

ART-Pro

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COLLABORATORS

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Chapter 1

ART-Pro

1.1 ART-Pro v0.62 © 1994 Frank Pagels / Defect Softworks

ART-PRO v0.62

multi-purpose graphics converter
and image processor

© 1994 by Frank Pagels
Defect Softworks

the Doomsday Party tool-competition winning tool

~Copyright~~~~	Copyright notes
~Disclaimer~~~	Warranties? No way.
~Distribution~	How to distribute
~Shareware~~~~	About the shareware concept
~Registration~	How to register
~Author~~~~~	How to reach the author
~Introduction~	Introducing ART-Pro
~Requirements~	What's required to run ART-Pro
~Installation~	How to install ART-Pro
~Usage~~~~~	How to use ART-Pro
~Future~plans~	What's up to come
~Acknowledges~	The people involved
~History~~~~~	The History of ART-Pro

1.2 Copyright

Copyright

The entire ART-Pro package was created and is copyrighted © 1994 by Frank Pagels, except for regtools.library which is copyrighted © by Nico François.

1.3 Disclaimer

Disclaimer

The ~author~ makes no guarantee of any kind for the reliability of the software described in this documentation, and thereof he is in no way liable for any damages or loss of data directly or indirectly caused by the use or misuse of this software. This documentation and the ART-Pro program are provided "as is" without any warranty, either expressed or implied.

1.4 Distribution

Distribution

The ART-Pro package may be redistributed freely, as long as there are no changes made to any part of this software. No parts of this package may be omitted or altered by any means except for archiving. You are not allowed to copy single parts, you have to reproduce the package completely. Please refer to the list of contents for verification:

ART-Pro	(dir)	
icons	(dir)	
ARTProLace.info		5306
ARTProMagicWB.info		8758
ARTProNoLace.info		2854
libs	(dir)	
regtools.library		43628
ART-Pro		45888
ART-Pro.guide		48011
ART-Pro.guide.info		503
ART-Pro.info		3567
Orderform.doc		4082
Orderform.dok		4391
ART-Pro.info		2657

Neither fees may be charged nor profits may be made by distributing this piece of software. Only a nominal fee for costs of magnetic media is acceptable, whereby the amount of US \$3 or DM 5,- must not be exceeded for a disk containing ART-Pro.

1.5 Shareware

Shareware

ART-Pro is shareware, which means this software may be used and redistributed freely, as long as you accept the conditions and limitations stated in the ~distribution~ and ~disclaimer~ sections. Please consider ~registration~ if you wish to use ART-Pro frequently.

This initial release of ART-Pro is no way restricted, that means no functions are disabled, no nasty registration reminder will pop up. You may use and test this unregistered version of ART-Pro as long as you wish.

Keep in mind that ART-Pro is under heavy development. There will be many additional features available in the future and registered users will be preferred in some ways. First of all, registered users will get one major update for free as soon it is completed. More free updates are available if you send in a disk and include either german stamps or enough money for postage. In addition to that, a lot of oncoming powerful features will be available to registered users only, e.g. an ARexx port and some external modules. Ideas and suggestions for improvements proposed by registered users will be taken into consideration first.

The ~shareware~ idea behind ART-Pro is quite different from that of shareware groups like SASG. The development is and will stay transparent to you, and there are no uniformed update conditions imposed on the user. The earlier you register, the better your demands can be taken into account. Last not least, updates stay free until doomsday.

1.6 Registration

Registration

To register, fill out the registration form included, print it out in some way and send it to the ~author~. The registration fee is DM 20,- or US \$15 or UK £10. Try to get a registration with other currencies if you dare. Include cash, international money order, or cheque. Coins in currencies different from German Marks cannot be accepted. Cheques are only acceptable from within Germany. Make international money orders and cheques payable to Frank Pagels.

Registered users will get one major update for free, whereby "free" implies postage. More updates will be available if you send disks and additional money or stamps for postage. Futural releases will differenciate between evaluation and registered versions, whereby some features will be reserved for the registered version only.

