WhatIFF? Issue 2.11

This PDF has been generated by a proof of concept AG2PDF function. It's very basic so far and not even close to finished but here you go!

WhatIFF? For The Creative Amiga User

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      <span class="shine">WhatIFF?<span class="fill">-Issue 2.11 September 2023</span></span>
                  For The Creative Amiga User


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Welcome to WhatIFF?

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                  -# WhatIFF? - Issue 2.11 - September 2023 #-
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      --EDITORS DESK--   -MEET THE WRITERS--
      A few word from the current editor about the magazine.
      ---SHELL TALK---
      A place for WhatIFF? writers and readers to air out their Amiga
      laundry or just talk about anything Amiga related!
      -----REVIEWS----   ---GAME REVIEWS----
      Reviews of hardware and software, old and new covered.
      -----GUIDES-----   -----ARTICLES------
      Guides and support to all things Amiga.
      -TALKING AMIGA--
      Hear from the people making hardware and software for the Amiga.
      -----LINKS------   ---AMIGA VENDORS---   ---AMIGA GROUPS----
      Amiga related links and Amiga vendor websites.
      -ADVERTISEMENTS-
      Vendor advertisements and more.
      -INVENTS CORNER-   ---COVER DISK---
      Get the latest from Kevin and find out whats on this issue's coverdisk.

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      NEXT ISSUE  *All content copyright of the respective authors 2023*
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From The Editor's Desk

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From The Editor's Desk - by: Timo Paul
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Hello again and welcome to another issue of WhatIFF?, the magazine that is free but gives you so much! As I sit here writing at my A1200 I have finally finished adding all the articles, reviews, guides and interviews. It has been an exhausting summer here in Japan with the average temperature being 35 degrees, and as much as I enjoy working on my Amiga it has made it a bit of chore this issue, however enough of my moaning and onto this issue.

We say hello to two new writers, Tristan Shiflett and Roald Strauss of who have contributed their expertise on anything Amiga audio related. Kevin Saunders is back with updates and John Scolieri has two guides regarding the fantastic PiStorm, Ivan Sorensen has a great piece on Amiga magazines from the past today. Sadly Steve Lord was unable to make it for this issue however fingers are crossed he will be back for the December issue.

The magazine readership has been steadily growing and it has been a real pleasure to have your comments. I have to give massive thanks out to AmigaBill for doing a section of his programme on the magazine. It is a real boost to all involved in the magazine when we see feedback like that.

Well I will not keep you any longer, I hope you will enjoy this issue and again if you you feel that you would like to contribute to the magazine please contact us at: submissions@whatiff.info

Free For All About Anything

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Shell Talk - by: Roald Strauss
==========

Physical media FTW!

Hello. My name is MisthaLu and I'm addicted to physical media.

At our house we have no subscription to any streaming service whatsoever. We cancelled Netflix looong ago after years of disappointment over the poor selection of movies. All we have now are DVD's and Blu-ray's. And that's what we prefer.

Here's why:

Availability
First of all, a lot of the movies we like to watch - classic 80's movies for example - simply aren't available on any streaming service. So in these cases there really isn't any other option for us. Granted, some older movies that we like to watch, can be found freely and legal on YouTube and/or archives, but it's always in some crappy quality version, and never with the subtitles we want. And sure, there's the option of illegal downloads - and then spend hours trying to find a subtitle file that matches that particular version of the movie. No thanks. We feel more comfortable sticking with legal options.

We Want The Directors Cut
Movies are a big interest of ours, and we usually prefer watching the Directors Cut version of the movie, rather than the standard theatrical version. Usually the streaming services only have the theatrical cut, and that's just not good enough for us.

Ours To Keep
We get to keep movies - in their original version. Streaming services are way too "unstable". Movies are removed from the selection without warning. Some are even edited decades after release, because someone somewhere got offended by something silly. You need the original physical media to prevent this silliness.

Quality
Streaming just can't match the quality of Blu-ray FullHD movies. Not to mention 4k movies. 'nuff said.

Price
Contrary to popular belief, physical media is actually cheaper than streaming services.

If you want a "full" selection of new movies, no single streaming service is enough. Expect to pay at least 3 service fees (and still not be completely happy with the selection of available movies).

Meanwhile, the newly released blu-ray version of the movie you're waiting to see on your streaming service, is available in stores for roughly one third the expense, or less (depending on how many streaming services you're subscribed to of course).

Older movies can be found on physical media - often still wrapped in foil - here and there for almost nothing. Often less than 1 EUR.

Display
Many people will emphasise the advantage of streaming: All your movies doesn't take up any space! But if you're someone who actually prefer your

movies to take up space, and be displayed on the shelves in the living-room for a cosy atmosphere, then streaming is not an advantage at all, is it?

No Interruptions
With the DVD or Blu-ray we're not risking any annoying interruptions due to problems with the Internet connection or the service provider. While I admit this is rare, we did experience it quite often at one point, and it was extremely annoying.

Bonus Content
Always nice to watch. Especially gag reels.
Yes I know you can always find these on YouTube, but as with everything online: You never know how long it'll be available, and you also have to watch 2-3 commercials before getting to it. Not worth it.

People who advocate streaming often argue with stuff like "Oh, but what if you take a break watching a certain show, and get back to it a month later - you can't remember how far you got! Streaming services remembers that for you!" Yes they absolutely do - and blu-ray does too! Even years after the disc was last played, the player can remember how far you got.

It is true though, that some blu-ray discs doesn't offer this feature - because the manufacturer can choose not to add it, for whatever reason. But the technology does support it. Even for shows spanning multiple discs - the blu-ray player will tell you which disc to insert, and start playing the next episode.

Even in cases where the manufacturer chose not to include this feature, there are still players - even DVD players - that remembers how far you got. So shut up already.

Welcome to the reviews section!

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- Reviews -

Hardware Review: OmniPort for Amiga 1200

What's an Omniport? Find out inside if this little adapter might be the expansion port the back of your A1200 has been waiting for.

Hardware Review: AmigaKit Triple LED Adapter

We have reviewed LED lights for the A1200 in the past, see if this one from AmigaKit has anything more to offer over the competitors.

Software Review: ImageFX 4.5

ImageFX has been around for many years and in 2020 the latest version was released with RTG support. Find out if it is still king of the hill.

Books Review: CD32 Disc Reference Guide

A new book listing all of the CD32 releases and more, read on to see if this is another Amiga book to add to your bookshelf.

Software Reviews: Aminet Goodies

Aminet top selection, each issue will feature a different contributor.

Hardware review: Omniport

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Hardware Review: OmniPort for Amiga 1200 - by Timo Paul
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Product Name
OmniPort - Multi port adapter for Amiga 1200

Developed By
Alinea Computer

Available From
amiga-shop.net

Price
25.95 EUR

Hardware/Software Requirements
Amiga 1200 with free expansion port

Test Machine
Amiga 1200/OS3.2/TF1260/Indivison AGA Mk3/A314-CP

Review

Omni - of all things, is an adept for the adapter from Alinea Computer.

For most of the A1200's life the rear expansion port has been mostly limited to SCSI ports or more recently video port adapters. However the OmniPort is the first board to really make use of the free space at the back of the Amiga.

In the famous words of the Cat "What is it?" - for those who do not know check out Red Dwarf series 2 episode 'Stasis Leak'. Well enough of my Red Dwarf geekery onto the review ...

The OmniPort is a small board that can be screwed into your A1200 motherboard, it provides two USB ports, one HDMI and one micro sd slot. The HDMI connector is compatible with the Indivision AGA Mk3 and if you have a Mk2 there is an additional cable available. The USB ports can be used with RapidRoad USB or Subway USB card. The Micro SD port can be connected to the internal SD card on a Vampire or interal IDE port with an additional adapter. Those with A1200.net cases will be happy to hear that the board also fits without issue. The Indivision AGA Mk3 video port unfortunately does not fit into the screw space on A1200.net cases so the OmniPort is ideal for those with a Mk3 and A1200.net case.

Installation

To install the board you will need take off the top cover, keyboard and remove the floppy drive or Gotek. From here it is a simple case of aligning the screw hole and tightening the screw. Another nice feature of the OmniPort is the included backplate which is available in a variety of colours to suit your case. I chose the transparent one as my case is an A1200.net transparent one. Fitting the cover can be a little tricky and requires some considerable pushing. Once the board is securely tightened and the rear plate in place, you can connect your cables. For my situation I only have the Indivision AGA Mk3 to connect, which was the main reason for purchasing the OmniPort. Again the necessary cables were already included and it was just a simple case of plug and arrange the cables.

Once the case was back on I could view my work, the transparent panel did not match my case exactly it still looked a lot better than before. Having

the HDMI cable secured tightly is a bit relief and having the option of adding USB capability or changing my internal HD to an SD card is very useful.

The OmniPort fills a need that 10 years ago that would not have been necessary but the numerous upgrades and addititions to the A1200 this little board has become quite the essential purchase.

Final Thoughts

I have found that the Amiga has become a black hole of sorts, with each passing year there are more and more ways to upgrade and keep your Amiga current. And amid all this the poor A1200 becomes quite a mess of dangling cables and wires. The OmniPort is something that addresses a need for cleaning up that mess. I find it to be very reasonably priced at 26 EUR and adds a bit of future proofing. You do not have to add USB capablity to use the card but if you do in the future then you do not need to suffer hanging cables out of the case or worse cutting holes into it.

On a final note, I did not mention in the review the use of the OmniPort with the PiStorm. For those of you who have a PiStorm and use the internal SD card, it can be a hassle changing the card. The OmniPort can be used with the internal PiStorm SD card with a small adapter, negating the need to open your case each time you want to change the SD card. If you have either an Indivision Mk3, A1200.net case, Subway, RapidRoad or/and PiStorm then this board is a great addition to your Amiga. Thank to Alinea Computer for their fast shipping and reasonable prices.

Hardware review: Amiga Kit LED

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Hardware Review: A1200 Triple LED Adapter (AmigaKit) - by Timo Paul
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Product Name
A1200 Triple LED Adapter

Developed By
AmigaKit

Available From
amigakit.com

Price
9.29 GBP

Hardware/Software Requirements
Amiga 1200

Test Machine
Amiga 1200/OS3.2/TF1260/Indivison AGA Mk3/A314-CP

Review

LED Adapters for the A1200 are two a penny, every Amiga shop is selling their version of the board and with each company comes variations with the board. For some reason I believed that we had reviewed an LED board in a previous issue but after checking I do not see one. So this has altered my review a bit.

To begin with, my LED light had stopped working due to being caught numerous times on the keyboard hole, the cable having been pulled out. At this time I went in search for an LED replacement and found one by Sordan for a great price, it also had the added advantage of having a plug at both ends of the cable. However the cable itself was very thin and as I had suspected it eventually broke. So it was time to find another LED adapter and one that was more sturdy this time.

Back in the day magazines would get sent stuff to review but with the market being much smaller now we do not have the luxury of having things sent to us for review. This means that we have to bargain hunt which in hindsight works probably better for the reader.

So to make a long story short, I eventually found an LED adapter that looked like what I was hoping for from AmigaKit. My main criterias were 1) a thick cable, 2) plugs at both ends, 3) fits into an A1200.net case. The AmigaKit adapter fit all three. The other added benefit of the AmigaKit adapter was the option to change the colours of the LEDs. So for example if you miss the red LED for power from the earlier Amigas you can have that for your A1200. You are limited to red, yellow and green though. I chose green for power, yellow for the floppy disk and red for the hard disk. It would have been nice if they had more colours available however it is very useful being able choose even out of the three.

From England to Japan

Ordering from AmigaKit was a fast and easy process as usual, however I did run into their 'extended' processing time for orders which was quickly sorted after e-mailing and posting on EAB. AmigaKit is a great company that has been around for a long time servicing us Amiga users when there was no one else. Saying that, it is sad to see how their customer service has gone down hill over the years.

Once the adapter was sent it quickly arrived, as usual their packing cannot be beat. The adapter is very solidly built, there are two LEDs together but it is difficult to see the line when in use. Installation was easy and there were no issues with the lights fitting into my A1200.net case, there is about 2mm of space either side which was a bit of a dissapointment. The cable is thick and sturdy with the connector on the top of the board. This made it a bit difficult to plug in the cable, especially if you have stubby fingers like myself. Placing the plug on the side or below would have made it a bit easier to access.

Once installed the LEDs were bright and nicely lit up my transparent case. I was happy with the order of LEDs I had chosen but at the same time missed the original green, yellow, orange configuration.

Final Thoughts

Being able to unplug the LED adpater from the keyboard is a small but not insignificant detail if you are often opening your case. The AmigaKit adapter is very good in this regard, the cable is strong, the lights are bright and you can choose the order they are installed. Even the slightly difficult access of the port on the board is not that much of a big deal.

If you are looking for a replacement LED adapter for your A1200 the AmigaKit board is a good choice at a reasonable price, it is compatible with the newer cases and has a limited range of options and most importantly has a thick cable and can be uplugged at both ends.

Software Review: ImageFX 4.5

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    Software Review: ImageFX 4.5 - by: Timo Paul
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Product Name
ImageFX 4.5

Developed By
Nova Design, Inc.

Available From
AmiStore
apps.amistore.net/imagefx/

Price
26.31 GBP

Hardware/Software Requirements
KS 2.1+, 2MB Ram, 20MB+ HHD Space

Test Machine
Amiga 1200 + PiStorm/TF1260

Review

When you think of graphics in the 80s and 90s the Amiga arguably was the leading platform with its 4096 colours available from the get go and programmes such as DigiPaint allowing the user to edit photographs it was the machine to have. Almost forty years later and the rest of the world has caught up and surpassed the Amiga, making it irrelevant when it comes to digital graphics, or is it?

If we look at the later Amiga models, mainly the AGA machines the HAM-8 mode is a great substitute for 24-BIT displays, tool that up with an accelerator and your old Amiga can become quite the image manipulator. What we need is modern software and while technically ImageFX 4.5 was released in 2020 it is still the newest commercial image processing software the Amiga has. So, lets take a look and see how it has fared after three years.

Originally I had planned to purchase the CD version in the hopes of receiving a physical manual with it but it turned out that the CD version was just that. As such I went for the digital download instead. Purchasing was smooth through the AMIStore App Store. A-EON Technology Ltd. had purchased the source code and future development rights from Woodall Design LLC in 2015. The latest version runs on Amiga OS and Morph OS.

While the purchase went smoothly I did not receive my key due to the some issue with the screen update. However a quick e-mail got me sorted with a download key.

Installation

You have a number of options when starting the installer:

* Install ImageFX 4.5
* Install ImageFX 4.5 Extras
* Install/Remove Hooks and Modules
* Install AnimBrushes
* Remove ImageFX 4.5
* Remove ImageFX Extras Only
* Install PowerStation

When you choose 'Install ImageFX4.5' another list of options will come up and they are:

* Install All Versions
* Don't Install Optimized Versions
* Install for 68020/68030 with Floating Point Unit
* Install for 68040
* Install for 68040 with Floating Point Unit
* Install for 68060

Choosing the version suitable for your system is quite easy, the only issue is if you have a machine with an LC060, in this case you will need to choose 'Don't Install Optimized Versions'. It takes a little while to install everything so during this time it might be a good idea to grab a drink or sandwich.

Under ClassicWB I had no issues with installation and loading the programme however when I tried to load up a picture be it a JPEG or IFF an error requestor popped up. After much head scratching it seemed that there is something causing an issue with my instaal of ClassicWB. To get ImageFX to work and load images I had to use Workbench 3.2 or BetterWB 3.2. Under 3.2 images loaded without any issues. So please note that if you are running ClassicWB and want to use ImageFX 4.5 it might be worthwhile upgrading to OS3.2 first.

What's New?

If you have used ImageFX before then the layout of 4.5 will be familiar, albeit now everything is contained with in floating windows. As far as I can see there is not too much difference regarding the filters and effects from previous versions. Clicking on `Filter` will present you with the following options:

- Dynamic Range
- Histogram Equalisation
- Colour Limit
- Anti Alias
- R.I.P
- Video Filter
- Median Filter
- Remove Grain
- Colour Balancing
- Count Colours

Comparing that to ImageFX 2, the filter options are exactly the same.

