# CandyFactory

Milan Pollé

| **COLLABORATORS** | | | |
|---|---|---|---|

| | *TITLE* :<br><br>CandyFactory | | |
|---|---|---|---|
| *ACTION* | *NAME* | *DATE* | *SIGNATURE* |
| WRITTEN BY | Milan Pollé | April 13, 2022 | |

| **REVISION HISTORY** | | | |
|---|---|---|---|

| NUMBER | DATE | DESCRIPTION | NAME |
|---|---|---|---|
| | | | |

# Contents

# Chapter 1

# CandyFactory

## 1.1   CandyFactoryPPC Documentation

```
                        C A N D Y   F A C T O R Y   P R O

                    Instant Graphics Creator

                        By Milan Pollé

                      ©1998 MotionStudios


-------------------------------------------------------------------------
                    P L E A S E   S E L E C T
-------------------------------------------------------------------------


                      Introduction

                    Functionality

                    Installation

                  Configuration

                        Usage

                        Legal

                      Feedback

                    Benchmarks

                      History
-------------------------------------------------------------------------
```

## 1.2  Legal stuff

```
  L E G A L
```

--------------------------------------------------------------------------------

```
  Candy Factory Pro is a commercial program. Copying is prohibited.

  This program was made by an Amiga enthousiast for all Amiga enthousiasts
  out there. If you care about the future of the Amiga at all, buy the
  software you use.

  CandyFactory is copyright ©1998 Motion Studios.
```

--------------------------------------------------------------------------------

## 1.3  Introduction

```
  I N T R O D U C T I O N
```

--------------------------------------------------------------------------------

```
  People making webpages, computer games or video titles often need to
  create logos or buttons. This could be accomplished using a paint
  package or a raytracer. Both require a lot of effort to be put into
  it as well as a certain amount of expertise with the software.
  Browsing different internet pages one can notice the most often used
  effects for creating logos. Effects like shaded bevels, glows and
  dropshadows are the most common.
  As computers become faster and memory becomes cheaper, many creative
  programs offer fast feedback on the changes the user makes to his
  design, which helps the creative process enormously and often gives
  pleasing results which are hard to predict in advance. The faster
  the user is presented with the results of his actions, the easier it
  becomes to tweak the settings until the desired result is obtained.
  Candy Factory Pro offers you the most popular effects coupled with
  both simple controls and fast feedback where possible, for fast and
  fun graphics creation.
```

--------------------------------------------------------------------------------

## 1.4  Functionality

```
  F U N C T I O N A L I T Y
```

--------------------------------------------------------------------------------

Source Material:

  – Greyscale mask image, preferably anti-aliased.
  – Or add anti-aliased text from within the program,
    using Compugraphic fonts.
    Variable size, width, emboldening, rotation and shearing.

Available Effects:

  – Material
    Realtime Color, Highlight, Highlight sharpness and Ambient color adjust.
    Nonshaded, shaded or reflective material.
    Use a standard or custom environment map.
    Realtime environment map positioning.
    Load and Save materials.
    Copy and swap materials beteen the object and the background.

  – Beveled edge
    Variable width, height, shape and smoothing.

  – Dropshadow
    With variable smoothing.
    Realtime color, intensity, distance and light dependant position.

  – Glow
    Normal glow with variable size and falloff.
    Diffuse glow with variable smoothness.
    Realtime center color, edge color and intensity adjust.

  – Bumpmapping
    Add noise, fractal, turbulence, fractal turbulence or custom
    bumpmap.
    Realtime resizing/stretching, height and clipping adjust (PPC).

  – Color texture
    Add a color map to the object or background.
    Variable sizing/stretching and positioning.

  – Lightsource
    Change the lightsource position and distance in realtime,
    in the canvas window or using the lightsphere.

Other features:

  – Load/Save/Merge projects
    Store your effect settings.
    Merge selected parts of a stored project with the current one.

  – Render image
    Remap image to 2 to 256 colors, with dithering.
    Use zero background color for webpage or video use.

  – Save alpha channel.
    Save image transparancy for compositing in a graphics program.

  – Refine passes

Quality render passes for shading, reflection and bumpmapping.

 – Truecolor mode
   Apply all effects simultaniously and display the results in
   realtime 24bit or a realtime 8bit dithered representation.

 – Settings
   Change the screenmode from within the program and save the
   settings together with the current effect window positions.