1.7 Author

Author

Submit suggestions, bug reports, registrations to:

Crazy Copper / Defect Softworks

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1.8 Introduction

Introduction

Have you ever been looking for a tool that cross-converts graphics in several popular formats, enables powerful color and image control, allows you to cut brushes and offers saving them in various formats, such as binary, source code, IFF, etc. - supporting all the additional AGA features, such as AGA sprites, and copperlists?

With ART-Pro, you've found a program to satisfy these needs. Or let's say you've found another one, due to the fact that there are numerous programs available offering features included in the list above. So why should I use ART-Pro then, you may ask.

The idea behind ART-Pro is to combine image format conversion with IFF-to-RAW conversion for programmers with powerful image and color processing with a well-designed and comfortable graphical user interface.

Though ART-Pro is just at the beginning of its development, the basic functions are yet complete, and you'll find IFF to RAW conversion (and vice versa) in quite innumerable ways implemented. There are features included to ART-Pro you won't find in any other program of that kind, and several great ideas are implemented that will help you making life easier.

If you take a first look at ART-Pro, you'll find a fully-featured, comfortable GUI - rather than an empty screen with dozens of menus, driving you berzerk with unsuitable colors and screen resolutions. Having a closer look, you'll get a first impression of the modular concept provided by ART-Pro. This is in some ways similar to Artdepartment Professional (as you might have guessed, the names "ART-Pro" and "AdPro" are more than mere coincidence :-). Various loaders and savers, image, color, and brush operators are available. Talking of image and color operators, those will be available, to be more precise - as mentioned before, ART-Pro is under development and many features are still to come.

ART-Pro is not yet a replacement for commercial high-tech image processors like Artdepartment or ImageFX and it will never be one. Right now, it's a great image converter for programmer's purposes and in addition to that, it will offer many essential color and image processing features in the future. Last not least, ART-Pro was written in carefully hand-optimized assembler code and is for that reason quite short and pretty fast.

Some people urged me to release this very early version of ART-Pro in order to get your interest and to find out what are the demands for a program like this in the world outside. So feel welcome to submit your suggestions.

Some features of ART-Pro 0.62:

- * comfortable GUI:
 - * all functions driven by gadgets or keyboard equivalents
 - * no menus on screens with weird resolutions and colors
 - * lots of options and settings for your individual taste
 - * comfortable brush cutting controlled on a separate screen

- * highly flexible source code generation
- * save load/savepath after Exit and load it at the Start
- * image converting:
 - * handles IFF to RAW as well as RAW to IFF
 - * supports interleaved blitter formats
 - * outputs as source / binary / linkobjekt
 - * includes additional blitter words for shifted blitting
 - * automatically saves the colors associated with an image
- * extensive sprite support:
 - * handles sprites in either 4 or 16 colors
 - * handles sprites being 16 / 32 / 64 pixels wide
 - * outputs as source / binary / linkobjekt
 - * allows you to cut several sprites in a single go
 - * automatically calculates sprites' control words according to their screen positions
- * color functions:
 - * supports LoadRGB / RAW / copperlist formats
 - * generates AGA copperlists
 - * handles 4 and 32 bit color depths for LoadRGB
 - * outputs as IFF, source, binary or linkobjekt
- * masking functions:
 - * generates brush masks for either interleaved or noninterleaved blitting
 - * supports specific mask colors

1.9 System requirements

System requirements

ART-Pro requires an Amiga with operating system 2.04 (V37) or higher. If not present (either no Amiga or no Kickstart 2.04), ART-Pro won't run. ART-Pro is very compact and handles low-memory situations, so you are able to use it even with a minimal memory supply. The amount of additional memory required for images depends on the pictures' dimensions and depths you're working with. The presence of a hard disk and a lot of memory is no bad idea, but not required.

1.10 Installation

Installation

There is no installation script for ART-Pro supplied right now, sorry. This initial public release is so easy to install to your system that you should be able to perform that task manually. If not, you're not advised to use ART-Pro anyway.