Distort provides more options however with the newer Image FX:

ImageFX 2	ImageFX 4.5
- Distort	- Displace
- Wave Distort	- Wave Distort
- Swirl	- Swirl
- Warp	- Warp
- Polar Blur	- Polar Blur
- Mosaic	- Mosaic
- Polar Mosaic	- Polar Mosaic
- Spherize	- Spherize
- Dream	- Dream
	- Liquid
	- Bubble

Effect has also been boosted with three more options:

ImageFX 2	ImageFX 4.5
- Remove Feature	- Remove Feature
- Oil Paint	- Oil Paint

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 - Disperse          - Disperse
 - Roughen           - Roughen
 - Apply Texture     - Apply Texture
 - Straw             - Straw
 - Crystallize       - Crystallize
 - Radial Star       - Radial Star
 - Lens Flare        - Lens Flare
 - Paint FX          - Paint FX
 - Hockney Tiling    - Hockney Tiling
 - Lightning         - Lightning
                         - Film Grain
                         - Fire
                         - Sparkle
```

Aside for the additions to Distort and Effect, the major difference between Image FX 2 and 4.5 is the interface, layers and a more built in hooks. The updated interface is a welcome update and makes using it with a graphics board a much better experience. The ability to have numerous windows open makes for a faster workflow. Thankfully the visual overhaul has not made the programme harder to use, if you have used ImageFX before then you will be right at home with the familiar buttons and layout.

ImageFX is different from other programmes in how it handle file creation an example of this would be when you want to create a new image/document.

With ImageFX you do not create a new file or document, instead you create a new `Buffer`, which can be done by clicking the `Buffer` button and then setting the dimensions, DPI, and RGB/Greyscale. Click on 'OK' and a window will pop up with desired settings. It is possible to load in a palette and apply it to your image or using the sliders set your own custom colours. I'll admit to it being a little confusing at first and requires more exploration. If you are used to the colour palettes in DPaint or Brillinace it could be a little intimidating at first. But we should bear in mind ImageFX is not an art package persay but an image processor. And this is where it really excels, the variety of filters, effects and additional hooks makes this the best image processor on the Amiga. While some of the actions can seem a bit clumsy by modern standards it still a powerful programme.

As a test in modern usage I loaded up some photos from a holiday. The photos were taken with a Nikon D3500, at the maximum resolution of the camera. Loading the image took a long time, around 2 minutes even with my TF1260 and PiStorm 32-lite connected. If possible using the onboard IDE on the TF1260 or the internal SD card of the PiStorm will make a difference in load times.

Once loaded I reduced the size to something more Amiga friendly. Dragging out the window will not enlarge the image, only the window. To do that you need to click on the (+/-) buttons. It took some experimentation and searching of buttons but I managed to distort some photos, cut them out and paste them into another image. Render times were fast, especially with the PiStorm, the TF1260 was slower but the screen update was faster. Hopefully a future update of will improve the chipram access and slower screen update.

Final Thoughts

ImageFX 4.5 is a welcome upgrade, the new interface looks great, the use of layers and extra filters have all kept ImageFX at the forefront of Amiga image processors. The ability to load and save a large variety of file formats makes this the image processor to go to. With all that power comes complexity and it will take time to learn how to use ImageFX to its full potential.

At the beginning of the review I mentioned that there was no printed manual with the CD, but there is an AmigaGuide manual included. It is a very well written and layed out guide and I suggest you keep it on hand when first

using ImageFX. While it would have been nice to have some examples of how to do certain tasks it is still very helpful. During my research I did find a manual for sale on the Barnes and Noble website for 17.99 USD, but it is only an eBook title.

If you are looking to do some serious image editing with your Amiga then ImageFX 4.5 should be your first stop. It can be used with the standard Amiga native modes or RTG and is very smooth on accelerated Amigas.

Book review: CD32 Disc Reference Guide

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Book Review: CD32 Disc Reference Guide - by Timo Paul
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Product Name
CD32 Disc Reference Guide

Written By
Amiga Jay

Available From
amigajay.itch.io
ebay.co.uk

Price
Physical 22.95 GBP
Digital 10 GBP

Review

I came across the CD32 book during my times trawling through Twitter or as it is now known as X(?!). Twitter is a great place to find out about new Amiga projects and the CD32 Disc Reference Guide is one of them. Written by AmigaJay it covers all 252 CD32 retail releases each with screenshots and a short review. The book is comes in at 260 pages all in full colour and is a very portable A5 size.

There are two versions available, the PDF and physical book, the physical book can be bought from eBay however due to the high shipping rate put on by eBay I contacted AmigaJay direct to buy straight from him. He sent the book promptly with tracking.

First Impressions

The book arrived after about a week and from the outset looks very professional with a cover of Zool standing on a flying CD and part of a CD32 in the bottom right corner. The cover is thick and glossy with the internal pages matte but also nice and thick. You get a breakdown of the contents on page 4.

Games - 161 titles
Entertainment - 19 titles
Education - 4 titles
Productivity - 21 titles
Reference - 23 titles
After-Market Games - 24 titles
Cancelled Titles - 185 titles
CD32 Disc Stats

As you can see the book does not only cover games but the whole spectrum of software that is available for the venurable CD32. On each page you get images of the game disk cover, rear, CD image, title screen and screenshot. At the bottom right is a rating from A-F and a short paragraph of text explaining a bit about the game and rating.

While I do not own a CD32 anymore, back when it first came out I was quick to buy the Dangerous Streets pack, the book is a very entertaining read. Sometimes it is nice to have something that you can just dig into quickly have a look around and maybe learn of a new title that you can play on a real CD32 or via emulation. I was surprised at the amount of titles that were released in the CD32s short lifespan and more so the newer titles that have come out. It seems the same old story though with the newer

titles again not taking advantage of the CD32 hardware.

Final Thoughts

If you have any interest in the CD32 then this is a great addition to your bookshelf. You do not have to own an CD32 to enjoy the content and it is presented in a very pleasant manner. AmigaJay has released another book the CDTV Disc Reference Guide which is a bit cheaper than the CD32 book coming in at 3 GBP if you want to read more about the Amiga CD machines. Releasing the book in A5 format was very smart, I think if it had been in A4 the book would not have been as useful. As it stands the small size makes it a very nice way to read about the games and other software releases for the last officially released Commodore Amiga computer.

Aminet Goodies - Writers top downloads from Aminet.

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- Aminet Goodies -
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Welcome to Aminet Goodies section, each issue one of our writes will list their top 10 downloads from Aminet. For this issue there were no writers with the time to write up a list. So this time round I will list some of the fun utilities you can download for Workbench.

1. CaBoom
   CaBoom is a utility that you place in your WBStartup and it recreates the exploding windows from the orginal Mac OS. You change the settings from the Tool Types when choosing Info on the icon. Pesonally I love this as it adds a bit more class to my WB.

   => http://aminet.net/util/boot/CaBoom.lha

2. PointerX
   When the busy pointer was changed from a sleeping cloud in 1.3 to the rather staid clock in 3.0 I was a bit disappointed. More so I wanted a busy pointer that was doing something while the Amiga was busy. There are several animated busy pointers available however I have found PointerX to be the best. Simple and effective.

   => http://aminet.net/util/boot/pointerx

3. BusyPointers
   If you want a bit more customisation with your animated pointers then BusyPointers is the utility for you. The default busy pointer has a slightly different design to PointerX but you can also choose a completely different style via the Tool Types setting.

   => http://aminet.net/util/wb/busypointers

4. PointerEyes 4.4
   For those of us computing in the 80s and 90s probably will remember installing a small eye utility that would follow the mouse. While having no real use it was a fun utility to have running on your Amiga. There have been a few released for the Amiga but PointerEyes 4.4 is the easiest to install and shows up in the titlebar unlike some of the other pointer eye utilities.

   => http://aminet.net/util/wb/PointerEyes.4.4

5. rewincy
   It can get a bit hectic when you have several windows open on Workbench and the only way you can find a window is by cycling through the bring to front button. Rewincy is a great utility that can be copied to the WBStartup drawer and when loaded you can cycle through all the open windows by pressing 'Tab and Left Amiga' together. A very useful tool for when working in the Workbench.

   => http://aminet.net/util/cdity/rewincy

A rather short list for this issue but I hope you will find some utilties that you have never used before or feel like revisiting. See you next issue when we should have another writer giving their suggestions.

gamereviews

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==============================================================================
                          - Game Reviews -
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             Game Review: CyberPunks 2 - Next Generation
   We have a play with the sequel to CyberPunks, CyberPunks 2 Next
   Generation and see how it stacks up to the original.
                          Game Review: NightShift
   A new futuristic point and click adventure game available freely
   on Aminet. Find out inside if this is worth downloading.

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Game Review: CyberPunks 2 Next Generation

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        Game Review: @CyberPunks 2 - by Timo Paul
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Product Name
CyberPunks - Next Generation

Developed By
Programming, Graphics, Audio by Adrian Robert Cummings

Available From
softwareamusements.com/mutationsoftware/index.html

Price
Digital 10.99 GBP
Boxed 16.99 GBP

Hardware/Software Requirements
AGA Amiga

Test Machine
Amiga 1200/TF1260/OS 3.2.2/Indivision AGA Mk3

Review

The original CyberPunks was released in 1993, available for ECS Amigas it featured bold and colourful graphics, with cartoony characters. With the sequence released 30 years later we have updated and more "mature" looking graphics. Having played the original in 1993 I had found it a fun but quite a hard game, including the time limit.

So what has changed aside from there being a 30 year hiatus?

The main differences are that the game is now supports only AGA machines, you can have two players at once and there is no time limit. The game can be purchased as a boxed game or digital download. I decided to go for the digital download as I do not have the space for keeping boxed games though the boxed version is tempting being only 6 pounds more. The gameplay has stayed the same with a top down view, the player needs to shoot the baddies and find keys to open doors, force field bypass circuits to deactivate the security force fields and MediPacks if you are losing energy. This time around if you pick up a MediPack it will affect your whole team. Collect Gold and Siler Crypto to earn enough money to buy upgrades, use the map to find your location and even gamble your crypto to give you the chance to buy more expensive items.

There is a variety of weapons that can be found throughout the game, they are:
* Basic Assault Weapon
* Orb Launcher
* Twin Laser
* Flame Thrower
* Special Weapons, these can only be bought from the terminal
* SmartBombUnit (use the spacebar to activate) Great for bosses!

How Does It Play?

I found CyberPunks 2 to be a very enjoyable game, more so than the orginal one from 1993. The gameplay has been made simpler, the graphics are good, more about them later, the music and sound effects are very effective and the gameplay is very nicely set. Quickly I found myself getting into the game and time quickly flew by. Before I knew it already an hour had passed

by, which is a great mark of a game. The control was tight and I had no issues controlling the characters with my wireless Commotron pad. An interesting mechanic of the game is that if you want everyone to fire in the same direction you need to tap in the same direction three times. It took me a while to realise this but once I had it figured out it became second nature. The first stage is not very hard at all but it is big, your mission objective is to save AmigaBill from his alien captors and the level ends in a hilarious scene with AmigaBill.

Each time you finish a level you are provided with a level code which can be entered from the title screen options menu. I was very happy to have this since the levels are quite large.

The graphics have changed quite a bit from the original game and I am not sure if it is for the better. They look less cartoony and more 'kick ass' but considering this is an AGA only game it seems to lack colour and is very dithered. In this regard the original ECS game colourwise looks better but the actual sprite design is better in CyberPunks 2. Things get better in later levels but it still looks like an ECS game.

The music and sound effects are great, very catchy music suiting each of the stages. Sound effects are spot on and remind me of shooters from the Megadrive and SNES, they have the same kind of muffled but bassy explosions and shooting sounds. When shooting with the laser it is just pure auditory bliss, reminding me of scenes from Aliens.

Will It Install?

CyberPunks 2 comes on two disks and is only available as an ADF, if you wish to run it from your hard disk you need to abide by the limited directory settings of:

```
 dh0:CyberPunks2
 dh0:Games/CyberPunks2
 dh1:CyberPunks2
 dh1:Games/CyberPunks2
```

I found installing the game with the WHDLoad installer made more sense than the suggested installation. Originally I had some trouble running the game on my machine which is an A1200 with a TF1260. I found out that by disabling the CPUSPEED SPEED=65 from my user startup allowed the game to run. Since then I have had no issues.

Final Thoughts

I had enjoyed the original and was looking forward to the sequel, the updated graphics while looking more like an ECS game work well. Moving away from the cartoony style was a smart move. The gameplay has been cleaned up and has made it more accessible and enjoyable. Overall I have really enjoyed this game and having AmigaBill in it is just the topping on a great game. Don't let the graphics put you off from videos online or screenshots, this is a very well constructed game that oozes gameplay and lots of fun.

Pros and Cons
+ Improved gameplay and mechanics
+ Very enjoyable shooter
+ Music and sound effects are spot on
+ Large enough to keep you occupied for a while
- Graphics are good but there is too much dithering going on that makes it look like an OCS/ECS game

Scores
Gameplay: 8.5/10
Graphics: 7/10
Sound: 9/10
Overall: 8.2/10 - Incredibly enjoyable arcade shooting fun than sounds and

looks great! Buy now!

nightshiftreview

==========
Game Review: NightShift - by Timo Paul
==========

Product Name
NightShift

Developed By
Eclectic Imaginations

Available From
nightshift.cx

Price
Free

Hardware/Software Requirements
AGA Amiga, 2mb Chip Ram, OS3.x, 23mb hard disk space, PAL output

Test Machine
Amiga 1200/TF1260/OS 3.2.2/Indivision AGA Mk3

Review

Last issue we had a look at NeonNoir a cyberpunk point and click adventure game and this time around again we have another cyberpunk adventure set in 2039 Boston. Exclusive to the Amiga it is available for free from Aminet or the official website: www.nightshift.cx.

It will take a little while to download on a real Amiga as the game comes in at 23mb, however once you have it downloaded it is a simple case of extracting the file and copying it to your desired location, no need for an installer or WHDLoad. What makes the game stand out from the get go are the HAM8 graphics and music. The developer has taken an interesting route by not using mod music but streaming music from the hard disk. This makes for a great soundtrack but also means a lot of hard disk access, so expect to see your HD light blinking most of the time. It should be mentioned that the game multitasks which is a welcome feature, as I write this review in ProText I have the game running in the background, very nice!

After you have loaded up the game, you get a nice title screen with some synthpop music streaming from the hard disk, you are unable to do anything until the music has stopped streaming. Once it has finished you can choose from the menu on the left, Start, Resume, Exit. Selecting Start will take you to the first screen which introduces your main protagnist, Sean, along with a profile picture. The following three screens set the scene to which you will be playing in. In nutshell the United States has been divided into two nations, the FSA Federal States of America and the RNA Republic of America. The game deals with the themes of surveillance and control by large corporations and governments. Finally another loading screen pops up with the text 'Chapter One: Night out', it is here you are introduced to the game proper with five action icons above, a picture of your bedroom on the right and text on the left side. The icons from the left provide the following actions: Game Options, Check Date/Time, Check News, View Map, and Use Phone.

From here is a simple case of moving the mouse around and click on hotspots, when you hover above a hotspot text will appear on the left. Unfortunately the mouse cursor does not change, it stays the same standard Amiga cursor which makes it a little difficult to play. Used to the standard system used in point and click games I was automatically expecting the pointer to

change. From here on you need to explore the game, clicking around the areas, travelling via the subway to other parts of the city and meet people. At the beginning of the game most locations are not available, you will have to meet certain people and travel to other places before you can even go into the mall for example.

Once you get the hang of the game mechanics and how to progress it becomes more enjoyable and the story is quite interesting keeping you in the edge of your seat at times. Crypto currency features a lot in the game so if you have a even a passing interest in it you will find this a very enjoyable. The game can only be progressed by figuring out the puzzles and riddles which means that it might be bit hard for non-native English speakers to enjoy the game.

Final Thoughts

I will not ruin the game by going over the story but there are few things that I would like to address. The game looks very nice, the HAM8 graphics are beautiful and really pop out of the screen. Saying that the music is a bit of an issue, while it sounds great you are the mercy of it. For example when you get to a new location the game will load background effects, this effectively stops the game as the hard disk is maxed out streaming the sound effects, you are unable to do anything during this time. This makes for a frustrating and jolting gameplay experience.

However I would not let this dissaude you from trying out the game, a bit of perserverance and patience will reward you with a very enjoyable game play experience and a story with a lot depth.

Pros and Cons
+ Beautiful graphics
+ Great music and sound effects
+ Story interesting once it gets going
- Music streaming can be jarring to gameplay

Scores
Gameplay: 7/10
Graphics: 9/10
Sound: 7/10
Overall: 7.6/10 - A beautiful looking game that is hamstrung by loading and audio issues.

Welcome to the guides section!

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- Tutorials/Guides -

PiStorm 32-lite RTG Setup

John Scolieri takes you by the hand and shows you all that is needed to get RTG up and running on your PiStorm 32-lite.

Running Elude Demos on PiStorm 32-lite

Do you want to run Elude demos on your PiStorm but find are always running into issues? Then worry no more as John Scolieri shows you how to run them on a PiStorm.

How to Reduce Noise in 8 Bit Samples

Roald Strauss takes you through the various processes to reduce the much hated noise in your 8 Bit samples.

LightWave 3.5 - Rendering DEMs

Learn how to use LightWave to render out DEMs and what is possible and not possible.

Modern Effects in Oldskool Trackers

Learn how to create modern sound effects in ProTracker and OctaMED to help add a bit more depth to your tracks.

Brilliance - Easy Dithering

A short tutorial on how to use the dithering feature of Brilliance and it's various uses.

Image FX4.5 Basics

A new series on getting started with the latest version of ImageFX.

PiStorm 32-lite RTG Setup

```
==============================================================================
          How to install RTG on a PiStorm32-lite - by: John Scolieri
==============================================================================
```

Following up on my Issue 10 review of my PiStorm32-lite accelerator in my Amiga 1200 I've decided to check out how RTG works on it. As there is currently no other PiStorm32 model (at least from the time of me typing this) and the 'lite' label was added to mitigate component shortage problems at the time of it's release so to save a few keystrokes I'll be calling it Storm32 from now on :-)

Before we start you need to have either a second monitor handy or a monitor that supports VGA and HDMI or DVI or Display Port. Also it's important to note that RTG with Emu68 does not provide a flicker fixer or scan doubler so your system needs to already have one installed or you need to have a monitor that can sync to Amiga frequencies/ screen modes. I personally use one monitor with a HDMI splitter box as seen in Pic 1 which makes it easier to switch from AGA to RTG modes though sometimes I still have to go into the monitors settings to switch from VGA to DVI modes which only takes a few button clicks.

So now that you have your monitor situation installed the first thing we need to do is to get a copy of Picasso96 which can be found on Aminet:

=> (https://aminet.net/package/driver/video/Picasso96)

or you can purchase the latest updated version which is still being developed today at Individual Computers website:

=> (https://icomp.de/)

Second thing is to download the latest VideoCore.card file at the Emu68-tools nightly builds website:

=> (https://github.com/michalsc/Emu68-tools/releases)

With both files downloaded you can install Picasso96 from it's built in installer and make sure to click on one of the graphics cards on the first install screen (it doesn't matter which one as you'll have to rename it later on).

Continue with the installation clicking 'proceed' button at each step until completion BUT DO NOT RESTART your Amiga instead copy the VideoCore.card file you downloaded in step 2 to LIBS:Picasso96.

Next go to DEVS/MONITORS and you will find the graphics board you already chose on the first Picasso96 install screen. You can change the name to something else if you wish or keep it as it is as the name of the file itself doesn't matter. Next open the 'Information' about the graphics board icon and go to 'Tool Types'. Locate the entry "BOARDTYPE" and change it to "BOARDTYPE=VIDEOCORE". Now make sure to click save before closing the screen!

Now you can safely reboot your Amiga 1200 and go to your Prefs folder on your Workbench and open Picasso96Mode. Next create a new setting by dragging the "New Setting" icon to the Setting screen area. You can now give this new setting a name and attach it to the VideoCore board by clicking on the "Attach setting to" pull down screen at the top of the window (it should show Board0:VideoCore or whatever name you gave it). At this point you can choose and test the built in screen modes shown on the right hand of the window by clicking the "Test" button. Once you've tested screen modes that work with your setup save changes to Picasso96 and your Amiga 1200 will

reboot.

Now you can go back to your ScreenMode Preferences and you should see all the new RTG VideoCore screen modes listed which you can select and save the setting you wish and enjoy your PiStorm32 with Emu68 and RTG!

After using RTG for over a month now I can truthfully say that it works flawlessly with no noticeable lag or screen defects on all the programs I normally use. The only downside (which is rather minor) is that the AGA to RTG does not switch automatically as noted above.

How to run Elude demos on a PiStorm

