



(POPOUT)

Random Dot Stereogram generator

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Introduction

POPOUT generates Random Dot Stereogram (RDS) images from drawings that you create. Stereogram images of the style that POPOUT creates appear at first glance to be a repeating pattern of random dots. When viewed properly, however, a "hidden" three dimensional image will "POP OUT" of the stereogram!

Using Paintbrush or some other suitable drawing tool, you will create a drawing using a 16-color palette. After saving your drawing as a 16-color BMP file, you will invoke POPOUT. POPOUT will read your drawing, interpreting each of the 16 colors in your drawing as a "level", and create an image file which is a stereogram image containing your drawing hidden within it. POPOUT is capable of creating stereograms in Black & White, Random Colors, or in Custom Color schemes of your own design. Using Paintbrush, you can then view and print your stereogram.

If you haven't yet installed POPOUT onto your hard drive, click on the "Installation" topic, and we'll guide you through the installation.

[Installation](#)

Installation

Installation of POPOUT is easy. Depending on how you received your software, installation may be different for different users. Select from the below list the topic that most applies to you:

[I thought POPOUT was already installed!](#)

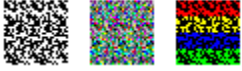
[I'm reading this POPOUT.HLP file not sure what to do!](#)

[I'd prefer to go step by step through the installation.](#)

[I'm an old DOS user. Give me the short version!](#)

I Thought it was already installed!

Could be, you're right. If your diskette was received through some sort of magazine or distributor, and you've already been through some sort of "Install" or "Setup" utility, then you've probably got POPOUT on your hard disk already. Check for a Program Group or Program Item called POPOUT, and an icon that looks like a miniature stereogram, like one of the three shown below.



If so, POPOUT is already installed. Jump to the topic "Introduction" to get you started. If not, jump to the topic "Windows Install" and we'll get POPOUT installed for you.

[Introduction](#)

[Windows Install](#)

Windows Install

If you're reading this, you're pretty much sure that POPOUT hasn't yet been installed onto your hard drive. Depending on the method that your software was distributed, it may be installed by an "Install" or "Setup" type of utility. Otherwise, follow the steps below for a sure-fire install. If you're an experienced PC user and the steps below look like they may be a bit more detailed than you need, you may want to jump to the "Short Version" topic for installation of this software.

[The Short Version of Install](#)

A Step-by-step installation procedure:

Put the POPOUT disk in your floppy drive.

Start the File Manager.

n In the Program Manager, find and double click on the "File Manager" icon. The File Manager is usually located in the "Main" Program Group.

Create a POPOUT directory on your hard drive.

n In the File Manager, click on the "File" pulldown, then click on "Create Directory...". In the window that appears, type:
C:\POPOUT (and press the 'Enter' key)

Open the POPOUT directory.

n In the center of the File Manager, move the scroll bar until the POPOUT directory is visible. Double click on it to open the directory.

Make the floppy the current drive.

n Click on the symbol representing your floppy drive.

Copy the POPOUT files to the hard drive.

n Hold down the left mouse button on the opened folder that represents your POPOUT floppy on the left hand side of the File Manager window, then drag it to the symbol that represents your hard drive. Release the mouse button. A window will appear that asks you if you want to do the copy. Click the "Yes" button.

Exit the File Manager

Create a POPOUT Program Group

n In the Program Manager window, click on the "File" pulldown, then click on "New". Press the "Program Group" button, then click on "OK". A second window will appear. Under "Description", type the word POPOUT followed by the 'Enter' key.

Create the POPOUT Program Item

n In the Program Manager window, click on the "File" pulldown, then click on "New". This time, press the "Program Item" button, and click on "OK". Another window will appear.

n Click in the "Description" box, and type the word POPOUT (but DON'T press the 'Enter' key).

n Click in the "Command Line" box, and type the following:
C:\POPOUT\POPOUT.EXE followed by the 'Enter' key.

Create a POPOUT Help Program Item

n In the Program Manager window, click on the "File" pulldown, then click on "New". Press the "Program Item" button, and click on "OK". Another window will appear.

n Click in the "Description" box, and type the words POPOUT Help (but DON'T press the 'Enter' key).

n Click in the "Command Line" box, and type the following:
C:\POPOUT\POPOUT.HLP followed by the 'Enter' key.

That's it! POPOUT is installed on your hard drive.

n You may want to resize your POPOUT Program group to make it a bit smaller.

Jump to the "Introduction" topic below, and we'll get you going on creating your own stereograms!

[Introduction](#)

POPOUT Install - The Short Version

This topic is included for the experienced user who is comfortable with DOS commands and the creation of Program Groups and Program Items. If you'd rather stay within Windows and be guided through the installation, jump to the "Windows Install" topic below:

[Windows Install](#)

The Short Version:

- n Shell out to DOS.
- n Create a directory on your hard drive called POPOUT.
- n Copy all of the files on the POPOUT floppy to the POPOUT directory.
- n Back in Windows, create a Program Group called POPOUT, or add the POPOUT Program Item to an existing Group.
- n Create the POPOUT Program Item with the command line POPOUT.EXE, and your POPOUT directory as the working directory. If you want, add POPOUT.HLP to the Group.