This is subject to change - with external modules becoming part of ART-Pro, installation gets more complicated and therefore, an installation script will be included some day.

Copy ART-Pro and ART-Pro.info to any location on your hard drive or working-disk. If not already present, copy reqtools.library into your sys:libs drawer. In addition to that, you should create a new directory in ENVARC: named "ART-Pro" which will be ART-Pro's default path to its preferences.

After these steps, ART-Pro can be started via Shell or Workbench.

1.11 Usage

Usage

After starting ART-Pro from either Shell or Workbench, you find its main screen opened. Most actions can be performed by both clicking the appropriate buttons and pressing their keyboard equivalents.

```

~Main~Control~Panel~

~File~Operation~~~~~      ~Image~Control~~~~~~
~Brush~Operation~~~~~     ~Image/Palette~Operation~

~Selecting~Modules~~

~Settings~Window~~~~~

```

1.12 Main Control Panel

Main Control Panel

There are four buttons and several text fields located in this area, affecting global operations and displaying general information.

The status line reflects ART-Pro's current status - errors are displayed here as well as messages of any kind. At startup, you find a welcome message there.

The three text fields below inform you about the memory currently being available, separated into "Memory" (total free), "Chip" and "Fast". I suppose you know what this is for. Images to be displayed require chip memory. Futural versions of ART-Pro will additionally keep the image in 8 bit internally, using fast memory for that purpose if available.

```

~About~      ~Settings~      ~Iconify~      ~Exit~

```

1.13 About

About

"About" opens a stunning about requester with some information concerning the ART-Pro revision running, the ~author's~address~ and stuff like that.

1.14 Settings

Settings

This button will open the ~settings~window~ which will be described in the settings window section.

1.15 Iconify

Iconify

As the name suggests, "Iconify" leads to iconification of ART-Pro, thus freeing as much memory as possible. ART-Pro opens a tiny window on the Workbench then, appends an AppItem to the tool menu, or leaves an AppIcon on your Workbench, depending on the selected iconification mode. Refer to the ~settings~window~ section for details.

1.16 Exit

Exit

Clicking this button or triggering its keyboard equivalent "x" quits ART-Pro without verification. ART-Pro will save the load/savepath to ENVARC:.

1.17 File Operation

File Operation

You find four buttons and three text fields in this area. They allow you to import and export files, they reflect the status of currently selected loaders and savers, and they inform you about the image file you're actually working at.

~Load~

~Selecting~a~Loader~

~Save~

~Selecting~a~Saver~~

1.18 Load

Load

Clicking this button opens a file requester, thus allowing you to select an image file to be loaded. You find the actual loader displayed in the text field right beside. Read the `~loaders~` section for details and the available formats.

1.19 Save

Save

Clicking this button opens a file requester, thus allowing you to specify a path and name for an image or brush to be saved. You find the actual saver displayed in the text field right beside. Refer to the `~savers~` section for details and the available formats. By default, you will be prompted to confirm overwriting files which already exist. This behaviour can be changed in the `~settings~window~`.

1.20 Selecting a loader

Selecting a loader

This is the tiny button on the right hand of the text field displaying the currently selected loader. On activation, the loaders window will be opened for you to select a loader that suites to your needs. Please refer to the `~module~selection~` section for details. See the `~loaders~` section for the available file formats.

1.21 Selecting a Saver

Selecting a saver

This is the tiny button on the right hand of the text field displaying the currently selected saver. On activation, the savers window will be opened for you to select a saver that suites to your needs. Please refer to the `~module~selection~` section for details. See the `~savers~` section for the available file formats.

1.22 Image Control

Image Control

There are three buttons and three text fields located in this area. They affect the screen's resolution, display mode, and depth, and they reflect the size and depth of the picture currently being loaded. The screen mode is

displayed in the topmost text field. You find the image size and depth below. The cycle gadget reflecting the image's depth is ghosted in this release of ART-Pro, for changing it is not yet implemented.