```
==============================================================================
         How to run Elude demos on a PiStorm - by: John Scolieri
==============================================================================
```

How I got my favourite ELUDE demos working again after installing my PiStorm32-lite Amiga 1200 accelerator.

With my 060 accelerator in my Amiga 1200 (running Amiga OS3.2) I just double clicked on the executable file form Workbench and the video started up great but this wasn't the case after I installed my PiStorm32 accelerator but with the power of IconX and TextEdit (or your favourite Amiga text editor) the problem can be solved as follows:

Note: For this example I'm running Elude's Kakao (AGA/RTG) demo released in 2012 at Revision

1- Open up your text editor

2- Type the following line without quotes "eld-kakao -double -rtg" (if using AGA type 'aga' in place of rtg).

   Note: eld-kakao is the executable demo file.

3- Save the text file as "kakao-runme" (or click me 1st etc.) in your kakao demo folder

4- In Workbench go to your kakao demo folder and right click on the kakao-runme text file created in step 3 and click on the 'Icons' tab at the top of screen and scroll down to 'Information'

5- Click on the 'Icon 'tab and click the 'default_tool' button and choose "SYS:C/IconX"

6- Click 'Save'

7- Now you can go into your kakao demo folder and double click on the "kakao-runme" file and enjoy the demo in all its AGA or RTG glory !

8- Now you can do the same thing for all your other favourite Elude demos.

I've attached a few screen shots so you don't miss any spaces like the first time I tried and wondered why it wasn't starting ;-)

Step 2 and Step 5

LightWave 101 - Rendering DEMs

==========
LightWave 101 - Rendering DEMs - by: Timo Paul
==========

If you are familiar with VistaPro then you probably have already heard of DEMs, for those not initiated by VistaPro let me explain a little about the DEM format. DEMs are 2D maps used by the U.S. Geographical Survey as a way to describe terrain shape and elevation. The entire globe has been surveyed this way including some planets in our solar system. Downloading and rendering pre-made DEMs is great but what if you want to create your own DEM for use in VistaPro or even better in LightWave?

We meet again old friend ...

Creating a DEM file is very easy, however you need to make sure you use the right software for this. In most cases I work with Brilliance but for some reason and the author was never able to find out why, ScapeMaker did not like IFF files made in Brilliance. So you will need to load up good old DPaint. ScapeMaker can import two sizes (258x258 or 514x514) of IFF files for conversion to the DEM format however since we want to save out the DEM file as a LightWave object we are limited to former size (258x258).

ScapeMaker works by reading the luminance values i.e. dark and light as elevation data, white being the highest point and black the lowest point. It also has certain requirements regarding file size and bitplane depth. 24-BIT, IFF64, HAM or anything with more than 6 bitplanes will not be accepted. 256 colour or grayscale low-res to high-res however will be loaded by ScapeMaker.

Armed with this information let's load up our old friend DPaint, remember to set the image size to 258x258 and a maximum of 256 colours. However in this case I suggest using 16 as we will be working exclusively in greyscale. Once you have DPaint loaded, we will need to create our pallete.

This is accomplised by using the menu, finding the 'Color' item, and selecting 'Pallete' and then 'Mixer' from the sub-menu. A new panel will appear, set the last colour to white and the click on the black colour and select 'Spread', click on the white colour next and a greyscale spread will appear in the panel. You can now click 'OK' to go back to the main screen.

Now the fun part starts, remembering that white is the highest elevation and black is the lowest draw an image, text, or logo. It might help to draw on paper first what you plan the image to look in 3D to help with applying the elevation values correctly. Save out the file as an IFF and then be ready to move onto the next part.

ScapeMaker

ScapeMaker v4 is the version that supports LightWave obj creation, however first we need to load the greyscale image we have created in DPaint. Once you have loaded ScapeMaker you will see two black windows with buttons above. Make suree 258x258 is selected and then click on 'LoadIFF'. When you have first loaded the IFF nothing will appear on the screen, you need to press 'MakeDEM'. A greyscale image of your IFF will appear, if it is not showing the whole image you can select 'Region', your image will appear with a floating window, drag out the window to cover your whole image and then click the close gadget. Click on 'MakeDEM' again to see your whole image.

If you save your DEM as it is, it will be only saved as a VistaPro DEM to save it for LightWave we need to copy some files into RAM before saving the file. ScapeMaker v4 comes with 5 pre-formatted LightWave objects

which need to be placed in the RAM disk when saving a DEM for LightWave. They are a '258x258' sheet divided into 4 quadrants of 130x130 points of which there are 4 of them as objects. The 5th and final file is a pre-formatted LightWave obj 'sheet' that covers the entire '258x258' object but at half the resolution, which gives you an objct of 17,500 polygons. With these files in the RAM Disk when you save the DEM ScapeMaker will look for the files and automatically create a LightWave object from your greyscale IFF image. From there it is a simple job of loading the object into LightWave, coloring or texturing it and then rendering. With this approach you can also import VistaPro DEMs and convert them to LightWave objects to create spectacular scenes.

I hope you have enjoyed this short guide on ScapeMaker and LightWave and as we reach our 12th issue after this one it might be time to say goodbye to the LightWave series of tutorials for a while and concentrate on some other 3D software. If you have a particular piece of 3D software you want to learn more about contact us and let us know.

How to Reduce Noise in 8 Bit Samples

```
==============================================================================
  How to Reduce Noise in 8 Bit Samples - by: Roald Strauss
==============================================================================
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DISCLAIMER WARNING: This article is written for the Amiga audiophiles only! Anyone reading this article, whom does NOT identify as an Amiga audiophile, assumes full responsibility for any mental and/or physical damage it might cause them. Neither the author nor WhatIFF? Magazine can be held liable for any emotional trauma caused by reading this article. Proceed at own risk!

The Quest For Less Noise

I began my exploration of the Amiga Protracker MOD format way back in the early 90s, and have created many MOD files in the 30 years that has passed since then. It became a passionate hobby that I've kept exploring till this day.

Despite many new modern trackers being available nowadays, I still find the 4-channel 8-bit MOD format more intriguing. The challenge in the limitations are simply more fun than having no limitations at all. So despite actually buying one of these newer and much more modern DAWs in recent times, I use Milkytracker to create my tracks 99% of the time nowadays.

It's been fun to be able to still discover new things about the MOD format even here in recent years. New techniques for making various effects. Alternative ways of putting things together. And most recently I began experimenting with ways to reduce the noise in the 8-bit samples.

Prior to these experiments I often asked around on various Amiga oriented chatrooms about ways to reduce the noise in 8-bit samples, but the only feedback I ever got was that it just wasn't possible.

Unfortunately I'm the kind of person who doesn't believe what people say. Probably because past experiences have taught me that most people don't actually know what they're talking about. The more they sound like they know, the less they actually know.

Therefore I often end up going on the quest myself at some point. And that's what happened in this case too. I wrote this article afterwards in order to share my discoveries with you.

Before getting started, I assume you know about the obvious:
- Make sure the 16-bit sample has a high an amplitude as possible. Even consider using compression in order to boost the overall amplitude
- Likewise, don't fade the amplitude in the sample - use commands for that instead.

Right. Let's get started then. Here's how to minimize the noise in 8-bit samples when converting from 16-bit.

The first (wrong) info

If you search for something like "how to remove noise in 8-bit audio", you will typically get a lot of results explaining that you need to apply "dithering" in order to get rid of something called "quantization noise".

Aha... and what exactly is dithering and quantization noise then?

Well, quantization noise (sometimes also called quantization distortion) is the noise that is created when reducing the bitrate from 16-bit (65536 distinctive sample values) to 8-bit (256 distinctive sample values). One

technique for converting 16-bit to 8-bit is simply to truncate the 16-bit sample, which basically means to just take the 8-bit byte part of the 16-bit sample. This means that a 16-bit value between 0 and 255 will be converted to the 8-bit value of 0. And the 16-bit value between 256 and 511 will be converted to the 8-bit value of 1, and so forth.

In other words, each 8-bit value will lose precision with up to 255 values compared to the 16-bit signal - and that's what's called quantization - because every 255 values gets reduced to a single value. And it is this lost data that causes the noise. The noise is actually the sound of the missing data.

Ok, so what is dithering then, and how is that supposed to solve this? Well, dithering is simply the process of "adding random noise" to the signal in order to hide or disguise the quantization distortion, and give back the audio a more natural sound. It supposedly replaces the quantization noise with a "white hissing" noise - which apparently many people prefer instead.

And there are many different kinds of dithering. The most common one is called Triangular Probability Density Function (TPDF), and you can apply such dithering to your sound with the following SoX command:

```
sox 16bitinput.wav -b 8 8bitoutput.s8 dither -S
```

Ok then, so far so good. Sounds interesting. But when we search for these things online, we tend to forget a simple but important reality: It's not 1995 anymore, and all of these articles about dithering are written by losers who doesn't even know what an Amiga is. They use socalled "modern professional" equipment, and often don't even talk about 16-bit to 8-bit, but rather 24-bit to 16-bit or even 32-bit to 24-bit. And the samplerates they use are usually 96 kHz or more.

Therefore, the dithering techniques they describe does not give the same results when targeting 8-bit 16 kHz, like we do on (stock) Amiga. Mainly because of the low samplerate we use.

The human ear can hear frequencies between 20 hz and 20 kHz, and is most sensitive to frequencies from 2 kHz to 5 kHz. Some people can even hear as low as 12 Hz and as high as 28 kHz. (And it is of course typically in this group you will find the audiophile people).

When you apply dithering to a 96 kHz signal - i.e. random small values on each sample value - it effectively becomes a frequency of its own that varies between 24 kHz and 48 kHz - meaning well outside the human hearing range. That's why it works. That's how you effectively move the noise away from the human hearing range.

Not so on Amiga though, because here we typically use samplerates between 8 kHz and 27 kHz. If we apply dithering to a 16 kHz sample, we're effectively adding a noise frequency that varies between 4 kHz and 8 kHz - which is no where near outside the human hearing range. It actually happens to be in the frequency range we are most sensitive to. In other words: It's the exact opposite result of what we're looking for. We're not getting rid of the quantization noise, but rather just adding an extra layer of "white hissing" noise on top of the quantization noise. So now we have noise with extra noise, which is easy to hear on the TPDF dithered sound given by the SoX command above. Useless.

But wait. There is also something called "noise-shaped dithering". Let's take a look at that then.

Noise-shaped dithering to the rescue?

Basically, noise-shaped dithering is where you try to shape the dither, so that it becomes not so random anymore, again with the purpose of moving the noise to a different frequency. A simple noise-shape dithering technique is

done by subtracting each sample value (of the applied noise) with the previous sample value. Because this will give a bigger chance of a higher frequency. So for a 44100 Hz signal, instead of the noise ranging between 11050 Hz and 22050 Hz, it will now be closer to 22050 Hz - which helps, because that's outside most people's hearing range. But for a 16 kHz sample on Amiga, it's still not a whole lot helpful. It'll merely bring the noise frequency closer to 8 kHz, which is still very audible to all of us.

For this reason, most of these noise-shaping dithering methods won't even let you process files with such low samplerates that we use on Amiga. The only one that will is called Shibata. And the SoX command looks like this:

```
sox 16bitinput.wav -b 8 8bitoutput.s8 dither -s -f shibata
```

It will be less noisy than the TPDF dithered output, but compared to the original truncated 8-bit version, it will sadly not reduce the noise at all.

At the low samplerates we use on Amiga, we don't have the option of moving the noise to a higher frequency outside the human hearing range. Our only option is to move it to a lower frequency. And SoX doesn't seem to do that.

Noise-shaping without dithering to the rescue then?

There is another tool out there called "Shibatch Sample Rate Converter". Like most of the SoX dithering methods, SSRC also refuse to work with lower samplerates. Lucky for us though, I'm a super hacker, so I took a look at the source code, and did some messy hacking experiments with the options. (Basically I just changed a couple of numbers so that the tool wouldn't dismiss my attempt using a lower samplerate than those supported, but if anyone asks, I was a super elite WhiteHat haX0r Uber geek who changed the world for the better - or better yet: Say that it can't be done any better! That way, we know someone will invest loads of time and effort to prove us wrong and provide an even better method in the near future).

I simply changed one of the profiles to "54264 Hz -> 27132 Hz". So that I have to feed it a 16-bit 54264 Hz file, to get an 8-bit 27132 Hz file back. To do this I obviously have to convert my 44100 Hz file to 54264 Hz first:

```
sox my16bit44100hz.wav -D -r 54264 my16bit54264hz.wav
```

And then I run my SSRC command:

```
ssrc_hp --twopass --bits 8 --dither 0 --pdf 1 0.1 --rate 27132 my16bit54264hz.wav my8bit27132hz.w
```

Notice I apply "--dither 0" which means I'm not actually doing any dithering anymore. This is all "just" noise-shaping. And that's probably the key.

I have no clue about inner workings of SSRC, but I can clearly hear a difference between this SSRC result and the previous SoX results - also when using 27132 Hz for the SoX command too. SSRC gives a much better result with far less audible noise.

The problem with these techniques though - both noise-shaping and dithering, is that it never actually removes the noise. It merely moves it to a different spectrum in the audio. And because it varies which frequencies different people hears best, there will always be some people who hear *more* noise in the samples where *you* hear the *least* amount of noise.

So what do we do?

Well, the only thing we can do really, is to consider the majority and/or trust our own hearing as musicians and pick whatever method *we* find the least noisy. Googling around seems to indicate that most people are very happy with the results that SSRC produce. And I definitely agree, despite my messy "hack" to allow 27132 Hz output.

So SSRC is definitely on the list of useful methods to reduce noise in our

MODs. But the downside is that it forces us to use a samplerate of 27132 Hz... And that's another thing to keep in mind when using the SSRC method: As soon as you play the sample at other samplerates, the noise-reduction effect may disappear. It may even result in more noise than the truncated sample will give.

Manual noise-shaping

Ok, so dithering is off the table. Dithering is no friend of Amiga. We do not like dithering. Noise-shaping seems to be the way forward though. So let's experiment some more with that.

SSRC is definitely on the list of useful methods, but surely we must be able to find more useful techniques? Preferably some that doesn't require us to use - and stick to - a samplerate of 27132 Hz. It would be nice with a method that can be used with lower samplerates, and which allows us to actually play the sample at different samplerates without losing the noise-reduction effect.

Let's take a look at manual noise-shaping on one of the most noisy samples in 8-bit: The sine bass.

I've created a few tools of my own that I use for this. First I use a little command-line tool to create a 16-bit C-1 sine tone in 16726 Hz. I then load this file with another small tool I made, which gives me a little simple graphical display of the 8-bit conversion along with the quantization noise that's created from the conversion (amplified to better see it).

Looks like this: Image 1

I can then manually adjust each sample value in order to shape the quantization noise into something a bit more smooth or soft.

Looks like this: Image 2

The result of this process is that the white hissing noise gets replaced with a harmonic distortion. The hissing noise is gone, and instead I have a socalled overtone mixed with my sine - which I very much prefer instead of the noise.

So to me, this is also a good solution for getting rid of the noise, and rather effective in the case of a sine sample. But it's not that easy to apply to all kinds of samples. The more complex the sound, the more difficult it is to find "pretty" shapes for the quantization noise.

The least amount of quantization

For the next experiment, we will pick the sample values that results in the least amount of quantization. If for example we start at a 16-bit value of 10, and the next sample value is 240. Then the least amount of quantization for the 8-bit samples would be 0 and 1, instead of 0 and 0 which will normally be the case for a truncated 8-bit sound. That way the quantization will be 10 and 15 instead of 10 and 240, which will logically reduce the noise a bit - move it to a lower frequency - but it will also change the actual sound. It will kind of constantly move the DC offset, and can therefore easily result in the sound moving outside the available amplitude. Comparing a normal sound with the sound produced by this method, we can see how the sound wanders off and leaves the window.

Normal Sample:
Normal Image

Sample with least amount of quantization per sample:
Least Amount of Quantization Image

While it's clear for me to hear that the noise has indeed been moved to a

lower frequency, it's also clear to see that this approach will only work for short sounds.

14-bit remains the ultimate solution

The final method on the list is the 14-bit trick, in which you need two channels and two samples. One 8-bit sample played at full volume + one 6-bit sample played at volume 1. This will give you a 14-bit'ish quality output, which gives the absolute best result of all the options - despite using lower samplerates.

So which method is the best?

Well, the best method is the one that works best for the specific case. Most of the time, the best result is produced by using a mix of different methods. Because each method has advantages and disadvantages.

Method	Advantage	Disadvantage
Dithering	No advantages at all!	More noise
SSRC	Moves noise down	Must be 27132 Hz
Manual shape	Noiseless!	Harmonic distortion
Least amount	Moves noise down	Wanders off
14-bit trick	Best result!	Requires 2 channels & sounds

The SSRC method is useful when needing to play snippets of recordings, e.g. when you have downmixed many channels into a single sound.

If you can't accept needing to use a samplerate of 27132 Hz for this - and if your sound is a short one - you can opt for the least amount of quantization method.

The manual noise shaping works best for short chip sounds.

The 14-bit trick has the disadvantage of needing 2 channels and 2 instruments, but it doesn't necessarily require more bytes than the SSRC method. I've found this method to be rather good for creating basslines with far less noise than plain 8-bit bass sounds has.

And that concludes my noise-reduction experiments. I hope some of you found it useful. :-)

Brilliance 101 - Exploring the Dither Tool

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Brilliance 101 Part 10 - by: Timo Paul
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Hello and welcome back to the 10th part of the Brilliance 101 series, this time round we are going to look at a very simple but effective tool if you have only a limited palette available. Often you will see dithering used in games on the Amiga and also on the Megadrive and SNES, it was a standard tool/effect to be used before we have thousands of colours available in game.

To get access to the dither settings you will need to find the 'Draw Mode' button on the right side of the panel. A right mouse click will bring up the panel. We will be working with the buttons 'Dither 1' and 'Dither 2' and using the sider at the bottom. But first a quick explanation of the differences between 'Dither 1' and 'Dither 2'. When you select 'Dither 1' with the dithered pattern being the current selected colour and the areas with no paint being always black. You can change the intensity of the dither by using the slider at the bottom on the panel. If you want a uniform dither then sticking to the values of 10 is a good idea, i.e. 10%, 20%, 30% and so on.