I'm not quite sure what to do!

No problem. If you're reading this, you're on the right track. If you've already installed POPOUT, jump to the topic "Introduction". This will get you started in creating stereograms. If you haven't yet installed POPOUT, jump to "Windows Install". If you're not sure if POPOUT has been installed, also jump to "Windows Install". The "Windows Install" topic will guide you through the installation of POPOUT.

[Introduction](#)

[Windows Install](#)

Creating a Stereogram

The following are the main steps you will follow in creating a stereogram image:

[Create a Drawing](#)

[Generate the Stereogram](#)

[View and Print the Stereogram](#)

Create a Drawing

The first step in generating a stereogram image is to design the image that you want to be hidden within the stereogram. This is the most time-consuming part of the process.

We've designed POPOUT to be used easily in conjunction with Microsoft Paintbrush, which all Windows users possess, and most are familiar with. If you've never used Paintbrush, you may want to spend some time getting familiar with it. If you prefer another drawing tool, you may certainly use it. POPOUT's only requirement is that your drawing be in 16-color BMP format. For purposes of this document, we will assume that you are using Paintbrush to create your drawings.

We recommend that you create your drawing by following the steps shown below:

[Redefine the Paintbrush Palette](#)

[Initialize the Paintbrush Canvas](#)

[Create your Drawing](#)

[Save your Drawing](#)

Warning!

Some new users of POPOUT invariably try to convert a scanned photograph to a stereogram. You should be aware that THIS WILL NOT WORK! This is not a fault of POPOUT. A scanned photograph contains NO depth information encoded within it. Colors or greyscale produced by a scan are NOT the same thing as depth information. POPOUT (or any other RDS generator) has no way of determining relative depth in the image.

Redefine the Paintbrush Palette

Your distribution diskette contains a Paintbrush Palette definition file called POPOUT.PAL. We suggest that you redefine the palette using this file.

When you start Paintbrush, you may have noticed that the default Paintbrush palette consists of 28 colors. Since Paintbrush can only save 16 of these uniquely (we don't know why), we've limited POPOUT to accepting drawings which are in a 16-color format. This means that in creating your drawing, you will use at a maximum only 16 colors from the Paintbrush palette.

Click on the Paintbrush "Options" pulldown, then click on "Get Colors...". Select the file POPOUT.PAL from your POPOUT directory. This file will redefine the Paintbrush palette such that all but 16 colors will be "blacked out". Furthermore, the remaining 16 colors will be rearranged in such a way as to make it easier for you to remember which color will map to which level in the stereogram.

Initialize the Paintbrush Canvas

Only the left-most 16 colors of the Paintbrush palette (8 on top and 8 on the bottom) will be used in creating your drawing. If you've redefined the palette with POPOUT.PAL, these colors are the only ones remaining.

Before starting your drawing, you should clear the canvas to the top-left palette color. If you've used POPOUT.PAL, this color is Black. If you haven't, this color is White.

Before clearing the canvas, you might want to decide on an image size. Click on "Options", then "Image Attributes". Click on the "pels" (meaning pixels) "radio" button. Enter the "Width" and "Height" of your image. We suggest starting with something small, like 320 Width by 200 Height.

Once you've chosen the size of your drawing, you're ready to clear the canvas. Click on the top-left color of the palette with the RIGHT mouse button. Click on the "File" pulldown, then click on "New".

Hint:

Later, you may want to experiment with clearing the canvas to a different color. You can get some interesting "Push In" effects (rather than POP OUT) in your stereograms.

Create your Drawing

Creating your drawing is the most time consuming part of generating a stereogram image. This is where you will actually draw the image that you want POPOUT to hide within your stereogram.

Using all of the normal Paintbrush tools, go ahead and create your drawing. The important thing to remember is that the colors you choose will be interpreted by POPOUT as "levels". Of the 16 left-most colors, the color on the top left (Black if you've used POPOUT.PAL) will be interpreted as the level furthest from the viewer. The next color (Dark Red if you've used POPOUT.PAL) is closer to the viewer. This continues on until the bottom-right color (White if you've used POPOUT.PAL) is the closest level to the viewer.

Important!

Do not confuse these colors with the colors of your stereogram. The color of your stereogram has nothing to do with the colors you use to create your drawing. The colors that you use here is simply a way for you to put depth information into your drawing.

Hint:

If this is your first time, you may want to use a drawing that we've included on your diskette, rather than creating one of your own. Click on "File", then click on "Open". Select the file EXAMPI.BMP from your POPOUT directory. This is a good example of a 16-color drawing.

Another Hint:

When you're creating your drawing, try not to have less than 3 or 4 pixels of the same color (level) in one horizontal row. For example, don't draw a vertical line that is only 1 pixel wide. Because of the way the illusion works, something like this will be very hard to see in the stereogram.

