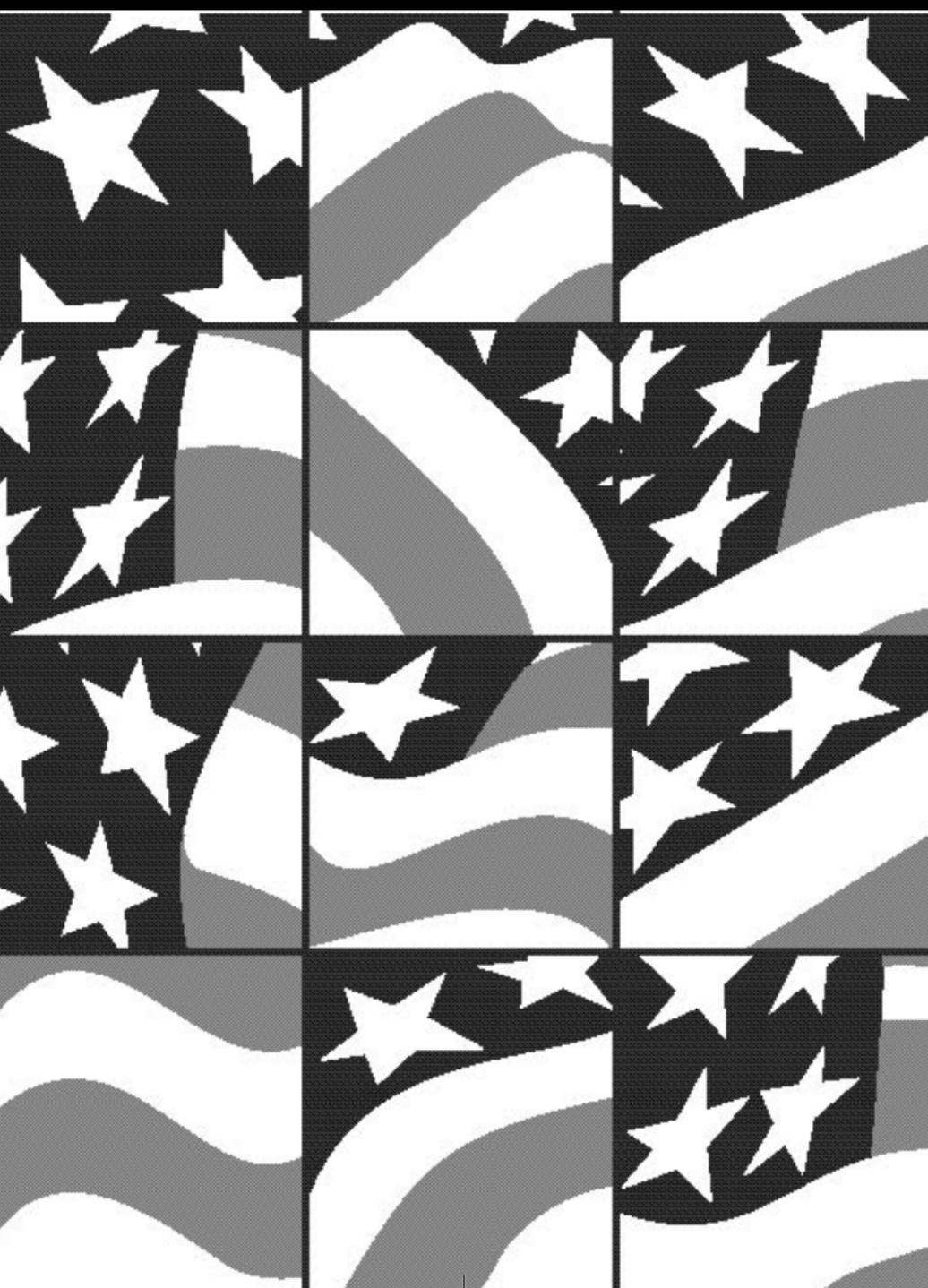


U.S. Government Printing Office
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Guidelines for Preparing and Submitting Electronic Design and Pre-Press Files

Professional Graphics (Part 1)





To Our Customers,

The United States Government Printing Office (GPO) is dedicated to providing our customers the best possible printed job at the lowest possible price, while meeting each customer's deadline. To do this effectively, GPO must be able to provide usable Electronic Design and Pre-Press (EDPP) files to the printing contractor.

Commonly referred to as Desktop Publishing, EDPP covers electronic publishing from design to press. The following guidelines will assist you in preparing effective EDPP files for items created using professional publishing software packages.

Due to the many advantages of digital design, we encourage all of our customers to consider submitting jobs as digital copy on electronic media. Your assistance in following these guidelines is appreciated.

Michael F. DiMario

MICHAEL F. DIMARIO
Public Printer

Special Notes

The EDPP guidelines are a two-part set dedicated to providing customers with valuable information about creating publications on a desktop computer.

The section that you are currently reading is **Part 1—Professional Graphics**. If you are a customer who is currently using an Office Graphics (OG) application such as WordPerfect, Microsoft Word, Microsoft Powerpoint, Microsoft Excel, Freelance Graphics, Microsoft Publisher or Harvard Graphics, please refer to **Part 2—Office Graphics**.

The EDPP guidelines are intended to help you create effective EDPP files, and to assist you in avoiding some of the problems that GPO frequently encounters in processing these types of files. The GPO does not want to discourage the use of any design method with which you and your organization are currently comfortable.

The expertise and experience of GPO and its contractors allows for the successful procurement of print publishing regardless of the software or design method utilized. Following these guidelines, where possible, will help to ensure that your work is processed and completed in a timely and cost-effective manner without any unnecessary delays.

These guidelines serve those customers who want brief solutions for a complex subject. Customers who need more detailed explanations may contact the Digital Information Technology Support group (DITS), or the appropriate Customer Service representative. In addition, several trade organizations have created similar but more extensive versions of these guidelines. DITS can be reached:

by phone: **202-512-1491**,
and e-mail: **sstovall@gpo.gov**
or: **wsebesky@gpo.gov**
URL: **www.gpo.gov/procurement/ditsg**

Guidelines for Professional Graphics Applications

Platform

EDPP files should be created using either the Macintosh or Microsoft's Windows operating system (OS). When using the Macintosh OS, use system 7.0 or later. When using Windows OS, use Windows 3.1, 3.11, Windows 95, or Windows NT 3.51 or 4.0.