With 'Dither 2' paint is applied to the image in a dithered pattern using the currently selected colour and the background colour. Like 'Dither 1' the intensity of the dither is controlled by the slider. Of the two I find 'Dither 2' to the most useful since I can change the space colour between the pixels to another colour. Please remember that if you are painting with a background colour no dither pattern will appear as the dithered colours will both be the same.

You can use 'Dither 1' and 'Dither 2' with any of the paint modes, even with text, which can prove to be quite useful. Free hand painting with the dither tool can give you some neat effects and it pays to play around with it.

That is it for this issue, a rather short tutorial, however next issue we will delve more into the 'Draw Mode' options and see what other tricks are possible from there.

ImageFX 4.5 101 - Basics Part 1

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            ImageFX 101 - Basics Part 1 - by: Timo Paul
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ImageFX is probably the best image processor there is for the Amiga, however with this power comes complexity and it can be a bit tricky figuring out how to do things beyong scaling or adding simple filters. In this guide we will look at creating a digital summer holiday postcard. While this guide was done with ImageFX 4.5, most of what is done can be done in ImageFX 2.

If you anything like me then you probably have drawer full of photos from your holidays. Being it 2023 they are most probably digital photos and making our task much easier than 28 years ago. To begin with find a photo that you want to be your main image, for my example I chose a shot of a beach from Amami island. The photo is quite large, over 4,000 x 4,000 pixels. Now while this is fine for modern day systems the old 2MB of chip ram in your Amiga can barely hold an image that size, so either resize it on your Mac/PC or do it the correct way, resize it in ImageFX. This is easily accomplished by loading the .jpg file, this will probably take a while so go grab a cold drink and some snacks while you wait. Once the image has been loaded all you need to do is click on 'Size' and set the height and width. For our postcard lets use a high res but friendly 1024 px by 768 px, once it has finished scaling save the file as an IFF.

Now we have to choose our other images that we will paste into the main image. The same process as above should be followed but to help save Chipram reduce the size of the images to 500 px by 500 px.

In my example I found a photo of the lovely breafast that we had eaten at the hotel. What I want to do with the photo is shrink and create a pespective effect. This can be accomplished with the 'Transform' button. A window/panel will pop up with several types of transformations, select 'Perspective 3D Rotate'. A grid will appear over the image buffer, by clicking and holding the left mouse button you can rotate the image. I wanted to create an angled image, my settings were:

```
 Rotate X = 35
 Rotate Y = -34
 Scale X = -25
 Scale Y = -25
 AntiAlias = On
 Locked Ratio = On
```

Take note of Scale X and Y, this is very important as if you leave them as is your image will be cut off at the edges. Using the slider you can shrink the image so the edges will not be lost. Once you have your settings as you like them, click on 'Preview' to see if anything needs to be changed.

Now we will need to cut out the modified image, I have tried in the past to find an easier way using mattes but without a manual I had to try it another way. If someone knows of another way to do this please contact me at the magazine so I can update this tutorial accordingly.

So on to cutting the image, you will need to click on the 'Full' button and select 'Poly', then draw an outline around the perspective altered image. We need to cut out the image next and this is done by clicking on the 'Brush' button, a selector will pop up and you will need to choose 'Pick Up Region'. Next go back to your main image and you will see the cut image has replaced the mouse cursor, find a spot that you like and press the left mouse button to paste it down.

To recap what we have done so far is to bring in our main image, the post card background if you will, reduced it to a more manageable size. Then brought in another image, reduced it, transformed it using the Perspective 3D Rotate, cut it out and pasted it on the main image. What we need to do next is bring in some more pictures and do the same but changing this time the Perspective 3D Rotate settings, experiment and use the preview as much as you can to save time.

Once you have set your images its time to give the main image a bit more pizzaz! Find the 'Effects' button and choose 'Lens Flare', if you left click on the top preview image you can position the flare where ever you want, to increase the size of the flare left click, hold and drag the mouse sideways to change the size. Use the Preview box at the bottom to see if you are happy with the results and then click on 'Okay'. Finally to give our post card a more postcard'ish look, find the 'Arexx' button, when you click on it a requestor will pop up, choose 'Border.ifx', you can leave the border width to 10 or more. This will put a nice white border around the card making it ready to be sent to all your other Amiga buddies or uploaded to Aminet. Here is an example of the results you should expect.

That ends our first ImageFX guide, I hope you found it useful. Right I am going to go and grab a cold drink before I melt before my Amiga in this summer heat. Until next time, Amiga Forever!

How To Create Modern Effects In Oldskool Trackers

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==============================================================================
   How To Create Modern Effects In Oldskool Trackers  - by: Roald Strauss
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```

Many of the modern DAWs available nowadays comes with a lot of built-in effects, we can use: Echo, reverb, phaser, lowpass filter, highpass filter etc. All with "automatisation" options too, which allows you to change the levels of the effect dynamically. Fancy stuff!

But for some of us, the oldskool way of tracking just remains the most appealing and intriguing option. Producing oldskool formats like MOD, XM, S3M and IT that can be used on older classic platforms, instead of creating the bigger sized streamed formats that can only be used on the more modern platforms.

But these old formats generally doesn't offer such fancy effects options, so what do we do there? Simple: You simulate the effects.

In this article I will describe how you can achieve the following cool effects in these old formats - even in the 8-bit 4-channel MOD format:

- Echo
- Reverb
- Phaser
- Surround sound
- Lowpass filter
- Highpass filter
- Bitcrunch
- 14-bit quality in an 8-bit MOD

There are of course many other kinds of effects you can create with the old formats, such as Timestretch (using 9xx). But this article is not about the available built-in effects-commands. This article is about how to achieve other effects that isn't officially supported by the format(s) with effect-commands, but rather effects you can achieve mostly by playing two samples at the same time.

Now, obviously you can always achieve most of these effects simply by merging the effect into the sample itself: Load the sample into Audacity and apply the effect. Then replace the boring-effectless-sample with this new sample-with-awesome-effect in your track.

And I'm not saying that's a wrong way to do it in some cases. I use this approach myself sometimes, depending on the effect and the track. But merging the effect(s) into the sample will give a rather static result - always the same amount of the effect. And that's not an optimal solution in my humble opinion.

In this little guide, we'll focus is on how to achieve a more flexible version of these effects, where you can adjust the levels dynamically in your track, thus ending up with much more variation of the effect.

1. Echo

The most simple of them all. All tracker musicians (should) already know about this one. It is no doubt the most used effect in the list, and no one would ever think about merging this effect into the sample. I'm just including it here to make it a complete list.

To add an echo to a channel, simply copy the channel of the pattern to another channel - insert a few empty rows at the top for the delay, and

reduce the volume of all notes. That's all there is too it. And you can do this multiple times, thus using multiple channels to produce a bigger echo effect.

You can also add some panning on the echo-channel(s) (if supported by the format), to enhance the echo-effect further.

The dynamics of this effect can thus be controlled with the volume and panning of the echo channels, and of course how many channels you want to use.

You can hear an example of such an echo effect in my track:

Happy_Sunrise_HQ_8bit.mod
=> https://www.indiegamemusic.com/5098

2. Reverb

To create a dynamic reverb, we first need to produce a sample of a reverb.

Load your sample into Audacity, and apply some heavy reverb effect. If the effect is strong enough, the actual instrument will be almost gone, and only reverb will be left - which is what we're going for here.

Normalise and apply Compressor a few times to boost the reverb. Then create or find some good loop points, so the reverb continues forever.

This way you'll have a reverb sample to go with your actual instrument. We're not merging the reverb effect with the sample in this approach. We're merely producing a separate reverb sample to use. One that is really loud, and thus needs to be played in a different channel at a low volume.

What's the difference in the actual result, you ask? Well there are two advantages with this approach: First, you can now adjust the level of reverb you want, in the actual track using volume commands, rather than in the sample. This can thus be dynamic through-out the whole track.
Second, because the reverb sample is normalised and compressed, and thus played at a very low volume, it'll practically be noiseless in an 8-bit MOD. Had we instead merged a low reverb effect into the sample, it would have been rather noisy in an 8-bit MOD, due to the mix of low amplitude and quantization noise.

The dynamics of this effect is thus controlled by the volume of the reverb sample, and how many channels you use. An instrument that only uses 1 channel, could easily use 3 additional channels for the reverb sample.

But we only have 4 channels available in Protracker of course. So in an alternative approach that only use a single channel, we can merge the two samples together: Merge the instrument sample with the compressed and normalized reverb sample. This approach is mostly useful for short instruments though, and the idea is that you fade the volume of the sample to reduce reverb. The more reverb you want, the less you fade the sample. The advantage with this approach is that you only have to use a single channel. You can hear an example of such a dynamic reverb effect in my track:

Connections-MOD
=> https://www.indiegamemusic.com/5430

3. Phaser

A phaser effect is achieved by playing the same sound in 2 channels slightly out of phase.

In case of a looped synth/chip sample, a phaser effect can be achieved by copying the instrument to another instrument, and adding a finetune on one of them. Playing both samples at the same time will then create a looping

phaser effect. And because we used finetuning on the instrument, we have the effect column completely free for other effects.

Alternatively, you can use the same sample in both channels, using finetuning effect command on one of them. For a MOD you can use commands E1x and E2x. For an XM there's Xxy available for even finer tuning. You can also get some funky effects with 4xy. Any command that controls vibrato and portamento makes the dynamics of this effect.

4. Surround Sound

You can turn the phaser effect into a surround sound'ish effect simply by panning each channel to each speaker.

5. Lowpass Filter

Low- and highpass filters are essentially the removal of high or low frequencies. To create a dynamic lowpass filter on a certain sample, first load the sample in Audacity and apply a highpass filter. (Yes, you read that right - apply the opposite filter of what you want in your track).

Then invert the sample (also known as boosting the volume minus 100%).

Now load this highpassed inverted version of your sample into your tracker, and play it with the original sample at the same time. Make sure they're both panned the same.

You will now only hear the low frequencies of the sound, because you're playing the inverted high frequencies of the same sound at the same time with the same panning, effectively removing the high frequencies, thus resulting in a lowpass filter. Setting volume on the inverted high frequency sample will determine how much of the high frequencies to filter away. Full volume = All high frequencies removed. Low volume = Very little high frequencies removed.

Creating a lowpass filter this way will give you

- One normal sample
- One highpassed sample
- Dynamic lowpass result

You can hear an example of such a low pass filter done this way in my track:

 Unshackled.xm
 => https://www.indiegamemusic.com/4797

That's 64 levels of lowpass + 1 level of highpass.

This approach requires 100% precise timing of the player though. (Read more about that later). For an alternative way of achieving a simulated lowpass filter, you can simply create the lowpass sample in Audacity, and play that together with the normal sample, slowly decreasing volume of one while increasing volume of the other. That approach won't require precise timing, but you'll miss the highpassed sample as the other approach will give you.

6. Highpass Filter

To create a highpass filter is done the exact same way as the lowpass filter, except of course you select the lowpass filter in Audacity instead of the highpass filter.

Any equaliser effect you want to dynamically filter out can be achieved this way.

You can hear an example of a high pass filter done this way in my

track:

 Back_to_Basics.xm
 => https://www.indiegamemusic.com/3352

7. Bitcrunch

A bitcrunch effect can be achieved much the same way as the low- and highpass filters are done. Simply run your sample through a filter that cuts off the upper or lower bits, depending on what effect you want. Then invert the sample, and play both at the same time. Again you have the dynamics available by adjusting volume of the effect-sample.

For example, you could split an 8-bit sample into two 4-bit samples, producing a rather rough noisy sound, that you can slowly fade away and back using the volume.

```
outbytelow = (inbyte & 0x0f);
outbytehigh = (inbyte >> 4);
```

8. 14-bit quality in an 8-bit MOD

The same way you can play two 4-bit samples in an 8-bit environment to produce 8-bit sound with the bitcrunch effect, you can also play two 8-bit samples in a 16-bit environment to produce 16-bit sound. This may not sound a whole lot interesting at first. Why split up a 16-bit sound into two 8-bit samples like that? Because: This technique also works on certain older platforms, such as the Amiga, where you officially only have 8 bits available, but technically the Paula soundchip is capable of more: It can achieve 14-bit'ish quality. I will skip the technical explanation, and just say that you can - by splitting a 16-bit sample into an 8-bit part and a 6-bit part - actually get 14-bit'ish quality on Amiga. (The "ish" part means "Definitely much better than 8-bit, but probably not quite true 14-bit"). And who wouldn't love that bass to be less noisy?

A 16-bit sample consists of sets of 2 bytes. Shift the first byte of each set 2 bits to the right, and save all these bytes as "6bit.raw". Save the other byte as "8bit.raw".

Play the 8-bit sample at full volume, and the 6-bit sample at volume 1.

```
outbyte6bit = (inbyte1 >> 2)
outbyte8bit = inbyte2
```

You can hear an example of and 8-bit MOD with 14-bit quality in my track:

 Happy_Sunrise_HQ_14bit.mod
 => https://www.indiegamemusic.com/5098
and also in:

 Sneaky_Chick_14bit.mod
        => https://www.indiegamemusic.com/5052

(Try turning on/off channel 3 in Sneaky Chick to the difference.)

A note about low/highpass filter, bitcrunch and 14-bit

Low- and highpass filters, as well as bitcrunch and the 14-bit trick all require precise timing in order to work, because the two samples has to play 100% synchronised.

This is not a problem for the XM, S3M and IT format, since all trackers and playerlibs for those formats has such a precise timing.

But trackers and playerlibs for MOD files sadly aren't consistent when it comes to precise timing. In other words, these tricks won't work with all trackers and playerlibs for the MOD format. So if you insist that your MODs

must play correctly everywhere, you should avoid using these tricks.

But if you only need your MODs to play correctly in the productions where they're actually used, go ahead and use these tricks all you want. Just make sure the playerlib thati s used, handles the MOD(s) correctly. This can be done simply by listening to the track(s) when played in the game.

I've had game-developers help me test playback of MODs using these tricks on various platforms, and so far it seems that the only platform that has issues is the Amiga, and only with Protracker 3.x

Protracker 2.3d handles them fine. Same with Hippoplayer and Delitracker. EaglePlayer only handles the tricks for the right speaker though. The built -in playerlib in AMOS also supports them fine, tested on A500 and A1200.

So I'm seeing a lot more players that support these tricks, than players that don't.

Now go have fun playing with these effect-simulations. :-)

Articles

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- Articles -

Custom Music vs Stock Music

Roald Strauss takes you through the pros and cons of custom music and stock music. This is a great article if you are making music or looking for music for your game.

Amiga Magazines Yesterday Today

Ivan Sorensen takes a fresh look at the magazines of yesteryear and sees what they can offer in 2023.

Revisiting The Tokyo Retro Computer Users

A year later and we re-visit the Tokyo Retro Computer Users meet to see what the gang are up to.

#Articles - WhatIFF? Issue 2.11 - September 2023#

Custom Music vs Stock Music

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Custom Music vs Stock Music - by: Roald Strauss
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There comes a time in any ongoing game development project, where the game -developer has to make up his mind about whether he wants to find a musician to do custom music for his game, or if he can settle for the stock music alternative; finding existing ready-to-use tracks in the style and mood that matches the game.

Meanwhile, all the world's musicians have the exact same choice to make: They must also decide whether they prefer to do project work or stock music. The target platform doesn't matter. Whether it's a homebrew game for a classic platform like the Amiga, or a commercial game for a modern platform, it's still the same decision both parties has to make.

From the game-developer's perspective, having custom music tailored to the game obviously sounds tremendously appealing. "What could possibly fit my game more than music that has been specifically written for it?"

But it's not always the holy grail the majority seems to think: The musician doesn't always live up to the vision and expectations of the game -developer, and sometimes it sadly doesn't take more than that for the whole project to slowly crumble and collapse. In the case of a commercial project, custom music is usually also much more expensive than the stock music alternative.

From the musician's perspective, project work typically pays a lot more than stock music does. But it also requires much more time and effort to create - and being instructed on how to do the music can often kill the passion, which can easily affect the quality of the end result.

These pitfalls doesn't automatically render project work useless of course. There are lots of game-developers and musicians who manage to avoid these problems, and have a thriving teamwork for many years. I'm merely saying it shouldn't be considered a bullet proof golden path to succes.

For me personally, as a much bigger artist than businessman, I basically want an approach that lets me stay passionate about my music - which means I absolutely have to have the freedom to create exactly the style and mood I feel like, when and how I feel like it, in my own pace, for whatever platform(s) I feel like, in whatever filetype(s) I find interesting at the time, and without having a stressing deadline to worry about. It's all about artistic freedom for me: I just want to make the music that I want to make, when I want to make it. And then game-developers can take it or leave it. It would of course be nice to be able to earn a little pocket money on my music, but all the other factors weigh a *lot* more. I am *much* more of an artist than a businessman.

While wanting all of those things for myself, I of course also realise that the game-developer has a similar list of things *he* wants: Be able to acquire high quality music that fits his game perfectly, with a matching genre and mood, in the filetype that his platform and development environment requires, that has a certain max filesize, max channel use to leave room for sfx, all at a low cost - and of course delivered before the deadline.

So the question is: Does such a model even exist? A single recipe that delivers all the wishes from both parties at the same time, despite having such opposite interest?

In my experience: *Yes!* That is *exactly* what stock music can do for both

parties.

I've been composing music for over 30 years now, and have been offering my tracks to game-developers via IndieGameMusic.com for half of that time.

Here's what I've learned during those 15 years.

In reply to the most frequent statement I keep hearing in the "custom music vs stock music" debate: "Stock music will never fit the game as well as custom tailored music".

Well, apart from the already mentioned pitfalls with that approach, I've simply lost count on how many times I've put a stock track of mine online at IndieGameMusic.com thinking "This doesn't sound like game music at all. No one will ever request this track", only to be contacted 6-12 months later by a game-developer with the words: "Wow! This track is literally *perfect* for my game!"

The first couple of times I experienced this, I was rather surprised, because I hadn't expected anyone to find that track usable at all - and definitely not decidedly "perfect". But over time it made more and more sense to me. Of *course* that track is perfect for his game. It makes all the sense in the world. The keyword being "world" here.