Save your Drawing

Once you're finished with your drawing, you will need to save it to disk in order for POPOUT to read it. Your drawing (which POPOUT calls a Source File) must be in a 16-color BMP format.

To save the drawing, click on the "File" pulldown, then click on "Save As...". In the "Save File as Type" window, select "16 Color bitmap". Here, you will need to choose a filename, for example, EXAMPI.BMP.

Hint:

We prefer to save Source File drawings with a filename ending in the letter "I" to indicate that this is an input file to POPOUT. By naming the stereogram the same name but without the "I", it is easy to remember which drawing was used to create which stereogram.

Generate the Stereogram

Once you've created your Source File drawing and saved it to disk in 16-color BMP format, you're ready to start POPOUT.

In the POPOUT Main Menu, you will specify the Source File drawing and specify a filename for POPOUT to save the stereogram, called the Destination File. After filling in a number of optional parameters, you will be ready to generate your stereogram. The following topics provide a description of all of the controls in the POPOUT Main Menu.

[Source File](#)

[Destination File](#)

[Translate File](#)

[Output Style](#)

[Color File](#)

[Create Color](#)

[Pattern Width](#)

[Pixel Density](#)

[Generate and Cancel](#)

Source File

The Source File is the filename of the 16-color BMP drawing that you created using Paintbrush or another similar tool. This is the main source of information for POPOUT when creating a stereogram, as it contains the image that POPOUT will hide within the stereogram.

In the POPOUT Main Menu, click on the Source File button, and select the filename of the drawing that you created.

Destination File

The Destination File is the file which is your stereogram. POPOUT will create this file. The purpose of the Destination File button in the POPOUT Main Menu is for you to specify the filename. POPOUT saves stereograms in BMP format so that they can be viewed by Paintbrush.

Hint:

When specifying the Destination File name, use a name similar to the name you gave to your Source File drawing when you saved it in Paintbrush. Down the road, it will help you remember which drawing was used to create the stereogram. If your Source File drawing is called EXAMPLI.BMP, you may want to name the Destination file something like EXAMPO.BMP.

Translate File

It turns out that there seems to be some "quirkiness" in the way Paintbrush saves BMP drawings. We're not sure why, but 16-color BMP drawings are saved slightly differently when Windows is running in 16-color mode as opposed to 256-color mode. A couple of the colors get mixed up when Paintbrush saves the drawing. In the tests we've run with Windows in 64K or 16M color modes, Paintbrush will only save 8 unique colors of your drawing. For this reason, we suggest that you have Windows running in 16-color or 256-color mode (which is probably the way most people's environment is set up anyway).

Furthermore, while we recommend that you redefine your Paintbrush palette with POPOUT.PAL when creating your Source File drawing, some folks may choose not to do so.

Because of all of these things, we needed to introduce some mechanism that was the "final word" on how colors in the Source File drawing are to be converted to levels in the Destination File stereogram. This is the purpose of the Translate File. We've included three Translate Files on your diskette; one of them should fit your environment.

[Selecting a Translate File](#)

[Structure of a Translate File](#)

Selecting a Translate File

Most all POPOUT users will be able to make use of one of the three Translate Files included on your disk. Read through the following scenarios, and find the one that fits your particular environment.

- n If you have Windows running in 16-color mode, and you've used POPOUT.PAL to redefine your Paintbrush palette, then use POPOUT16.POT as your Translate File.
- n If you have Windows running in 256-color mode, and you've used POPOUT.PAL to redefine your Paintbrush palette, then use POPOUT.POT as your Translate File. This is the scenario we prefer to use, and recommend that you use.
- n If you have Windows running in 16-color mode, and you've chosen to use the default Paintbrush palette, then use POP16ORG.POT as your Translate File.
- n If you have Windows running in 256-color mode, and you've chosen to use the default Paintbrush palette, then you will not need a Translate File.

Structure of a Translate File

While you should never need to create your own Translate File, we've included this topic to explain what is contained within the Translate File.

The Translate File is a simple text file, consisting of 16 lines. Each line contains one of the numbers 0 through 15.

The Translate File assigns positional numbers to the 16 left-most default colors of the Paintbrush palette. If you were to start Paintbrush and NOT redefine the palette, you could assign numbers 0 through 7 to the 8 top-left colors, and the numbers 8 through 15 to the 8 bottom-left colors.

The first line of the Translate File specifies which one of these colors should be the "bottom" level of the stereogram (the level furthest from the viewer). The next line contains the number of the color for the next level up, etc. The 16th line of the Translate File specifies the color that will map to the "top" level, the level closest to the viewer.

Output Style

The Output Style section of the POPOUT Main Menu consists of three "radio" style pushbuttons. The Output Style specifies the type of stereogram that you want POPOUT to create. The following topics will discuss each of these Output Styles.

[Black and White Output Style](#)

[Random Output Style](#)

[Custom Color Output Style](#)

Hint:

If you're experimenting just to see if you can get a viewable stereogram, you may want to leave the Output Style set to Black & White, as these take up a lot less disk space than Random or Custom Color stereograms.