~Screenmode~Selection~

~~Render~/~ReDisplay~~

1.23 Selecting a Screen Mode

Screen Mode Selection

This button is located at the right hand of the text field that displays the screen mode. It brings up a list of all screen modes available to your system. The set of screen modes offered here depends on your machine's chipset revision and on the monitors located in your Devs/Monitors system drawer.

With this feature you can easily change a picture's screen mode. It depends on the picture's depth and your machine's chip set whether a screen mode modification will succeed or fail. E.g. it's not possible to change a 32 color LoRes picture to HighRes on an OCS/ECS machine in this version of ART-Pro. This is subject to change - futural versions will handle this by rerendering the image.

1.24 Render / Redisplay

Render / Redisplay

In ART-Pro's current version, this button will just display a previously loaded picture. In future, this gadget will additionally render a picture when necessary. This will occur when changes of the screen's mode or depth require color reduction.

1.25 Brush Operation

Brush Operation

This area displays the selected brush operator, the actual brush's dimensions and its size in bytes. There is only one brush operator available in this version of ART-Pro - "normal cut" - and for that reason the brush operation selector appears ghosted.

Select "Execute" to cut a brush. You will then enter your currently loaded image with a tiny control screen at the bottom.

~Control~Screen~~~~

~Selecting~a~Frame~

~Grid~~~~~

~AutoCut~~~~~

1.26 Control Screen

Control Screen

There are three buttons and four text fields located on this control screen. They are named as follows:

- X - displays the current horizontal position of the cursor,
 relative to the left screen border
- Y - displays the current vertical position of the cursor,
 relative to the upper screen border
- BW - the current brush width
- BH - the current brush height
- empty box - indicates whether the brush width is a multiple of 16.
 Check it out to see the effect.
- ~AutoCut~ - to automatically enclosure the brush
- Accept - to accept a brush selection
- Cancel - to leave this section without a new brush

1.27 Selecting a Frame

Selecting a Frame

Move your mouse to an appropriate location inside your picture, press the left mouse button and size the rubber frame to the dimensions of your choice. There's no need to keep the left mouse button pressed. If the frame's size suites to your needs, press the left mouse button once again.

To redo that operation, press the right mouse button and reselect another brush.

If you're satisfied with your brush selection, leave this section by either clicking the "Accept" button or by pressing its keyboard equivalent "a" - or just press "ESCAPE" for the same purpose. To abort, click on "Cancel" or press "c".

If you're too lazy to cut your brush at its exact borders, try clicking ~AutoCut~ after you've selected a rough frame.

1.28 Grid

Grid

You may toggle the grid by pressing the "g" key. The grid's width amounts to 16 pixels which corresponds to the number of 16 bit words your brush is wide. You might wish to switch off the grid on heavy DMA torture screens such as SuperHiresInterlace HAM8 :-).

By default, a grid is drawn. This can be changed in the ~settings~settings window~.

1.29 AutoCut

AutoCut

This feature is very handy when there's no need to cut a brush at its exact borders. The rubber frame will automatically enclosure your brush at its outmost edges. The keyboard equivalent is "u".

1.30 Selecting a Module

Selecting a Module

Whenever you wish to select another ~loader~ or ~saver~, image or color operator, you'll be confronted with a list window containing the modules currently being available to ART-Pro. The gadgats "add", "add dir", "kill", and "kill all" appear ghosted due to the fact that there are no external operators available in this version of ART-Pro.

To select a module, highlight an entry in the list view, then hit "Okay" or "Accept". Accept will execute the selected operator immediately. Hitting the close gadget will abort the module selection, as well as selecting "Cancel". Doubleclicking an operator is equivalent to "Accept" and leads to immediate execution.

1.31 Loaders

Loaders

In this version, ART-Pro supports the following loader formats:

~IFF-ILBM~

~RAW~~~~~

~SCREEN~~~

~RAW-BLITT~

1.32 IFF-ILBM

IFF-ILBM

Simply loads an IFF ILBM picture.