Other Platforms: Agencies using platforms such as Unix should discuss the project in advance with GPO, so that suitable vendors can be invited to bid.

File Submission

Files can be submitted for procurement on any commercially established media, or by Electronic File Transfer (EFT).

Media: Physical media include, but are not limited to, 3.5" floppies, SyQuest products (all sizes), Iomega products (Bernoulli, ZIP, or jaz), Magneto Optical, and single-session Recordable CD.

Electronic File Transfer (EFT): Electronic submissions include, but are not limited to: e-mail, File Transfer Protocol (FTP), and modem. EFTs may or may not be practical due to slow data transfer rates, noncompatible systems, or large file sizes. It is important to clearly state the method and restrictions of any desired EFT on the Standard Form-1 so that suitable vendors may be invited to participate in the bidding process.

Professional Graphics (PG) Publishing Software

The following programs are used to create a majority of the professional publishing work received by GPO. For the purposes of these guidelines, the following application programs will be considered Professional Graphics (PG) applications.

Macintosh Platform

Page Layout: QuarkXPress, Adobe PageMaker

Drawing/Illustration: Adobe Illustrator, Macromedia FreeHand

Image Manipulation: Adobe Photoshop

Windows (3. series) Platform

Page Layout: QuarkXPress, Adobe PageMaker, Adobe FrameMaker

Drawing/Illustration: CorelDRAW, Macromedia FreeHand

Image Manipulation: Adobe Photoshop

Current Software Versions: If possible, use current software. Avoid using any software that is more than one major revision old. Also avoid using the initial release of software that has been upgraded significantly. Customers with access to the World Wide Web (WWW) should check software vendors' websites for upgrade patches and other important information.

File Formats

Native Application Files: Most vendors request that all files provided for publishing be in native format. For example, a PageMaker 6.0 file should be saved as a .pm6 (Windows) file, and a QuarkXPress file should be saved as a .qxd (Windows) file. The .pm6 extension is native to PageMaker, and the .qxd extension is native to QuarkXPress. (**Note:** Three-letter extensions are not used on the Macintosh OS.) Using the save feature of most PG software will save in native application format.

Print-to-file: Print-to-file (or print-to-disk) files will have either a .ps or .prn extension (Windows); however, the majority of GPO's vendors would prefer not to receive PostScript files. This preference is due to the fact that PostScript files cannot be readily changed or corrected. Customers who are comfortable submitting print-to-disk files are welcome to continue doing so. However, GPO recommends that native application files be provided as well, so that any changes or corrections can be easily accomplished. (**Note:** In order to ensure that files output properly, GPO suggests that you contact the DITS group (see page 2) prior to submitting a job in PostScript format only.)

Digital Deliverables: After final production is complete, the printing contractor can be required to supply corrected files with delivery of the printed product. These files may be requested in corrected native form, "as printed" PostScript files, or other requested formats.

Re-purposed Deliverables: If desired, products can be requested as electronic files that may be re-purposed to uses other than print. These other file formats consist of, but are not limited to, Adobe Acrobat Portable Document Format (PDF) and HyperText Markup Language (HTML). Text files coded in Standard Generalized Markup Language (SGML) may be requested as well.

Fonts

PostScript Type 1: Always use industry standard PostScript Type 1 fonts. It is best to provide the entire font set (Macintosh—printer and screen fonts; Windows—.pfm and .pfm files) with each job, but send in only the font sets used in the job. Font files that contain customized features such as kerning and tracking **MUST** be provided. True Type fonts may be used, but the majority of vendors prefer PostScript. (**Note:** If fonts are supplied, indicate on the Form 952 the type name and manufacturer of the font. If it is not possible to supply the font, you must clearly indicate on Form 952 the type name, manufacturer, and the version of the font.)

Converting Fonts to Outline: If drawing/illustration graphic files contain type matter, fonts for these files should also be provided. One way to avoid font problems with these files is to convert all type to either outlines or paths, depending on the software. Caution: once converted to outline/path, text is difficult to edit.

Menu Styles: Menu styles such as bold and italic added to type should be avoided. Use the actual font instead. Not all typefaces will output properly if created using menu styles. The example below shows a standard “style” template. Using any of the stylization type effects (such as “B” in Graphic 1) can cause problems at output.



Graphic 1 demonstrates “menu styling” to achieve the bold effect. The actual font in this example is Times. In order for the actual font to print bold, the menu style must be added. Menu styling works well on laser printers and other desktop printers, but does

not always work on the production devices used for print publishing.



Graphic 2 demonstrates the correct way to achieve the bold effect. In this example, the actual font is B Times Bold. The actual font will print bold without having a style applied because it was created as a bold font. However, you must have the font B Times Bold properly loaded on your system.

Scans

When scanning images, it is important to capture enough information (resolution) to accurately reproduce the image. However, excessive information capture does not necessarily guarantee a better scan. Large file sizes may actually increase processing time and costs.

General rule of thumb: To achieve optimal results, scanning for EDPP should be accomplished by a prepress professional using properly calibrated equipment and suitable image manipulation software.

Because image fidelity is a highly subjective issue, acceptable quality may vary from customer to customer and job to job. Customers who choose to do their own scanning should follow the guidelines below, which should provide generally acceptable results.

Color Mode (Color Images): All images should be converted from RGB (the typical scanner's default) to CMYK through the scanner interface, or image manipulation software.

Cropping, Rotating & Scaling. Scanned images should be cropped, rotated, and scaled prior to placement into the page layout file. These three functions are best accomplished in the image manipulation program (Photoshop), not in the page layout program (Quark or PageMaker).

Scanning Resolutions (color and grayscale):

Scan all images at a resolution of between 266 and 304.8 pixels per inch. This requirement is based on an input-to-output (I/O) size ratio of 1 to 1. For example, a 3x5 inch original photograph that is to be printed at 3x5 inches (I/O ratio of 1 to 1) should be scanned at 266 to 300 pixels per inch. The same 3x5 inch original photograph to be printed at 6x10 inches (I/O ratio of 1 to 2) should be scanned at 532 to 600 pixels per inch. All other enlargements and reductions are similarly proportional.

Scanning Resolution (line art): Scan all line art as bitmap images with a resolution of between 1,200 and 2,540 pixels per inch, based on an I/O ratio of 1 to 1. Enlargements and reductions are similarly proportional.

Image Manipulation: If special effects such as blurring or distorting in any fashion are desired, scans should be generated by the customer prior to submission for printing. Applying special filters and effects will create a unique image that is difficult to reproduce. Any special effect should be applied to high-resolution (live) files only.