Black and White Output Style

This is the default Output Style. This Output Style selection will tell POPOUT to generate your Destination File stereogram in the form of a 2-color BMP file. For hardcopy to a simple black and white printer, this is the Output Style you'll want to use.

Random Output Style

This Output Style button tells POPOUT to generate the Destination file stereogram using a random selection of 256 colors.

These stereograms are stored as a 256-color BMP file.

Hint:

Random color stereograms, even though they are 256 color, convert nicely to a 16 color format. Read the stereogram in Paintbrush, then resave it as a 16-color BMP. This may be helpful for users with color printers with limited capability.

Custom Color Output Style

This is the Output Style that allows users precise control over the coloring of their stereograms. When this Output Style is selected, POPOUT needs some mechanism to tell it precisely how to color the stereogram. It uses something we call a Color File to do this.

Important!

Don't confuse the color of the stereogram with the colors that you used when creating your Source File drawing in Paintbrush. Those colors that you used in Paintbrush were converted by POPOUT to "levels", and have nothing to do with the color of the stereogram.

The Color File is the mechanism used by POPOUT to control the color of the stereogram. The Color File contains, in precise detail, how the color of the stereogram should vary from top to bottom of the image.

When using this Output Style, you must either create a new Color File by clicking on the Create Color button, or use a previously created Color File by clicking on the Color File button.

[Selecting a Color File](#)

[Creating a Color File](#)

Hint:

Color Files are independant of the stereograms. You may eventually have an entire directory containg many Color Files that you've created. Any Color File may be used to color any stereogram. We suggest naming color files (which have a default extension of *.POC) such that they indicate the color scheme. For example, a Color File containing the color scheme "Red, White, Blue" may be called something like USFLAG.POC, or RWB.POC.

Selecting a Color File

The rectangular Color File button is used to select a previously created Color File when generating custom color stereograms. Click on the button, then select the Color File you want POPOUT to use when coloring the stereogram (Color Files have a default extension of *.POC).

If you will be creating a new color scheme for the stereogram, you will need to create a new Color File. In this case, click on the Create Color button.

Create Color

The [Create Color](#) button is used to create a new color scheme, and hence, a new [Color File](#). Color Files are used in the creation of [Custom Color](#) stereograms.

The Color File is a simple text file which describes to POPOUT how to color your stereogram. In a Custom Color stereogram, we consider some of the pixels to be [foreground pixels](#), and others to be [background pixels](#). The foreground pixels of the Custom Color stereogram may vary in color from top to bottom of the image. The background pixels all have the same color value.

When you press the Create Color button, a window which we call the "[Create Color File](#)" window pops up. In this window, you may select any number of colors from 1 to 50 to make up the color scheme of the foreground pixels in your stereogram. You may also select the color of the background pixels.

For a detailed description of the "Create Color File" window, refer to the topic "Create Color File Window". For a detailed description of the structure of a Color File, refer to the topic "Structure of the Color File".

[Create Color File Window](#)

[Structure of a Color File](#)

Create Color File Window

"Create Color File" is the name of a POPOUT window that is opened when you press the "Create Color" button. The purpose of the window is to allow the user to create a color scheme for Custom Color stereograms, and hence a Color File.

The "Create Color File" window has the following controls:

[Foreground Color Buttons](#)

[Background Color Select](#)

[Clear Button](#)

[Save and Cancel Buttons](#)

Foreground Color Buttons

The "Create Color File" window contains eight buttons along the left side of the window. These buttons are used to create a color scheme for the foreground pixels in Custom Color Stereograms.

You may press any of the eight color buttons from 1 to 50 times. By the sequence and number of button presses, you will define how you want the color of foreground pixels to vary from the top to bottom of the stereogram.

For example, if you press the buttons Red-White-Blue, the foreground pixels of the stereogram will vary gradually from Red at the top of the image to White in the middle, then finally from White to Blue at the bottom.

As you press a color button, a list is maintained and displayed to remind you of the color scheme you're designing.

Hint:

Color buttons may be pressed more than once. For example, the key presses Red-White-Blue will produce a color scheme different than pressing Red-Red-White-White-Blue-Blue. Experiment.

Another Hint:

If you've made a mistake, you can delete colors from the displayed list. Click on the entry in the list to highlight it, then click on the Clear Button.

Background Color Select

To the right of the "Create Color File" window is a "combo box" which allows you to select the color of the background pixels in a Custom Color stereogram.

The default color of these background pixels is Black.

Hint:

If you will be printing this stereogram, try using White as the background color. The resulting stereogram will tend to be less "busy" looking.

Clear Button

The Clear button in the "Create Color File" window has two purposes. When selecting a foreground pixel color scheme, a list of the colors you've chosen appears in the center of the window. If you click on one of the colors in the list to highlight it, then press the Clear button, the entry will be deleted from the list. If you press the Clear button when no entries in the list are highlighted, all of the entries are deleted.

