying. Of course, users of the Commodore 64 and various types of classic Amiga are particularly affected. Although it may seem otherwise, ash-coloured plastics are not exempt from the problem, as can be seen on the Atari XE and ST series computers.

There are different approaches to whitening old cases. Some users appreciate the yellow tint as a tangible sign that we are dealing with vintage hardware. Others (like myself) consider yellowed cases to be unsightly and a sign of carelessness during restoration. If you, the reader, hold such views, then this article is for you. I have also decided to include a bit of chemistry, which should brighten things up a bit and encourage you to experiment on your own.

The first thing to consider is why plastics turn yellow. Well, the so-called photo-oxidative degradation process is to blame. Plastics are polymers. As the name suggests, they are made up of many monomer molecules linked together in long chains. Polyvinyl chloride, for example, is made by polymerising vinyl chloride. When we use the equipment, we unintentionally expose the case to light. Daylight, which contains a significant amount of ultraviolet in its spectrum, is mainly harmful. Under the influence of light, the polymer chains are depolymerised and the monomers released react with atmospheric oxygen. This process is responsible for the yellowing of old cases. Of course, it happens very slowly (and only in the outer layer), but since we are dealing with equipment from the 1970s and 1980s, the effects are very visible. The process is accelerated if the equipment has been in a place where tobacco products are regularly smoked, as the nicotine and tar from the smoke also diffuse into the inner layer of the plastic.

It is therefore necessary to consider how the yellowing process can be partially reversed. Of course, degradation cannot be reversed, but it is possible to get rid of its products either by mechanical removal or by decomposition into colourless compounds. The first method, although it seems sensible, is difficult to carry out because we usually have to remove a fairly thick layer of plastic that is affected by the degradation process. Sometimes it is possible to limit ourselves to such treatments, as will be discussed below. Unfortunately, in the vast majority of cases, this method is not sufficient as the only one and more sophisticated means must be resorted to. In such situations, chemical processes are required. Chemical bleaching methods can be divided into:

- bleaching by adsorption
- bleaching by compensation
- bleaching by oxidation and reduction
- bleaching by structural change

The last two methods are of interest to us. The retro com-

munity has developed many better or worse methods for bleaching plastics. They are all based on the use of bleaching agents such as:

- ozone
- chlorine (actually hypochlorous acid formed in situ)
- hypochlorites (e.g. the popular so-called "chlorine" bleach ACE)
- hydrogen peroxide (oxidised water at higher concentrations)
- certain metal salts with strong oxidising properties (persulphates, percarbonates, perborates, etc.)

The most popular method is known in the trade as 'retro-brite'. It involves applying a hairdresser's bleaching paste to the bleached plastic, then wrapping it in stretch film to prevent the paste from drying out. The whole thing then has to be exposed to sunlight for a few hours.

It has to be said that this method gives quite good results for using such simple and readily available means. The bleaching paste contains hydrogen peroxide in a concentration of a few percent. It is readily available from auction sites or hairdressing wholesalers and is also relatively cheap. Unfortunately, this method of bleaching plastics has a number of disadvantages. Firstly, the process only takes place in the presence of strong sunlight, which also heats the bleached plastic. Without sunlight, the process takes place very slowly or not at all. This inconvenience alone often disqualifies this method completely (especially at times other than spring and summer). I have tried to replace sunlight with a UV light source. Unfortunately, the results were negative. The process only occurred after using very powerful light sources with a dominant UVB component, which are difficult for the amateur to access. With the power of these sources, the UVB light can easily damage the eyes and skin, so I will not go into further detail. Another disadvantage of the 'retro-brite' method is the need to ensure that the paste is applied very evenly over the surface of the plastic. If you are not careful, you run the risk of creating stains that are virtually impossible to remove, and the only way to salvage such a plastic is to paint over it, which is neither aesthetically pleasing nor (despite appearances) easy to do. Although I have bleached most of my equipment using this method, its disadvantages have led me to look for alternatives.

It should be noted that the bleaching effect of any method can be greatly improved by activating the surface. This aspect is often overlooked in the various descriptions, although in my experience it is very important.

The process is very simple. First of all, we need to get a brush with hard plastic bristles. In practice, a nail brush from a beauty salon will work perfectly. We will also need some AJAX bathroom cleaning powder. I strongly discourage any rationalisation here and any attempt to replace this product with another. Unfortunately, my experience shows that only AJAX (and it must be powder, not liquid) works well in this case. We start by pre-lubricating the plastic. We do this by simply washing the plastic with normal dishwashing liquid. We can then proceed to activate the surface. At this point I recommend wearing latex or nitrile gloves as AJAX powder is quite irritating to bare skin. It is also important not to splash the product in our eyes. Just because something is readily available and sold as a product for home use does not mean it is completely safe. The powder is made into a thick paste with warm water and applied to the plastic in a thick layer. After a while we can start brushing the plastic. Two processes take place here. The AJAX powder consists mainly of non-ionic detergents, an abrasive and hypochlorite. The abrasive removes the outermost layer of plastic and a weak hypochlorite solution partially whitens the deeper layers. If the material is only slightly yellowed, this method may be sufficient and no further treatment is necessary. In my experience, C64 and VIC-20 cases respond well to this treatment, but unfortunately it does not make much of an impression on Amiga 500 and 600 or Atari cases. Of course, you cannot scrub materials with inscriptions (e.g. keys) with a hard brush. Here we have to limit ourselves to the medium hardness of a paintbrush or a soft toothbrush. It should also be mentioned that the material will become slightly dull after such treatment, but the effect is still closer to a new condition than a situation where the case is literally polished in places as a result of many years of contact with the hand. After drying (wet material looks very different to the dry one) we can visually assess the condition of the surface. In many cases, unfortunately, we still have to work hard.



At this point we need to decide on the bleaching method. The ideal bleach should remove the effects of degradation without causing secondary damage to the material and (very importantly) should not damage inscriptions or stickers. It would also be ideal if we were not dependent on the presence of sunlight or strong sources of ultraviolet light.

A very good method has been developed which involves saturating methyl alcohol with chlorine and immersing

bleached plastics in such a mixture. This method does not (in most cases) destroy inscriptions or stickers, and can even be used to whiten yellowed paper. Unfortunately, the chemicals involved are difficult to obtain and toxic, so I will not go into further detail (those involved in chemistry will know what to do next anyway).

One of the other methods is to use perhydrol, which is a 30% hydrogen peroxide solution. Unfortunately, the bleaching process does not take place at room temperature. It is necessary to heat the solution to about 80°C. This has two disadvantages. Firstly, such a solution is highly corrosive and, shall we say, dangerous. Secondly, this temperature fluctuates dangerously within the limits at which most plastics become plastic. I would like to mention here that I once accidentally destroyed my Amiga keyboard in this way. It was enough to step away from the process for a moment and the temperature rose so high that the keys were irreversibly deformed. So I don't recommend this method.

A much safer agent (both for the material itself and for us) is sodium percarbonate. This reagent is readily available on auction sites for a few euros per kilogram. When sodium percarbonate is dissolved in water, we get a mixture of highly alkaline sodium carbonate, which supports the bleaching process, and hydrogen peroxide, which serves as a basic bleaching agent. The concentration of hydrogen peroxide is not high, but when working with this process it is still necessary to use basic protective measures. The water temperature can be 50-60°C, which is much safer. It is best to carry out the process in a suitably large basin or cuvette (so that all the housing elements and keys can be immersed). We add enough percarbonate "by eye" to make the water surface foam intensively. The bleaching process takes about an hour and can be done in total darkness. Simply rinse the bleached material thoroughly under running water. It is worth mentioning an interesting effect: at first, when the surface of the plastic is wet, it may seem that the process has not gone well and the surface is only slightly better than before bleaching. However, all you have to do is wait patiently for the water to evaporate and the surface will look much, much better.

Most plastics respond very well to the above method, but there may be cases where a different approach is required. An alternative method that can be used is ozone bleaching. The easiest way to produce ozone is to use an ozone generator, which is readily available on auction sites. The cheapest model will do. It is worth placing a disperser in the form of a ceramic ball on the tube, available from aquatic retailers. Bleaching must be carried out outdoors or in a very well ventilated utility room. Even mild ozone poisoning can cause headaches and mood swings, and prolonged exposure can cause severe irritation and inflammation of the respiratory tract. Do not stay in the room while the machine is working! Place the items to be bleached in a container that allows them to be completely submerged in water. Place the tube of the ozone generator equipped with a dispersion so that the stream of ozone beads covers as many objects as possible. The treatment will take between 30 minutes and two hours. Simply rinse the bleached items with water.

Braver readers who are not afraid to experiment can try sodium perborate or sodium persulfate (both salts are



▲ An example of a home ozone generator

readily available on auction sites). I haven't done any experiments in this area, but "in theory it looks good". Another alternative is to use sodium hypochlorite, either in the form of ACE bleach or pure reagent (also easy to use). The effect is greatly improved if a weak acid (acetic or citric) is added to the hypochlorite solution, but this gives off acrid fumes and should only be done outdoors.