Tip: Using the “Sharpen” or “Unsharp Masking” filters of most image-editing software may improve image quality.

Scanned Image File Formats: Scanned images should be saved as uncompressed TIFF or EPS. If saving EPS files from Photoshop deselect the “include halftone screen” and “include transfer function” options (See PG-10, “Appropriate File Formats.”)

Color Issues

Spot Colors: To ensure color continuity when working with multiple software programs, make sure that all spot colors are assigned the exact same name in each program. To the computer system, PANTONE 200 CVU is not the same color as PANTONE 200 CV. Color names should be consistent throughout all elements of the layout file and in all imported graphic elements. In addition, avoid using the default spot colors such as red, green, and blue that appear in the color menu of most page layout software.

Four-Color Process: To ensure color fidelity when working with four-color process builds and process color simulations of PANTONE colors, make sure that the color-build tables (of cyan, magenta, yellow, and black [CMYK]) are consistent throughout all elements of the layout file and in all imported graphic elements. In addition, be aware that some spot colors cannot be adequately represented using four-color process inks. Selecting colors from color charts that contain representations of built colors, using the TruMatch color system, or using Color Management Systems (CMS) such as PANTONE's ColorDrive, Color Sync, or any International Color Consortium (ICC) compliant profiles, can help to standardize four-color process builds.

Color Mode: Any file requiring four-color process separations should be in CMYK color mode only. Do not submit color files in RGB, Index, LAB, or other color modes. Any file requiring spot-color separations should be defined by the proper spot-color model (PANTONE, Toyo, etc.) and identified as spot colors for output.

Color Expectation: Never expect the overall color of a final printed piece to match a furnished color visual. A color visual is not a good representation of the final piece due to the physical differences between ink in traditional printing; inks, toners, and dyes in digital printing; and the colorants used in desktop color printers.

Graphics and File Formats

Establishing Links: Always use proper file import techniques (PageMaker “Place” and QuarkXPress “Get Picture”) to establish external links. Using the Edit menu to “Cut and Paste” graphic files will yield a product that differs from the expected results. (**Note:** avoid using the “Store in Publication” feature of PageMaker. This feature will cause excessive file sizes that may affect processing time and costs.)

Updating Graphics: All graphic files must be linked properly. Graphic files that have been modified in an originating program (Image Editing or Illustration/Drawing) after placement in the page layout file **MUST** be updated (relinked).

Nested Graphics: Avoid nested elements in graphic files (graphic files embedded into other graphic files). If supplied graphics must contain nested elements, make sure that ALL original drawing/illustration files and graphic files (EPS or TIFF—including the nested graphics), have been provided.

Clip Art: When using clip art, make sure that it is designed for EDPP. Not all clip art can be processed properly on a PostScript Raster Image Processor (RIP). In addition, copyrighted materials may not be reproduced without written permission from the copyright holder.

Appropriate File Formats: All graphic files should be saved using either the TIFF or EPS file format. Occasionally, TIFF and EPS files must be altered. In order to ensure that changes to these files are possible, include any native application files as well. Avoid graphic file formats such as GIF, PICT, BMP, and PCX which are not suitable for most production methods. Unless the originator completely understands graphic compression formats (such as JPEG), avoid these as well.

Scaling, Rotating, and Cropping: All images should be cropped, rotated, and scaled prior to placement into the page layout file.

Proofing

General Proofing Needs: Proofs should be requested for most EDPP jobs, and for all EDPP jobs containing color. Consult the appropriate GPO representative for appropriate proofing requirements. (**Note:** A visual generated by a desktop color printer may not be a suitable proofing medium due to the physical differences between ink in traditional printing; inks, toners, and dyes used in digital printing and the colorants used in desktop color printers.)

Conventional Proofs: Some customers will require conventional film-based proofs such as bluelines, color keys, matchprints, and Cromalins. For these types of proofs, films must be generated, which can cause costs to increase, and may interfere with tight production schedules. If film-based proofing is not a requirement, digital proofs should be considered.

Standard Digital Proofing (SDP): Due to many factors (cost and time being the main issues), standard digital proofs may be suitable for many of the jobs created in PG software. Customers who want lower-cost proofs and are willing to accept reasonable, but not exact, color match, should consider SDP's. A brief, but by no means complete listing of SDP's would be: Dye sublimation (3M's Rainbow), color inkjet (HP Recorder, DuPont Digital WaterProof, and Iris Graphic's Iris), thermal wax (Tektronix Phaser 240), and color laser (Kodak Approval, Screen True-Rite).

Digital Contract Proofs: As the digital proof process matures, and calibration systems become more sophisticated, digital proofs will become more accurate. At the present time, only a limited number of digital proofing systems represent final press output accurately enough for use as contract proofs.

Two-Step Proofing: For jobs where changes are likely, and film-based proofs are required, GPO suggests employing a two-step proofing process. The first step involves a standard digital proof to check for general positioning

and to finalize the document. Once the document is finalized, conventional film-based proofs can be produced. This process allows some flexibility with the design prior to the output of film.

One-Off Proofs: One-offs are proofs printed from digital presses such as Xerox's Docu-Color 40, Indigo's E-Print, Agfa's Chroma-press, and Scitex's Spontane. Because they are imaged from the final production device, these proofs can be an exact match of press output. In this way, one-offs are more prior-to-production samples than proofs.

Miscellaneous

Extraneous Files: Do not include nonimaging files, or files that are For Position Only (FPO) on the production disk. If nonimaging or FPO files are included, clearly indicate on the visual or other documentation that they DO NOT PRINT.

Originator Responsibility: The creator of the final production files should share responsibility for generating a usable product. Any contract (either with a Government designer or outside contractor) to produce EDPP files should remain open so that corrections can be made up until the point final approval is given to printer's proofs.

Printer-Ready Files: In order to maintain schedule and reduce cost, files on production disks should be final and ready for output. However, complex tasks such as trapping, image correction, silhouetting, and setting output specifications should generally be performed by the contractor.

Gradations: To avoid problems with banding, gradations should be properly created. Image editing programs such as Photoshop, or drawing programs such as Illustrator and FreeHand, can produce good gradations if created properly. Gradations should generally range from 3 to 98 percent. In addition, other

factors such as paper stock and the intended production method should be considered as well. (**Note:** Customers who desire gradations that cover a large contiguous area should consider letting the print contractor create the gradation. It is difficult to create large area gradients (that do not cause banding) using most PG applications.)