Save and Cancel Buttons

Once you've chosen a list of foreground colors, and selected a background color, click on the Save button to create a Color File. You will be prompted for a filename for the Color File. POPOUT Color Files have a default extension of *.POC.

Once you've saved your color scheme into a Color File, the "Create Color File" window will close, and the name of your newly created Color File will be entered into the "Color File" space in the POPOUT Main Menu.

If you've decided that you don't want to be generating a Custom Color stereogram after all, click on the Cancel button to close the "Create Color File" window.

Structure of a Color File

Most users will probably never have any need or desire to manually modify a Color File. Since a Color File is a simple text file which can be edited using an editor such as Notepad, you may very well want to "tinker" with Color Files.

In the interest of simplicity, we designed the "Create Color File" window to create Color Files containing only full intensity primary and secondary colors, as well as White and Black. By "tweaking" a Color File, you can create color schemes including many other colors. Therefore, we've included this topic to discuss the structure of a Color File.

As previously mentioned, a Color File is a simple text file. The Color File can contain any number of lines. Each line contains a command to POPOUT. There is a very strict syntax that must be adhered to in a Color File (remember, since Color Files are generated by POPOUT's "Create Color File" window, there's normally never a problem - problems only occur when you modify a Color File).

Each line in a Color File must begin with one of four words: RED, GREEN, BLUE, or BLACK (case does not matter). Any number of lines may begin with the words RED, GREEN, or BLUE, but only one line may begin with the word BLACK. Furthermore, the line beginning with the word BLACK must be the last line in the Color File.

For lines beginning with the words RED, GREEN, or BLUE, the syntax is as follows:

COLOR STARTC ENDC STARTY ENDY

where:

COLOR is either RED, GREEN, or BLUE

STARTC is the beginning intensity (in percent) of the color

ENDC is the ending intensity (in percent) of the color

STARTY is the beginning line (in percent) of the stereogram

ENDY is the ending line (in percent) of the stereogram

STARTC, ENDC, STARTY and ENDY are all integer numbers between 0 and 100 (inclusive), preceded by one space. ENDY must always be a larger number than STARTY.

For the line beginning with the word "BLACK", the syntax is:

BLACK REDC GREENC BLUEC

where:

REDC is the amount (in percent) of Red in the background pixels

GREENC is the amount (in percent) of Green in the background pixels

BLUEC is the amount (in percent) of Blue in the background pixels.

REDC, GREENC, and BLUEC must all be integer numbers between 0 and 100 (inclusive).

For example, the line:

RED 0 100 0 100

would be interpreted by POPOUT to mean, "Gradually vary Red from 0% intensity to 100% intensity, from 0% down the image (the top) to 100% of the way down the image (the bottom). In other words, this command will ramp any red in the image from full-off at the top of the stereogram, to full intensity at the bottom.

The following example is a Color File generated by pressing the sequence Red-White-Blue in the "Create Color File" window, and selecting Yellow as the background color. Note that this sequence will cause the foreground pixels in the stereogram to be Red at the top of the image, gradually fading into White in the middle, then onto Blue at the bottom. The background pixels will be Yellow.

RED 100 100 0 50

RED 100 0 50 100

GREEN 0 100 0 50

GREEN 100 0 50 100

BLUE 0 0 0 50

BLUE 0 100 50 100

BLACK 100 100 0

The above example Color File would be interpreted by POPOUT as follows:

The first line would be read by POPOUT as, "Vary Red from full-on at the top of the image, to full on in the middle of the image". In other words, Red stays at full-on for the top half of the image.

The second line would be interpreted as, "Vary Red from full-on in the middle of the image to full-off at the bottom".

The third line tells POPOUT to vary Green from full-off at the top to full-on in the middle, and the fourth line says to ramp green from full-on in the middle to full-off at the bottom.

The fifth and sixth lines ramps Blue from full-off at the top to full-on in the middle, then to stay at full-on for the bottom half.

When POPOUT combines all of this information when creating foreground pixels, we see that there is no Green or Blue at the top of the image, but lots of Red. So, the very top of the image will be Red. For the top half of the image, Green and Blue gradually increase in intensity so that in the middle, we have full intensity of all three colors, resulting in White in the middle (Red + Green + Blue = White). Moving from the middle to the bottom of the image, both Red and Green fall to full-off, while Blue stays at full-on. So, in the bottom half of the image, we fade from White to Blue.

The last line of the Color File redefines the Black, or background pixels, to be full-intensity Red and full-intensity Green, but no Blue. Red + Green = Yellow, so the background pixels will be Yellow.

Hint:

If you're in there fiddling with Color Files, make sure and "overlap" both color and position values. For example, in the two lines above that describe Red, the middle of the image (50%) is defined in both lines. Don't do something like:

```
RED 100 100 0 50
```

```
RED 100 0 51 100
```

In the above example, we haven't "covered" the area between 50% and 51% of the way down the image.