It is worth mentioning another useful device. If you are planning to take up computer refurbishment as a long-term passion, it is worth investing in an ultrasonic cleaner. It's true that the case won't fit into such a washer, but the keys will. The washer significantly improves the effects of both of the above methods if the operation is carried out in the washer's tank with the ultrasonic generator switched on. An additional advantage of the washer is its ability to heat the liquid to a set temperature. I particularly recommend this method for bleaching keys where the abrasive surface activation described above is not possible. The ultrasound makes it easier for the bleach to attack the plastic surface and at the same time promotes the mechanical removal of the reaction products.

Another useful tool is a compressor (even a small, oil-free one). It will save us a lot of nerves waiting for the bleached items to dry. Just direct the airflow onto the surface and it will dry almost instantly, without any traces of drops or streaks.



▲ An example of an ultrasonic cleaner

I wish readers a successful experiment in this area, but I would like to point out that (generally speaking) such operations always involve some risk, so please do not complain to me if anything goes wrong. Every situation is different and what has worked for me several times may not work for you. Also, dear reader, please remember to take appropriate precautions when working with chemical reagents! ■

From left to right: sodium persulfate, sodium percarbonate, sodium hypochlorite, Ajax





Emulation zone

DrawBridge

■ author: Sleeva / translation: Tomxx

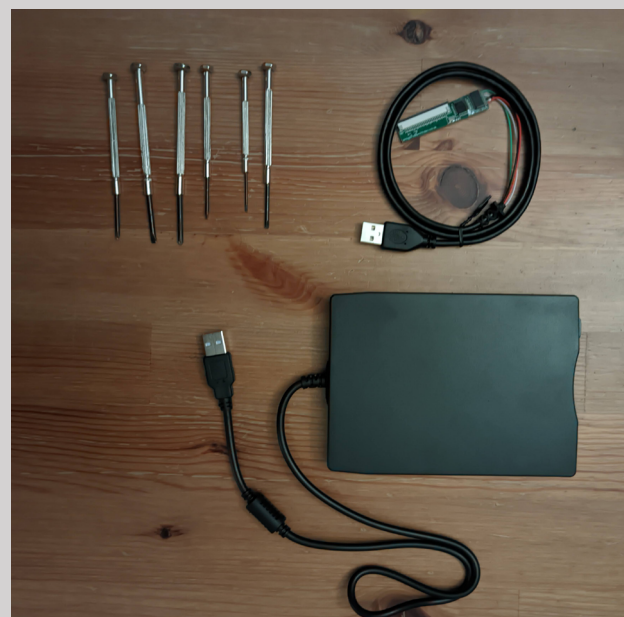
If I had to describe in a few words the most important computer memories of many, many years ago, I would probably start with the smell of a heated CRT TV case and the crunching sounds of a head moving over a magnetised disc hidden in a plastic frame. Clicking on the DFO: floppy drive was a promise that in a moment we would find ourselves in a completely different world, made up of zeros and ones, but perceived by the user as infinite iterations of universes – forests, caves, sun-baked wildernesses, dangerous underground dungeons or the cold expanses of the cosmic void. And it is about my battles with three-and-a-half inch floppy discs that I will write about today.

In a previous text addressing the issue of transferring data from modern computers to Amiga, I mentioned Robert Smith's project codenamed DrawBridge. When I came across the website amiga.robsmithdev.co.uk that describes a solution by which a standard, PC-based floppy drive into a computer via a USB port is capable of reading and writing Amiga versions of floppy disks, I didn't think long. There were two solutions to choose from – to build my own circuit according to the instructions provided, or to buy a ready-made one. Since my soldering skills are low (and end with the knowledge not to grab the hot part of the soldering iron), I signed up for the queue waiting to buy a chip based on the Arduino Nano. It lasted forever and if I counted correctly, fourteen months passed between the time I ordered and the day I received the message that I had 48 hours to finalize my purchase or I was off the list.



ArduinoNano

Well, the decision was made a long time ago, so I clicked on the link provided, completed the purchase and collected the package from the post office two weeks later. Here's a quick note for those who want to follow in my footsteps. Brexit did its work – the package, which was due to arrive in a few days, visited customs on the way and I had to add a customs fee to the final price. At home, poorer but happier, I unpacked a cardboard envelope containing a USB cable with four thin wires soldered to a tiny circuit board. With the most important part already in place, all that remained was to complete the formalities and order the drive itself. I opted for the N533 model – identical to the instructional video showing how to connect the two components. A quick confirmation of the purchase on Amazon in the UK (yes, learning from mistakes is not my forte...) and three days later, this time without any financial surprises, I had everything I needed on my desk to start the assembly.

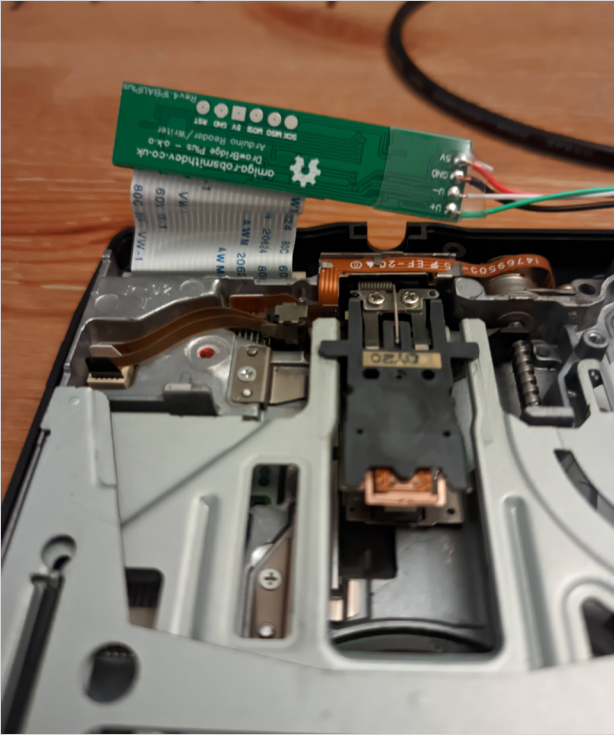


DrawBridge unboxing

Fortunately, the whole process is not complicated. All you have to do is follow the step-by-step instructions presented in the video (all the documentation is available on the project's website and in the instructions included in the package – also in the form of QR codes so you can easily



play the video on your phone). To be on the safe side, we first connect the drive to the computer and check that it is discovered by the system. Under Windows 11, it's a classic plug-and-play – a few seconds after connecting, the floppy disk drive appears in Explorer. We then proceed with the installation process. The drive is secured with a small screw. After unscrewing it, we gently slide and remove the upper part of the case, remove the tape from the original board, put the cable aside and plug in our Arduino. All we need now are the drivers for the virtual COM port, available from ftdichip.com; once installed, we can start playing around.



DrawBridge connected to the floppy disk drive

The diagnostic test performed in the DrawBridge software (available on the project website) was passed in a second run. I think that the tape was not fully tightened and after correcting this, everything went smoothly.

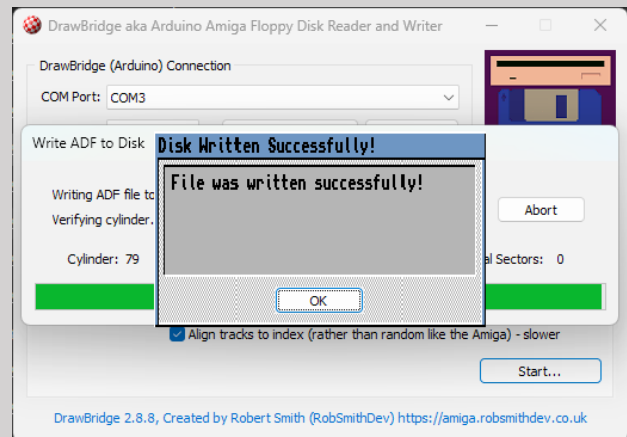
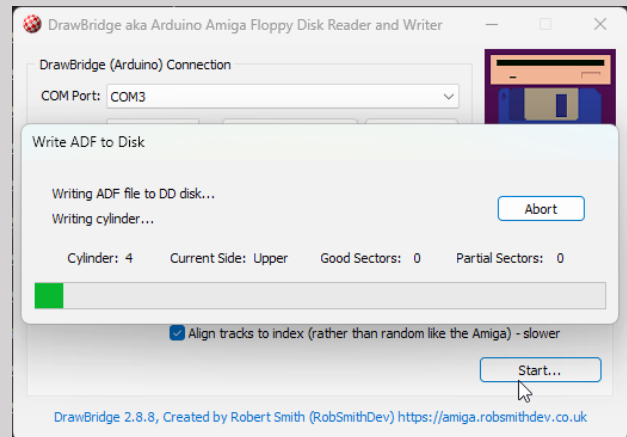
```
Running Diagnostics on FTDI:AQ025B6X (FT232R USB UART)
Attempting to open and use FTDI:AQ025B6X (FT232R USB UART) without CTS
Testing CTS pin
CTS OK. Reconnecting with CTS enabled
Board is running firmware version 1.9.25 (modified for DiskChange support)
Fetching latest firmware version...
Firmware is up-to-date
Features Set:
  o Disk Change Pin Support
  o DrawBridge PLUS
  o HD/D0 Detect Enabled
  o Accurate Flux Read Mode
Testing USB->Serial transfer speed (read)
Read speed test passed. USB to serial converter is functioning correctly!
Testing write-protect signal
Enabling the drive (please listen and watch the drive)
Checking for INDEX pulse from drive
Measuring Drive RPM...
Drive RPM measured as 301.05 RPM
Checking board type...
Board EEPROM setting matches detected board type.
Asking the Arduino to find Track 0
Track 0 was found. Asking the Arduino to find Track 70
Testing Disk Change pin.
*** Please remove disk from drive *** (you have 30 seconds)
*** Please re-insert disk into drive *** (you have 30 seconds)
Disk change is working correctly
Starting drive, and seeking to track 40.
Disk inserted was detected as DOUBLE DENSITY
Checking for DATA from drive
Attempting to read a track from the UPPER side of the disk
Tracks found!
Reading was successful!
Writing and Verifying Track 41 (Lower Side)...
Writing and Verifying Track 41 (Upper Side)...
Writing and Verifying Track 41 Precomp Mode (Lower Side)...
Writing and Verifying Track 41 Precomp Mode (Upper Side)...
Hurray! Writing was successful. Your Arduino is ready for use! - Send us a photo
or join my Discord server at https://discord.gg/Hctjg5FXu
```