--------------------------------------------------------------------------------

## 1.5  Configuration

  C O N F I G U R A T I O N

--------------------------------------------------------------------------------

  Minimum recommended configuration:
  68030 CPU with FPU
  16MB of memory
  AGA (using NewWPA8)
  Harddisk

  Recommended configuration:
  PowerPC card
  32MB of memory
  Graphics card

--------------------------------------------------------------------------------

## 1.6  Installation

  I N S T A L L A T I O N

--------------------------------------------------------------------------------

 * AGA users please copy NewWPA8 to c: This speeds up chunky to planar
   conversion, it shouldn't be used with GFX boards, it will have some
   glitches with overlapping windows, but nothing problematic.
   You can execute NewWPA8 from the shell or your user-startup.
   Using AGA you could try an interlaced screen, giving an impression of
   the speed you could get with a gfx card.

   NEWWPA8 OR PATCHWPA8 ARE ESSENTIAL FOR CANDYFACTORY TO WORK RIGHT
   WITH AGA!!!!

This is because the normal OS WritePixelArray8 trashes the
chunky source. The patch won't start from the WBStartup drawer.

* The patterns directory holds the standard reflection/noisebump
  patterns and should be in te program's directory.

------------------------------------------------------------------------------


## 1.7  Usage


                   U S A G E

------------------------------------------------------------------------------


Starting Candy Factory Pro for the first time will bring up a screenmode
requester. The minimum resolution available is 326x300, so everything still
fits on the screen. Please select your desired screenmode. Using a 24bit
or 16bit mode with a graphics card will give you realtime truecolor
feedback. Using an 8bit mode will represent truecolor images in a standard
palette with dithering. You can use the render option to show the image
in a better quality.

You can supply a greyscale picture, preferrably anti-aliased and load
it with the 'Load Mask' menu option from the project menu. After loading
CandyFactory will scan the picture.

Another option is to add anti-aliased text with the 'Add Text' option from
the projects menu.

After this Candy Factory Pro will show a nonshaded version of the picture or
text, anti-aliased if the truecolor option is activated.
You can change this to shaded or reflective by using the materials window.

Now you can apply some effects to it:

Windows Menu:


              Material
            Change Material settings

             Lightsource
            Change Lightsource settings

             Inner Bevel
            Add Bevelled Edge to object

             DropShadow
            Add Dropshadow to object

                Glow
            Add Glow around object

```
              Bumpmap
           Add Bumpmap

         Color Texture
          Add Color Mapping
```

  Image menu:

```
         Invert Mask
         Invert Object/Background mask

         Render Image
         Render/remap image

         Clear Image
         Clear image
```

  Settings menu:

```
          Screenmode
         Selects a screenmode

           Realtime
         Realtime settings

            Paths
         Filepath settings

         Save Settings
         Save current settings
```

  Project menu:

```
          New project
         Open a new canvas window

         Open project
         Open or merge a project

         Write Project
         Save a project to disk

           Add Text
         Create anti-aliased text

           Load Mask
         Load mask source image

           Save Mask
         Save mask image

          Save Image
         Save final image
```

```
        Save Alpha
      Save image transparancy
```

------------------------------------------------------------------------------

## 1.8  Object/Background Material

```
  M A T E R I A L  (change the material of the object or background)
```

------------------------------------------------------------------------------

```
 - Edit:                 Select editing object or background material.

 - R,G,B:                Change the Red, Green and Blue components
                         of the current material element. Using
                         metallic or environment mapped materials
                         this color setting will determine the
                         reflection color.

 - Color, Specular, Ambient: Select Color, Specular (highlight) or
                         Ambient (color of dark areas) element.

 - Shading:              None/Normal/Metal/Envmap, select no, normal
                         or metallic-reflection shading. Select envmap
                         to use your own image as a reflecting
                         environment (see next option)

 - Environment Map       Filename of the image used as the reflected
                         environment. Very blurry images give the
                         best results. Click the '?' button to select
                         an image.

 - Glossiness:           Change the highlight's sharpness.

 - Load/Save:            Load or save the current background or
                         object material.

 - Copy/Swap:            Copy selected object or background material
                         to the nonselected background or object
                         material.

 When using a metallic material, add a very bright specular with very
 low glossiness for the best results.
 If you subtract the Color RGB values from the specular RGB values
 you will get very smooth highlights.
```

