

RawAGA v2.0

COLLABORATORS

	TITLE : RawAGA v2.0		
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REVISION HISTORY

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Chapter 1

RawAGA v2.0

1.1 RawAGA v2.0

"RawAGA" documentation

by Team HOI!

Version 2.0

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IN GENERAL
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1.2 FIRST NOTE

FIRST NOTE...

This program will only work under kickstart 3.0 (V39) and higher. If you try to run this program under a lower kickstart version, the program won't work at all. Note that this version of RawAGA doesn't use any 68010+ instructions, because there might be AGA computers with a 68000 processor in the future (who knows...?).

1.3 IN GENERAL...

IN GENERAL...

This utility enables you to convert graphics from the Interchange File Format (better known as IFF) to plain, raw data. The raw format is useful if you want to use graphics in your own productions. RawAGA is also useful if you want to convert your pictures into sprite data. Note that this

converter can be used for non-AGA pictures as well. A note to the old Amiga crowd: follow your fellow freaks and upgrade to an AGA machine!

Why bother with a raw format if we've got the highly compressed IFF format? To be accurate: if you're not into programming, this utility means shit to you. Just keep using your ol' file formats. However, if you're into programming this utility can prove to be extremely useful to you. If you want to display a picture with the computer you HAVE to present the graphic data to the computer in a raw format (i.e. uncrunched). The same goes for sprites and Blitter Objects.

1.4 RAWAGA

FEATURES: RawAGA...

- handles all types of IFF pictures;
- handles (anim)brushes;
- handles Anim-5 animations;
- is compatible with V39 and AGA computers;
- converts while loading (for low memory situations);
- converts AGA pictures as well as old picture types;
- includes a frame cut/save option;
- saves as either aligned (interleaved) or normal raw format;
- can generate sprite data (2 and 4 bitplanes (attached));
- can generate the special AGA sprites (32 and 64 pixels wide!);
- can generate a colormap which is ready to use for a copperlist;
- can generate a colormap for use with the LoadRGB32() function.

1.5 INSTALLATION

INSTALLATION...

Drag RawAGA's icon into your favourite utilities drawer on your System partition or floppy. Double click on the icon and the program should run.

MAKE SURE THAT THE REQTOOLS.LIBRARY IS PRESENT IN YOUR LIBS DIRECTORY, OTHERWISE THE PROGRAM WILL FAIL TO WORK. THIS LIBRARY IS AVAILABLE AT YOUR LOCAL PUBLIC DOMAIN DISTRIBUTOR AND/OR BULLETIN BOARD SYSTEM.

1.6 USAGE

USAGE...

Start the program by double-clicking on the icon or by entering its name from the shell. If everything goes well, you're confronted with your workscreen. Select "Load" from the menu and a file-requester will appear. Select the IFF picture you wish to load. When the picture is loaded you can save the entire picture as a raw picture or as an interleaved picture. The difference between the two is as follows:

Suppose you have loaded a picture which is 200 lines high and 3 bitplanes deep...

```
rawfile:  line1    bitplane1
          line2    bitplane1
          line3    bitplane1
          ...
          line200  bitplane1
          line1    bitplane2
          line2    bitplane2
          line3    bitplane2
          ...
          line200  bitplane2
          line1    bitplane3
          line2    bitplane3
          line3    bitplane3
          ...
          line200  bitplane3
```

```
aligned file: line1    bitplane1
              line1    bitplane2
              line1    bitplane3
              line2    bitplane1
              line2    bitplane2
              line2    bitplane3
              ...
              line200  bitplane1
              line200  bitplane2
              line200  bitplane3
```

Note that RawAGA won't save a colormap behind the pictures because it has a separate option to do so.

If you don't want to convert the entire picture you can choose to cut a frame from the picture and save this. This frame can of course also be saved in either raw or aligned format.

1.7 SPRITES

SPRITES...

If you want to cut a sprite out of the picture you have to keep these two

things in mind:

1: Is the picture either 2 or 4 bitplanes deep? If not you're not able to save sprite data (Sprites are always 2 or 4 bitplanes deep!).