Color File

The Color File button is used when you want POPOUT to create a stereogram with a color scheme that you have previously defined and stored on your disk as a Color File. The Color File button is used to select the Color File. This button is enabled only when you've selected the Output Style to be Custom Color.

Color Files are independant of stereograms. You may in time have a directory full of miscellaneous Color Files. Any Color File may be used to define the color for any Custom Color stereogram.

To create a Color File, refer to the topic "Create Color".

[Create Color](#)

Hint:

Color Files have a default extension of *.POC. Name a Color Files to be descriptive of the color scheme it defines, not the stereogram you're using it to create. For example, a Color File that describes the color scheme "Cyan, Magenta, Yellow, Black" might be named something like CMYK.POC.

Pattern Width

One of the first things you notice when looking at a Random Dot Stereogram is the seemingly repeating patterns of random dots across the width of the image. We refer to this distance between repeating patterns as the Pattern Width.

When POPOUT generates a stereogram, it reads this parameter (which we've arbitrarily defaulted to 48) to determine how many pixels to generate before repeating the pattern. The Pattern Width value is specified in Pixels.

Since we don't know the resolution or size of your monitor, and we don't know the resolution of your printer and whether you'll be scaling your image before printing it, we don't know the physical distance between patterns in your finished stereogram. This physical distance between patterns is what increases or decreases the relative "depth" of the image contained within the stereogram. The wider the pattern, the more depth in the image. Also, the wider the pattern, the more difficult it will be for some people to see the hidden image.

Depending on your own environment, you will probably want to experiment with different values for the Pattern Width. We recommend a pattern width of somewhere between three quarters of an inch to an inch and a half.

Pixel Density

When generating a Black & White or Custom Color stereogram, we have the concept of "foreground" and "background" pixels. In Black & White stereograms, we consider the White pixels to be in the foreground, and the Black ones to be in the background. When creating Custom Color stereograms, we consider the colored pixels to be the foreground pixels, and the "Black" pixels (which may be redefined to another color) to be the background pixels.

The Pixel Density is a percentage value. It specifies to POPOUT the percentage of foreground pixels that should be generated. The default value is 50, which tells POPOUT that when creating a Black & White or Custom Color stereogram, make roughly half of the pixels the foreground color, and half of the background color.

The reason for including the Pixel Density parameter is for generating a stereogram which you intend to print. Users who copy their stereograms to directly to high density printers (such as the 300 and 600 dots per inch with no scaling) will find that stereograms created with a 50% Pixel Density tend to be a bit dark. By adjusting this value, a lighter print can be obtained. Allowable values are from 1 to 99 (both 0 and 100 make no sense, as this would produce an image of all foreground or all background pixels!)

Note:

The Pixel Density is not used when the Output Style is Random, since there is no concept of foreground or background pixels. In this case, all pixel colors are chosen randomly by POPOUT. T

Generate and Cancel

The Generate button in the POPOUT Main Menu is the "DO IT" button. Once you've set up all of the controls, click on the Generate button.

At this point, POPOUT will read your Source File drawing, and any appropriate controls that you've set like Translate File, Output Style, Pattern Width, etc. POPOUT will then create a file on your disk with the name you gave as the Destination File. This file is your stereogram. POPOUT displays a status bar at the bottom of the menu to provide feedback as to where it is in generating your stereogram. Depending on the speed of your computer, you may never even notice it.

Once POPOUT has finished generating your stereogram Destination File, you may exit POPOUT if you wish. The Cancel button is used to exit POPOUT.

Hint:

Don't exit POPOUT if you're experimenting with an image. Iconify POPOUT, and view your stereogram using Paintbrush. This way, POPOUT will retain all of the parameters you've set up, and it will make it easy to change a parameter for another iteration.

Another Hint:

Since the RDS is based on randomly generated pixels, sometimes you may get a stereogram that just doesn't "look right". A glob of blue pixels here, a glob of black pixels there, etc. Each time you press the Generate button, POPOUT uses a different set of random numbers, so keep hitting Generate, view the stereogram via Paintbrush, go back and hit Generate again, etc., until you get a stereogram that you like.

View and Print the Stereogram

Once you've clicked on the Generate button in the POPOUT Main Menu and POPOUT generated your stereogram, you will want to view it. POPOUT saves your stereogram using the filename given as the Destination File, and saves it in BMP format. Black & White stereograms are stored in 2-color BMP format, while Random and Custom Color stereograms are stored as 256-color BMP files.

Start Paintbrush, and Open the file that you specified to POPOUT as the Destination File. If you're not satisfied with something, either Open your Source File drawing and fix it, or fiddle with the parameters in POPOUT. Once you're satisfied, you may want to print your stereogram. Print your stereogram directly from Paintbrush. Refer to the topic "Hints for Printing".

[Hints for Printing](#)

Hint:

When you're working on a stereogram, never exit POPOUT or Paintbrush. Either iconify the one you're not using, or keep it in back. This makes any iteration of fiddling with your drawing, fiddling with POPOUT parameters, viewing the stereogram, fiddling again with your drawing, etc., a lot easier and quicker.