------------------------------------------------------------------------------

## 1.9 Lightsource

```
  L I G H T S O U R C E   (change lightsource settings)
```

--------------------------------------------------------------------------------

```
  - Distance:                 Set the distance of the lightsource or
                              reflection. Maximum distance is an infinit
                              lightsource, like the sun.

  - X/Y Pos:                  Horizontal and vertical position of the
                              lightsource. Change it by entering a value
                              here or clicking/moving in the shaded
                              sphere or the main picture.
```

--------------------------------------------------------------------------------

## 1.10　Inner Bevel

```
  I N N E R   B E V E L   (add a bevelled edge to your object)
```

--------------------------------------------------------------------------------

```
  - Bevel width, height:      Size and height of the bevel.

  - Smoothing:                From a sharp, to a rounded bevel.

  - Top/Bottom slope:         Change the shape of the bevel as previewed
                              in the profile box.

  - Carve:                    Invert the bevels height, as if it where
                              carved out. You can make the object darker
                              than the background to make the effect more
                              pronounced.

  - Render:                   Render the bevel.

  When using metallic or environment mapped materials, keep the height
  of the bevel low.
```

--------------------------------------------------------------------------------

## 1.11　Dropshadow

```
  D R O P S H A D O W   (add a soft dropshadow, this will set the background to
                        non-shaded)
```

--------------------------------------------------------------------------------

```
    – Smooth                      How smooth or sharp the shadow will be,
                                  smoother shadows take longer to render.

    – Intensity                   Intensity of the shadow, you can fade it
                                  in and out.

    – Color                       Change the color of the shadow.

    – Distance                    Distance of the shadow to the object.

    – Render                      Render the shadow.
```

--------------------------------------------------------------------------

## 1.12  Glow

```
  G L O W   (add a glow around the object, this will set the background to
          non-shaded)
```

--------------------------------------------------------------------------

```
    – Size                        Size of the glow with normal glow.
                                  Smoothness of the glow with diffuse glow.

    – Intensity                   Glow intensity, you can fade it in and out.

    – Central color               Glow color near the object

    – Edge color                  Glow color as it moves away from the
                                  object.

    – Falloff                     How thick or thin the normal glow is.

    – Diffuse                     Different type of glow, normal glow is
                                  sharper and faster to render.

    – Render                      Render the glow.
```

--------------------------------------------------------------------------

## 1.13  Bumpmap

```
  B U M P   M A P   (add a bumpy look to your object/background)
```

--------------------------------------------------------------------------

```
    – Select                      Select object or backgound bump settings.
```

--------------------------------------------------------------------------

   – X/Y Size                  Size of the bumps.

   – Bump height             Intensity of the bumps.

   – Top/Bottom clip        Clip the bumps.

   – Type:                  Noise type:
                               Normal
                               Fractal (more complex, different sizes)
                               Turbulence (with sharp changes)
                               FTurbulence (with different sizes)
                               Bitmap (see next option)

   – Bumpmap              Filename of the bumpmap image used when
                               selecting bitmap with the type selector.
                               Click the '?' button to select a file.
                               You can load a color image as well as
                               a greyscale one, Candy Factory Pro will
                               use the brightness of the image as a
                               height indication.

   – X/Y Pos              Position of the bumpmap.

   – Apply:               Apply the bumpmap.

   – Invert              Invert the bumps.

   – Move               Check to position the bumpmap by clicking
                               and moving the mouse in the canvas window.

  When using metallic or environment mapped materials, keep the height
  of the bumps very low.

--------------------------------------------------------------------------------

## 1.14  Color Texture

  C O L O R   T E X T U R E (add a color pattern to your object/background)

--------------------------------------------------------------------------------

   – Select             Select object or backgound texture settings.

   – Filename            Name of the image used as a color pattern.
                               Load an image by clicking the '?' button.

   – X/Y Size                  Size of the color pattern.

   – X/Y Pos               Position of the color pattern.

   – Move               Check this to position the texture by clicking
                               and moving in the canvas window.

                                        Uncheck to move the lightsource again.

  – Apply                    Apply/Remove the texture.

  When using a metallic or environment mapped material, the color texture
  will act as a reflection map, determining which colors will be reflected.

--------------------------------------------------------------------------------

## 1.15   Invert Mask

   I N V E R T   M A S K
--------------------------------------------------------------------------------

  Invert the object's mask, creating a cutout effect.

--------------------------------------------------------------------------------

## 1.16   Render Image

   R E N D E R   I M A G E
--------------------------------------------------------------------------------

  Reduce the truecolor image to 2 to 256 colors.