Screens: Never use fine-detail tint screens (under 5 percent). Fine-detail screens appear acceptable when imaged to desktop printers (300–600 dpi) but virtually disappear when imaged at higher resolutions. As a general rule, start with 10 percent and increase in increments of 10 percent (i.e., 20, 30, 40 percent, etc.). If possible, avoid any screen higher than 70 percent.

Rules: Never use rules that are less than .5 point. Hairline rules appear acceptable when imaged to desktop printers (300-600 dpi) but virtually disappear when imaged at greater resolutions.

Bleeds: Bleeds should be provided by the originator, and should be included in all files that image off the final printed page. As a general rule, allow 1/8 inch for any bleed. To ensure proper sizing/positioning when creating a bleed for an image (halftone, line art, etc.), the bleed must be provided.

Compressing Files: It is best not to compress files (using PKZIP, STUFFIT, Microsoft Backup or comparable programs) submitted to GPO. If it is necessary to compress files, make the files self-extracting. If file size is an issue, consider using a removable drive. See PG–3 (File Submission Media) for a brief list of common removable drive types.

Backup Copies: In order to ensure that important data is not destroyed, the agency must be responsible for creating backup copies of all files submitted to GPO. All media and FTP transfers are fallible. Environmental conditions, accidental mishandling, and other factors can compromise files submitted for printing.

Documentation

Form 952: Fill out GPO Form 952 (Desktop Publishing—Disk Information) in its entirety; information in the block concerning the desktop publishing technical contact is extremely important and should not be omitted. Special instructions can be written in the space provided or on attached pages.

Marking Visuals: If additional work is required to make the submitted files ready for output, an explanation of the work must be provided on the furnished visual(s) and other documentation (SF-1, Form 952, or attached pages). All notations on visuals should be dated and initialed. Examples of markings on visuals would be:

- Marks indicating the proportion at which visuals were output (100, 50 percent, etc.)
- Marks indicating the color system used (PANTONE, Process, Toyo, etc.)
- Marks indicating perforations, folds, die-cuts, etc.

Current Visuals: Always provide a current (UP-TO-DATE) visual generated from the files on the production media, not from files located on your computer hard drive.

Color-Separated Visuals: With multiple color jobs, supply a color-separated visual as well as a composite. With extensive multi-page publications containing color, provide color-separated visuals of random groups of pages. Composite color visuals, or visuals marked up to show colors used, are acceptable but should not be submitted in lieu of color-separated visuals.

GPO will gladly accept files that fail to conform to these guidelines. Be aware, however, that nonconforming files may cause time delays and cost overruns.

Listing of any commercial product is for informational purposes only and in no way should be construed as an endorsement by the GPO. Product names used in these guidelines are the trademarks of the respective companies and do not indicate endorsement by the GPO.

GPO cannot be held liable for damaged electronic products submitted. The wording “electronic products” includes, but is not limited to all files, disks, cartridges, CD’s, and tapes. It is the responsibility of the customer agency to keep backup copies of ALL electronic products submitted to GPO.

These guidelines assume a certain level of experience with the software and practices indicated. Specific instructions on how to perform EDPP can be found in the many fine resource books and publications that exist for EDPP production.

Glossary

Banding The usually unwanted “stair step” effect found in gradient images.

Bitmap A graphic composed of a series of square dots, or pixels, rather than a set of lines or vectors. Bitmap files are usually created using a paint program (MacPaint or PC Paintbrush).

BMP A file name extension indicating that the file contains a Windows-compatible bitmapped graphic image. These files are limited to 24-bit color (RGB), and cannot be CMYK.

Build Percentage The tint screen percentages of process cyan, process magenta, process yellow, and black used to simulate a spot color using process inks. See also CMYK.

Clip Art A set of non-copyrighted or public-domain graphic images, photographs, maps, or line art, usually on disk, that you can import into publishing or presentation software and incorporate into other documents.

Color Build A color made by using screen tints of two or more process colors (CMYK). For example, green using dots of process yellow and process cyan.

Color-Separated Visual A visual that is output as color separations, instead of as a composite, controlled through Print dialog menu. These visuals will image a single piece of paper (plate) for each color used. Color-separating visuals is an excellent way to check for proper color usage.

CMYK An acronym for the subtractive primary colors, C (process cyan), M (process magenta), Y (process yellow), and K (process black). (Printers use K for black to keep from confusing it with B for blue.) They are used in process color printing to simulate full color as the human eye sees it. See also RGB and Spot Colors.

Color Breaks Indications on camera-ready copy or visuals accompanying EDPP files that specify which image prints in which color.

Color Inkjet A process used by color printers that uses ink (not dyes or wax) to create color images.

Color Laser A process used by color printers that uses lasers (not inks, dyes, or wax) to create color images.

Color Mode A way to define color such as the printer's CMYK (process cyan, process magenta, process yellow, and black), or the monitor's RGB (red, green, and blue), or some DTP programs' HSV (hue, saturation, and value).

Compression A means to reduce file size to allow quicker handling, easier storage, and faster data transfer.

Contract Proofs Proofs that adequately represent the final press output. These types of proofs are used to hold the contractor accountable for things such as color match. Examples of contract proofs would be DuPont Cromalins and 3M Matchprints.

DTP The acronym for Desktop Publishing. DTP is another name for EDPP. (See also EDPP.)

Digital Proof A representation of the final image made from the data stored in a computer before plates or even negatives are made.

Digital Deliverable The return of files used for producing a printed product. In essence, this digital deliverable is a "digital negative." Digital deliverables can be requested as either "as printed" PostScript, "as corrected" native application files, or other requested formats. See Repurposed Deliverables for other digital deliverable options.

Dots Per Inch (DPI) DPI is a measure of resolution for monitors, printers, and scanners. Should not be confused with Pixels Per Inch. See also PPI.

Dye-Sublimation A process used by color printers that uses dyes (not inks or wax) to create color images. Images from dye-sublimation printers appear to the human eye to be continuous tone.

EDPP The acronym for Electronic Design and Prepress. EDPP is the use of a desktop computer, using off-the-shelf software, to do typesetting and page layout in order to produce composed pages (in-place text and graphics), with output to a print production device.

EDPP Output Paper or film resulting from the use of desktop publishing programs. It can be made either on office printers or specialized high-resolution devices such as imagesetters or plotters.

EFT The acronym for Electronic File Transfer. The transfer of files by digital means (telecommunication, etc.). Normally, EFT's consist of modem transfer, File Transfer Protocol (FTP), e-mail, etc.