First attempts

As I don't like too much clutter on my desk, I decided to put everything together first, remove the unnecessary stuff and start the practical tests in peace. And here, my dears, another note for potential followers. Well, my hardware projects have been cursed for a while now and it hit me again this time too. After reassembling the case, placing the screws in and tidying up a bit, I plugged the drive in again and... Windows reported an unrecognised device. Without prolonging the story unnecessarily, one of the cables got caught in the screw during the folding process. When the screw was tightened, the cable was severed with surgical precision, resulting in – the obvious – no connection and a user error. So check three times that everything is in the right place before you pick up a screwdriver.

After a quick fix of stripping the insulation, twisting the cable and securing the sensitive area with tape, checking a couple of times that everything was in place this time, reassembling the case and screwing the perpetrator of the electronic crime back in place, I was finally able to start working with the physical media.

As I said, the diagnostic tests went smoothly. I checked read, write, recognition (whether the disc was write-protected), and whether it had been removed and reinserted. I then selected a few favourite programs (OK, games, you know) and checked the .adf writing to the media. This time there were no surprises – the write was completed successfully in several dozen seconds.



Disk writing tests



I went back to the project site, downloaded and installed the plugin for WinUAE, configured DFO: to use the new drive, set the basic configuration to a bare Amiga 1200, inserted a freshly written floppy, and after a dozen or so head rasps, my eyes were blown open by the blood-red text of Guru Meditation.

Well, as we all know, floppy disks are not the most durable of media, years in a cupboard are definitely damaging, and HeroQuest might not have been the best choice to start with. So I started from scratch – this time with the latest version of Dungeon Master (v3.60). Saving the .adf to the floppy without a hitch, switching to the emulator, starting the virtual Amiga, grinding my head and ... it worked! The first logo on the screen, then the language selection, the gates to the underworld appear, I click the start button, but instead of going to the Hall of Heroes I get an error code message (as I later found out it was the result of anti-piracy protection). What puzzled me, however, was that the same Dungeon Master launched directly from the file worked fine. Three times lucky, as they say. So I ripped P.P. Hammer to a floppy. The writing is flawless, I repeat the procedure, the drive clicks, "press fire" is displayed on the title screen and ... 4 minutes later, watching the disc load and listening to the drive, I begin to suspect that something is not quite right. The same looping effect on loading occurred in Addams Family and Lethal Weapon. Following my friend's advice, I tracked down my original Workbench floppies. This time, when I tried to load them, system read errors and sector numbers popped up on the screen. As they say – there are no cases, only signs. It's impossible for everything to fall over at the same time.

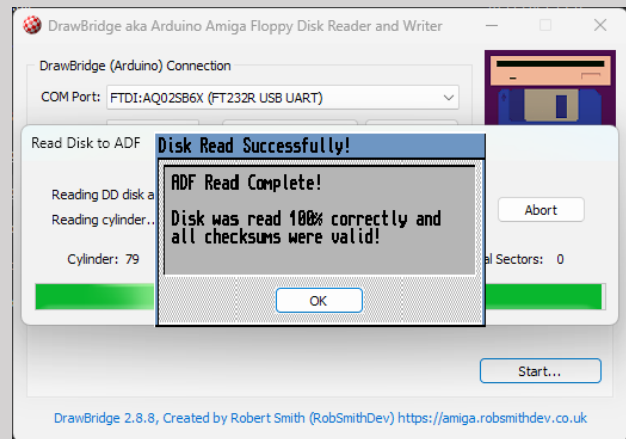
"This is not good" – it was my only thought.

Diagnostics OK, writing floppies without problems, so everything works, just not much. So I tried writing a game file to a floppy (no problems, of course) and then ripping the data from the floppy to a file. As you might have guessed, I got a read/write error.

Since I'm not one to give up easily, and the editor-in-chief had heard that an article describing my battles with FDD was already in the pipeline, I made a tough decision: I ordered a second drive. The hardware retro scene friends I consulted confirmed my belief that the problem described was not a classic PEBKAC (an acronym for "problem exists between keyboard and chair"), but most likely a badly calibrated floppy drive. Probably it could be fixed somehow, but nobody knows how (and for how much).

I placed an order and made the purchase from the country's largest auction portal before noon, so that I had the new drive on my desk in the evening of the same day. Without further ado: I repeated the whole set-up procedure, being careful with all the cables, of course.

The drive is visible in the system, diagnostic tests OK, writing to the floppy without errors, trying to read from the floppy... And WE HAVE IT! (as they shout in Top Model after two thousand shots of the session).



Disk reading tests

I went back to WinUAE (fortunately the drives don't need any tweaking once configured), inserted Dungeon Master and this time everything booted as it should, without errors. I spent the evening writing and reading floppies under virtual Amigas (mostly A1200s, but also A500s). Everything worked fine. The clicking of the drive and the buzzing of the head reading data (like in the old days) mingled with the melodies generated by Paula's virtual circuits. Games stored on multiple media again forced the removal and insertion of floppies. The time machine this time did not look like a DeLorean, but like a small black box with a USB cable sticking out.

The time has come to summarise this hopefully not too long article.

DrawBridge (in this finished version) is easy to install and effective to use. That is, of course, if you're not unlucky with the drive itself. Convenience traditionally comes at a price, which can be reduced by trying to prepare all the necessary components yourself. The version you can order from Rob's site costs £36 including postage. Customs duty cost me £10, while the cost of the drive is 50-130 PLN, depending on the seller and country.

Is it worth it? If you have your private programs and data hibernating somewhere on floppy disks and want to easily, without taking out a real Amiga, dump them into files and create a backup – yes. If you have your favourite games and want to feel like a teenage Amiga player in the 1990s for a moment – yes. If you want to transfer some files to your Amiga – yes, although Workbench can read and write floppy disks in FAT. Rob Smith's solution is great, it works under emulators (yes, I admit without a beat, I have not yet checked the written floppies on my A1200) and is convenient if you are creating under WinUAE or other software that pretends to be Amiga, because it is simply faster.

Well, unless, like me, you are looking for a way to revisit the past and the memories that will forever remain in your heart. Memories that may have been idealised over the years, but that's what memories are all about. To bring joy and emotion. And there is no doubt that tapping the head of the floppy disk drive provides such emotions. I felt thirty years younger. ■

How to create your own game for the C64? *Part IV*

■ author and translation: Void



TUTORIAL

As we have seen in the previous installments of the 'How to write your own game...' series, creating a simple game with a static background is not overly complicated, especially when you have such a great machine as the Commodore 64. The opposite of complication and making life difficult are games in which the scenery moves freely in at least one direction. The movement should of course be smooth and reasonably fast.

Smooth screen movement in games was an obvious standard in arcade machines produced in the 1980s, but surprisingly rare in home machines of the time. The reason for this is that creating the impression of movement requires a large amount of data to be transferred, too much for the inefficient processors used in eight-bit computers at the time.

In time, hardware support for scrolling appeared, introduced by Atari in the 400 and 800 models, among others. Nomen omen, this support is one of the best in eight-bit microcomputers. The first Commodore computer to feature hardware scrolling was the Commodore 64, released in 1982. However, as Albert Charpentier, the creator of that computer's graphics chip, pointed out in an interview with Bil Herd (1), this mechanism was very rudimentary and still required a lot of work from the processor. A somewhat amusing example of hardware where scrolling is 'easy' is the Atari VCS console: displaying graphics is such an absurdly difficult task that dynamically changing game backgrounds make no difference.

It's worth mentioning the popular machines on which scrolling was extremely difficult and therefore quite rare: the ZX Spectrum or the Amstrad CPC. Let's also mention the champions in this category, apart from the aforementioned eight-bit Atari, the NES console and, of course, the Commodore Amiga. And how did the PC family of computers fare? Not so well, as it turns out. Let's take the legendary platformers, for example: Titus the Fox, Prehistorik and Blues Brothers. Yes, all these games scrolled, but not very smoothly.

There are essentially three techniques for scrolling the contents of the screen. The first is a brute force rewrite of the memory contents. This technique requires a lot of processing power and is therefore not always applicable on weaker hardware. The lack of power can be compensated by using double buffering, reducing the FPS and reducing the game area (e.g. by using a large dashboard area).