2: Is the frame you've cut either 16, 32 or 64 pixels wide? If not you won't be able to save sprite data (sprite hardware restrictions).

If you have cut a frame which doesn't conflict with these two rules, you can select either to save the sprite as a source file or as a binary data file. The two are fully compatible with each other. If you would assemble the generated source file you'd get the same as the data file!

If you've selected a frame in a picture with a depth of four bitplanes, two files will automatically be saved. The first file will have the extension ".ATT1" and the other the extension ".ATT2". Obviously the first file will contain the information for sprite 1 and the second file the information for sprite 2.

The sprite data will be saved in the following format:

2 bitplanes sprite, 16 wide:

```
dc.w 0,0
dc.w line1_bitp1,line1_bitp2
dc.w line2_bitp1,line2_bitp2
dc.w line3_bitp1,line3_bitp2
dc.w ...
```

2 bitplanes sprite, 32 wide:

```
dc.w 0,0,0,0
dc.w l1_word1_bitp1,l1_word2_bitp1,l1_word1_bitp2,l1_word2_bitp2
dc.w l2_word1_bitp1,l2_word2_bitp1,l2_word1_bitp2,l2_word2_bitp2
dc.w l3_word1_bitp1,l3_word2_bitp1,l3_word1_bitp2,l3_word2_bitp2
dc.w ...
```

2 bitplanes sprite, 64 wide:

```
dc.w 0,0,0,0,0,0,0,0
dc.w l1_w1_b1,l1_w2_b1,l1_w3_b1,l1_w4_b1,l1_w1_b2,l1_w2_b2,l1_w3_b2,l1_w4_b2
dc.w l2_w1_b1,l2_w2_b1,l2_w3_b1,l2_w4_b1,l2_w1_b2,l2_w2_b2,l2_w3_b2,l2_w4_b2
dc.w l3_w1_b1,l3_w2_b1,l3_w3_b1,l3_w4_b1,l3_w1_b2,l3_w2_b2,l3_w3_b2,l3_w4_b2
```

As mentioned before, In case of attached sprites (4 bitplanes), two files are saved with the information for sprite 1 (bitplanes 1 & 2) and for sprite 2 (bitplanes 3 & 4).

1.8 ANIMS & BRUSHES

ANIMS & BRUSHES...

If you load an anim file, a requester will appear on your screen. You can either select to load the first frame or the entire animation. To cycle

through the animation, press (or hold down) the right cursor key. All of the functions in the menu work with anims as well.

In case of a brush, RawAGA loads the brush and makes sure that a screen which is sufficiently bigger is opened (enabling the menu to keep operating properly). If an animbrush is selected, RawAGA gives you the same requester you get when loading an animation. You can either read the first frame of the brush or load the entire animbrush in memory. Again you can press (or hold down) the right cursor key to advance through the frames.

1.9 COLORMAPS

COLORMAPS...

RawAGA can save your colormap information in two ways, as a standard AGA copperlist or as a colorlist you can directly feed to the LoadRGB32 system function (Graphics base offset -882 (V39)). The save routine always saves these colormap files as a source file which is compatible with any decent assembler (like Asm-One, Seka, Devpac etcetera). The file format of these files is as follows...

Copperlistdata:

```
dc.w $0106,$0c40      ;colorbank select etc. (see AGA hardware facts)
dc.w $0180,$0xxx      ;high nibbles color0
dc.w $0182,$0xxx      ;high nibbles color1
dc.w ...
dc.w $01be,$0xxx      ;high nibbles color31
dc.w $0106,$0e40      ;loct bit on (selects high or low nibbles)
dc.w $0180,$0xxx      ;low nibbles color0
dc.w $0182,$0xxx      ;low nibbles color1
dc.w ...
dc.w $01be,$0xxx      ;low nibbles color31
dc.w $0106,$2c40      ;bank 1 select, loct bit off
dc.w $0180,$0xxx      ;high nibbles color32
dc.w $0182,$0xxx      ;high nibbles color33
dc.w ...
dc.w ...
dc.w ...
dc.w $0106,$ee40      ;bank 8 select, loct bit on
dc.w $0180,$0xxx      ;low nibbles color 224
dc.w $0180,$0xxx      ;low nibbles color 225
dc.w ...
dc.w $01be,$0xxx      ;low nibbles color 255
```