Embedded Files Files that were created in one program and inserted into another. If a file is embedded, a complete copy of the embedded file is included into the file in which it is embedded—not to be confused with the external linking of files. In PageMaker, embedded files are “stored in the publication.”

EPS The file name extension for an Encapsulated PostScript file. EPS files may contain bitmapped or object-oriented graphics, and may contain a low-resolution bitmapped image of the file to be used for screen viewing only. EPS files can contain embedded special information such as: spot colors, clipping paths, line screen values, and transfer functions, not to be confused with PostScript, which is a page description language.

Form SF-1 The Government's standard form for printing and binding requests.

Form 952 The Government Printing Office's form designed to explain the nature of furnished EDPP files. Commonly known as the “Desktop Publishing Disk Information Form.”

FTP The acronym for File Transfer Protocol. A standard means of transmitting digital information from one computer to another over modem or high-speed line.

GIF The acronym for Graphic Interchange Format. A standard file format (developed by CompuServe) for displaying images on the World Wide Web. These files are low-resolution RGB or indexed color files and should not be used for print publishing.

Gradients Variations in the tint values between white and a single color. The different tint values pass smoothly from one value into another value.

Gradient Fill The gradual transition between one color to another, or the smooth blending of colors or white to black.

Imagesetter A device used to image high-resolution film, Resin Coated (RC) paper and,

in some cases, plates. Imagesetters are generally PostScript language devices that have processors similar to, but more complex than, desktop PostScript printers.

JPEG A file format abbreviation for Joint Photographic Experts Group. JPEG is an image compression standard and file format. Some JPEG formats lose image data and are not suitable for detailed images.

Kerning In typesetting, the adjusting of space between specific pairs of adjacent characters.

Keylines Holding lines drawn on camera-ready copy or visuals to indicate the placement of halftones or other copy that is to be stripped in separately. Keylines may or may not print and should be marked accordingly.

Linked Graphics A means of connecting graphics to the program in which they will be used without removing them from their initial location and placing or embedding a copy of the graphic in the application. See also Embedded Files.

Live Scans An indication on a visual accompanying a digital file that the file for the graphic so marked is to be used for output, rather than being “for position only.”

Low-Resolution Placement File A low-grade (low-resolution) image containing a relatively small amount of information. For example, either a low number of dots per inch such as a graphic made in a paint file format at 72 dpi, or a high-resolution image displayed in low resolution to save time in monitor or printer rendering.

Media Floppy disks, removable drives, CD's, tapes, etc. Any type of transport device used to move files from one computer to another.

Native Application Files The default format in which an application program saves files. This format may be a proprietary one; however, most programs can save data in a variety of formats including ASCII and PostScript. Also known as document format.

Nested Graphics A graphic file that contains separate embedded graphic file(s).

PCX A common Windows file extension for images created in paint programs.

PICT A low resolution graphic file format designed for displaying object-oriented graphics using the Macintosh OS.

PPI The acronym for Pixels Per Inch. PPI is the number of pixels that fit (horizontally and vertically) into 1 square inch. PPI is generally used when explaining the effective resolution of scanned images.

Pixel Stands for picture element. The smallest element that display software can use to create text or graphics.

PostScript A page description language developed by Adobe Systems, Inc. Not to be confused with EPS (Encapsulated PostScript), which is a graphic file format, PostScript is the de facto industry standard language for imagesetters.

PostScript Files Files from a DTP program that are in the PostScript “universal” page description language format rather than the program’s native format otherwise known as “Print-to-Disk” files. Not to be confused with EPS files.

PostScript Type 1 Fonts A type font in the PostScript format. Also known as a Type 1 font.

Print Driver A program that tells a computer how to communicate with a specific brand and model of printer or imagesetter.

Prior-To-Production Samples Samples of products that are generated from the final production machine (and include binding and finishing as well), but prior to the bulk of the printing run. For traditional printing, this is a very time-consuming and expensive way to proof a printed job.

Process Color The colors of process cyan, process magenta, process yellow, and black used in four-color process printing to simulate all of the colors as the human eye sees them. Also known as four-color process.

RGB Red, green, and blue, the colors used in a computer monitor, as opposed to process cyan, process yellow, process magenta, and black (CMYK) used in printing inks. (**Note:** The printing industry uses K for black to keep from confusing it with B for blue.) See also CMYK.

Raster Image Processor The device (either hardware or software) that allows output devices to plot dots to film, plate, paper, or other substrates.

Repurposed Deliverables Files that, after being saved in a different format, are used for completely different purposes. An example of a repurposed file would be high-resolution CMYK TIFF files used for a printed publication that are then saved as RGB low-resolution files for WWW viewing. Re-purposed deliverables may also include HTML, SGML, Adobe Acrobat PDF, and other electronic file formats.

Resolution A measure of image sharpness, usually measured in dots per inch (dpi).

Scanning the process of converting a two-dimensional image into digital data that can be manipulated and stored on a computer.

Self Extracting A single file that contains multiple compressed images and will open without having the originating software available. A way of compressing files so that the person who decompresses the file need not have the originating software available.

Spot Colors An ink color, designated by the PANTONE or similar system, where the ink used is the actual color desired (e.g., green ink rather than process yellow and process cyan to simulate green). See also Build Percentage.

Thermal Wax A process used by color printers that uses colored wax (not inks, dyes, or lasers) to create color images.

TIFF Tagged Image File Format. A graphic file format used to describe bitmapped files, especially scanned graphic images. TIFF files are used in both Mac and PC environments. In the PC environment, the file extension is TIF.

Trapping The intentional slight overlapping of two adjacent images or inks (that will print in different colors) to avoid gaps.

Visual A model of the final printed product, usually made by the originator. Visuals are often made from prints made on wax thermal, inkjet, or similar printing systems from the digital information and are not true indicators of the color and sharpness of the final product. Also known as a concept proof or as hard copy.