The second technique is to use a window that allows you to preview a larger virtual screen. This is theoretically the best and simplest solution for software, but unfortunately the size of the virtual screen is limited by memory, so you can forget about creating huge levels.

The third technique is to organise the screen memory in the form of a cyclic buffer and to let the start pointer of the screen memory run freely. This technique can be used on Atari computers; unfortunately it is not available for

the Commodore 64 (the VSP demoscene technique is beyond the scope of this article).

In theory, the Commodore 64 and its VIC-II graphics chip support Technique No. 2. Unfortunately, there is no virtual screen in this case. Scrolling mode requires the screen to be shrunk horizontally, vertically or both. The hardware then moves the window a maximum of 8 pixels in either direction. This seemingly pointless mechanism makes it possible to use technique No. 1, i.e. rewriting the contents of the video memory using the processor, quite effectively.

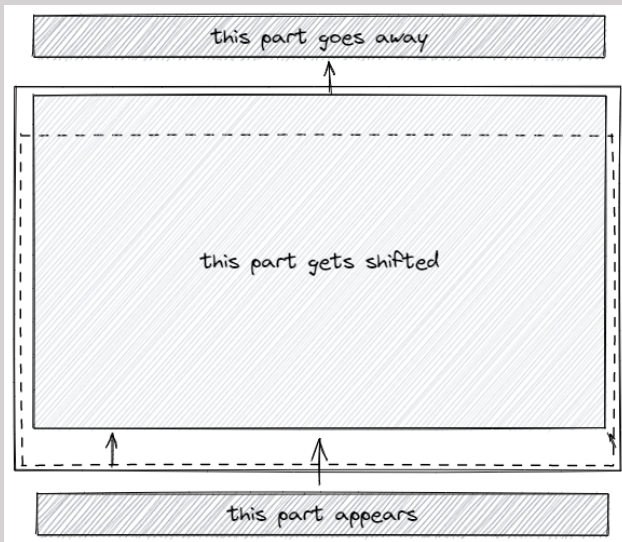
Let us first consider the issue of copying memory. How much work does it take to copy a single byte of memory on a Commodore 64 computer? This is relatively easy to estimate. Assuming we are using direct address mode, we need to execute two machine code instructions:

```
LDA source
STA destination
```

In this addressing mode, both the LDA and STA instructions require four CPU cycles to execute. So copying a single byte costs at least 8 CPU cycles. If we were to go crazy and use a macro assembler to write a maximum speed code, without any loops and using only the above instructions, we would need 8000 cycles to copy the contents of the text screen. It is worth noting that it takes 19656 cycles to display a single frame on PAL models and 17095 cycles on NTSC models. In summary, it takes almost half the available CPU time to copy the contents of the screen! If we wanted to scroll the screen in a similar way in bitmap mode, we would need at least 8 times as much time, i.e. 64000 cycles. As you can easily see, scrolling a graphical screen at a nominal speed of 50 or 60 fps is simply not possible. There is a reason why most games with scrolling backgrounds use multicoloured text or hires text mode.

In addition to copying the screen content, it is also necessary to fill a row or column (depending on the direction of movement) with new content. This code also needs to be fast enough to be done in 1/50th of a second, along with the copy code above.

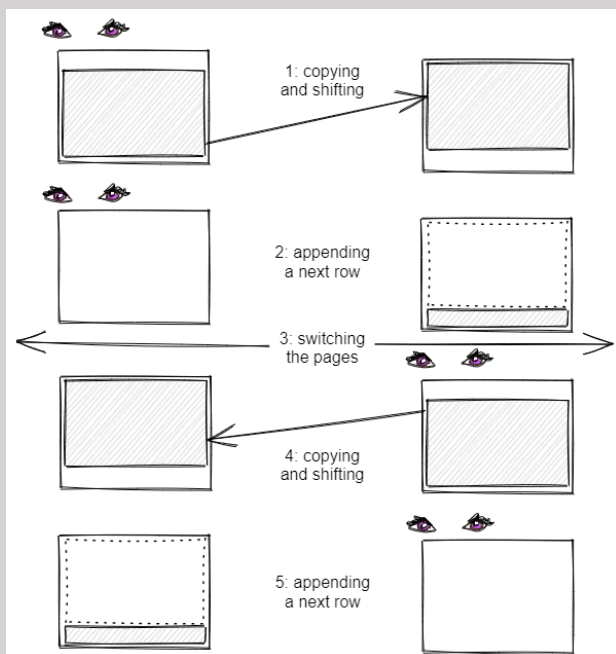
Unfortunately, the contents of the image memory are not the only data we need to process. The Commodore 64 computer also has colour memory. If the content we want to move is multicoloured (and it usually is), we have



Shifting screen memory content

to move the colour memory in addition to the image memory. In practice, the time required for the whole operation must be multiplied by two. This means that scrolling alone takes up almost all the CPU time, which is simply unacceptable for interactive games.

At this point, we are reminded of the hardware shift of 8 pixels in each direction. This function gives us extra time, in practice up to eight times more time, depending on the desired scrolling speed. All the operations required for scrolling can be divided into phases and performed sequentially, using the hardware shift register in the meantime. This technique requires the use of two pages of memory, so that the page being modified is invisible at any given time, and the page not being modified at any given time is hardware scrolled.



Double-buffering principle

So much for the screen memory. The colour memory on the Commodore 64 has one unpleasant feature – it is impossible to use the double-buffering technique on it, because ... there is only one buffer available. That's right, the colour memory is a completely separate chip (in later C64 models it was integrated into the SuperPLA chip) and any changes made to it are immediately visible on the screen. Almost immediately, and this is our only hope.

Moving and rewriting the colour memory will inevitably result in one part of the screen showing the previous state and the other the current state. This effect is only visible for a fraction of a second, but is still noticeable. So-called 'screen tearing' is characteristic of sloppily written games, and it is not my aim to teach you sloppy coding.

As I mentioned above, there is some chance of this happening because changes, whether to the colour store or to the visible side of the frame store, are not displayed immediately, as the screen content is drawn line by line (these lines are also called rasters). If, when modifying the contents of the colour memory, we consistently move in front of or just behind the currently drawn raster line, the tearing effect will not occur. If we move to a 'pass', the tearing effect will be triggered.

It is very important to switch image memory pages at the right time. When copying 'before the raster', the page must be changed at the beginning, before the layout starts to create a new frame. When copying 'behind the raster', the page is changed at the end, before the graphics chip starts chalking the next frame.

In the next part of the series, we will begin to create a shoot'em up type game, scrolling smoothly in one direction at a constant speed. This is the simplest type of scrolling, which is not to say that it is trivial. I also recommend reading Cadaver's article (2), which describes more advanced techniques. ■



Commando, Elite, 1985 and Green Beret, Imagine/Konami, 1986 – two examples of smooth scrolling games from the 1980s

Bibliography

- <https://www.youtube.com/watch?v=JeGCC2Kgqik> interview with Albert Charpentier
- <https://cadaver.github.io/rants/scroll.html> – multidirectional scrolling and the "game world" by Cadaver

XC=BASIC coding guide

Part V – It's time for some real coding...

author and translation: Tomasz "Razor" Kaniecki

In the previous episode, we managed to design the shapes of the blocks and the playing field. Now it's time to code the necessary elements that will soon come together.



TUTORIAL

DEFINING VARIABLES

Our game will store its state in several variables. Defining variables in XC=BASIC can be a bit confusing if you remember how it worked in CBM BASIC, but don't worry – the differences are easy to understand. As you remember from the previous sections, the commands that can be used to define variables are DIM, LET, FOR and DATA. (I also remind you that the `x = 1` statement is actually an implicit call to LET).

Variables are defined at compile time. When the compiler encounters a variable name in one of the above statements, it checks if the variable exists and creates it if it does not. This variable cannot change its type later.

Unlike CBM BASIC, where DIM is used to define an array, DIM XC=BASIC can also define a single variable. Therefore, it is good practice to pre-define variables at the beginning of a program using DIM to avoid potential problems later. So let's define our variables as follows:

```
REM -- The playfield, an array of 25 integers
REM -- Note this has already been added in step 2.4
DIM playfield[25]
REM -- Level (1-10)
DIM level!
REM -- Current score
DIM score%
REM -- Highest score of the day
DIM hiscore%
REM -- Game status: 0 = game on, 1 = game lost
DIM game_status!
REM -- How many rows have been cleared (reset
above 100)
DIM ttl_rows_cleared!

REM -- Shape of current piece
DIM shape
REM -- Shape number of current piece
DIM shape_no!
REM -- Color of the current piece
DIM shape_color!
REM -- X, Y position and rotation of current
piece
DIM piece_x!
DIM piece_y!
DIM piece_r!

REM -- Shape of next piece
DIM nxt_shape
REM -- Shape number of next piece
DIM nxt_shape_no!
```

A few words of explanation. Variables without a sign are integers. An integer is a 16-bit type with a sign, whose value ranges from -32768 to +32767.