Any track anyone makes will of course be perfect for *some* game out there in the big world. It's merely a matter of how long it takes for that particular game-developer to decide to create this game of his, and subsequently how long it takes for him to find the track online. And IndieGameMusic.com has a ton of search options to help the game-developers, so that part shouldn't take long.

And that's it really. That's the short and simple explanation of how stock music becomes an equally good option as custom music, for both the game-developers and musicians.

"But what if the game-developer wants exclusive music then", I hear someone yell out in the back. "Yeah! And how can the musician even earn a decent penny with this approach?", someone else joins in.

The answer to both of those questions is: "Licenses".
Just because we're talking stock music doesn't mean the game-developer can't get exclusive tracks. IndieGameMusic.com gives both parties plenty of options here:

If money is of no object to the game-developer, and if he insists on being the only one in the world using the track(s) for his game, then he can search for tracks available with an Exclusive Resale license. Tracks that hasn't been used for anything yet can be offered exclusively, and they will usually still only cost about half the fee that the equivalent custom music would cost.

Should the game-developer wish to pay even less, he can go for a mix of a Non-exclusive Resale license + a Platform Exclusive license for the specific target platform of his game. Buying the Platform Exclusive license prevents other game-developers from using the same track on the same platform. For newer platforms, this will typically cost the game-developer about 25% of the fee he would have payed for the custom music equivalent. And for the older classic platforms, such as the Amiga, it's typically less than 10% of the price for custom music.

Going even cheaper than that, the game-developer can also choose to settle for a Non-exclusive Resale license (without a Platform Exclusive license). Tracks sold with this license can be sold many times to many different game-developers on many different platforms, which is why the price is typically only between 5 EUR and 20 EUR per track. And that's why this license is the most attractive one for both parties. Many sales for the musician, and very inexpensive for the individual game-developer. But obviously not a solution

for those game-developers who want the music to be solely associated with their game.

Finally, there are also quite a lot of musicians who offers their tracks with a Freeware license. This means game-developers may request to use the track free of charge *if* their game is also free of charge. Notice that this license requires that the game-developer doesn't make money on the game in any way.

So as you can see, there's a *lot* of flexibility with usage and prices.

"Ok ok, but how does the musician earn a decent penny on this then?"

Simple: By offering a Non-exclusive Resale license + several Platform Exclusive licenses for his tracks. That way, the musician only needs to sell this combination of licenses 3-4 times in order to have earned the same he would have made on doing the same track as a custom one.
Or alternatively, sell the Non-exclusive Resale license alone 10-20 times.

To increase the chances of selling a track multiple times, it's a good idea for the musician to make the track available in a filetype that can actually be used on multiple platforms - and/or make it available in multiple different filetype formats - and/or make it available in multiple different qualities and filesizes. In other words: The musician must engage himself in the impossible mission of "pleasing everyone". Did you make a 4-channel 8-bit Protracker MOD below 80 kb? Then you can convert it with SNESMOD to a format compatible with the Super Nintendo. You can also use Timidity to convert to MIDI, or use 2MIDI from Un4Seen to convert to a MIDI+SF2 soundfont.

Offering the track in many different filetype versions logically increases chances of selling the track multiple times to different game-developers on different platforms. But it also increases chances of selling the track exclusively - to game-developers who is targeting multiple platforms with their game-project, and thus needs the same track(s) to be compatible with many different audio systems. Additionally, some game-developers who are targeting a classic platform, such as the Amiga, sometimes has to settle for a lower quality version of the music in the game itself, because of memory / channel / bitrate / samplerate limitations, and therefore sometimes want to include a CD with the soundtrack in a better quality with the physical release.

So to summarise: I recommend that the musician tries to offer his tracks in both WAV, MP3, OGG, XM, MOD and more if possible - all in multiple different bitrates and samplerates and qualities.

"Fine, but how often does the musician sell 3-4 Platform Exclusive licenses then? Or 10-20 Non-exlusive Resale licenses?", the sceptic continues.

I admit, this is something that requires a lot of waiting. But it does also depend on the track of course - and luck. I've sometimes sold a license just a few days after putting the track online, but at other times it took 2 years before I sold one.

This time span between sales is the only "cost" of choosing to do stock music instead of project work. But then again, I don't see how that differs a whole lot from the time the musician would sit around waiting to get hired for project work.

Of course, the target platform(s) matter too. As a musician, I'm obviously not expecting to get rich of making MOD files for Amiga games. I create those filetypes purely out of the nostalgic passion for my childhood computer, and also because I want to support game-developers on the classic platforms in general.

But it's not completely impossible to earn some pocket money on the old

formats either. I'm actually seeing quite a lot of interest in the MOD format. Admittedly not so much from Amiga game-developers though. My biggest MOD customers are actually Atari Jaguar developers. Gotta love that MOD can be used on so many platforms. But I hope to hear from more Amiga game-developers in the future. ;-)

Here at the end, I would like to encourage all Amiga composers out there to put your MODs on display at IndieGameMusic.com. Help out the game-developers on the Amiga (and other classic platforms) find music for their future projects, by building a nice stock music library with the filetypes they need. Thank you.

amigamagazines

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Amiga Magazines - Yesterday Today - by: Ivan Sorensen
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Greetings Checkmarks. Today I am going to talk about Amiga magazines and specifically as an Amiga fan in 2023.

Growing up in Denmark, we did have a couple of computer magazines with an interest in the Amiga, the most notable being the magazine known as Det Nye COMputer (among a few name changes) before the castle walls finally fell and it transitioned to being a PC-only magazine.

This was a decent magazine with the usual mixture of productivity articles, game reviews, hardware reviews, industry interviews and so forth. Not a bad magazine at all really, though the level of professionalism certainly varied over the lifespan. The letters page was often quite lively with the Amiga vs PC debates of the day.

However, I did not have a chance to look at the UK and US Amiga publications until many years later when I was able to find scanned archives of them online (many are available on archive.org these days). I have come to quite appreciate these magazines and so I wanted to talk about what they can offer you, from the perspective of someone living in 2023 and reading many of them for the first time.

Of course, the most immediate use is nostalgia: Reading about various pieces of kit that were being released, marvelling at the prices of a 20-megabyte hard drive and revelling in the excitement of the Amiga 3000 announcement. Nostalgia often gets a bad reputation in retro computer circles, but I think we are all prone to indulging in it at times, especially for something that was often a formative experience in our relationship with technology. And I suspect you are mentally better off spending an hour reading about Kickstart 1.3 than spending an hour scrolling on Facebook.

For those trying to understand the history of home computing, magazines are also an important view into what the general outlook was at the time. Amiga fans are quite prone to pet peeves (Piracy killed the Amiga! Doom killed the Amiga! Ranger! ST ports!) And it can be quite helpful to get an insight into what the actual thoughts were at the time. With online access being far more limited, magazines often acted as the common social ground for users and are often the best way to gauge what reactions were to a particular product or development.

Many of the bigger magazines were aimed at a more professional audience (Amiga World) or a general user audience (Amiga Format, CU Amiga) and would include tutorials and guides on topics from computer graphics to programming to using specific applications. These tutorials remain as valuable as ever for people looking to use their Amiga in the present day. In many cases, tutorials on specific topics can actually be difficult to find online and video formats suffer from being slow and inefficient compared to a concise written guide.

Game players of course benefit greatly from magazines. Game reviews could occasionally baffle and frustrate, but it can be valuable to see what the reaction to a game was before the internet forums settled on the one true answer. You may be surprised to see that many games considered mediocre today were rated quite well, while some fan favourites had frosty receptions. Perhaps a useful reminder that when it comes to whether a game is fun to actually play, it matters less if it has 4 levels of parallax or 3.

Gaming-oriented magazines often featured walkthroughs, cheat codes and hints as one of their main draws. These can be a lot of fun to try out on their own (some have errors or only worked on specific versions of the games, and others were straight-up hoaxes) but they are also often not documented well online. Sometimes the only answer to solving a particularly devious puzzle may lie in an old copy of Amiga Format!

A final word of course needs to be said about cover disks. These were disks with demos, artwork and sometimes full games or programs that came with the magazine. Later they would be replaced with CD options in some cases. Cover disks seem to have been more of a feature in the UK magazines and some users were able to satisfy all their productivity needs with cover disk programs.

Many of these have also been archived online and from a historical perspective, it can be a lot of fun to check out a cover disk after reading through that particular issue of the magazine. The concrete value is perhaps a bit lower these days, as the full version of a particular game is generally only a download away.

Of course, you could run an experiment where you rely entirely on cover disk games and programs for your Amiga entertainment and productivity needs.

Hmm, Ill be right back, downloading some cover disks.

tokyoretro

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Tokyo Retro Computer Users - One Year Later - by: Timo Paul
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Living in Japan is an amazing experience, and over the 17 years that I have been here, it has grown to become my home. While there are many great things about Japan, being an Amiga user is a bit more tricky. The Amiga was a presence here and there is hardware available and thanks to the Internet it is very easy to order all sorts of hardware delivered to Japan. However one aspect that I miss are the Amiga meetups and shows, in Europe and the States the Amiga is well catered to. But in Japan not so much, so when the opportunity presents itself to meet other Amiga users I generally jump at the chance. One year ago I wrote about my experience at the Tokyo Retro Computer Users meet up, there I met three other Amiga users and got down to some serious Amiga discussions. I had always wanted to go back but due to work or other commitments it was always difficult to make it. But finally my schedule lined up with a meet date.

On the 26th of August I woke up to another blistering hot day, my A1200 was packed up in a gym bag ready to travel with me. I took the train from Inagekaigan station on the Keiyo line to Hatchobori station and proceeded to the exit on the map I had printed out from Google Maps. Confident this time that I would not get lost I exited the station and strolled in the scorching sunshine with my A1200 slung over my back.

After about 20 minutes of walking I was quite lost, not having a smartphone meant I had to rely on my other GPS. So a quick call to the wife and she got quickly onto Google Maps finding my position from the surrounding buildings and guided me back to the station and then onwards to my destination. I must say thank you to her for putting up my with Amiga obsession and lack of direction.

Arriving about one hour late I got the building and quickly changed into a clean shirt, paid my entry fee on the 5th floor and then took the lift down to the 4th floor to meet the rest of the gang. When I entered the refreshingly cool room there was a small group of people already there working on their computers. Edoardo came over quickly to say hi and he also had my A600 board that he had repaired, upon taking removing the IDE cable four pins came off with it. He had kindly offered to replace the IDE connector. Shortly after that I met Sven who recently bought an A1200 and has been slowly building it up. This time he came with his Z80 mini computer that has evolved from a small motherboard into a fully encased mini computer with SD card slot and all the necessary IO ports.

This time around I also brought my A1200 in it's translucent case and new keycaps, I had wanted to see if someone could help me with an issue with the A314.device driver guruing on me when I did a cold boot. Sven was able to figure out a solution for this and I am testing the solution at this moment, if it continues to work I will publish the it in the next issue.

Soon other regulars arrived, Michelle brought a very small portable TV and was working on how to fix an issue of wavy lines appearing on the screen. Eventually it was traced down to a dodgy power supply, it seems this quite often the case with older hardware. She also brought along a stack of SNES games and hearing the sounds from Zelda brought memories rushing back of my youth. Another memeber Tom had brought an MSX to play games on and had a remake of Adventure from the Atari 2600.

It was at the point I remembered that I had installed some new games on my A1200 for *ahem* review purposes and decided it would be nice to get some game time in, so I managed to rope in Sven and Edoardo for some gaming on

CyberPunks 2 and our exclusive last issue Hamulet. The latter caused the most interest when I explained how the game was using HAM mode.

It was a quiet group this time around and while no other Amiga hardware was on display there was a new person I met who lives only 2 stops away and is a big Amiga fan. It was a pleasure meeting you Greg!

The rest of the was spent working on Michelle's SNES, Greg was having some troubleshooting done on his halfway built IMSAI replica. Saburo was back doing an RGB upgrade on his Intellivision replacing the RF out signal. It was amazing to see him work on such delicate and small board using his smartphone to figure out what needed to be done.

However all too soon the time came for everyone to pack up, Greg kindly offered to drive me back since he is so close to my area. It was fun ride back packed full of Amiga talk. The next event is slated for the end of September and I hope that I can make it. If you wish to join or just find out more then please visit the meet's website:

www.monochromeeffect.org

PS: You can find me there in the red shirt!

Welcome to voices of the people behind Amiga hardware and software.

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==============================================================================
                - Talking Amiga -
------------------------------------------------------------------------------

                  -= RNO Software Developer Interview =-
  If you ever visit Aminet it is highly likely you have seen an RNO product
  listed. We talk to the man behind the plethora of RNO software available
  for classic and next gen Amigas.
                   -= Erik Hogan: Scorpion Interview =-
  Rob O'Malley talks to Erik Hogan about the genesis of his game creation
  software Scorpion.
         -= Gunnar von Boehn: Apollo Team Interview Part 1 of 2 =-
  Part 1 of 2, we speak to the leader of the Apollo team with topics ranging
  from the Natami to the SAGA chipset.

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           #Talking Amiga - WhatIFF? Issue 2.11 - September 2023#
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RNO Developer Interview

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Interview - RNO Developer
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1. Thank you for taking part in this interview, you are the author of the RNO series of software, can you explain a bit about why you started the RNO series of programs?

Hi, and thank you for showing interest in my creations :)

I've always been a passionate music consumer, and for the last couple of decades I've mainly listened to music on my MorphOS machines when at home. I have created many support scripts for audio players with ARexx and with Lua too, that's after Lua was integrated as a modern ARexx replacement for MorphOS. As a side note, the Lua implementation in MorphOS supports existing ARexx ports, etc., which is very useful.

One thing I was missing when listening to music when I was not sat in front of my computer, was to have some kind of a front-end screen with larger text, so that I could see which song was playing even when I was at the other side of a room. I got some inspiration from the music player for the PS3 console, and started to wonder if could I produce a similar solution with cover image support, etc.. It would also be nice if it would work with multiple audio players.

Plain scripting languages weren't quite enough for the plan, or would have become too hacky with external requirements, and with C it would have taken way too long for me to produce a reliably working program with the features I wanted. I started to look at other alternatives and the Hollywood programming language seemed to be a promising option for this kind of "multimedia" oriented program. It had functions to show images in layers with effects, networking support, ARexx support, and so on. It was also based on Lua, which I had already learned, so I decided to give it a try.

Hollywood's documentation is incredibly good and it has an active support forum, so I got into it quickly. After a while RNOInfoScreen, the first application in the "RNO series", was born. Programming with Hollywood was really fun and time efficient, so I was able to be productive with it and started to fulfill other ideas I had.

2. What does RNO stand for?

RNO is a demogroup that I've been involved with since the late 90s. The name comes from 'Rave Network Overscan' originally, but we just use the abbreviation nowadays.

It's difficult to come up with program names that wouldn't have been used by other programs, and that's why I started adding RNO in front of my application names. I guess it's some kind of branding now, but it was just for the easi(lazi)ness at first :)

3. The programs are available across a variety of Amiga platforms (Classic, MorphOS, OS4.1) what programming language do you use for developing the software?

I've been using Hollywood for all my recent multiplatform applications. It's a cross-platform multimedia-oriented programming language, that originates from the Amiga, and has some Amiga specific features too. It's based on the popular Lua scripting language, even though it's pretty much hidden within Hollywood's own functions.

You might ask why Hollywood? Well, I'll try to keep it short. Even though I know C to some degree, and have even created some Amiga demoscene productions with it over the years, I don't feel comfortable enough to make well behaved/stable utility programs with it for our platforms. C is a low-level language where a single mistake can lead to catastrophes on Amiga related platforms where we don't have proper memory protection for legacy reasons. You would also need to learn low-level operating system specific coding, and generally spend too much time preparing all manner of things before getting into actual content production. That said, I still squeezed out an RNOInfoScreen screensaver for MorphOS in C, with an embedded LZMA packed Hollywood executable in it.

Hollywood, on the other hand, is a high-level language where you can just concentrate on producing the actual features for programs and forget the OS initialising stuff, etc.. It also doesn't mess or crash the underlying operating system or other programs if you create bugs in your code, so it's also safer for users in that regard. Finally, as a bonus, a program made in Hollywood can work on a dozen of other platforms, that's without any adjustments in the code.

The downside of using Hollywood is that it's a bit resource hungry for less expanded classic Amigas, but it's really great for Next Generation Amiga compatibles and faster classic solutions, or if you want to release any programs on mainstream or mobile platforms.

4. What hurdles have you encountered developing the software?

I have written all my recent applications under MorphOS, and development itself has been quite painless generally. I've found some Hollywood bugs and made some feature requests, but nothing that would have stopped me completing the programs before getting fixes or features in Hollywood itself. Hollywood's author is very active at fixing bugs and you can be sure they're fixed in the next version - if you just report them!

The biggest hurdles I've encountered are with external dependencies on other platforms. In theory Hollywood programs should work equally well on all platforms if there are enough resources, but in practise that is only the case when you're using Hollywood's core functions with its own windows. RNOInfoScreen and RNOPDF are good examples of programs that just work on every platform without issues, because they're built around Hollywood's internal features.

If you use external GUI toolkits (like MUI with a separate plugin for Hollywood) or other external programs, there are differences and difficulties between platforms. For example, there's 'classic' MUI v3.8, but then there are also newer MUI branches, and a clone (Zune) with incomplete compatiblity. I've also used external Shell commands from my programs, but even some core Shell features differ (like output-redirections) and LhA ports are from entirely different branches on some platforms, etc.. All this takes time and effort to test and solve, and in a worst case scenario you don't find a solution at all, but I'll say more on that topic in the next question.

5. Which platform has been the most difficult, and easiest, to develop for?

MorphOS has been the easiest to develop for, as it has the latest official MUI, based on the work by the original author, and the OS is also very compatible with Commodore's AmigaOS. Pretty much everything I've tried to do has worked on it virtually straight away, with only a few issues.

There have been some issues with the unofficial MUI branch on OS4, but the issues I've faced have now been fixed. OS4 itself dropped some legacy support at one point, which was a problem until a work-around was developed in Hollywood. Also, a long-standing very annoying crash issue was finally traced back to OS4's codesets.library, and now there's a fixed version

available.

So, in the current situation I can say that both MorphOS and OS4 are the easiest and most trouble-free platforms to develop for, from my point of view, with the tools I use. Both operating systems also have the required libraries built-in, which is way easier than hunting down all those dependencies - as on OS3.