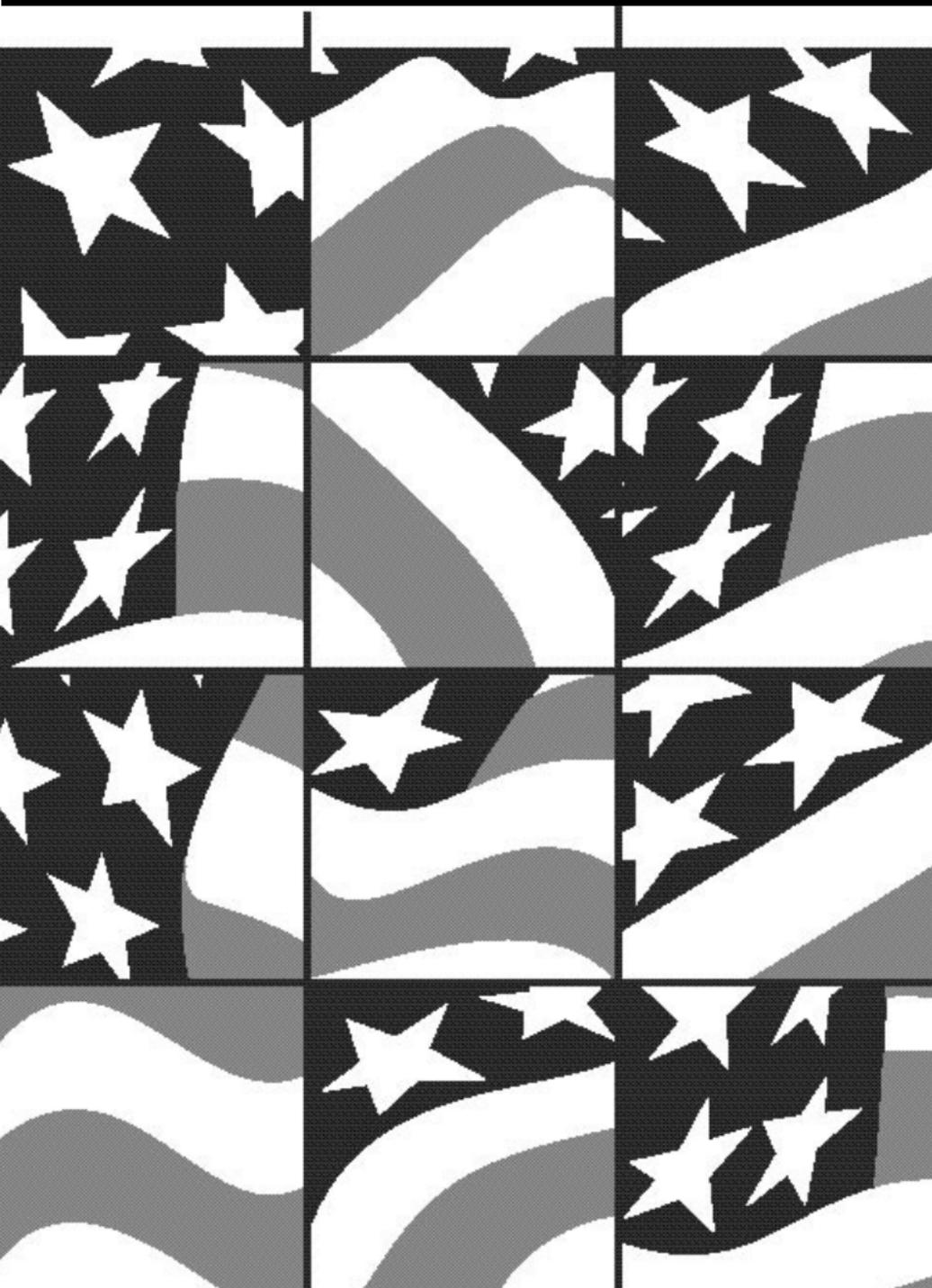
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Public Printer

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The EDPP guidelines are a two-part set dedicated to providing customers with valuable information about creating publications on a desktop computer.

The section that you are currently reading is **Part 2—Office Graphics**. If you are a customer who is currently using a Professional Graphics (PG) application such as QuarkXPress, Adobe PageMaker, Adobe Photoshop, Adobe Illustrator, Macromedia FreeHand, or CorelDRAW, please refer to **Part 1—Professional Graphics**.

The EDPP guidelines are intended to help you create effective EDPP files, and to assist you in avoiding some of the problems that GPO frequently encounters in processing these types of files. The GPO does not want to discourage the use of any design method with which you and your organization are currently comfortable.

The expertise and experience of GPO and its contractors allows for the successful procurement of print publishing regardless of the software or design method utilized. Following these guidelines, where possible, will help to ensure that your work is processed and completed in a timely and cost-effective manner without any unnecessary delays.

These guidelines serve those customers who want brief solutions for a complex subject. Customers who need more detailed explanations may contact the Digital Information Technology Support group (DITS), or the appropriate Customer Service representative. In addition, several trade organizations have created similar but more extensive versions of these guidelines. DITS can be reached:

by phone: **202-512-1491**,
and e-mail: **sstovall@gpo.gov**
or: **wsebesky@gpo.gov**
URL: **www.gpo.gov/procurement/ditsg**

Guidelines for Office Graphics Applications

(nontraditional print design software)

Platform

Products designed using typical Office Graphics (OG) software should be created on either the Macintosh or Microsoft Windows operating system (OS). When using the Macintosh OS, use system 7.0 or later. When using Windows OS, use Windows 3.1, 3.11, Windows 95, or Windows NT 3.51 or 4.0.

Other Platforms: Agencies using platforms such as Unix should discuss the project in advance with GPO, so that suitable vendors can be invited to participate in the bidding process.

File Submission

Files can be submitted for procurement on any commercially established media, or by Electronic File Transfer (EFT).

Media: Physical media include, but are not limited to, 3.5" floppies, SyQuest products (all sizes), Iomega products (Bernoulli, ZIP, or Jaz), Magneto Optical, and single-session Recordable CD.

Electronic File Transfer (EFT): Electronic submissions include, but are not limited to, e-mail, File Transfer Protocol (FTP), and modem. EFT's may or may not, be practical due to slow data transfer rates, noncompatible systems, or large file sizes. It is important to clearly state the method and restrictions of any desired EFT on the Standard Form-1 so that suitable vendors may be invited to participate in the bidding process.

Office Graphics (OG) Software

The use of OG software is most appropriate for products meeting very specific equipment parameters, and may not be suitable for all products. Contact the DITS group if you are unsure whether your current OG software can produce the desired product.

The following programs are used to create a majority of the typical OG work received by GPO. For the purposes of these guidelines, the following application programs will be considered Office Graphics applications.

Windows Platform

Microsoft PowerPoint, Microsoft Word, Microsoft Excel, Microsoft Publisher, WordPerfect, Harvard Graphics, Adobe Persuasion, and Freelance Graphics.