Variables with an exclamation mark (!) are bytes. A byte is an 8-bit type in the range 0 to 255. Variables with a percentage (%) suffix are of floating point type. This is exactly the same 40-bit floating-point type that CBM BASIC uses, in fact floating-point calculations are performed by CBM BASIC, not XC = BASIC. This also means that they are very slow. The reason we use them to store the result is that the integer would overflow at 32768, the only time the result needs to be updated is when the rows on the board are cleared. Speed will not be critical at this point, so this is not a performance issue and we can compromise.

These are not all the variables we will need. But we will define them later where they will be used.

PROCEDURES

For our game we need the following:

1. `clear_playfield` to clear the playfield before each game.
2. `get_shape()` to find a shape in the shape array.
3. `overlaps()` to check if the shape overlaps the playfield. This will tell us if the object can be moved or rotated.
4. `draw_shape` draws the shape on the board at the given position.
5. `draw_preview` draws the next shape in the preview window. This is used in conjunction with the previous procedure.
6. `lock_piece` locks the piece so that it is fixed when it reaches the end of the board.
7. `clear_row` clears the row, removing everything from the top if the row is full.

The `get_shape()` function is used to find a shape in the array we created earlier. To find the shape in the array, we use the following formula:

$$\text{index} = \text{shape_no} * 4 + \text{rotation}$$

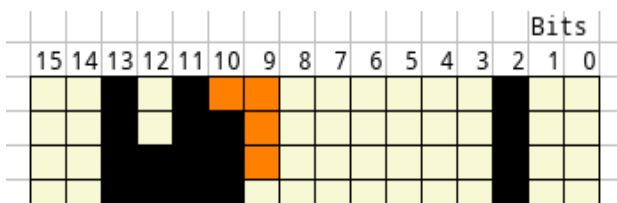
Since each shape has 4 rotations, we need to multiply the number of the shape (a number between 0 and 6) by 4 and add the number of rotations (which is 0 to 3).

Now the only problem is that the function will be called a lot and multiplication is an expensive operation. Fortunately, the multiplier is 4, which means that moving each bit in the multiplier two places to the left will give the same result, but much faster! So we can code this function as follows:

```
FUN get_shape(shape_no!, rotation!)
  RETURN shapes[LSHIFT!(shape_no!, 2) + rotation!]
  REM -- Shapes of all pieces in all rotations
  DATA shapes[] = %0100010001000100,
%0000111100000000, %0010001000100010,
%0000000011110000,~
%0100010011000000,
%1000111000000000, %0110010001000000,
%0000111000100000,~
%0100010001100000,
%0000111010000000, %1100010001000000,
%0010111000000000,~
%1100110000000000,
%1100110000000000, %1100110000000000,
%1100110000000000,~
%0000011011000000,
%1000110001000000, %0110110000000000,
%0100011000100000,~
%0000111001000000,
%0100110001000000, %0100111000000000,
%0100011001000000,~
%0000110001100000,
%0100110010000000, %1100011000000000,
%0010011001000000
ENDFUN
```

The next is the overlaps() function, which checks if the block overlaps with existing blocks on the board. This is a key function because it needs to be called every time we want to move or rotate a block to see if the move is possible. If you remember the previous steps, we defined both the shape and the board as integers, with each bit corresponding to a block. So we can use bit operations to check if an element overlaps. The only difficulty is to extract individual pieces that are comparable to a single row of the board.

The black blocks are parts of blocks already on the board, and the orange blocks are parts of a single block. We are going to compare 4 times 2 integers.



```
REM -- Extract a single row from the shape
FUN extract_row(shape, row!, x!)
  REM -- Step 1: mask the nibble
  REM -- Step 2: move it to the left end
  REM -- Step 3: move it right by the piece's X
  position
  RETURN RSHIFT(LSHIFT(shape & mask[row!], bit-
pos![row!]), x!)
```

```
REM -- Helper data for bitwise calculations
DATA mask[] = %1111000000000000,
%0000111100000000, ~
%0000000011110000,
%00000000000001111
DATA bitpos![] = 0, 4, 8, 12
ENDFUN
```

After extracting all the lines from the shape, we can easily compare them with the playfield using a bitwise AND operation. If the AND returns true for any bit, this means that there is an overlap. Here is the finished overlaps() function:

```
REM -- Check if the piece overlaps the playfield
REM -- at the given position
REM -- Returns 1 or 0 (true or false)

FUN overlaps!(shape_no!, rotation!, x!, y!)
  REM -- Get shape by number and rotation
  tmp_shape = get_shape(shape_no!, rotation!)
  REM -- Check row by row
  FOR i! = 0 TO 3
    playfield_row = \playfield[i! + y!]
    piece_row = extract_row(tmp_shape, i!, x!)
    IF piece_row & playfield_row <> 0 THEN RE-
TURN 1
  NEXT
  RETURN 0
ENDFUN
```

Look at the code above carefully and note the following:

- The function returns a byte, so we have added ! to its name.
- We need to access the global variable playfield from within the function, so we need to put a backslash in front of it: \playfield

To move a piece around the screen, we need something to draw it and something else to remove it from the screen. Since these two operations are very similar, we can code them as one:

```
REM -- Draw or erase the current shape on
screen at the given position
REM -- draw! > 0 means draw, draw! = 0 means
erase
PROC draw_shape(shape, x!, y!, color!, draw!)
  REM -- This is the memory address where we
can start drawing
  REM -- Everything before is invisible
  CONST VISIBLE_AREA_START = 1199
  REM -- Calculate start addresses
  screen_addr = screen_address[y!] + x!
  REM -- Iterate through all bits in the shape
  FOR bit_pos! = 0 TO 15
    REM -- Calculate where to draw
    addr = screen_addr + block_offset![bit_pos!]
    REM -- Only draw if it's in the visible
area
    IF addr >= VISIBLE_AREA_START THEN
      REM -- If bit in shape is set
```

```

IF shape & LSHIFT(CAST(1), bit_pos!) <> 0 THEN
  IF draw! = 0 THEN char! = 32 ELSE char!
= 160
  REM -- Draw char
  POKE addr, char!
  REM -- Set color
  REM -- Add the distance between screen
RAM and Color RAM
  REM -- To get color address without off-
sets calculating again
  POKE addr + 54272, color!
  ENDF
ENDIF
NEXT
REM -- The address in Screen RAM for each row
on stage
DATA screen_address[] = 1036, 1076, 1116,
1156, 1196, 1236, 1276, 1316, 1356, 1396, 1436,
1476, ~
1516, 1556, 1596,
1636, 1676, 1716, 1756, 1796, 1836, 1876, 1916,
1956, 1996
REM -- For each bit in the shape there is
a matching offset where the
REM -- character should be drawn relative to
the top left of the shape.
REM -- This offset, added to the screen ad-
dress will give us where to
REM -- plot a character.
REM -- Note that we're going backwards as Bit
#0 is the bottom right position
DATA block_offset![] = 123, 122, 121, 120, 83,
82, 81, 80, 43, 42, 41, 40, 3, 2, 1, 0
ENDPROC

```

Have you noticed IF ... ENDF? This is a handy alternative to the classic IF ... THEN if you want to avoid writing a very long line.

Another thing that may be new to you is the CAST() function, which is used to convert a value from one type to another. This is called explicit type conversion.

Now we draw a block on the screen:

```

REM -- Draw the piece preview
REM -- Effectively uses the draw_shape routine
above
PROC draw_preview
  REM -- Clear the preview area
  FOR i! = 0 TO 4 : TEXTAT 33, 19 + i!, " "
: NEXT
  REM -- Draw the shape in the appropriate
color
  CALL draw_shape(\nxt_shape, 21, 19, \
colors![\nxt_shape_no!], 1)

```

Due to the large amount of code I had to show you in this part, we will leave the description of the remaining functions, which we will program in the next section.

See you next time. Happy coding! ■

The most interesting XCBASIC projects:

1. Snake. First game written with version 0.9



2. Flying Saucers. A great-looking shooter



3. XCB Invaders. A classic written from scratch in XCB



With dice and pencil

HeroQuest: Game system

author: Tomasz "Razor" Kaniecki / translation: Tomxx

The world has long been at peace. Ever since the darkness that once consumed the magical lands was cast into oblivion, peace has reigned. But evil has not been destroyed, only banished – hiding deep underground, it is slowly regaining its strength and awakening to take its revenge. We need heroes to stand up to it, or the world will be doomed.



The above introduction is worthy of a Diablo cover, and we are only talking about a board game that had a C64 port, released in 1991 and well received. We're talking about the game HeroQuest, which we received for review from Rebel.

Our team can consist of 2-5 players, although a mobile phone application has recently been released that acts as a game master, so you can basically play solo. Players will have classic characters at their disposal: a mage, a barbarian, a dwarf and an elven warrior. The objective is clear – we are to explore the inhospitable dungeons and destroy all the filth that lurks there. For our mission to be successful, we must capture the boss, who is hiding somewhere in the chambers and poses a serious challenge to the team. After that, we need to get to the surface and be careful of the traps and other nasties that lurk here and there. Speaking of which, we have quite a collection of them here, ranging from weak goblins to slightly more dangerous orcs to tough fish-like beasts and terrifying black knights.