Hints for Printing

Paintbrush contains a nice mechanism for printing your stereograms. There are a few tips, however, that we've included so that you produce the nicest looking hardcopy.

- n Always use the Printer Resolution. When you print using Paintbrush, there is a box in the Paintbrush Print window labelled "Use Printer Resolution". Always 'X' this box. If you don't, you may see vertical ridges or lines in your stereogram.
- n Try to scale by integer multiples of 100. In the Paintbrush Print window, scale by numbers like 100%, 200%, 300%, etc. Otherwise, you may see the same vertical lines or ridges mentioned above.
- n Depending on the resolution of your printer, and the scaling factor mentioned above, you may need to go back and recreate your stereogram with a different value for the Pattern Width in the POPOUT Main Menu. On paper, the distance between repeating patterns should be around an inch to an inch and a half.
- n If you've generated a Black & White stereogram, and your printing to a black and white printer, you may notice that the stereogram is a bit dark, especially if you have a high resolution printer and your print scale factor is small. Go back and re-generate your stereogram with a higher value for the Pixel Density in the POPOUT Main Menu.

Hints for Viewing

Some folks will have no problems in viewing your stereogram images. Others may need a bit of help. Below is a list of "hints" that we've compiled from different people.

- n Start with your head about a foot or so from the image. Stare at it and let your eyes relax. If things start to move out of focus, let them. Keep staring.
- n With your head about a foot from the image, suddenly move toward the image, and try not to refocus.
- n Stare at something at a far wall. Then, suddenly, glance at the image. Don't try to refocus on the image.
- n Get your nose right up to the image. Gradually (or for some people, quickly) move your head back.
- n Practice by drawing two dots on a piece of paper about an inch or so apart. Stare at them and let your eyes relax. Both dots should go out of focus, and you will see a total of four fuzzy dots. Keep staring. As the two middle fuzzy dots start to move toward each other, let them. There will be a point where the two middle fuzzy dots meet, and you will see a total of three dots, where the one in the center is clear, and the two edge dots are fuzzy. This is what you need to be doing to your eyes to see the stereogram image.
- n On a printed stereogram, draw two dots like in the above hint just above the stereogram, at a distance identical to the pattern width. Once you stare and see three dots, gradually move your eyes down into the stereogram without trying to refocus.
- n Put your stereogram behind a piece of glass, then stare at your reflection in the glass.

Problems, Suggestions, etc.

If you've encountered some sort of problem in trying to generate a stereogram image using POPOUT, our first recommendation is to rummage through this Help file. We've tried to include a number of tips and suggestions to give you the best possible results. Chances are, the answer to your question is buried in this Help file somewhere.

If not, or if you have any other problems, either contact the agent or merchant that sold you your software. If he or she can't answer your question, you can contact the authors by way of the addresses shown below:

POPOUT

C/O Bob Hankinson

P.O. Box 50632

Dallas, Texas 75250

Or via the Internet, America OnLine, Prodigy, or CompuServe:

Internet or AOL: BHankinson@aol.com

Prodigy: GRSR18B

CIS: 73144,1046

Advantages of Registering POPOUT

This version of POPOUT is shareware. It is a fully functional Random Dot Stereogram generating program, capable of creating 640x480 Black & White stereogram images.

This Help file, as well as the POPOUT Main Menu, was originally written and designed for a non-shareware, commercial version of POPOUT. Therefore, there are references in this Help file to features that do not exist in this shareware. Furthermore, there are some controls in the POPOUT Main Menu that are not used in the shareware.

Upon registering your copy of POPOUT, we will send you the commercial version of the software. As we mentioned above, the commercial version contains a few enhancements not in the shareware. While the shareware is fully capable of generating stereograms, the commercial version is capable of generating more complicated stereograms. Since this Help File was written for the commercial version, we've included the following addendum that explains the enhancements that have been added to the commercial version of POPOUT.

- n The number of "levels" of depth in this shareware is the "bottom" level, and one other level. When this shareware version reads your Source File drawing, non-black colors are all treated the same. In the commercial version of POPOUT, each of the 16 colors possible in the Source File drawing is translated by POPOUT to a different "level" of depth in the stereogram. The result is a stereogram with 16 separate levels of "depth".
- n The Pattern Width is fixed to 48 pixels in this shareware. In the commercial version, we've added the capability to vary this parameter. The Pixel Width parameter is extremely useful for generating hardcopy on a high resolution printer.
- n The Pixel Density is fixed at 50% in this shareware. In the commercial version, this parameter may be altered, allowing the relative contrast of the stereogram to be adjusted. This enhancement is useful in improving the quality of printed stereograms.
- n In the commercial version, we've added the capabilities for POPOUT to generate colored stereogram images. The Random and Custom Color Output Styles have been added. The Random style will direct POPOUT to generate a stereogram with 256 randomly chosen colors. The Custom Color style allows the user to precisely specify the output color scheme of the stereogram.
- n In the commercial version, we've added the capability of POPOUT to read Source File drawings (and therefore generate stereograms) of any size.