1.33 Screen

Screen

This handy function allows you to grab any screen currently open on your system. Simply select a screen of your choice after the screen selector has popped up.

1.34 RAW

RAW

This loader allows you to load a standard (i.e. non interleaved) raw file. After selecting "Load" a requester will pop up and prompt you to specify the raw-formatted picture's width, height, depth, and display mode. The cycle gadget entitled "Display" allows you to choose between normal, halfbright and HAM display mode. Using the TAB key, you can cycle between the string gadgets. Select "Do it" or press its keyboard equivalent "d" to load the raw image file, or "Cancel" for abortion. You will then be prompted to select a screen mode, and finally, the raw picture will be loaded.

1.35 RAW-BLITT

RAW-BLITT

This loader allows you to load an interleaved raw picture file. After selecting "Load" a requester will pop up and prompt you to specify the raw-formatted picture's width, height, depth, and display mode. The cycle gadget entitled "Display" allows you to choose between normal, halfbright and HAM display mode. Using the TAB key, you can cycle between the string gadgets. Select "Do it" or press its keyboard equivalent "d" to load the raw image file, or "Cancel" for abortion. You will then be prompted to select a screen mode, and finally, the raw picture will be loaded.

1.36 Savers

Savers

In this version, ART-Pro supports the following saver formats:

~IFF-ILBM~~	~COLOR~~~~~
~RAW~~~~~	~MASK~~~~~
~RAW-BLITT~	~MASK-BLITT~
~SPRITE~~~~	

1.37 IFF-ILBM

IFF-ILBM

This saver allows you to save your current picture or brush as IFF-ILBM.

1.38 RAW

RAW

This will save your current picture or brush as RAW non-interleaved. Please refer to the ~settings~window~ section for all the available settings and options for this.If you have selected "Link" as outputformat then you must specify~the~linkdata before save.

1.39 RAW-BLITT

RAW-BLITT

This will save your current picture or brush as RAW interleaved. Please refer to the ~settings~window~ section for all the available settings and options for this.If you have selected "Link" as outputformat then you must specify~the~linkdata before save.

1.40 SPRITE

SPRITE

This will save your current brush as one or multiple sprite(s). Please refer to the ~settings~window~ section for all the available settings and options for this.If you have selected "Link" as outputformat then you must specify~the~linkdata before save.

1.41 COLOR

COLOR

This will save your current picture's palette. Please refer to the ~settings~window~ section for all the available settings and options for this. If you have selected "Link" as outputformat then you must specify~the~linkdata before save.

1.42 MASK

MASK

This will save your current picture or brush as a mask for non-interleaved blitting. All colors different from the background color will be taken into account. If ~Ask~Mask~Color~ is enabled in the ~settings~window~, you will be prompted to enter a specific mask color instead. If you have selected "Link" as outputformat then you must specify~the~linkdata.

A normal mask save results in a single-bitplaned mask to be used for each bitplane-oriented blitter operation.

1.43 MASK-BLITT

MASK-BLITT

This will save your current picture or brush as a mask for interleaved blitting. All colors different from the background color will be taken into account. If ~Ask~Mask~Color~ is selected, you will be prompted to enter a specific mask color instead. Please refer to the ~settings window~ section for details. If you have selected "Link" as outputformat then you must specify~the~linkdata.

A blitter mask save results in an interleaved, multi-bitplaned mask, whereby the masking bits appear identical for each bitplane.

1.44 Settings Window

Settings Window

Here you can adjust all your preferred settings and options for the use of ART-Pro.

```

~Global~Settings~                               ~Source~Format~
~Image~Format~  ~Color~Format~  ~Sprite~Format~

~Save~          ~Load~          ~Use~          ~Cancel~

```

1.45 Show Pic after Load

Show Pic after Load

With this switch enabled, any picture will be displayed right after loading.

1.46 Center Pic

Center Pic

This one will automatically center your picture to the middle of the screen.

1.47 Draw Grid

Draw Grid

This switch represents your preferred setting whether a grid shall be drawn when you're ~selecting~a~frame~ for cutting a brush.