The gameplay is very interesting because it resembles an RPG session. One of the players is the game master, who reveals subsequent chambers and their contents to the others, making it difficult to repeat the game. Each time you can change the number of enemies, the treasures and the location of the monster boss. The mechanics themselves are simple and classic: you cast spells, swing a sword and shoot a bow, all while rolling dice. The simplicity of HeroQuest is also its advantage; the game is quick to pick up and the pleasure of exploring the dungeons is great.



The setting of the game is great. The figures of the monsters and heroes are accurate, and anyone who is willing and able can paint them. We also have gadgets such as doors to chambers (open and closed versions), treasure chests, tables, rats, skulls and bookshelves. Everything is plastic and looks like a doll's house, only in a slightly darker version (oh, that made bed...).

I mentioned solo play – if you install the free app, the GM will be virtual. The application shows us where and what to place during the game (e.g. when the hero opens the door to the chamber) and also controls the monsters (basically according to a simple rule: all against one). What makes the game even more interesting is the fact that, between the subsequent scenarios, we record the treasures, weapons and coins we obtain in atmospheric paper notebooks. What's more, before the next expedition, the heroes can go to the shop and use the gold they've earned to buy additional weapons or armour.

I played HeroQuest several times and each time the game was different: I was attacked by different monsters, the treasure was somewhere else. This means that you can play this title for many winter evenings without getting bored. The only drawback I can think of is the price – the game costs around a hundred euros... Still – I recommend it! ■



The partner of board games reviews page in our magazine is:

rebel



REVIEW

On another subject

■ authors: Drakon, Komek / translation: Ari, Tomxx

Eggy's Maze

Eggy's Maze is one of the games submitted to the annual MSXDev competition. Designed for the MSX2 platform, this puzzle game by Jacco Bikker is another variation on the "collect all x's to move on" theme (x is followed by a key object; in Eggy's Maze it's... eggs). Eggy's Maze draws on a handful of the most interesting puzzle games: Pengo, Sokoban or Robbo.

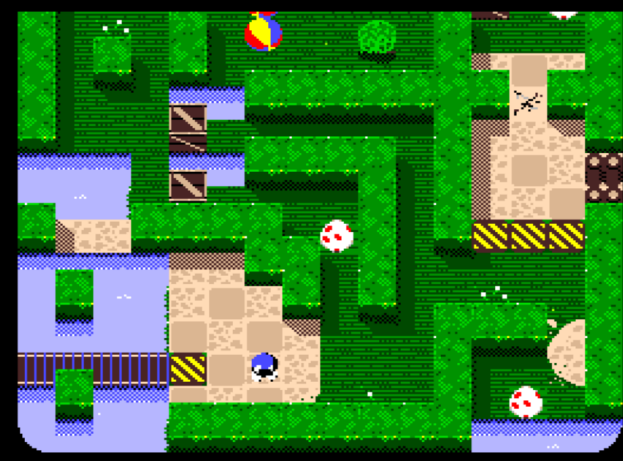
What is the game about? You control a character who has to collect colourful eggs scattered all over the board. This will not be easy, because the author has put a lot of obstacles in the way. To reach an egg, you often have to move a crate to the right place, roll a beach ball that is blocking your path, or perform a series of moves in a certain order. You also have to watch out for cracks in the ground, as a hole is created when you pass through them. And that's

not all – once you've collected eggs from a certain board, an alarm will go off, activating the guards. Getting to the exit is then much more difficult.

The game makes use of several unique MSX features, including storing the game state in a battery-backed memory (we

also have a code system for the levels). The game boards form a large labyrinth. The graphics are very nice and clearly drawn. The background music is quite pleasant, although it gets tiresome after a while. Recommended for long evenings. ■ **Drakon**

Platform: MSX2, Jacco Bikker, 2023



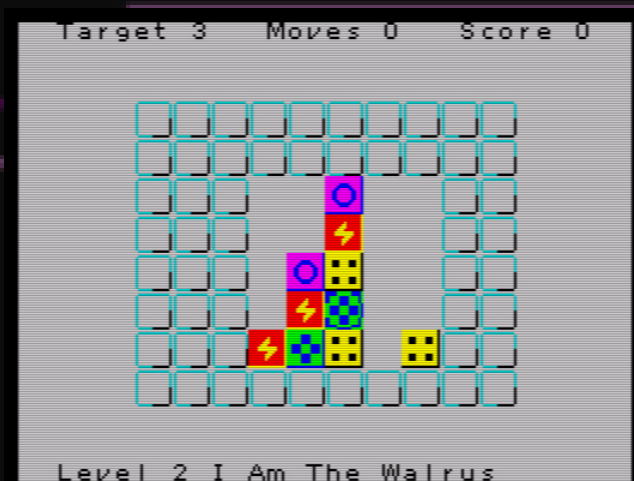
Vexed

One of my favourite genres is puzzle games. I keep a close eye on what's new on the electronic entertainment market, especially in this category. I loved Cultivation, a game released years ago for the small Atari (ah, those high-resolution monochrome graphics...), so I welcomed Vexed with high hopes. After all, what is Vexed if not a clone of Cultivation? Simple rules and an addictive game that won't let you tear yourself away from the screen for a moment are Vexed's main strengths.

In the game, we move blocks marked with different symbols. Our task is to move them so that they connect in pairs. Two blocks of the same pattern placed next to each other destroy themselves. The aim of the game is to clear the board of all the blocks. Of course, gravity is at work here, so you can't move the blocks upwards. However, the authors have decided to make this seemingly simple game a little more difficult. Often our blocks do not come in pairs, but in threes. For the trio to disappear, all three blocks must touch the walls at the same time. So you have to be a bit like a chess player and try to think your strategy a few moves ahead. The winner is the player who needs the fewest moves to clear the board.

The game has been released on many platforms: Game-Boy Classic, Sega Master System, Sega Game Gear, C64, ZX Spectrum 48/128, ZX Spectrum Next, ColecoVision, MSX, Sega SG-1000, SpectraVideo SV-318/328, Memotech MTX 500/512, Sord M5, CougarBoy/MegaDuck, Micro-Bee, Atari 5200, Elan Enterprises 128 and Amstrad CPC. I played the ZX Spectrum version. You can download the game from <https://under4mhz.it.ch.io/vexed>. I recommend it! ■ **Drakon**

Platform: several, Under 4 MHz, 2023



Time Wizard

What would you say if you could take control of time in the blink of an eye? "What is this madman talking about?" – you might think. Well, I'm not mad – you can do it too!

All we need to manipulate time is the game Time Wizard and a small Atari (and some coal, which is the classic Polish joke about Atari being powered by fossil fuels). Remember! Enemy number 1 are evil robots from the future who want to take over the world. The only way to stop them is to go to the future and collect all the energy hidden in special hourglasses. We are aided in this task by a Timekeeper who has the ability to manipulate time using the Joy, Fire and Left/Right combinations. Oh, I feel in my bones that this is not going to be an easy mission. We have to guide the wizard through 15 levels full of sharp spikes, laser beams, electrical discharges and evil robots. We must be careful!

What I have seen so far has impressed me greatly. The time manipulation effect looks excellent and reminds me of rewinding a VHS tape. The graphics, which are interestingly pixelated and have a nice colour scheme, are also a strong point. The music and sound effects are stimulating, which is important in this type of game.

Finally, it is worth mentioning that Time Wizard is a game that was submitted to the ABBUC Software Contest 2023. In my opinion, it is one of the better productions in this competition, and every Atari user should check it out for themselves.

PS I have a tonne of coal ready in the cellar. ■ Komek

Platform: Atari XL/XE, Amarak, 2023



Gates to Heaven

I have to admit that I'm a sucker for platform games, especially those with nice graphics. So when I heard about a new game for the Amstrad CPC, Gates to Heaven, I decided to check it out and share my impressions with you.

The protagonist of the game is the clever Ruperto Gonzalez, who must prevent the blockade of the revolutionary AMSDOS+ operating system, which is on the side of global network freedom. To do this, Ruperto must find and upload three computer programs so that the development of WEB 4.0 is not threatened. The task is not an easy one, as all the necessary media are located in the huge complex of the International Museum of the 1980s.

The museum is divided into three levels. The first is the film and television section, where the protagonist must find the cassette containing the first part of the code and then load it into an Amstrad CPC 464. Totally old school. The next stage is the comics and literature section. This time you have to get a 3-inch floppy and load it into a CPC 6128. The last level is the video games section and the lost cartridge, which Ruperto will install in a GX4000. The hero must also remember to move the power lever in each level, which turns on the lights in that area and activates the computers needed to load the codes. The hero must also not allow the virus to activate, which will do so after a few minutes when the lever is moved (countdown in the top right-hand corner).

Gates to Heaven is not an easy platformer, but this does not detract from its playability, it only makes it more attractive. The colourful and very nicely done graphics hit my taste perfectly. Add to that nice music and well-chosen sound effects. What more do you need? Just play and play again! ■ Komek

Platform: Amstrad CPC, ESP Soft, 2023





TALKING HEADS

My favourite Commando

Probably every gamer who grew up in the 1980s was familiar with the game *Commando*, which did much to popularise the run'n'gun genre. If I remember correctly, there were quite a few interesting C64 and Amiga titles associated with this big hit. Let's focus on the ones that stuck in your mind or just broke your joysticks. Obviously I also have my favourite *Commando* clone, so let me start the conversation.