  – Number of colors         2 to 256 colors

  – Dither                   Add an error-diffusion pattern to optically
                             extend the number of colors and reduce banding.

  – Background 0             Use color index 0 instead of the background
                             useful for internet (transparant background)
                             and video-title work.

  – Refine shading/bumpmap   Turn on interpolation/supersampling for
    texture                  bumpmap or texture for a smoother look.
                             Or the shading refine for smooth shading
                             and specular highlights.

--------------------------------------------------------------------------------

## 1.17 Clear Image

```
C L E A R   I M A G E
```

--------------------------------------------------------------------------------

Using this option will clear the mask, which will remove the object,
all effect settings will remain. Now you can add new text.

--------------------------------------------------------------------------------

## 1.18 Screen Mode

```
S C R E E N   M O D E
```

--------------------------------------------------------------------------------

Selecting this item will bring up a screenmode requester. Supported screenmodes
are 8bit (also AGA), 15bit, 16bit and 24bit modes. The selected screenmode
can be saved with the 'Save Settings' menu option.
Minimum screensize is 336x336, because of the window sizes, hires modes are
really recommended.

--------------------------------------------------------------------------------

## 1.19 File Paths

```
P A T H S
```

--------------------------------------------------------------------------------

Here you can set the default filepaths Candy Factory Pro will use when
opening images, projects and fonts.

--------------------------------------------------------------------------------

## 1.20 Realtime Settings

```
R E A L T I M E
```

------------------------------------------------------------------------------


  These settings are to improve the speed of the program on slower machines
  by giving lower quality representations of the graphics. Truecolor modes
  on 8bit or AGA screens will be displayed with a special dithered mode.
  It is recommended to do a render or turn on Rendered Display in 8bit
  modes to get a better impression of the image.
  On PowerPC machines with graphics cards, all the slowest options can be
  used.

  – Realtime Fast/Truecolor     Select a fast representation when moving
                                the lightsource or modifying colors, or
                                a realtime truecolor mode..

  – Display Fast/Rendered/       Display quality after moving or modification.
    Truecolor                    Fast, remapped colors (set settings with
                                 the render menu option) or truecolor

  – Auto Render Bevel/           Render effects immediatly after modifying
    Shadow/Glow                  a parameter, recommended only on fast machines.

  – Refine Shading/              Automatic high-quality render pass after
    Bumpmap/Color Texture        moving the lightsource or modifying colors,
                                 sizes etc.
                                 Recommended only for fast machines.

  – Sliders                      Enable realtime update of the image when
                                 dragging sliders. Recommended only for
                                 fast machines.


------------------------------------------------------------------------------




## 1.21  Save Settings

   S A V E   S E T T I N G S

------------------------------------------------------------------------------


  Saves the settings for the selected screenmode, which windows are
  opened, as well as their positions, the realtime settings and the
  default file paths.
  Will be automatically loaded at program startup.


------------------------------------------------------------------------------




## 1.22  New Project

```
N E W   P R O J E C T
```

---------------------------------------------------------------------------

Open a new canvas window. This will remove the current image and mask.
You can select the x and y size, the window should fit on the screen.
The effect settings will remain the same.

---------------------------------------------------------------------------

## 1.23  Open Project

```
O P E N   P R O J E C T
```

---------------------------------------------------------------------------

Load or merge a previously saved project. You can check the parts you
want to load, these will replace the current settings. Unchecking the
maskpath checkmark will apply the effects to the current mask. The
image settings checkmark will load the invert-mask setting.
Checking effects that are not applied in the project file will reset
those effects.

---------------------------------------------------------------------------

## 1.24  Write Project

```
W R I T E   P R O J E C T
```

---------------------------------------------------------------------------

Save the current project settings to disk. You can select which parts
you want to save. The applied effects are checked. It is recommended
to save the maskpath as well, so the mask will be automatically loaded
with the project and the effects are shown as they where meant.
The image settings checkmark will save the invert mask setting from
the image menu.

---------------------------------------------------------------------------

## 1.25  Add Text

```
 A D D   T E X T
```

--------------------------------------------------------------------------------


Add anti-aliased text using a standard Compugraphic Font (CG).

- – Fontname                Name of the Compugraphic font to use.
                            Click '?' button to select a font.
                            Only the scalable Compugraphic fonts
                            will be shown, because bitmapped
                            fonts cannot be used for antialiasing.
                            The size doesn't need to be set here.