So, then as to the harder platforms to develop for ... 68k as a platform is so diverse nowadays that it becomes difficult to develop and maintain programs on it.

As there are new AmigaOS versions that aren't fully compatible with the original OS. For example, the newer versions from Hyperion have created several incompatibilities and fundamental changes to Commodore's original AmigaOS versions, which has given me some grey hair. At one point I just had to make separate executables of my programs to pre- and post AmigaOS v3.1.4, prior to me finding work-arounds or otherwise getting fixed.

On the hardware side there are these quasi-software based solutions around FPGAs and SBCs, etc., and it seems that their internal software development lags behind in most cases, which can be seen as compatiblity issues. For example, I've been banging my head against a wall with the unpredictable behaviour of FPU versions of my software with Vampire setups. We've been tracking it back, all the way, to the C compiler used by Hollywood and finally to the FPU implementation in Vampires. At the moment I should just say, please don't use the FPU versions of my programs on Vampires - until their emulation gets better!

Finally, most 'real' "Classic" Amiga setups have the "legacy" MUI v3.8 installed, but many emulation setups are using later "Next Generation" MUI implementations. If I use newer MUI features in my programs, I have to implement checks as to which MUI version is discovered and then have specific code with disabled features for older MUI versions.

All in all, it's impossible for me to test my programs on all "68k" varieties out there, and I just can't guarantee quality, and user experience, with my 68k compiled programs in every situation, which annoys me a bit.

AROS (x86) is a whole different beast, and the most difficult to develop for from my point of view. None of my programs have worked straight away under it, and I always have to make some modifications and work-arounds to get them to work as intended, or at least in an acceptable way.

Zune (MUI clone on AROS) doesn't support newer MUI features and even legacy MUI v3.8 compatibility isn't complete. I've come across tens of features that don't work, or work with glitches, or just crash. I've had to change my design, drop some features when running on AROS, just accept some glitches, or even forget an AROS version entirely due to Zune.

Certain Hollywood plugins aren't available for AROS, making it impossible to complete some of my programs. HTTPS support (internal or external) has been non-existent until more recent efforts, but it's still very buggy - too much for my uses. Some basic OS features don't work as they exist in other Amiga compatibles, for instance, I couldn't find a way to redirect 'stderr' in Shell. I also had to write a custom solution to run ARexx scripts, and so on! You never know what will crop up when trying to run a new program under AROS for the first time. All these surprises make AROS development more laborious than others.

On top of that, AROS is available in many different varieties. First of all I tried to test my programs under Linux hosted versions but they were really crashy. Apparently native versions should be more stable, and my current setups under VMware feel better. It's still hard to tell if an issue is due to AROS itself or the platform/distribution you're running it on.

As a final note, I've also released some WarpOS programs, but I have no access to 'real' hardware. All I can do is to test them under MorphOS, which runs WarpOS binaries, but there seems to be some nuances between the real hardware CSPPC and BPPC. So, it's kind of difficult to develop "blindly" for WarpOS, but I still think that classic PPC users will appreciate that a program can run on a PPC rather than on a 68k. :)

6. You have created a large variety of software, which one are you most proud of?

It's difficult to choose, because I'm pretty proud of them all. I'm proud of the philosophy behind my programs, which is to make them simple looking and simple to use, but still have powerful modern features 'under the hood' that you haven't seen with other programs. To concentrate on what you really want to achieve with a program and find a fresh approach to its implementation. Sometimes people are too stuck with 'traditional' thinking and don't see all the coolness in my programs. :D

If I'd have to mention some programs anyway, I'm pretty proud how modular, and "effective", RNOEffects is for an image processing program. Each effect is in its own include file, and it's just a matter of removing or adding only one line in the main source code to enable or disable an effect. When enabled, the effect will be listed in a pull-down menu and is available for batch conversion, image combining, ARexx controlling, icon exporting, and so on. Every effect can be used in all those features, so it's nice that you can use all effects in a freely selectable order within it, for example, a batch conversion process. Most other programs just offer a limited custom selection of processing effects for these special features. RNOEffects also offers some nice tricks for alpha transparent graphics, which are harder to do on more traditional image processing programs.

RNOWidgets just looks so cool and uses 3D hardware accelerated layers on MorphOS and OS4, which is a true Next Generation feature to get realtime alpha transparent window backgrounds to make irregular shaped windows, etc.. Widgets are highly configurable in their appearance and you can use semi-transparent foreground images to create, for example, glossy effects over actual widgets, which offers a modern touch with them.

Finally, I can't forget a glowing mention for RNOTags, which is an ultimate solution for ID3 tag editing. It can load just about any possible variation of tag and it's quite a sophisticated program in its own right, but more about that shortly.

7. Which RNO program was the most difficult to create and why?

Even though it's taken time to develop some other programs too, the most difficult was, and still is ... RNOTags.

I was longing for a good ID3 tag editor to edit metadata on MP3 files, first on the Amiga and then on MorphOS, but years passed and I still wasn't pleased with anything I found. Programs either supported ID3v1 tags only or had only limited support for ID3v2 frames. They also didn't support embedded images, actually broke tags, or were just prone to crashing. I run MorphOS with its internal memory tracker enabled, as it's a good way to catch buggy programs, and it revealed that the 68k program I used most was behaving badly. After finding that I didn't dare to use it often, as it was usually: "write a tag with my fingers crossed, and reboot as soon as possible if it broke something". How carelessly I had used such programs in the old days, and it's no wonder my OS3 setup didn't stay stable for that many days without rebooting and the filesystem blew up occasionally. :)

When I had made RNOInfoScreen, which supports loading of embedded cover images from MP3 files, I really wanted an editor that could insert a cover image into MP3 files that they were missing from. So, I started to take a closer look if I could make a better program myself.

OK, what's an ID3 tag then? There are old ID3v1 tags, that are placed at the end of a file and have static fields for information, which sounds easy. Then there are newer ID3v2 tags, that are at the start of a file and are quite ambitiously designed. There's just so much content in the specifications, that programmers are likely to take shortcuts without full support. Then there are several different revisions of both main versions, which aren't even backwards compatible always or have some obscure definitions that nobody has ever used. What should I support in my program?

Well, everything of course!

ID3v2 specifications define over a hundred different kind of "frames", where each frame contains a certain piece of information about an audio file. Also there can be unofficial frames 'in the wild' to add to that amount, and some frames can be used several times in a tag. Many ID3 tag editors support only a narrow selection of frames, and then just ditch unsupported frames in the worst case. It's not OK to delete a bunch of frames when just editing, for example, a song title ... as even the internal tag editing options in Windows 10 did this when I last tried, sigh.

I wanted to make sure that all possible frames get preserved, even if my program wouldn't know what to do with them, but I also wanted users to be able to re-arrange or remove them if desired. It meant I'll have to use a dynamic list for frames rather than a fixed set of fields like most other programs do. I also wanted to allow users to add and edit any possible text based frames, and also some binary frames like attached pictures. It should also be possible to convert data between tag versions so that users could convert ancient tags to more commonly used ones.

OK, now I know what I want, but is there anything to help me in this process? Libraries/plugins I could use? No. Example source codes? Well, one for reading specific tag versions, but it seemed to have bugs like miscalculating tag sizes, and it doesn't help with writing at all, but it gave me some inspiration in how to get started. I decided to write everything from scratch myself, and handle files byte-by-byte and tags bit-by-bit.

I spent several months reading through and then interpreting the specifications over and over again, implementing reading and writing of tags, and trying to fill gaps on the information. If googling didn't help, then I just scanned through a massive collection of MP3 files to find a common pattern to make my own conclusion. For example, there is contradicting information if text strings should be null terminated or not in v2 tags, so I made an educated guess based on scanning of close to thirty thousand files from the 90s to current day, but I still left it user selectable in case someone else thought otherwise and wasn't happy with my default settings. There have also been other programs that create some non-standard mess with tags, or didn't overwrite a previous tag, but added new ones - resulting in multiple tags on a file, and all that kind of unexpected trash within files that my program would be able to handle and ideally be able to dispose of somehow. Even though I don't agree with everything in it, this old rant may give you an impression about the situation when you want ID3 tag support:

=> https://blog.codinghorror.com/a-spec-tacular-failure/

After all that ground-work, it was time to write the visible part of the program, and that became quite complex too. The GUI is very flexible and powerful with all frame adding and arranging options, sniffing corresponding frames from filenames, caching, copying, and conversion of contents, online help for everything, etc.. With all of this taken into account, this has been the *most demanding* program for me to write so far.

8. What plans do you have beyond the currently available RNO programs?

Updating current programs seems to be an eternal project, and some of the programs should be released on more platforms, but that would need more

testing. For example, RNOTags isn't widely available, as I planned to release it on a certain app store to get some compensation for all the effort I put into it, but the plan dried up and the program was left in limbo. It's only available for MorphOS as donationware now, but I'm going to release it for other platforms myself, in due time. It will take some time though, as I started to add a FLAC support for it, which is still far from being ready.

Though there are always ideas for totally new software, and the AROS camp is eager to fulfill some software gaps, so I get many requests and support from there (hi Salvatore!). RNOPublisher, RNOArchive, and RNOTunes were born in this way, and there's at least one new program I've promised to make.

I have some wild ideas for new apps and it would be interesting to try if they'd be do-able, but they might be just too ambitious to start with. I'd also want to make a couple of games one day, I already have ideas if I'd ever have time from application coding. Also, demoscene compos always inspire me to do something myself too, but I don't know if that will happen. I don't have any roadmaps or exact plans, it just happens if I get a do-able idea or some program needs an update quicker than others, but generally I have several programs under development simultaneously and they finish when they finish.

9. Thank you for your contributions to the Amiga scene, do you have any final words before we finish the interview?

Please give feedback to developers, be it on public forums or email, but it's always nice to hear if someone has tried or even uses your programs. Even a short comment gives developers a good feeling, and if you've ever wanted to code yourself, give it a try as you've no excuses! It's still fun despite some challenges :)

Also, thank you for all the people who have supported my software development! Thanks to Neil Pearson for being a tireless proof-reader for my ReadMes, MorphOS Library articles, and now for this interview too.

Finally, please visit https://jpv.amigaaa.com/ to check out the software I've talked so much about! :) There you'll find screenshots, YouTube videos, and other information there.

Erik Hogan Interview

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Interview - Erik Hogan (Scorpion) by Rob O'Malley
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Scorpion Engine is a game development system for the Amiga and Mega Drive Genesis conceived of and developed by Erik Hogan. It is designed to be easy to use and flexible, while still providing the performance and features needed to create high-quality games. Scorpion Engine is free to use, and it is supported by a growing community of developers.

1. Can you share your history with Amiga computers and Megadrive consoles? How old were you when you first encountered them, and what are some standout memories or experiences you had with these platforms? How did your usage of Amiga computers and Megadrive consoles contribute to your passion for game development and coding?

The Amiga was something I never had as a kid - I grew up on the C64 and it seemed like the Amiga was the obvious eventual upgrade path. To that end I collected issues of Amiga Power, hoping to have a substantial coverdisk games library by the time I finally got my hands on one.

The Amiga upgrade never came - Doom was on the horizon and the general consensus at the time was that PC was taking over the computer market. But I never forgot how badly I wanted one, and around a decade ago I got my CD32. The desire to do something creative with it led me into the homebrew projects that eventually became Scorpion Engine.

I don't have that many memories of the Mega Drive specifically, nearly everyone I knew was a Master System owner. But there was one standout - I remember seeing a demo of Road Avenger in an electronics store, and I was blown away by the gorgeous anime visuals (in spite of the lack of gameplay). That experience inspired me to do an unofficial Amiga port decades later.

2. Can you elaborate on the key features and functionalities of your game development system that differentiate it from other existing solutions for the Amiga and Megadrive and how do you envision your game development system addressing the needs and challenges specific to these retro platforms?

There are three key pillars for Scorpion Engine:

1. Performance - Scorpion is aimed at making highly performant games on unexpanded Amigas and Mega Drives. While this is a tricky challenge for a generic engine running on vintage hardware, every update brings improved speed through gradual conversion of the underlying codebase to optimised ASM.

2. Flexibility - Scorpion is designed to be flexible enough to tackle a wide variety of genres. There are projects in Scorpion that represent the platformer, shooter, action-rpg and beat-em-up genres.

3. Simplicity - Scorpion is meant to be usable for anyone who wants to use it. It uses modern file formats like PNG for graphics and Tiled for map editing, and the codeblocks scripting system is designed to be easy to use without needing to learn programming.

With these three key pillars, it very much is intended to be a 68K counterpart to engines like Unity, Unreal, GameMaker and Construct.

There are other game creation engines for Amiga such as Backbone and Redpill, both of which are viable options for making a quality Amiga game. And there are also game creation engines for other platforms such as

GBStudio and NesMaker. But for the Mega Drive, the only alternatives to Scorpion that I'm aware of require the learning of programming languages.

3. What advice would you give to someone who is interested in using Scorpion Engine to create their own games? What are the best resources for learning how to use Scorpion Engine?

Unfortunately there's not a lot in the way of good documentation or "from scratch" tutorials out there for Scorpion. There's so much to be done on the engine and so little time that I have to prioritise rapid progress over everything else.

For new users, I'd always recommend just downloading it and tinkering with the large number of demos that are included.

There's also a long running thread at EAB that is a common place to ask for advice at:

=> https://eab.abime.net/showthread.php?t=97450

as well as a growing Discord community on the PixelGlass server at:

=> https://discord.gg/VpWBCd8TGg.

The Scorpion community is always friendly and happy to help out newcomers.

4. What are the plans for future development of Scorpion Engine?

The future plan is to continue growing in terms of features, performance and platform support. The Amiga will continue to receive specific features just for that platform as well as general features that improve all platforms. Porting code from Blitz to pure 68k asm to improve speed and reduce the size of the engine is an ongoing process.

I've also recently been dwelling on writing a Rust runtime to allow Scorpion games to be ported to Windows, Mac, Linux, Web, Android and iOS. In addition, support for Neo Geo is tentatively planned in 2024, and Jaguar in 2025.

5. What are some notable projects that have been developed using Scorpion Engine, and which projects do you believe best showcase the features of the engine? Additionally, what projects would you like to see developed using Scorpion Engine in the future?

There's so many out there, I feel like I'm going to miss out on some really important ones! I do need to apologise for major projects I haven't listed below.

I think Mixel's "Creeping Me Out: Hex Night" is by far the largest and most ambitious Scorpion project that's ever worked on, there's so much depth and variety in it that it's an excellent showcase for what can be done with the engine.

Wonderboy by AcidBottle and Green Beret by Dante Mendes also show that the engine is capable of handling full length arcade ports. Also, Dante's upcoming Castlevania AGA is a good example for how visually stunning Amiga games can be.

There's also a handful of games like Boxx 4 (Lemming880) Duckstroma (UltraNarwhal) where they're very conscientious about performance, those games are excellent examples that show that the engine can run well on stock hardware when designed specifically for it.

Aeon's Legend (formerly known as 'Scorpion Boy') is a game that I've helped BitBeamCannon on that aims to be the best of both worlds, combining world class visuals with decent performance on stock hardware.

So far as games I want to see developed in the future, the number #1 is definitely AlarCity - my own, well overdue, running-and-gunning action RPG. Finding the time to work on it alongside all other Scorpion projects and the engine itself is a challenge, but it's always in the back of my mind and every now and again I dust it off and do a little more on it.

Finally, I've always craved a Shantae game or port in Scorpion Engine - if Wayforward ever offered me chance to work on a Shantae project, I'd say yes in a heartbeat.

Thanks Erik for taking the time to answer these questions, the engine itself is open source and found on GitHub:

=> https://github.com/earok/scorpion-editor-experimental

Gunnar von Boehn Interview

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Interview - Gunnar von Boehn (Apollo Team)
==========

1. Hello, can you introduce yourself and explain how you came to Amiga and what you do in the Apollo team?

My name is Gunnar von Boehn aka 'BigGun'. I was born in 1972 in Braunschweig Germany. Maybe the city name sounds familiar to you, as Commodore had its big European factory in my home city Braunschweig. So, it's no wonder that I had C-64 computer myself at a young age. I was lucky that my best friend's older brother was very active in the C64-unprotection crew "LCS", which gave me plenty of games and my friend and me also learned a bit of coding.

Inspired by the great C64 games we also tried to code games. With my very limited skills at that time, I spend a lot time working on a small C64 Indi vertical shooter game of a flying dragon named "King of the Air".

Commodore released the Amiga 1000 in 1986 in Germany. The Amiga was totally innovative. It was showcased in several local computer stores. The powers of Amiga were absolutely impressive. Games like Defender of the Crown blew me away. The combination of graphical and musical powers clearly showed how advanced the Amiga is. As I did not have the money to buy an A1000 right away - I spent most days after school in the computer store trying to get my hands on it to play with one of the showcases A1000. Staying each day in the computer store I met one day a guy from a very early Amiga cracker group "PowerStation" and we became friends.

With a stroke of luck, my parents won a little sum of money, which they invested to buy me an A1000 in 1987. I was totally happy - and immediately joined the Amiga cracker team "PowerStation" later "Traxxion" later "Sinners". Being in this group gave me access to an unlimited number of games but most importantly, it gave me access to all the assembly codes of their intros and cracktros. I got some good books. the excellent Amiga hardware reference manuals, and a 68K CPU instruction book. From then on, I was totally focused on learning how the great machine Amiga works. The working example codes of the intros helped me a lot to quickly understand both the 68k and the powers of the Amiga chipset.

It was clear to me that the Amiga is an engineering masterpiece.

The 68000 CPU is not only very powerful but also very coder-friendly and very nice to code on. The Amiga combines the CPU with the very powerful and smart Amiga chipset. The idea behind the chipset to have DMA-based independent working helpers Sprites/Copper/Blitter etc is genius.

Some people say school took a back seat, from then on for me.

I would say I spend a lot of time coding intros, demos, and trainers. While technically still at school, I had a part-time job at a local video company where I programmed video effects for them on the Amiga in assembly. I had at that time still my A1000 and later an A2000 with a 68020 CPU accelerator card and hard drive. I started dreaming of making a living as an Amiga game developer and started coding some games in assembly. "Ravage" was a typical Arcade shooter, "Wega Wars" was a Space Explore/Conquer simulation.

After I finished school, I did my military service and then spent my money on getting the brand new Amiga 4000 and coded a lot on it. The last major project I did on the A4000 was coding a relational database for the Amiga.