1.48 Overwrite

Overwrite

With this option enabled, you'll be prompted to confirm overwriting already existing files.

1.49 Auto save Colors

Auto save Colors

If you want to automatically save a picture's palette along with the image, this switch is the right one for you. When active, saving~an image~ will generate a color output as well, whereby your preferred color settings will be used. The name will be the same as of the image, with an appropriate extension added, such as .s for source code or .col for binary etc. This switch appeared useful to me, because I sometimes forget to save the colors :-).

1.50 Ask Mask-Color

Ask Mask-Color

When saving a ~MASK~ or ~MASK-BLITT~, normally all colors are taken into account, except for the background color which will appear transparent. When this switch is enabled, you will be asked for a specific, single mask color instead.

1.51 Iconify Mode

Iconify Mode

ART-Pro offers three different ways of iconification - AppItem, AppIcon, and Window. You can adjust your preferred mode here. An AppItem named "ART-Pro" will be appended to the Workbench's tool menu, an appicon will be put somewhere on your Workbench, or a tiny window will be opened. To re-enter ART-Pro, select the menu item, double-click the appicon or click the zip gadget in the tiny window's title bar. Be careful, clicking the window's close gadget is equivalent to ~Exit~.

1.52 Screen Palette

Screen Palette

Adjust your favourite screen colors here.

1.53 Source Format

Source Format

In this area you can configure all the settings associated with the source code generation.

~Language~

~Indent~~~

~Tabs~~~~~

~Spaces~~~

1.54 Language

Language

In this release of ART-Pro, only Assembler source code generation is supported. With other words, the "Language" cycle gadget has no effect on the language right now. At least C, Pascal, E, and Basic will be supported in the

future, other languages, such as Modula2, Oberon etc. may be taken into consideration as well.

1.55 Indent

Indent

This cycle gadget allows you to specify the character to be used for indenting. This can be either Tabs or Spaces.

1.56 Tabs

Tabs

Enter the number of tabs to be used for indenting here.

1.57 Spaces

Spaces

Enter the number of spaces to be used for indenting here.

1.58 Image Format

Image Format

In this area you can configure all the settings associated with the image output. In this ART-Pro release, this will affect the ~RAW~ and ~RAW-BLITT~ savers, as well as ~MASK~ and ~MASK-BLITT~.

~Output~~~~~

~Width~~~~~

~BlitWord~~~~

~Line~Entries~

1.59 Output

Output

Specify either "Source" or "Binary" here for the image data output. In oncoming versions of ART-Pro, more output formats will be available as well, such as "LinkObject".

1.60 Width

Width

This cycle gadget will only be available if the ~Output~ selector is adjusted to "Source". Here you can specify the data width to be output – choose between bytes, words, or longwords.

1.61 BlitWord

BlitWord

You can adjust this cycle gadget to "None", "Left", or "Right". To treat a brush in a normal manner, select "None". For shifted blitting, you may wish to add extra words at either the left or right side, whereby the brush will be enlarged by one word (16 pixels) in width.

1.62 Line Entries

Line Entries

This string gadget will be disabled when ~Output~ is adjusted to "Binary". It allows you to specify the number of data entries per line when source code generation is enabled. Enter 0 here if you want to omit line feeds in order to fill up a line completely. Note: Not all editors can handle lines with extreme lengths.

1.63 Save

Save

Click this gadget or press its keyboard equivalent "s" to save the current settings. A file requester will pop up and prompt you to specify a path and file name for your settings file. Remember, the default path for ART-Pro's settings is ENV:ART-Pro respectively ENVARC:ART-Pro. The default name is ART-Pro.prefs.

1.64 Load

Load

Click this button or press its keyboard equivalent "l" to load a previously saved ART-Pro settings file. A file requester will pop up and prompt you to specify a path and file name for your settings file.

1.65 Use

Use

Activate this button or press its keyboard equivalent "u" to accept and use ART-Pro's current settings. The settings window will be closed and you'll get back to the main screen.