Macintosh Platform

Microsoft Word, WordPerfect, Adobe/Aldus Persuasion, MacDraw, MacPaint, and MacWrite.

Current Software Versions: If possible, use current industry accepted versions of all software. Avoid using any software that is more than one major revision old. Also avoid using the first release of software that has been upgraded significantly. Customers with access to the World Wide Web (WWW) should check software vendors' websites for upgrade patches and other important information.

File Formats

It is important to note that most printing production systems utilize the PostScript page description language; therefore, it is important that our agency customers work in a PostScript environment as well. Computers used for print publishing should be connected to a PostScript printer, or a PostScript print driver should be selected before design begins.

TIP: PostScript print drivers may be downloaded from the World Wide Web (WWW).

Native Application Files: Most vendors request that all files provided for publishing be in native format. For example, a WordPerfect document should be saved as a .wpd file, and a PowerPoint file should be saved as a .ppt file. The .wpd extension is native to WordPerfect, and the .ppt extension is native to PowerPoint.*

Print-to-file: Print-to-file (or Print-to-disk) files (Windows) will have either a .ps or .prn extension and as a general rule are not preferred by vendors. This preference is due to the fact that print-to-disk files cannot be readily changed or corrected. Customers who are comfortable submitting print-to-disk files are welcome to continue doing so. Please contact GPO prior to submitting a job in PostScript format only.

Digital Deliverables: After final production is complete, the printing contractor can be required to supply corrected files with delivery of the printed product. These files may be requested in corrected native form, “as printed” PostScript files, or other requested formats.

Repurposed Deliverables: If desired, products can be requested as electronic files that may be re-purposed to uses other than print. These other file formats consist of, but are not limited to, Adobe Acrobat Portable Document Format (PDF) and HyperText Markup Language (HTML). Text files coded in Standard Generalized Markup Language (SGML) may be requested as well.

***Note:** Most PostScript production environments will require lengthy conversions to ensure proper output of native OG files. **TIP:** To expedite the job and to save money, each color page may be saved/exported as a windows metafile (.wmf).

Fonts

PostScript Type 1: The two most common fonts for OG software are PostScript type 1 and True Type. As a general rule of thumb, it is best to use PostScript fonts. This preference is due to the fact that most production methods utilize a PostScript Raster Image Processor (RIP). If using PostScript fonts, it is best to provide the entire font set (Macintosh—printer and screen fonts; Windows—.pfm and .pfm files) with each job, but send in only the font sets used in the job. Font files that contain customized features such as kerning and tracking **MUST** be provided. True Type fonts may be used, but the majority of vendors prefer PostScript. (**Note:** If fonts are supplied, indicate on the Form 952 the type name and manufacturer of the font. If it is not possible to supply the font, you must clearly indicate on Form 952 the type name, manufacturer, and the version of the font.)

Menu Styles: Menu styles such as bold and italic on type should be avoided. Use the actual font instead. Not all typefaces will output properly if created using menu styles. The example below shows a standard “style” template. Using any of the stylization type effects (such as “B” in Graphic 1) can cause problems at output.



Graphic 1 demonstrates “menu styling” to achieve the bold effect. The actual font in this example is Times. In order for the actual font to print bold, the menu style must be added. Menu styling works well on laser printers, and other desktop printers, but does not always work on the production devices used for print publishing.



Graphic 2 demonstrates the correct way to achieve the bold effect. In this example the actual font is B Times Bold. The actual font will print bold without having a style applied because it was created as a bold font. However, you must have the font B Times Bold properly loaded on your system.

Scans

When scanning images, it is important to capture enough information (resolution) to accurately reproduce the image. However, excessive information capture does not necessarily guarantee a better scan. Large file sizes may actually increase processing time and costs.

General rule of thumb: To achieve optimal results, scanning for EDPP should be accomplished by a prepress professional using properly calibrated equipment and suitable image manipulation software.

Because image fidelity is a highly subjective issue, acceptable quality may vary from customer to customer and job to job. Customers who choose to do their own scanning should follow the guidelines below, which should provide generally acceptable results.

Color Mode (Color Images): All images should be converted from RGB (the typical scanner's default) to CMYK through the scanner interface, or image manipulation software.

Cropping, Rotating & Scaling. Scanned images should be cropped, rotated, and scaled prior to placement into the page layout file. These three functions are best accomplished in the image manipulation program (Photoshop), not in the page layout program (Quark or PageMaker).

Scanning Resolutions (color and grayscale): Scan all images at a resolution of between 266 and 300 pixels per inch. This requirement

is based on an input-to-output (I/O) size ratio of 1 to 1. For example, a 3x5 inch original photograph that is to be printed at 3x5 inches (I/O ratio of 1 to 1) should be scanned at 266 to 300 pixels per inch. The same 3x5 inch original photograph to be printed at 6x10 inches (I/O ratio of 1 to 2) should be scanned at 532 to 600 pixels per inch. All other enlargements and reductions are similarly proportional.

Scanning Resolution (line art): Scan all line art as bitmap images with a resolution of between 1,200 and 2,540 pixels per inch, based on an I/O ratio of 1 to 1. Enlargements and reductions are similarly proportional.

Image Manipulation: If special effects such as blurring or distorting in any fashion are desired, scans should be generated by the customer prior to submission for printing. Applying special filters and effects will create a unique image that is difficult to reproduce. Any special effect should be applied to high-resolution (live) files only.

Tip: Using the “Sharpen” or “Unsharp Masking” filters of most image-editing software may improve image quality.

Scanned Image File Formats: Scanned images should be saved as uncompressed TIFF or EPS. If saving EPS files from Photoshop deselect the “include halftone screen” and “include transfer function” option (See PG-10, “Appropriate File Formats.”)

Color Issues

Spot Colors: Most OG software lacks the ability to handle spot colors (PANTONE, TOYO, etc.). In most cases, any color created in OG software will contain RGB data. During the conversion process RGB data is automatically mapped to a CMYK value space and printed as a process-color build. At the present time, spot colors are not an option with OG software.

Four-Color Process: To ensure color fidelity when working with four-color process builds and process-color simulations of PANTONE

colors, make sure that the color-build tables (percentages of cyan, magenta, yellow, and black) are consistent throughout all elements of the layout file, and in all imported graphic elements. In addition, be aware that some spot colors cannot be adequately represented using four-color process inks. Selecting colors from color charts that contain representations of built colors, using the TruMatch color system, or using Color Management Systems (CMS) such as PANTONE's ColorDrive, Color Sync, or any International Color Consortium (ICC) compliant profiles, can help to standardize four-color process builds.