How to Register POPOUT

To register POPOUT, simply click on the "Help" pulldown in the POPOUT Main Menu. Then, click on "Register POPOUT", and an order form will be displayed. Also, if you restart POPOUT a button labelled "Order Form" will appear on the opening window. The order form may be printed by clicking on the "File" pulldown in the Order Form window, then click on "Print Topic".

I Thought it was already installed!

Could be, you're right. If your diskette was received through some sort of magazine or distributor, and you've already been through some sort of "Install" or "Setup" utility, then you've probably got POPOUT on your hard disk already. Check for a Program Group or Program Item called POPOUT, and an icon that looks like a miniature stereogram, like this:

UK Order Form



Oakley Data Services
3 Oakley Close, Sandbach,
Cheshire CW11 9RQ, England



Call +44 (0)270 759739
Fax +44 (0)270 765272
CIS: 100024,1763

To print this order form, click on the "File" pulldown above, then click on "Print Topic".

To:

Oakley Data Services, 3 Oakley Close, Sandbach,
Cheshire CW11 9RQ, England.

Please send me _____ registered copy(s) of POPOUT, together with Shareware Versions of some of your other software.

Prices:

UK and EEC:

17.00 Pounds Sterling including P&P, plus VAT (17.5%) = 19.97 Pounds Sterling per copy.

Rest of the World:

17.00 Pounds Sterling plus 2.00 Pounds Sterling P&P = 19.00 Pounds Sterling per copy.
(Unless otherwise requested we ship a 3.5" HD disk)

Total Price : _____

I enclose a cheque / wish to pay by MasterCard / Visa (delete as applicable)

Credit Card Details:-

Name as on card:-

Card Number:-

Expiry Date:-

Please send the registered version to :-

Name:

Address:

Post Code:

Day Time Tel. No.

You can also contact us by the following:

Phone:+44 (0)270 759739

FAX:+44 (0)270 765272
CompuServe: 100024,1763
Internet: 100024.1763@compuserve.com

It would also help us if you could tell us where you got POPOUT from:-

Please include any suggestions you have for enhancements.

USA Order Form

To print this order form, click on the "File" pulldown above, then click on "Print Topic".

To:

POPOUT
P.O. Box 50632
Dallas, Texas 75250

Please send me _____ registered copy(s) of POPOUT.

The registration fee for POPOUT is \$20.00. Texas residents must add 7.25% Sales Tax for a total of \$21.50.

Unless otherwise noted, we ship 3.5" diskettes.

Please send the registered diskette to:

Name:
Address:
City/State/Zip:

For any questions or comments, we also be contacted at the following email addresses:

Internet: 73144.1046@compuserve.com
AOL: BHankinson
Prodigy: GRSR18B
CIS: 73144,1046

It would give us some nice feedback on our distribution efforts if you tell us where you received your POPOUT Demo. Also, please include any suggestions for future enhancemets.

background pixels

Pixels in a Custom Color stereogram that all have the same color

Black & White

A stereogram Output Style consisting only of black and white pixels

BMP

A standard image format. Stands for "bitmap"

Cancel

Use this button to exit POPOUT.

Color File

Contains the color information for generating Custom Color stereograms

Create Color File

A window that pops up when the "Create Color" button is clicked

Create Color

Use this button to create a new color scheme.

Custom Color

A stereogram where the user designs the color scheme

Destination File

This is the file that POPOUT creates that contains your stereogram.

EXAMPI.BMP

A sample Source File drawing included with this diskette.

foreground pixels

The white pixels in Black & White stereograms, and the colors that are varied in Custom Color stereograms.

Generate

Use this button to create the stereogram.

Output Style

Specifies the type of stereogram that POPOUT will generate

Paintbrush

Paintbrush is a drawing tool included with Microsoft Windows. POPOUT was designed specifically to be used with Paintbrush.

palette

At the bottom of the Paintbrush window is the palette of colors you use in drawing. With POPOUT, only use the left-most 16 colors.

Pattern Width

The distance in pixels between repeating patterns in the stereogram

Pixel Density

For Black & White and Custom Color stereograms, the percentage of pixels that are foreground pixels.

POC

Default Color File extension

POP16ORG.POT

A Translate File included with this diskette

POPOUT

POPOUT is a Windows based Random Dot Stereogram generator.

POPOUT.PAL

This is a Paintbrush palette definition file that blackens all but the left-most 16 colors in the Paintbrush palette.

POPOUT.POT

A Translate File included with this diskette

POPOUT16.POT

A Translate File included with this diskette

Random

A stereogram Output Style consisting of randomly chosen colors

RDS

Random Dot Stereogram

scan

Scanned photographs are not suitable for stereograms as they contain no depth information.

Source File

This is the drawing your create which will be "hidden" within the stereogram.

Stereogram

Translate File

A text file that provides the "final word" on how POPOUT will convert colors to levels.