1.66 Cancel

Cancel

Activate this button or press its keyboard equivalent "c" to forget the actual settings and to go back to the main screen.

1.67 Global Settings

Global settings

All switches affecting ART-Pro's general behaviour and global appearance are grouped together in the settings window's upper left.

~Show~Pic~after~Load~	~Auto~save~Colors~
~Center~Pic~~~~~~	~Ask~Mask~Color~~~
~Draw~Grid~~~~~~	~Iconify~~~~~~
~Overwrite~~~~~~	~Screen~Palette~~~

1.68 Image / Palette Operations

Image / Palette Operations

These functions are not yet implemented.

1.69 Color Format

Color Format

In this area you can configure all the settings associated with the ~COLOR~ saver output.

~Output~~~~~~
~Format~~~~~~

~Depth~~~~~

~Line~Entries~

1.70 Output

Output

Using this cycle gadget, you can configure the color data output. Choose between Source, Binary, or IFF.

1.71 Format

Format

Here you can specify the color format defining the source or binary ~output~. Choose between Copper, LoadRGB, or Pure.

Copper will generate a copperlist. Depending on the ~Depth~ setting, this applies to standard or AGA copperlists. Copperlist means in detail that there are MOVE commands included for the appropriate color registers.

LoadRGB will generate color data for the use with the graphics.library LoadRGB function. Depending on the ~Depth~ setting, this applies to LoadRGB4 or LoadRGB32 (V39).

Pure will generate a raw color table.

1.72 Depth

Depth

Adjust this to either 4 or 8 Bit. This will affect all color ~output~ and ~format~ settings, except for IFF.

If you plan to use AGA color resolutions in your software projects, adjust this switch to 8 Bit.

1.73 Line Entries

Line Entries

This string gadget will be disabled when ~Output~ is adjusted to Binary or IFF. It allows you to specify the number of data entries per line when source code generation is enabled. Enter 0 here if you want to omit line feeds in order to fill up a line completely. Note: Not all editors can handle lines with extreme lengths.

1.74 Sprite Format

Sprite Format

In this area you can configure all the settings associated with the ~SPRITE~ saver output.

~~~~~Output~~~~~

~Cols~            ~Width~