Color Expectation: Never expect the overall color of a final printed piece to match a furnished color visual. Color visuals are not a good representation of the final piece due to the physical differences between ink in traditional printing; inks, toners, and dyes in digital printing; and the colorants used in desktop color printers.

Clip Art

Copyrights: Copyrighted materials may not be reproduced without written permission from the copyright holder. Be careful when including published cartoons, and photographs in the design layout.

Color Mode: As a general rule, most color OG clip art is in RGB mode. Other color modes such as CMYK, Indexed Color, and LAB Color may be used as well. Please understand that color shifts may occur during the conversion to CMYK that is necessary to print in color.

Proofing

General Proofing Needs: Proofs should be requested for most EDPP jobs, and for all EDPP jobs containing color. Consult the appropriate GPO representative for appropriate proofing requirements. (**Note:** A visual generated by a desktop color printer is generally not a suitable proofing medium due to the physical differences between ink in traditional printing; inks, toners, and dyes used in digital printing; and the colorants used in desktop color printers.)

Conventional Proofs: Some customers will require conventional film-based proofs such as bluelines, color key, matchprints, and Cromalins. For these types of proofs, films must be generated, which can cause costs to increase, and may interfere with tight production schedules. If film-based proofing is not a requirement, digital proofs should be considered.

Standard Digital Proofing (SDP): Due to many factors (cost and time being the most important), standard digital proofs may be suitable for many of the jobs created in OG software. Customers who want lower-cost proofs and are willing to accept reasonable, but not exact color match, should consider SDP's. A brief, but by no means complete listing of SDP's would be: Dye sublimation (3M's Rainbow) color inkjet (HP Recorder, DuPont Digital WaterProof, and Iris Graphic's Iris), thermal wax (Tektronix Phaser 240), and color laser (Kodak Approval, Screen True-Rite).

Digital Contract Proofs: As the digital proof process matures, and calibration systems become more sophisticated, digital proofs will become more accurate. At the present time, only a limited number of digital proofing systems represent final press output accurately enough for use as contract proofs.

Two-Step Proofing: For jobs where changes are likely, and film based proofs are required, GPO suggests employing a two-step proofing process. The first step involves a standard

digital proof to check for general positioning and to finalize the document. Once the document is finalized, conventional film-based proofs can be produced. This process allows some flexibility with the design prior to the output of film.

One-Off Proofs: One-offs are proofs printed from digital presses such as Xerox's DocuColor 40, Indigo's E-Print, Agfa's Chromapress, and Scitex's Spontane. Because they are imaged from the final production device, these proofs can be an exact match of press output. In this way, one-offs are more prior-to-production samples than proofs.

Miscellaneous

Extraneous Files: Do not include nonimaging files, or files that are For Position Only (FPO) on the production disk. If nonimaging or FPO files are included, clearly indicate on the furnished visual or other documentation that they DO NOT PRINT.

Originator Responsibility: The creator of the final production files should share responsibility for generating usable films. Any contract (either with a Government designer or outside contractor) to produce EDPP files should remain open so that corrections can be made until final approval is given to printer's proofs.

Printer-Ready Files: In order to maintain schedule and reduce cost, files on production disks should be final and ready for output. However, complex tasks such as trapping, image correction, silhouetting, and setting output specifications should generally be performed by the contractor.

Gradations: Gradients created in OG software generally will band or streak at output. If available, professional graphics applications can be used to create good gradients. Customers are cautioned to use gradients carefully if banding is unacceptable.

Screens: Never use fine-detail tint screens (under 5 percent). Fine-detail screens appear acceptable when imaged to desktop printers

(300-600 dpi) but virtually disappear when imaged at a higher resolution. As a general rule, start with 10 percent and increase in increments of 10 percent (i.e. 20, 30, 40 percent, etc.). If possible, avoid any screen higher than 70 percent.

Rules: Never use rules that are less than .5 pt. Hairline rules appear acceptable when imaged to desktop printers (300-600 dpi) but virtually disappear when imaged at higher resolutions.

Bleeds: Bleeds should be provided by the originator, and should be included in all files that image off the final printed page. As a general rule, allow 1/8 inch for any bleed. To ensure proper sizing/positioning when creating a bleed for an image (halftone, line art, etc.), the bleed must be provided.

Compressing Files: It is best not to compress files submitted to GPO. If it is necessary to compress files, make the files self-extracting. If file size is an issue, consider using a removable drive. See OG-3 (File Submission Media) for a brief list of possible drive types.

Backup Copies: In order to ensure that important data is not destroyed, the agency must be responsible for creating backup copies of all files submitted to GPO. All media and EFT's are fallible. Environmental conditions, accidental mishandling, and other factors can compromise files submitted for printing.

Documentation

Form 952: Fill out GPO Form 952 (Desktop Publishing-Disk Information) in its entirety; information in the block concerning the desktop publishing technical contact is extremely important and should not be omitted. Special instructions can be written in the space provided, or on attached pages.

Marking Visuals: If additional work is required to make the submitted files ready for output, an explanation of the work must be provided on the furnished visual(s) and other documentation (SF-1, Form 952, or attached pages). All notations on visuals should be dated and initialed. Examples of markings on visuals would be:

- Marks indicating the proportion at which visuals were output (100, 50 percent, etc.)
- Marks indicating perforations, folds, die-cuts, etc.

Current Visuals: Always provide a current (UP-TO-DATE) visual generated from the files on the production media, not from files located on your computer hard drive.

Color Visuals: With color jobs it is best to supply a composite color visual. If a color visual cannot be provided, please supply a black-and-white visual marked with color information.

GPO will gladly accept files that fail to conform to these guidelines. Be aware, however, that nonconforming files may cause time delays and cost overruns.

Listing of any commercial product is for informational purposes only and in no way should be construed as an endorsement by the GPO. Product names used in these guidelines are the trademarks of the respective companies and do not indicate endorsement by the GPO.

GPO cannot be held liable for damaged electronic products submitted. The wording “electronic products” includes, but is not limited to all files, disks, cartridges, CD’s, and tapes. It is the responsibility of the customer agency to keep backup copies of ALL electronic products submitted to GPO.

These guidelines assume a certain level of experience with the software and practices indicated. Specific instructions on how to perform EDPP can be found in the many fine resource books and publications that exist for EDPP production.