NOTE THAT THIS COLORMAP IS ALWAYS THE FULL 256 ENTRIES, EVEN IF YOU LOAD A PICTURE WITH LESS THEN 8 BITPLANES!

and the colormap data for the LoadRGB32 function is as follows:

```
dc.w numberofentries,0
dc.l $RR000000,$GG000000,$BB000000 ;RGB value for color 0
dc.l $RR000000,$GG000000,$BB000000 ;RGB value for color 1
dc.l ....
dc.l $RR000000,$GG000000,$BB000000 ;RGB value for the last color
```


1.10 QUITTING

QUITTING...

Just select the "Quit" option from the menu or press the shortcut keys (left Amiga key and "Q").

1.11 AGA HARDWARE

AGA HARDWARE FACTS/TIPS...

If you want to use the special AGA sprite modes, these registers are essential:

FMODE (\$dff1fc):

BIT 2 and 3 can make these combinations:

- %00 = sprites are 16 bits wide and must be word aligned
- %01 = sprites are 32 bits wide and must be longword aligned
- %11 = sprites are 64 bits wide and must be quadword aligned

BPLCON3 (\$dff106):

BIT 6 and 7 can make these combinations:

- %00 = sprites are ECS Default
- %01 = sprites are LoRes (140 nS)
- %10 = sprites are HiRes (70 nS)
- %11 = sprites are SHRes (35 nS) (Super Hi-Res)

(these modes are independent of the screen resolution)

BIT 13-15 can make 8 possible combinations selecting the colorbank for the colorregisters (\$0180-\$1be).

There are plenty more registers which have got something to do with sprites and/or colors but that would exceed the purpose of this documentation. It just helps you to get started!

1.12 THE AUTHORS

THE AUTHORS...

RawAGA was programmed by THAIZER and RhInO (Thijs van Rijswijk & Reinier van Vliet), both members of Team Hoi!

You can reach us at the Total Confusion BBS in The Netherlands. The telephone number is: +31-(0)35-855918. Our handles are respectively THAIZER & RhInO.

Please leave bug reports and comments whenever you like!

1.13 COPYRIGHT

COPYRIGHT & REGISTERING...

These programs are Copyrighted in 1993 by Team Hoi! The programs may be freely distributed if they are left unaltered. Please note that if the framecut options don't work, you've got an unregistered version! To register send 10 american dollars to bankaccountnr: 3917.18.509 in holland. Don't forget to state your full name and adres on the banktransfernote so we can send you the correct version.

1.14 DISCLAIMER

DISCLAIMER...

We (Team Hoi or any of the individual authors) are in no way responsible or liable for loss of data, or any other kind of information, due to (im)proper use of the program RawAGA.

1.15 HISTORY

HISTORY...

10-AUG-93> RawAGA V2.0

Added features:

- RawAGA now decodes while loading. This leaves more memory for multitasking than if you load the picture in memory first.
- RawAGA now handles animations correctly.
- RawAGA now handles brushes correctly and opens a bigger screen when necessary.
- RawAGA now handles animbrushes (animbrushes use a different format than normal animfiles. They use the so-called "eor" technique).
- RawAGA now uses the v39 doublebuffer-tag when it has to play an animation.
- RawAGA can now save LoadRGB32 colormapdata
- RawAGA can now cut frames and save them as raw/aligned
- RawAGA can now cut sprites (normal sprites and AGA sprites)

10-APR-93> AGA Converter (old name)

- First version of the program
-

1.16 AND FINALLY

AND FINALLY...

Do you already own Team Hoi's A.G.A. specific products, like the two HoisAGA demos ("Planet Groove" and "Mindwarp") and the "Enigma" encoding tool...? Look forward to the world's first (we hope) REAL A.G.A. game called Moon Child, the official sequel to our Amiga action game "Hoi!"

Please feel free to send your Team Hoi fanmail (no programme-technical stuff, just nice correspondence) to:

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C YA !!!