~~~Ctrl.~Words~~~~

~~~Line~Entries~~~

## 1.75 Output

### Output

Using this cycle gadget, you can configure the sprite data output. Choose between Source or Binary.

## 1.76 Colors

### Number of Colors

Here you can adjust the number of colors for the sprite conversion. Select either 4 or 16 colors.

The Amiga customchip hardware supports sprites in either 4 or 16 colors. For the use of 16 colors, a sprite pair of two 4colored sprites has to be "attached". Attaching means, the positions of sprites belonging to a pair have to be identical (the sprites would appear in the normal 4 color display otherwise), and the attach-bit of at least the second (odd) sprite has to be set.

Using ART-Pro, there's no need to bother. Just select 16 colors, and ART-Pro does the rest for you - Your brush selection is interpreted as one or a multiple of 16colored sprites. If you select ART-Pro's ~control~~word~~calculation~, even that position and attach-bit stuff will be performed automatically.

## 1.77 Width

### Width

Select a sprite width for your purpose here. Choose between 16, 32, or 64 pixels. Keep in mind that sprites wider than 16 pixels are not supported prior to AGA.

---

## 1.78 Control Words

### Control Words

Sprite datalists for hardware-programming purposes require control words at their beginning. These control words contain all the information needed for the sprite display, such as horizontal and vertical start positions, vertical stop position, and the attach-bit mentioned in the ~colors~ section.

ART-Pro supports sprite control words in three ways: None, Empty, or Position. Use the cycle gadget to adjust one of these.

None      ART-Pro doesn't care about control words. They will be omitted.

Empty     ART-Pro includes control words at the beginning of the sprite datalists, but they're empty, i.e. set to zero.

Position ART-Pro includes sprite control words containing ALL the information needed for proper display.

The last setting can be extremely useful for you, if you're one of those hardware programmers who use static sprites for complex screen layouts. In this release of ART-Pro, the control word calculation will be performed as follows:

VerticalStart      = raster line \$2c + brush's Y position inside your picture

VerticalStop       = raster line \$2c + brush's Y position + brush's height

HorizontalStart    = DMA start \$80 + brush's X position inside your picture

Experienced programmers will have noticed that these values apply to standard non-overscan screens. In futural versions of ART-Pro, these calculations might be customized to the user.

## 1.79 Line Entries

### Line Entries

This string gadget will appear ghosted when ~output~ is adjusted to Binary. It allows you to specify the number of data entries per line when source code generation is enabled. Enter 0 here if you want to omit line feeds in order to fill up a line completely. Note: Not all editors can handle lines with extreme lengths.

---

## 1.80 Future Plans

### Future plans

This is just a list of ideas that may become part of ART-Pro some day. Don't belt ~me~ if you don't find your favourite ideas realized in the next release - you should rather get in contact with ~me~ in order to lay stress upon features listed herein, or if you've got other suggestions.

#### Savers

|                    |                                                          |
|--------------------|----------------------------------------------------------|
| RAW-CHUNKY-LEFT    | left-justified 8Bit chunkies                             |
| RAW-CHUNKY-RIGHT   | right-justified 8Bit chunkies                            |
| RAW-16BIT-RGB      | any pixel represented by a \$0RGB color value            |
| STENCIL MASK       | mask generated with a specific set of colors             |
| STENCIL MASK-BLITT | interleaved mask generated with a specific set of colors |
|                    | some popular gfx-formats                                 |

#### Loaders

|                  |                                               |
|------------------|-----------------------------------------------|
| DATATYPE         | universal loader using system datatypes       |
| RAW-CHUNKY-LEFT  | left-justified 8Bit chunkies                  |
| RAW-CHUNKY-RIGHT | right-justified 8Bit chunkies                 |
| RAW-16BIT-RGB    | any pixel represented by a \$0RGB color value |
|                  | some popular gfx-formats                      |

#### Brush operators

|                     |                                                              |
|---------------------|--------------------------------------------------------------|
| MULTICUT VERTICAL   | allowing multiple brushes to be cut, and linked vertically   |
| MULTICUT HORIZONTAL | allowing multiple brushes to be cut, and linked horizontally |

#### Image operators

|       |                  |
|-------|------------------|
| SCALE | flexible scaling |
|-------|------------------|

LESS COLORS                      to reduce the number of colors used

#### Palette operators

PALETTE                      RGB/HSV palette adjustments

BIAS                          global color adjustments for  
saturation, brightness, contrast, RGB

PACK COLORS                  removing unused colors and  
re-ordering the palette

#### Miscellaneous

Implementation of C, Pascal, Basic, and E source code  
generation

Customized sprite control word calculation

ARexx port

Don't forget that it depends on YOUR feedback what ideas will be  
implemented first or if at all.

## 1.81 Acknowledges

#### Acknowledgements

- Thanks to Captain Bifat / The Electronic Knights for suggestions,  
testing, redesigning the graphical user interface, drawing the logo  
and icons, and writing the documentation.
- Thanks to Buggs / Defect for suggestions, additional help, and  
testing.
- Thanks to M.U.D.U. / Defect for the nice Mona Lisa-Icon

## 1.82 History

#### History

V0.62    21.10.1994

- added save LinkObjekt
- added save Load/Savepath after Exit
- some Bugfixes

V0.60    08.10.1994

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First public release for the Tool-Competition at  
the Doomsday Party.

## 1.83 Specify Linkdata

### Specify Linkdata

After selecting "Save" and define a Filename a requester will pop up and prompt you to specify the Linkdata. The Stringgadget entitled "External definiton" allows you to enter a Labelname for the Objektfile. With the Cyclegadget "Memory Type" you can specify a Memory Type for the data. Select "Do it" or press its keyboard equivalent "d" to save the linkdatafile, or "Cancel" for abortion.

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