Then catching me by surprise, Commodore went broke.

This broke my heart. :(My plans on making a living as an Amiga game

developer were blown away. I knew how advanced the Amiga was and how much better its internal design was compared to the PC. So wanted to work with computers - it was not so easy for me to have to work with the technically inferior and to me "disgusting" PC designs.

I worked for a number of computer industry companies. After showing the database that I wrote on Amiga I got a job at MySQL. I also worked at SONY and later in hardware development at IBM and much later in CPU development at HUAWEI.

All the jobs that I got... I got because of the great amount of programming and hardware knowledge I had acquired working with the Amiga. It was at IBM where I met many other Amigans. We were at this time working together in the "CELL" team (heart of PlayStation 3). "CELL" was a joint development of SONY and IBM. We quickly became good friends who shared a love for the Amiga and talked a lot at lunchtime about how superior many concepts of Amiga were and still are. We assumed how wonderful the Amiga is to learn programming and learn how hardware works and how elegant the Amiga design is. We quickly agreed it was a shame that Amiga did not continue.

We then formed the idea - that Amiga was so great - that it's worth reviving and continuing it. Based on this we started the NatAmi (Native Amiga) project and our goal was to revive Amiga again. For the Natami we needed a CPU, which of course needed to be a 68K CPU. As only the 68K has the coder-friendly features which made Amiga such a great computer. As Motorola did not produce any 68K anymore. We decided to make our own much more advanced 68K CPU.

Which we named "APOLLO" - so this is where the Apollo Project started.

Today I am the team lead of the Apollo-Team and I am the manufacturer of the great V4 cards here in Germany. I spend my day working on computer development, core updates, answering user questions or making great Amiga-world-domination plans with our team. I enjoy very much working together, with a great team of "crazy" computer nerds, who have the same dream of giving the 68K the well-deserved status back, so somehow when Commodore went bankrupt my quest to revive the Amiga began :)

2. Can you tell us what the Amiga means to you?

The current Amiga landscape is very diverse. A cursory glance at the Amiga computing scene through internet searches will reveal a diverse number of solutions that aim to revitalise Amiga-experience. Options range from preservation-only based 'replica' printed circuit boards to PC's running software to emulate of the Amiga. In addition, there are also a lot of people to whom the look, shape or feel of the huge, cream housing with the rainbow checkmark, seems to be very important.

For the Apollo Team, and of course, especially for me, it is clear that it is about the inner values that make an Amiga an Amiga.

1. The efficient Amiga chipset
2. The powerful 68K CPU
3. The freedom of the Amiga OS

The Amiga combined excellent GFX and audio capabilities, with an OS which was swift, logical, understandable, straightforward 'and simple' and most importantly it left the programmer's freedom and didn't restrict them.

Combined with a CPU which was designed to make programming understandable and made the 'homemade' software development possible for everyone. And all this for an affordable price.

Such beauty isn't typically seen in other places today. You will not find it on Linux or Windows machines. Even today's 4 GHz PCs do often not have the swiftness, they are hard to understand and are absolutely not straightforward, they give the users less freedom, and are bloated and

inefficient, totally the opposite of the beloved Amiga design. It is clear that today's Computers are complex to understand and do not make the best out of the performance they could have.

That is why the Apollo Team decided to revive this timeless beauty of the Amiga architecture. So, the idea of the Apollo-Team is to combine the elegance of the Amiga design with modern possibilities and to develop and improve an Amiga, in the spirit of the good old times.

The vision of the team is not about the marketing, branding, logos or case design and of course, it is not about emulation or other ugly workarounds to make machines pretend to be an Amiga.

The Apollo Team's vision is to keep the fundamental inner values above alive and regard these as technical beauty and design marvels, which were created by brilliant engineers. Dave Haynie, former chief engineer for Commodore, once said "The Apollo Team, CPU and chipset innovations are truly in the same innovation spirit of the original Amiga inventors. Making the Vampire an Amiga, which the original team would have designed too."

3. Can you talk about how the history of the NatAmi project started in 2002?

It was in the year 2002 when a group of IBM developers, comprising Thomas Hirsch, Jens Kuenzer, Christoph Hoehne, Peter Kaltstein and myself started the 'Native Amiga' or NATAMI project. All these enthusiastic computer professionals were working for IBM at Cell-CPU-solutions like for example 'ROADRUNNER' which was at that time the world's fastest super-computer.

We 'Amigans' found each other very quickly during the coffee breaks. We spoke about how much better, more elegant and easier the work at IBM would have been with the Amiga and how much easier coding for 68K was than for IBM's PowerPC and how regrettable it was that Commodore didn't exist anymore.

In the beginning more for fun, but at some point, with a certain crazy seriousness, we raved about how nice it would be to revive the Amiga. At one of these conversations, it was Thomas Hirsch who said, that he had already started redesigning the Amiga-AGA - Chipset and that it was more or less working, 'THAT' was the starting signal to rewrite history.

The goal of the NATAMI Team was to reimplement the Amiga architecture according to the original clever Amiga spirit. The team had the problem of not having access to chip fabrication to build any Amiga chips. So we used a Field Programmable Gate Array (FPGA) technology for building the Chipset. FPGAs are 'writeable' chips just like a writeable CD-ROM. And just like a writeable CD-ROM, it can be used to put your own music onto it. A designer can put inside a writeable FPGA his own logic, thereby creating his own chips. Using writeable chips is not a new concept. Commodore did this already many times and in many Amigas or cards for Amiga often writeable chips were used. The 68040 CPU card of the A4000 for example, has ten writeable chips on it.

So the team of Amiga-loving colleagues at IBM decided to revive the Amiga. After we recreated the AGA chipset and finished Thomas's work, the next two steps needed, were to source many 68060 CPUs from Motorola and to build the NATAMI main board.

The goal was to create thousands of boards to help to grow the Amiga user base and create again a market for new Amiga development.

The reinvented AGA chipset did impress every Amiga fan seeing it. When Bill Buck the CEO of Genesi saw it, he proposed to add this AGA chipset to the 3rd generation of his Pegasos systems. He wishes to create a compatible system that could run real Amiga software directly in hardware. But as it turned out, this future Pegasos version never came to fruition, so the deal never came about.

The Pegasos Systems used a PowerPC CPU from Motorola chip branch Freescale.

The PowerPC chip was originally invented by IBM. As the NATAMI Team members were all working at IBM's PowerPC laboratory they were PowerPC experts and were programming PowerPC every day. They knew that this chip did not meet the requirements they wanted to revive the Amiga. The PowerPC is a fast CPU and it is very strong in floating point performance, but it is not programmer-friendly at all. And because, in the opinion of the NATAMI- Team the programmer friendliness was one of the main aspects of Amiga, the lack of good programmability was the show stopper for using PowerPC chips.

We knew that we needed new 68K CPUs to revive the Amiga. The programmer friendliness of the 68K CPU was what made coding for Amiga so great. Also, we wanted at least the 68060 CPU. If we want to revive Amiga, it should not be slower than the Amiga used to be. But getting thousands of 68060s was an impossible problem to solve.

Motorola stopped long ago to produce these chips, and you cannot buy them anymore. So, we hoped to convince Motorola to produce them again. Thomas and I arranged a meeting with Freescale, who is the chip production part of Motorola, in Austin Texas in 2008 using the help of Bill Buck, CEO of Genesi. Bill Buck had excellent connections to Motorola and arranged the meeting for us. The Freescale guys were very friendly and receptive to the NATAMI. At the same time, the Freescale vice president made it crystal clear that they could not produce the 68060 anymore. 'Sorry Guys, the tools are gone, the plans are gone, even the fab does not exist anymore. This means we would need to redevelop the 68060 from scratch - but the original team of developers is not with Motorola anymore, many are in retirement homes now!', he said.

So it was impossible to restart production with their current budget. But it was not about money, "Even if you put a million dollars on the table. There is no chance for new 68060 processors" Freescale's vice president told Thomas and me.

Despite this impasse, Freescale offered something else. The Coldfire CPU family. The Coldfire was interesting to evaluate because the Coldfire is some kind of relative to the 68K CPU. The goal of the Coldfire family was to use the same good and very human readable 68K instruction set, but at the same time to simplify the CPU by leaving a number of instructions out. This made the chip both simpler and cheaper to produce than the 68K.

But it would have the disadvantage that the missing instruction would trap out and need to be emulated by a software library. This concept was not new, the original Motorola 68060 CPU, which was used for the Phase5 Cyberstorm accelerators, already missed some instructions of the 68K family. And the missing instructions needed to be emulated in software. Emulating in software is of course much slower than execution in hardware. And while software libraries for missing instructions could be used from Workbench this was not possible when an Amiga game was directly booted. This was part of the reason why some games crashed on 68060. The performance hit for the missing instructions on the 68060 was manageable as only a few needed to be emulated and the majority was executed in hardware. For the Coldfire the situation was different as it missed a lot more instructions, so it was not clear how useful it could be in an Amiga.

Back home I was benchmarking the Coldfire and profiled the Amiga OS to see how many instructions of the instructions that the Coldfire lacks were used by the Amiga OS. The tests clearly showed, that the Coldfire chip was relatively weak in-memory performance and the Amiga OS used far too many instructions the Coldfire missed. The combination of poor memory performance and slowdown by missing too many instructions would result in Amiga OS and old Amiga applications only running slowly on it. So, in the end, it was obvious that for the NATAMI project, the Coldfire was not suitable.

The Team had to find another solution to bring NATAMI to life. After the

first shock, Jens and me brainstormed about developing our very own CPU, again with an FPGA.

If you know that IBM or Intel needs about 500-1000 people working 2 years on a chip design, this idea was more than crazy. IBM calculates for this high amount of man-working- hours typically a development budget of about 40 million USD for a new chip design.

4. What was the main idea behind the Vampire/Firebird/Icedrake Acclerators?

Many Amiga owners are faithful to their beloved Amiga and continue to use them all the years. We have developed the best 68K CPU of the world! Our Apollo 68080 not only continues the excellent programmability of all 68K it also adds new features to it and reaches a performance no other 68K was able to reach before.

Dave Haynie - former Chief Engineer at Commodore International acknowledged this and said on Facebook about the V4 technology: "If Commodore had the 68080 CPU then, Amiga would have ruled the world."

We believe that our Amiga fans should be supported to use their Amigas as long and as well as possible. Therefore we have created accelerator cards for them giving them the best 68K CPU and also allowing them to upgrade their Amiga chipset to Super-AGA.

Our accelerators allow owners of Amiga 500/1000/2000/600 and 1200 to upgrade their system to the fastest CPU and to Super-AGA, allowing them to play AGA games.

Yes, you can finally play AGA games also on your Amiga 500!

All the Amiga owners can use Truecolor, 3D acceleration and 16bit Audio features of the newest and best Amiga chipset.

These accelerators create a basis with the same performance and operties as our new Standalone V4 Amiga has. Having the same features makes it easy for software programmers to develop new powerful games again, which will ensure the survival of the Amiga over time.

5. Can you provide an overview of the Super AGA chipset?

I assume everyone knows the great original three custom chips of the Amiga?

The chief engineers in former times named the important audio chip Paula, the graphic chip Denise and the management chip Agnus.. The design of DMA channels, the power of audio voices, the possibilities that sprites and bitplanes offer, the concept of the Blitter is clever and enable the programmer to do very cool stuff. Probably the most important and most clever is the Copper that has the power to orchestrate it all. This design is clever and very elegant, it's creative, and it's even revolutionary today! It's a design for the future.

Furthermore, the Amiga chipset is very well explained with good documentation, and once you understand how it works you can do amazing things with it. In my opinion, the Amiga chipset is an amazing masterpiece of its own. Understanding the chipset itself means realising that this is the work of geniuses!

The chipset is fully DMA based. This means it can play audio, show GFX, show sprites (These are small moving GFX elements) or can copy parts of the screen just by using the Blitter, without any demand on the CPU. The copper, which is a special unit, does help to coordinate all this. This DMA-based concept was well ahead of its time.

Of course, when the Amiga chipset was developed some compromises had to be made to save cost. And the original Amiga chip designers planned to add many features in future chipsets. It was planned to add modes with more

colours. In addition there were plans to add Chunky Modes, these modes provide some advantage for certain types of games. It was also planned to add support for higher quality audio samples like 16-bit audio, more audio channels to make sound richer in games. The Blitter 'A the chip which copies a lot of Gfx in games. It operates in the original Amiga on 16bit and it was planned to upgrade this to 64bit. There were also plams to upgrade the Copper and it even to build 3D acceleration into the Amiga chipset.

And SUPER-AGA does all this which was ever planned and dreamed of for the Amiga. It adds all the features that the Amiga developer has ever dreamed of having.

Super-AGA is the Amiga chipset that Commodore might have built if Amiga ruled the world today.

6. What were some of the key features and specifications of the Super AGA chipset that set them apart from the first-generation Amigas?

The AGA chipset is a great design. The idea to have DMA channels which do all the work and offload the CPU is very smart and opens up great opportunities, without needing to waste CPU time. The Amiga chipset combines many features which increase the efficiency of the system a lot. While the Apollo Team admires this ingenious invention, it has to be honestly said that there are also limitations in the good old AGA. For example, the concept of the Amiga audio channels was great, but the OCS audio channels were limited to a 28 kHz maximum sample rate, which was excellent at their time but a little below the CD quality of 44khz today. The upgrade from OCS to ECS improved this and increased the supported sample rate of 56Khz, exceeding even CD quality. The Amiga had 4 DMA-based audio channels. Four-channel allows the creation of excellent Amiga MODULE music or excellent sound effects for games, but when you want to have both at the same time, 4 channels become a limitation.

Having 8 or 16 HW channels would make coding games with both awesome music and perfect sound effects a lot easier.

The original Amiga designers were aware of these limitations, and they planned to upgrade the AMIGA chipset with 'AAA' to improve audio by having more Amiga DMA audio channels and to improve graphics to 24-bit. So, it was planned not to replace but to improve the Amiga chipset. With this knowledge, it is clear that a Team with so many clever minds such as the Apollo-Team, has completely in the spirit of the developers at that time, further developed the AGA chipset. In this sense, the Super AGA chipset is the next step of the Amiga design.

New feature in SAGA	Benefit of the new Feature
SAGA has 1024 colour registers (OCS has 32; AGA has 256)	More colourful, next-gen looking games graphics card quality desktop and immensely improved graphics (e.g. games, programs, demos).
The audio channels are improved to support 8bit/16bit/32bit per channel.	Highest sound quality and professional studio standards.
The number of audio channels was increased from 4 channels to 16 channels.	High-quality music and much more sound effects at the same time.
The Audio channels support stereo panning.	Makes music and effects more realistic. Advantage for studio-quality mixing. Important in music production and game development

The Audio Channels support an infinite sample Size.	Allows high-end music composing, like in a real studio and simplifies coding a lot.
Every sprite has now 16 colours (instead of 4 colours) and can use his own colour palette instead of having to share colours.	Nicer-looking sprites, allow arcade game . ports, as Street Fighter to look like the original.
Sprites now support display lists.	Makes sprite coding much easier.
Hardware collision detection is much more fine-grained.	Makes sprite coding much clearer.
Copper was improved and upgraded from 16bit to 32bit now.	True colour copper gradience is now a piece of cake to code.
The Planes graphics DMA was improved and also supports now 8bit chunky/15bit and 16bit 24bit and 32bit TrueColour modes.	As planned by the Commodore guys. Is crucial for 3D games and graphics is much more colourful.
Modern features like 3D acceleration.	Finally, the 3D games we always wanted become possible.
YUV Video modes were added.	Hardware supports now DivX/MPEG video playback. You can watch DivX and MPEG movies.

In short, the Super-AGA chipset is the next generation Amiga chipset which the Commodore always planned to develop but never brought to market. But the most important thing is, that the SAGA chipset follows all the good and efficient Amiga ideas, and even with all the new great features it is 100% coded as a true Amiga chipset. You would never get such a swift elegant and beloved Amiga feeling with using a PC graphic card plugged into an Amiga or doing other ugly NON AMIGA workarounds.

As I say, "Since Super-AGA, coding games for Amiga never has never been so easy and fun!"

Thank Gunnar for your answers, we look forward to the second part of your interview next issue!

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Welcome to the links section!

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Links
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www.amiganews.net/en/
One of the most up to date and comprehensive sources for
Amiga news from around the globe.

www.eab.abime.net
English Amiga Board, the majority of the users are from
Europe, a very friendly and helpful Amiga forum.

www.exxoshost.co.uk
The resource if you need help or information about the
new Terrible Fire cards.

www.amibay.com
A great place for buying and selling Amiga hardware,
they also have some very nice people to give advice about.
Of recent it has become very hard to register on the
website since their server migration.

www.amiga.org
Probably the longest running Amiga forum on the world
wide web, most American Amiga users are on this board.

www.amigaworld.net
Another large Amiga website covering all Amigas, includes
news, discussions and classifieds.

www.amigans.net
English Amiga website covering next generation, emulation
and classic Amigas.

www.amigafuture.de
The longest running Amiga print magazine, issues are
available in English and German.

www.amiga-addict.com
Newest English Amiga print magazine, if you are missing
the likes of Amiga Power and Amiga Format, then this is
the magazine for you.

www.ka-plus.pl
Commodore and Amiga print magazine avilable in English
and Polish. Lots of games content.

mancave-ramblings.blogspot.com
Our own John Scolieri's personal website.
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If you have a link that you would like added to list
contact: submissions@whatiff.info

Welcome to the Amiga vendors section!

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     Amiga Vendor Links
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    Alinea
      https://www.amiga-shop.net

   Amedia Computers
     https://www.amedia-computer.com

     Amiga 68k
   http://amiga68k.com

       Amigakit
      https://amigakit.amiga.store

       Amiga MC1
   http://amiga1.com

          Amiga Shop
   https://www.amigashop.org

   AmigastoreEU
    https://amigastore.eu

   Amiga on the Lake
   http://amigaonthelake.com

   Arananet Retro Products
      https://www.arananet.net/pedidos

       Arcade Shopper
      https://www.arcadeshopper.com

      BuyElbox
       http://buy.elbox.com

   Electronics Is Fun
      https://electronicsisfun.com

   GGS Data
   http://www.ggsdata.se

   My Amiga Shop
   https://shop.myamigashop.com

   Relec
   http://www.relec.ch/fr

   RetroAMI
   https://retroami.com.pl

   Retro Passion
          https://www.retropassion.co.uk

   Retro Ready
   https://retroready.one

   Sell My Retro
   https://www.sellmyretro.com

   Retro Rewind
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https://retrorewind.ca

Sordan
https://sordan.ie

Tindie
https://www.tindie.com

Vesalia
https://www.vesalia.de

#Amiga Vendor Links - WhatIFF? Issue 2.11 - September 2023#

Welcome to the Amiga Groups section!