- – X Size                  Width percentage of the text
                            characters; 50 is half the width
                            200 is twice the width.

- – Y Size                  Size of the font, the aspect
                            ratio will remain the same.

- – X,Y Pos                 Position of the text.
                            You can position the text by clicking
                            and moving in the canvas window.

- – X,Y Bold                Variable emboldening, this is a standard
                            bullet.library function and doesn't work
                            too well with higher values.

- – Shear                   Makes italic text, value in degrees.

- – Rotate                  Rotates the text, value in degrees.

- – Spacing                 Ajusts the spacing between the characters.

- – Style                   Changes the kerning style between normal and
                            design kerning.

- – Text                    Text to be printed.

This tool uses the standard bullet library functions. Unfortunatly there
seem to be some bugs in the bullet library, causing some combinations
of settings not to work right.


--------------------------------------------------------------------------------



## 1.26  Load Mask

```
 L O A D   M A S K
```

------------------------------------------------------------------------------

Load a mask file as a basis for you object. The mask should be a non
24bit IFF image file. You can use an image file with background color
0, or an antialiased greyscale image with a dark background and light
foreground, for an antialiased image. Loading a mask will remove the
current mask or added text.

------------------------------------------------------------------------------

## 1.27  Save Mask

S A V E   M A S K

------------------------------------------------------------------------------

save the mask image you are currently using. Useful for saving the
mask you created with the 'Add Tekst' tool, so you can edit it or
load it again. To save the mask created in Candy Factory Pro with
the project, save the mask to disk and reload it, when saving the
project, check the mask checkmark.

------------------------------------------------------------------------------

## 1.28  Save Image

S A V E   I M A G E

------------------------------------------------------------------------------

Save the final image to an image file. You can select truecolor or
indexed colors mode. You can set the number of colors to use, whether
or not to dither the image and whether you want to use color 0 as the
background color. Set the refine checks for high-quality shading,
bumpmapping and color texturing.

------------------------------------------------------------------------------

## 1.29  Save Alpha

```
   S A V E   A L P H A
```

--------------------------------------------------------------------------------


  This option will save the image's transparancy information to a 256 color
  greyscale IFF file. This image can be used for compositing in an image
  editing program.


--------------------------------------------------------------------------------


## 1.30  Feedback

```
  F E E D B A C K
```

--------------------------------------------------------------------------------

  Send bug reports and suggestions to:

  milan@davilex.nl


--------------------------------------------------------------------------------


## 1.31  PPC Benchmarks

```
   B E N C H M A R K S (using the CandyFactory example picture)
```

--------------------------------------------------------------------------------


Bevelsmooth, Dropshadow and Diffuse Glow now use a different, much
faster algorithm, speedups noted at the bottom of the tables.

(innerbevel drawing only partly optimized on 68K)

INNERBEVEL (size 30, smooth 10)

| CPU | 060/50 | 604e/200 | RATIO |
|-----|--------|----------|-------|
| v0.54b | 33.48s | 4.24s | 7.9x |
| Current | 16.28s | 1.28s | 12.7x |
| Optimized x | 2x | 3.3x | 1.6x |


BEVELSMOOTH (height or smooth change, smooth 10)

```
CPU                  060/50   604e/200   RATIO

v0.54b               16.23s     3.29s     4.9x
Current               2.79s     0.21s    13.3x

Optimized x           5.8x     15.7x      2.7x



DIFFUSE GLOW (size 30)

CPU                  060/50   604e/200   RATIO

v0.54b               48.36s     3.61s    13.4x
Current               3.46s     0.21s    16.5x

Optimized x            14x     17.2x      1.2x



DROPSHADOW (smooth 30)

CPU                  060/50   604e/200   RATIO

v0.54b             1:09.30m     6.10s    11.4x
Current               5.28s     0.24s      22x

Optimized x          13.1x     25.4x      1.9x


-------------------------------------------------------------------------------
```

## 1.32  History

```
   H I S T O R Y
-------------------------------------------------------------------------------


  - Candy Factory Pro 1.0:
    Debuts at the Computer '98 fair in Cologne at November 13th (Friday!)
    1998


  Future:
  Please not that buyers of this program will be able to download free
  patches from the internet or get them from magazin's cover-CD's.
  These patches will contain bugfixes and/or improvements to the current
  version.


-------------------------------------------------------------------------------
```