Komek: My favourite game that I associate with *Commando* is *Arnie*, released by Zeppelin Games in 1992, which my mate Wojtas and I were very excited about, especially since we owned the original cassette release. The game seemed difficult at first, but we got the hang of it pretty quickly. I vividly remember the hardcore mood in the later stages of the game, when the enemy army sent our adrenaline levels soaring. The second part of *Arnie*, with different graphics, was okay but lacked something and did not repeat the success of the original. I played it a few times, but without much excitement.

Michal: I also have fond memories of *Arnie*. If I'm not mistaken, I bought the game in 1995, when there was already a pretty decent PC in my family home and the C64 was undeniably on its way out (suffice it to say that the computer manufacturing had ended in April the previous year). The enjoyment of the game was enhanced by a pleasant teenage awareness of swimming against the tide (at the time, peers tended to opt for *Doom II*) and a dash of nostalgia. I felt a foretaste of the excitement we all feel today when we fire up productions from a bygone era, preferably on the original hardware. In 1995, *Arnie* was already retro, and as you know – there's nothing like retro!

Retrobajtel: Back when I had a ZX Spectrum there was a *Rambo* game on one of the cassette compilations. I barely remember it, but when I see the screens today,

those distinctive wooden huts you run around with a gun, the memories come flooding back. It might be time to launch it up again? Later, my Spectrum took a back seat as I went to my friend's house to play on the C64 before classes. And it was at his place that I saw *Commando*. No, come back – I first saw *Commando* on a slot machine in an arcade near school. But it was fun when we could play it at home. And we kept order in a jungle full

of enemies. Who didn't want to play *Arnold*? When my mum brought home this movie from the VHS exchange place, the motivation was even greater. Later on I already had an Amiga and some cool games appeared on this platform that reminded me of that epic game. The first game was the great *War Zone* on a floppy. Can you feel it? A single 3.5" floppy and so much great content inside. I walked around the neighbourhood praising the Core Tech developers for what a beautiful piece of work they had created. The second game I played was *Alien Breed*. Oh, the atmosphere, the gameplay, the explosion of the base and the elimination of the aliens... And the best Amiga music... And then one of the games that blew away everything I'd ever seen or played: *Cannon Fodder*.

The C64 port of *Commando* didn't really appeal to me. I preferred *Who Dares Wins II*. However, the game I played most from this type of production was the now somewhat forgotten and underrated *Purple Heart*.

– Monka

Erik: When you mention *Commando* my first association is *Rambo*, *First Blood Part II*. Both action movies from 1985 one featuring Schwarzenegger and the other Stallone, the two competing action heroes of that time. I watched the movies and played the games but the fondest memories come from music from both games. I still occasionally hum the highscore theme from *Rambo*. A game I played a lot was *Into the Eagles Nest*, where you had to infiltrate a nazi castle and rescue the prisoners (sounds familiar right?), which was not a pure shoot'm-up but more like a *Gauntlet* clone. But the best memories are reserved for *Alien Breed*

▼ *Ikari Warriors*, Publisher: Elite, Amiga, 1987

on the Amiga. The instant excitement of a self-destruct message 'Warning, destruction imminent' always works, also in later PC games such as *Descent* or *System Shock*.

Void: Among the first games I recorded on my tape were two with a military theme: *Green Beret* and *Commando*. Both are masterpieces in their own right, and also quite challenging, especially the former. I particularly liked the dynamic and honest *Commando*. Many have tried to build on the success of this title by releasing more or less successful clones: *Ikari Warriors* or *Who Dares Wins*. A pleasant diversion for me was the game *Purple Heart*, which added two-way scrolling, nice graphics and pleasant music to the tried and tested *Commando* format.

Jackal: *Commando* reminds me irresistibly of the times when I used to try to squeeze in to watch the pros play this type of game in the arcades. Once I got my hands on my beloved Amiga 500, I found the closest resemblance to *Commando* in *Fire Force* – a game characterised by its brutality, Rambo-like atmosphere (Stallone!) and a wide repertoire of tools for killing the bad guys. I also remember sleepless nights playing *War Zone*, which drove me mad for a long time (the Atari equivalent of *Who Dares Wins II*). But it was *Cannon Fodder* that brought the most excitement, broken mice, joysticks and shattered nerves, a game I still play to this day, suffering multiple deaths over and over. Anyone who has played it knows the feeling.

Razor: I remember it like it is today: if there was an action movie on TV (with Sylvester or Arnold, of course), I'd immediately run to my C64 and look for something that would let me play the role of a hero with a gun who defeats dozens of enemies without a scratch. It started with *Commando*, but the one that appealed to me the most was *Green Beret*. I still go back to the Amiga version, which has great graphics. Then I got my hands on *Space Hulk*, which wasn't a classic run'n'gun shooter, but I couldn't resist taking out the bad guys roaming the corridors in this pseudo-three-dimensional game. Like Jackal, I also really enjoyed *Fire Force*, which was brilliantly done and left a few bruises on my youthful face.

neidemon: I will never forget *Who Dares Wins II*. It was one of the first games I played with my mum in my pre-school days. If I remember correctly, this was in 1990, and it turns out that my mum is an example of an older generation

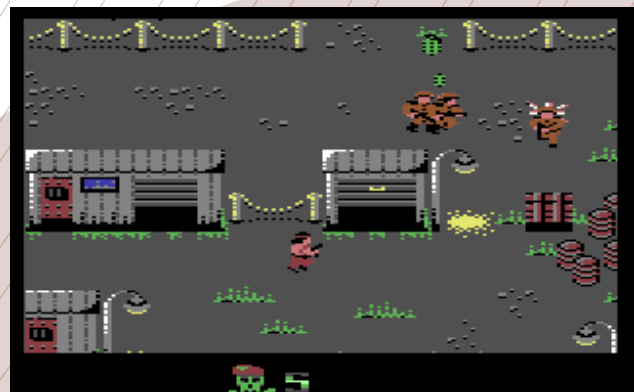
that (despite some cognitive dissonance) has successfully assimilated the idea of a computer game. Interestingly, today (33 years later!) we still refresh the title from time to time, with better or worse results, but the warm memories always come back. Anyway, we happen to play different games and even test new releases. I recently discovered *Arnie*... I have to admit that I like it too.

Agnieszka FPWG: I love *The Chaos Engine*. For me, it's a game that captures the imagination thanks to its perfectly created world. I love the unique characters, who not only have interesting looks, but also a variety of equipment. It's an excellent game, and despite the years that have passed, it's hard to tear yourself away from it.

Ari: As far as I'm concerned, two titles immediately come to mind: *Ikari Warriors* and the *Who Dares Wins I and II* series. The first game is a great memory of playing co-op with a buddy and blasting through hordes of enemies in the jungle, driving a captured tank and the hilarious pirouettes of hit soldiers. All wrapped up in a great intro, good graphics and memorable music. It was one of the finest action games of its time. I still return to it from time to time, either alone or with my son, to bring death and destruction to enemy troops.

The *Who Dares Wins* series (especially the first part) is almost a carbon copy of *Commando*, which author Steve Evans made no secret of. There are many similarities to the original: the colour scheme, the enemies, the locations, the way you shoot and throw grenades – everything is deceptively similar to *Commando*. As a result, the game was withdrawn from official sale after a while, and the rest of the copies were distributed unofficially. For the second part, the developer diversified the gameplay considerably (adding tanks and planes, among other things). What I liked about these games was that they were challenging but fair, as it was possible to complete them without cheats or poke codes. This gave me a great sense of satisfaction that I felt years ago and still feel today when I occasionally fire them up. The best evidence of this is my review of both games in the K&A magazine issue #9, where I gave them pretty good overall scores.

Monka: All my love for computer games started with the first arcade machine I saw. All I remember is the intro with the commandos jumping out of a plane over a dense jungle. Over the years, despite many attempts, I have not been able to identify this game, but not long after my first contact with the arcade machine, I had my C64 at home and I knew why I liked the *Ikari Warriors* port so much. The

▼ *Purple Heart*, Publisher: CRL, C64, 1988

short but atmospheric intro did its job, and the game itself required a bit of strategy.

The C64 port of Commando didn't really appeal to me. I preferred Who Dares Wins II. However, the game I played most from this type of production was the now somewhat forgotten and underrated Purple Heart. It had a great, atmospheric soundtrack and varied graphics. The biggest advantage of this production was the possibility of two-player cooperative play and the variety of weapons, whose behaviour was reproduced on the screen.

Phowiec: Soldier One – this is what comes to mind when someone asks about a Command-like game for the C64. Years later I know it's a perfidious rip-off of the Beach Head series and not the best in quality. But at the time, when I was 11-12 years old, there was no better game for me. It starts innocently enough, with you first shooting from the deck of a battleship, changing your perspective and your cannon. Once we land on the beach, the game begins to resemble the adventures of the Commando movie. At the time, with its 3D view the game seemed better than an arcade machine, which offered a flat 2D view from above. Well, it seemed to me back then that it's 3D, but now I know it was flat as a pancake and only the well-timed perspective and quasi-shading cleverly fooled me. But it was still impressive. How many games back then had a first-person view, with a moving rifle at the bottom of the screen and enemies jumping out or hiding behind rocks and fences? Or throwing grenades or trying to shoot by suddenly leaning out of a watchtower? There was nothing like that before. As a lover of VHS and arcade machines, I was looking for games that made me feel at least a little like I was in a film. And this is what I got. Now I know that nostalgia is a powerful thing and can turn an ordinary shifty game into a huge hit. But I keep telling myself that it was a hit – and I will stick with that idea.