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     Amiga Group Links
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          United Kingdom United States Canada Germany Sweden
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          France Belgium Czech Republic Denmark Finland
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      Australia Russia Ireland Scotland Malta Japan
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   #Amiga Group Links - WhatIFF?#
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uk

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     Amiga Group Links
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     United Kingdom

  Amiga North Thame
  http://www.amiganorththames.co.uk/

  Birmingham Amiga Group
  https://www.facebook.com/groups/BhamAmigaGroup/

  LINCS Amiga Group (LAG)
  http://lincsamiga.org.uk/

  Norwich Amiga Group
  https://norwichamigagroup.co.uk/

  North West Amiga User Group
  http://www.bambi-amiga.co.uk/spudmiga/nwag/index.html

  South West Amiga Group
  http://www.southwestamiga.org.uk/

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        #Amiga Group Links - WhatIFF?#
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usa

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     Amiga Group Links
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  USA

  Sacramento Amiga Computer Club
  http://www.sacc.org/

  Central Texas Amiga Computer Society
  http://main.org/ctacs

  Central New York Amiga Computing Enthusiasts
  https://www.meetup.com/CNY-Amiga-Computing-Enthusiasts

  Central Texas Commodore Users Group
  https://www.meetup.com/Central-Texas-Commodore-Users-Group/

  Metroplex Commodore Computer Club
  http://www.amigamccc.org/

  Southern California Commodore and Amiga Network
  http://www.portcommodore.com/dokuwiki/doku.php?id=sccan:start

  Fresno Commodore User Group
  http://www.dickestel.com/fcug.htm

  Westchester Amiga User Group
  http://www.westchesteramigausergroup.org/

  Amiga Computer Users Long Island
  https://www.facebook.com/groups/202303702519

  Southeast Amiga User Group
  https://www.facebook.com/groups/SoutheastAmigaUserGroup/

  Stamford Peterborough Amiga Group
  https://www.facebook.com/groups/spaguk

  The Other Group of Amigoids
  http://togausergroup.org/

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        #Amiga Group Links - WhatIFF?#
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canada

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==============================================================================
     Amiga Group Links
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  Canada

  Amiga Computer Users of Edmonton
  http://www.amicue.org

 Amiga Users of Calgary
  http://www.amuc.ab.ca

 Toronto PET Users Group (TPUG)
 http://www.tpug.ca
 * Started in 1979, TPUG is also the operator of the annual World
   of Commodore computer show.

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        #Amiga Group Links - WhatIFF?#
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germany

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     Amiga Group Links
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  Germany

  AUCB Treffen
  http://www.amigaclub-bautzen.de/

  Amiga Club Munster
  http://acmuenster.de/

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        #Amiga Group Links - WhatIFF?#
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sweden

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     Amiga Group Links
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  Sweden

  Swedish User Group of Amiga
  http://suga.se/

  Amiga Computer Group
  http://www.amiga-cg.se/

  Syntax Society
  http://www.syntaxsociety.se/

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france

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     Amiga Group Links
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  France
  Triple
  http://www.triplea.fr/

  AFLE
  http://afle.free.fr/

  AmigaPower
  http://www.amigapower.net/

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belgium

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     Amiga Group Links
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  Belgium

  Belgian Amiga Clubâ€¨http://www.amigaclub.be/

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czech

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     Amiga Group Links
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  Czech Republic

  Luky & Amiga Klub Forever + Czech PowerPC User Group
  http://powerpc.lukysoft.cz

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        #Amiga Group Links - WhatIFF?#
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denmark

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     Amiga Group Links
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  Denmark

  Amiga Club Denmark
  http://www.amigaclubdanmark.dk/

  Danish Amiga User Group
  https://www.facebook.com/groups/101927439851660â€¨

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        #Amiga Group Links - WhatIFF?#
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finland

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     Amiga Group Links
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  Finland

  Finnish Amiga Users Group
  http://saku.amigafin.org/

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        #Amiga Group Links - WhatIFF?#
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australia

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     Amiga Group Links
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  Australia

  Sydney Amiga Users Group
  http://www.saug.org.au

  Amiga Users Group
  https://www.amiga.net.au/

  MAUG
  https://www.facebook.com/groups/MAUGr/

  Perth Amiga User Group (PAUG)
  https://www.facebook.com/groups/perthamigausergroup/

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        #Amiga Group Links - WhatIFF?#
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russia

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     Amiga Group Links
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  Russia

  Amiga Information Center (AIC)
  http://amiga.org.ru

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        #Amiga Group Links - WhatIFF?#
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ireland

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==============================================================================
     Amiga Group Links
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  Ireland

  Amiga Ireland Meetup
  https://www.facebook.com/groups/amigaireland

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        #Amiga Group Links - WhatIFF?#
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scotland

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     Amiga Group Links
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  Scotland

  Scottish Amiga User Group
  https://www.facebook.com/groups/626138110921245

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           #Amiga Group Links - WhatIFF?#
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malta

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     Amiga Group Links
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  Malta

  Amiga Malta
  https://www.facebook.com/groups/amigamalta

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        #Amiga Group Links - WhatIFF?#
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japan

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     Amiga Group Links
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  Japan

  Commodore / Amiga Fan Club Japan
  http://cfc.amiga.co.jp/

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        #Amiga Group Links - WhatIFF?#
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#Amiga Group Links - WhatIFF? Issue 2.11 - September 2023#

Ivents Corner

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September 2023 Ivents Corner
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I'm sure you're all enjoying the wonderful WhatIFF magazine as much as I am, my sincere apologies for not contributing to the last issue, a family health matter - my dear Wife had been extremely sick with a very rare disease, and a long recovery journey ahead, anyway back on to these fun Amiga projects.

Here are a few updates.

Amiga Art Contest 2023

The Amiga Art Contest for 2023 is officially open, Doug/10Marc recently posted his official video announcing the start of this very exciting competition. We have the same categories which are Hand Drawn, Photographs, 3D/Ray Traced, Animations, Music/MODS, Deadline is 11th November 2023. Please remember you can use Real or Emulated Amigas and Doug/myself are the two judges, Anyone who is a patreon of either of us can also vote for best in each category. We plan to have a few prizes, for the moment keeping some of them secret. As long as you have created the Art/Music using Amiga software your entry is valid. What we do also love is the description, process and inspiration story behind your creative efforts.

Best of luck :)

Boss Machine

Boss Machine I have been focusing on a lot more Big Bosses with detailed animation frames and ideas for how each of them move. I have posted lots of free content on my Patreon and various social sites, e.g. EAB forum :) Recently we did a test for some of those fast parallax scrollers to add more detail in the background, we can swap out some of the parallax splits with other unique graphic tiles. Another focus for me is the end level design. Technically the pixel height we have for some levels is 480 pixels and we have a few tricks up our sleeve to enhance end level areas such as adding caves to fly into, modifying colour palettes for the foreground/enemies that help blend into the background, I plan to post some of these ideas on my Patreon very soon. Dan and I need to test this out first so expect a quick video or two :)

In general Boss Machine is getting a lot more attention.

Apollo Invaders

Space Invaders for all Apollo Vampires is constantly improving and right now we are focusing on adding more mid bosses (ten) as well as a reward system for every zone you complete. The game has 100 levels and everytime you complete a zone you get a medal for your achievements. Alongside these Mid level Bosses will have tiny children enemies that are simplified versions of the mothership.

We plan to showcase this new update at Gamescon :)

We do also plan to release a boxed version of the game, so this is also exciting news for anyone who loves to collect physical media. Sneak peek of these enemy designs on my Patreon blog :)

Till next time,

Amiga Forever
Kev | Invent

Cover Disk Number 3

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            September 2023 Cover Disk Contents
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Welcome to our 3rd cover disk or rather 3rd contents folder, for this issue we have playable demo of the in development BitBeam Cannon game Aeons Legend, here are few words from the developer about the demo:

Aeon Legends is currently being developed by the BitBeamCannon team using scorpion engine. Please be aware the game is still in early development WIP and that the game is designed for at least 2 button controllers. 1 button is jump, one attack, hold up and attack to throw the projectile weapon, and top left shoulder button on CD32 (or space-bar) to switch the weapon you will throw between a boomerang or a bomb also, the little statues with e up-arrows are like guidesigns.. if you walk onto them and tap up text will appear with clues for the things you can do in the game.

This is not a real level designed to be fun, it's a demo level to show the progress and game features.

In addition we have multi-module for your listening pleasure, and here are words from one of the artists involved:

Acidic breakcore OctaMED multi-module by Mr. Roboto, df0:BAD & cTrix in 2023. Over twenty minutes of music in about 1.2 uncompressed megabytes of data. For best results please use the latest version of Hippo Player if not OctaMED itself. Look out for the upcoming physical floppy music disk release in late november!

What's coming up in the next issue?

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        Next Issue - 2.12 December 2023
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I hope you enjoyed our 11th issue, next time it will be our 12th issue out in December and it will mark two years of the magazine. In the issue we interviews with Claude of PiStorm fame interview, Steve from RetroPassion and a BitBeam Cannon. Reviews currently confirmed at the moment will look at the A600 with the latest Furia, PiggyBackNot RGB2HDMI v3 and Personal Paint v7.3. Plus more! Regarding tutorials we will continue the ImageFX series, an updated A314 guide on fixing device errors and clock. Finally there will be a special article on 'What Commodore Did Right' with some help from AmigaBill. As usual this is not all the content but what has been confirmed up to now. See you next time in December when it should be much cooler!

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            #Next Issue - WhatIFF? Issue 2.11 - September 2023#
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Meet the writing staff of WhatIFF?

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Writing Staff
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WhatIFF? is an independent magazine created by Amiga enthusiasts from around the world looking for a more serious magazine. The main writers at the moment are a small group but hope to grow in coming issues.

* Main Writing Staff *

Ivan Sorensen

John Scolieri

Kevin Saunders

Roald Strauss

Rob O'Malley

Steve Lord

Timo Paul

Tristan Shiflett

We are always interested in new articles, guides or stories, if you have something you wish to submit please send it to:
submissions@whatiff.info

#Writing Staff - WhatIFF? Issue 2.11 - September 2023#

timopaul

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Name: Timo Paul
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amifan (EAB)

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Websites:
www.whatiff.info
www.binarybeats.xyz

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Bio:

My journey with the Amiga started in either '87/'88 when the family got an A500 (Back then it was a computer for the whole family), I remember the monitor and A500 boxes almost being as high as myself. Before this time I had only been exposed to the ZX Spectrum and C64, using the blue Workbench for the first time was an amazing experience. When I saw DigiPaint in action I could not believe my eyes. From that moment I was a devoted Amiga user going through various Amigas, A500+A570, A600, A3000 and A1200. Over the years my Amiga has been used to creating digital artwork and for making or shall I say trying to make music. Then in the year 2021 I decided for some crazy reason that the Amiga scene needed a digital magazine similar to Amiga Report. It was my intention to have something that picked up where the great Amiga magazines such as Amiga World and Amazing Computing left off, providing a more serious look at Amiga usage through tutorials and reviews.

stevelord

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Name: Steve Lord

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Aliases:
stevelord (EAB)

Contact info:
stevelord@whatiff.info

Websites:
www.thedorkweb.substack.com

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Bio:

Steve enjoys doing impossible things on his Amiga 4000 and CDTV. Whether it's using his CDTV for email, playing Internet radio through his bluetooth speakers from his Amiga 4000, or talking to the world via the ISS from either. If people say the Amiga couldn't do it, he's probably looking for a way to do it. Steve writes his WhatIFF articles mostly using Arnor ProText.

johnscolieri

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Name: John Scolieri
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Aliases:

klx300r (EAB)
328gts (amigans.net)
aGS@C64_AMIGA (Twitter)

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johnscolieri@whatiff.info

Websites:
mancave-ramblings.blogspot.com

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Bio:

Like many Amiga users my first computer addiction was the mighty Commodore 64! One day close to Christmas of 1986 I drove to my local Commodore store called Comspec...I was in high school and played rep hockey at the time and didn't have the time I used to when I was in grade school to visit Comspec each weekend to check out the latest magazine and games. Imagine my surprise when I stepped into the store and immediately in front of me was THE AMIGA! It was looping the Defender of The Crown intro and I fell in love instantly! From that day on it was my mission to buy that Amiga but I had just worked a few part time jobs to help pay for my first ever used car and didn't have a hundred bucks to my name lol. The Amiga was close to $2,000 Canadian dollars (after taxes) and unlike my C64 my parents didn't fall for the 'I need it for school' rant again.

To (try) to make a very long story short I didn't save up to buy my Amiga until I started University in 1989. In the mean time I saw another Amiga called the Amiga 500 at Comspec and it was a lot cheaper than THE AMIGA but my eyes and heart and soul were only set on THE AMIGA! When I finally bought it that was the proudest/happiest moment I've ever felt and I jumped straight into University with Excellence! word processor and Logistix spreadsheet/ database. In my 2nd year I bought my first ever hard drive, a whopping 33MB which had its own case which sat atop my Amiga 1000 case. Later fast ram side cars showed up and I mingled with Manx Aztec C compiler in computer science class. Of course all the great games with awesome music/sound effects made my Apple/PC friends envious!

By my 3rd year we had a small Amiga computer club and a few of us got our first accelerator boards for our Amiga which was called LUCAS and was based on a design in a Transactor magazine. It had a 68020 at 16 MHz with FPU on it and it really helped out with the more complicated spreadsheets and compiling programs. Life was good, the internet was just starting up, I graduated University and got my first full time job and then the bad news of Commodore going bankrupt hit the newspapers, magazines, and BBS boards! There was so much activity going on still in user groups and computer stores so us Amiga users just figured that it would sort itself out. At work there were only PC's running AutoCAD and I despised using the early Windows systems and couldn't wait to get back home to my Amiga. Over the years busy with work and 'adult life' many of my Amiga friends moved on to PCs and I ended up getting my first Amiga 1200 and later Amiga 4000 for great prices. I was still amazed how the Amiga community was still active and so helpful up to the early 2000's. By then I was married and working harder than ever to save up to buy a home instead of

renting an apartment and my Amiga's were left at my parents house until around 2010 or so I read about a brand new Amiga which was coming out based on PPC CPU called the AmigaONE X1000 running a new AmigaOS4. I was skeptical at first after hearing about the technical issues with the earlier SE, XE boards with the initisal AmigaOS4 release but after consulting with some friends I joined the beta test team to get one of the first X1000 boards and I immediately felt at home with AmigaOS4.1 and have used it as my home Amiga ever since. Once I got some space set up in my house I got my Amiga's out of my parents house finally and eventually my original Amiga 1000 sits next to my AmigaONE X1000 and original C64 and of course my Amiga 1200 and 4000 came along too and with new accelerator cards and ram boards and spare motherboards and parts etc etc etc. Here I am today grateful to the Amiga computer and especially to the amazing Amiga community who back then and today has always been resilient, creative and helpful !

kevinsaunders

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Name: Kevin Saunders

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Aliases:
Invent (EAB)

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kevinsaunders@whatiff.info

Websites:
www.patreon.com/KevinSaunders
www.youtube.com/KevinSaunders
www.twitter.com/invent71
www.instagram.com/invent71/
www.ko-fi.com/kevinsaunders

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Bio:

My journey with the Amiga started around 1988, The first time seeing the Amiga 1000 in the shop window playing animations such as the Amiga Juggler I fondly remember. My Brother and I saved up for an A500, and eventually bought an A4000 (cybervision 64 card) and then an A1200 with an 030 accelerator. I loved collecting every Amiga Magazine with demo disks. My interest in game designing for the Amiga started with deluxe paint and I did dabble with The Miracle Keyboard but that skill in music didn't last. It is because of the Amiga that I now work in video animation and game design.

ivansorensen

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Name: Ivan Sorensen
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Aliases:
Weasel Fierce

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ivansorensen@whatiff.info

Websites:
everydayamiga.posthaven.com

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Bio:

Danish Amiga fan since the 90s. Started with a 1200 and a 1200 is my machine today. I am interested in the casual and the philosophical aspects of the Amiga computer.

My cats enjoy Turrican.

robomalley

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==============================================================================
  Name:  Rob O'Malley
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  Aliases:
  anaki rob
  Mr.Roboto

  Contact info:
  anakirob@whatiff.info

  Websites:
  systemofsound.org

==============================================================================

  Bio:

  Rob has been making music on Amiga ever since in the mid to late 90's
  his guitar teacher suggested that he get a drum machine to practice along
  to, and he instead opted to use OctaMED on his Amiga 500+ with A590 to
  craft beats and basslines

  Favourite quote:

  '...all she wanted to do was play with my ears all night' :P
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roaldstrauss

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Name: Roald Strauss
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Aliases:
MisthaLu

Contact info:

Websites:
wwww.indiegamemusic.com

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Bio:

Content coming soon.

tristanshiflett

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Name: Tristan Shiflett
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Aliases:
Manical

Contact info:
Discord: Manical#1992 / manical90

Websites:
manical.neocities.org

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Bio:
Manical started making music for the Amiga in early 2021 (April) and has released at some demoparties, and is planning to go to more along the way. He's in the demogroups MoonShine and Hokuto Force as a musician, and soon to be a coder or graphician. He started out with Protracker for his first 3 mods, then moved to FastTracker primarily, and then he started exploring Impulse Tracker and started making tracks with Furnace. His songs have gotten good reviews by many famous people in the demoscene, such as Jammer, Purple Motion, Skaven, and cTrix (Most known for his gAtari). Since his music journey, he's entered Syntax 2021, Mysdata 2022, Boozedrome VI (Which his track that he entered ended up on the official Boozedrome tape which was limited to 50 copies).

Favorite quote: 'You see, we are here, as far as I can tell, to help each other; our brothers, our sisters, our friends, our enemies. That is to help each other and not hurt each other.'

danielreimann

Name: Daniel Reimann

Aliases:

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Websites: Translator for www.amiga-news.de