▼ *Soldier One*, Publisher: American Action, C64, 1986



Tomxx: Speaking of Commando, it's important to mention Commando Arcade SE – the demoscene upgrade of the original game released in 2015. It's a phenomenal version with brand new graphics, five new levels (the C64 version now has 8 levels, the same as the original arcade version), a seamless sprite multiplexer and many other improvements. I often go back to this game, because for me it is the ideal. From the old days, like Ari, I have very fond memories of Ikari Warriors, both on the C64 and the Amiga. The games in this series may not have been as playable as Commando, but they allowed you to work with a buddy, and that was a total blast. I also have very fond memories of War Zone and Watchtower on the Amiga. Both games had good graphics and animation, cool visual and sound effects, although for some reason they lacked a music track. And yet, as we remember, Rob Hubbard's track from the Commodore version of Commando added even more playability to that production (the soundtrack from Amiga Commando was not so good).

For me the 'Commando-killer' would have to be Ikari Warriors. Not only does it feature fun two player co-op action, I like the variation of the game world and you can also jump into tanks to blast those baddies.

– Louie

Louie: Oh wow! Commando, now that brings back lots of warm memories as it was one of the first games I had played on my Commodore 64. I remember that I thought that the cracked version that I had was somewhat broken because sprites would disappear momentarily and music would sound all glitchy whenever too much was happening on screen. It wasn't until 30 years later, after the release of Commando Arcade SE that I learned it was a technical bug within the game. Anyway, back to the topic at hand, for me the 'Commando-killer' would have to be Ikari Warriors. Not only does it feature fun two player co-op action, I like the variation of the game world and you can also jump into tanks to blast those baddies. I think it is the slower pace of Ikari Warriors that wins me over as it makes the game feel more strategic in that you can take your time to pick enemies off and use your grenades wisely. But if I was to stretch the topic out to consider any style of top down run'n'gun style of games then Alien Syndrome would be at the top of my list. I really enjoy the mix of blasting, saving captured prisoners and upgrading weapons within the sci-fi setting and I am surprised that the game is not revered more than it is by C64 shooter fans. ■

▼ *Watchtower*, Publisher: OTM, Amiga AGA, 1996



In the colors of war

Desert Amiga

Photo by: Wojciech Połec

The photographs presented here are the result of meetings, the most important of which was a face-to-face meeting. The vicissitudes of fate meant that years later I renewed contact with Wojciech, a good friend from my studies at the Poznan University of Technology, with whom I had the opportunity to live in Student House No. 2 at the students' district Poligrod there. As it turned out, photography is among Wojtek's many current interests, a glimpse of which can be seen here as well as on the cover of the current issue. It is worth mentioning that the Amiga 500, immortalized in war colors, was also no stranger to the photographer. He clearly had a crush on this computer when he was young and had just used this "friend" model at his good acquaintance's house. Even though at that time, Wojtek belonged to "IBM clan" with his self-assembled PC 286, he spoke fondly of this friend's A500.

This nostalgia for the late 1980s and early 1990s, a period fraught with many groundbreaking yet turbulent events in Poland, is another source of the war theme of this issue. It is also the result of our second meeting and our passions. Among them is an interest in the military and historical reconstruction, as well as old computer hardware and software. The immediate impulse, however, was a photograph I saw years ago on the last page of the monthly magazine "Bajtek". In the June 1987 issue, in the article "Information

Challenge" (pl: Wyzwanie informacyjne) published there as part of the "Not only computers" (pl: Nie tylko komputery) series, one could see a shaggy gentleman wearing glasses and a headband. With a keyboard in his hand and a floppy disk behind his belt, the figure was clearly a pastiche of heroic commandos from such action movie hits of the time as "Rambo" or "Commando." The memory of this humorous styling gave me the idea of doing a photo shoot with Amiga in a military setting, which happened in the first attempt in March 2021. The timing was no coincidence, as it tied in with the 30th anniversary of the First Gulf War. Regardless of the assessments of this brief, albeit violent conflict in places, as well as its problematic legacy, it must be acknowledged that it made a huge impression on public opinion at the time. Indeed, Operation Desert Storm was the first large-scale computerized war, which, incidentally, was also quickly discounted by video game developers. Many titles published in the beginning of 90s is somehow a part of legacy of the Kuwait war in 1991. This creative use of war theme recalls conclusions made by the ancient philosopher Heraclites of Ephesus. This Greek philosopher saw war as both destructive and creative force. Is military confrontation or arm's race necessary to propel the human development? Anyway, trying to find an answer to this question is beyond the scope of this text and the entire issue. ■ Leon

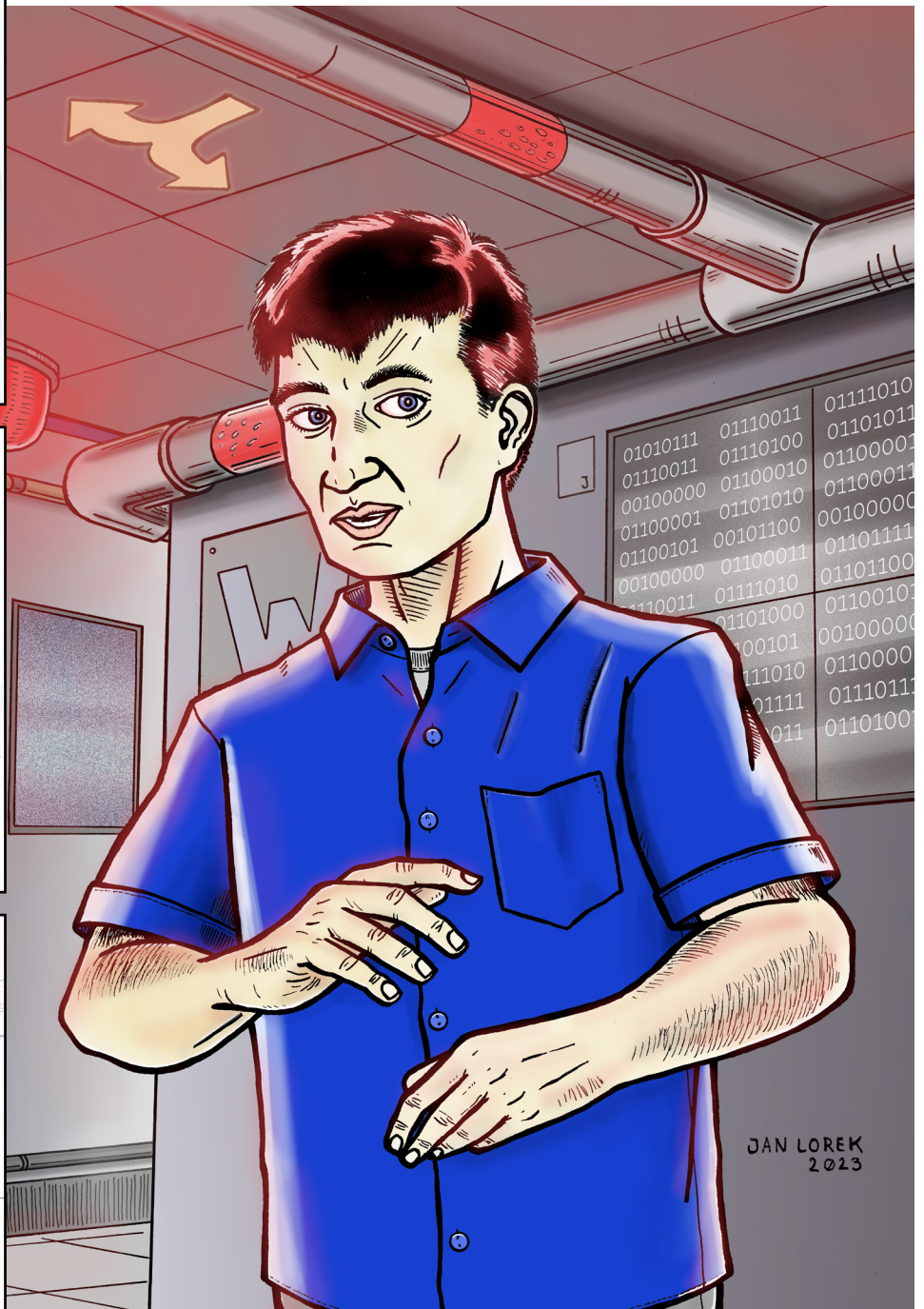


JOHNNY PRESENTS

The study of Caim

Today I present a cover study for the game "CAIM" for Bobr Games and Haplo. Before I made the drawing that can be found in the official edition, I made some sketches. It would be a pity not to show them. We have, as you can see below, a version with a figure who is afraid and hiding from some danger, and one with a bust with an expression of surprise. I even started putting mascara on the first one. I am posting the version that was on the cover without the logo, so that it can be seen differently, more precisely than on the packaging.

UNUSED ARTWORKS



SKETCH OF THE FINAL VERSION