
The Guidelines

**Best Practices for
Preparing & Submitting Electronic
Design & Prepress Files**

A Letter from The Public Printer



To Our Customers,

The United States Government Printing Office (GPO) is dedicated to providing you, our customers, the best possible publishing product at the lowest possible price, while meeting each customer's important deadline. To do this effectively, the Government must provide correctly prepared 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 best practice guidelines will assist you in preparing the most effective EDPP files possible.

Due to the many advantages of properly prepared 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 and will help ensure that the Government receives the best possible value from its publishing products.

Public Printer

Foreword

This revision of “The Guidelines” represents a shift in suggested practices from earlier versions of the publication. Due to recurring production problems with common Office Graphics (OG) software, the previously published section on Office Graphics applications has been removed. Users of OG Software who are unable to have products designed in Professional Graphics (PG) Software are now encouraged to supply either Camera Copy or as Adobe Portable Document Format (PDF) files, not native OG files.

PDF: While this guide does not provide instructions for creating PDF files there are several sources for obtaining this information. Customers who use office software will find instructions for creating high quality PDF files on e-Pub’s web site (<http://www.gpo.gov/procurement/ditsg>) as well as commercial web sites from Adobe (www.adobe.com), Agfa (www.agfa.com) and product evangelism sites such as PDFZone (www.pdfzone.com) and PurePDF (www.purepdf.com). In addition, GPO’s Institute for Federal Printing and Electronic Publishing (IFPEP - 202-512-1283) teaches Adobe Acrobat courses as well as desktop publishing courses.

Camera Copy: Customers who submit camera copy in lieu of electronic files should follow the following guidelines:

- Output at a minimum of 600 dots per inch (DPI). 1000 DPI or higher is preferred.
- If the document contains photographs, tint screen areas or copy with fine detail, output with a minimum line per inch (LPI) screen of 75 and a maximum line per inch screen of 100 LPI.
- For better results with tints and/or photographs, simply fill the area with 100% black (called a window) and indicate the percentage desired, or the appropriate photograph. A vendor can underlay the appropriate screen tint, or use the window to “drop” in a photograph.

Please note that the basics of proper file creation, unlike technology, stay fairly consistent. While no specific “recipe” exists for creating the perfect Electronic Design and Prepress File (EDPP) file, the suggestions provided in this publication will simplify the process and minimize potential problems.

The Basics:

Prior to beginning work on a project, GPO recommends that anyone involved in the design component be familiar with both basic printing concepts and basic design concepts.

Basic Printing: The art of commercial offset lithography is very structured and “color” limited as compared to typical desktop printing (e.g., desktop printers, color laser, digital presses). Understanding the limitations of conventional print (including effective use of desktop/digital printing) and the work a rounds associated with these limitations is crucial for today’s designer. GPO recommends basic print publishing training (or equivalent experience) for any customer who will be working with EDPP files.

Basic Design: The art of design has established practices that govern the look and feel of print publishing documents. Issues such as readability, white space, effective use of color, and typography are still important even though the computer makes the overall design process accessible to “non-designers”. Understanding what constitutes good design is crucial for today’s designer. GPO recommends basic design training (or equivalent experience) for any customer who will be submitting EDPP files.

For training classes contact GPO’s IFPEP:

Phone: 202-512-1283

e-mail: IFPEP-registrar@gpo.gov

web: <http://www.gpo.gov/ifpep/ifpep.html>

Synopsis of Changes:

- Combining The Publication - As stated earlier, the Office Graphics section of earlier editions has been dropped. Users of OG software (e.g., Microsoft Word, PowerPoint, WordPerfect, Harvard Graphics, etc.) are no longer encouraged to submit native Office Graphics files. Customers may use OG programs for design, but should be cautioned that these types of files can cause cost increases and jeopardize schedules. GPO’s current suggested practice is to provide properly created Adobe Portable Document Files (PDF) or camera copy instead of Office Graphic files. See e-Pub’s web site at <http://www.gpo.gov/procurement/ditsg> for more information on creating press ready PDF files.

While some of the information has changed, the goal of the guidelines remains the same. To provide best practice guidance to customers who are creating publishing products via desktop computer. As always, the e-Pub Group is available to answer questions regarding electronics and publishing.

Questions, comments or suggestions for improving this document should be directed to GPO's e-Pub Group (202-512-1491), or you may contact us through our web site at www.gpo.gov/procurement/ditsg.

Platform

EDPP files should be created using either the Macintosh or Microsoft's Windows operating system (OS). When using the Macintosh OS, use system 7.5 or later. When using the Windows OS, use Windows 95, 98 or ME, or Windows NT 3.51, 4.0, 2000.

Tip: GPO will accept files from either platform; however, the Macintosh is the primary platform used by the print publishing industry. GPO's experience has shown that most service providers (and printers) are Macintosh based. Consequently, files created on the Macintosh process with fewer problems and typically with lower overall costs.

Other Platforms: Agencies using alternative 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, 3.5” superdisks, Iomega products (all sizes), Magneto Optical, single-session Recordable CD or DVD-R.

Caution: Customers should be wary of data stored on certain types of removable media (e.g., SyQuest cartridges) as it may become increasingly difficult to access the information. GPO suggests phasing out older legacy media.

Electronic File Transfer (EFT): If desired by the ordering agency, GPO contracts can include the electronic submission of files. Electronic submissions include, but are not limited to e-mail and File Transfer Protocol (FTP). Proprietary solutions (e.g., Wam!Net) can be accommodated if requested by the ordering agency.

Caution: EFTs may not be practical due to slow data transfer rates, incompatible systems, incompatible file formats and naming conventions. Attachments to e-mail can be particularly troublesome due to common file size limitations associated with attached files and encoding issues.

Tip: 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.

Commonly Accepted Publishing Software

The programs listed on the following pages are used to create a majority of the print publishing work received by GPO. They are also the preferred programs of the commercial printing industry. Files created using the following software output with fewer problems than files created in programs not designed for print publishing. Other programs may be used, but unless they support prepress functions (e.g., PANTONE colors, trapping, bleeds, crop marks and color separation) problems will likely occur. Customers who use programs other than those listed below should consider supplying high-resolution PDF files instead of native files (see e-Pub’s web site at <http://www.gpo.gov/procurement/ditsg> for more information on creating appropriate PDF files).

Macintosh Platform.

Page Layout: QuarkXPress, Adobe PageMaker, Adobe FrameMaker, Adobe In-Design

Drawing/Illustration: Adobe Illustrator, Macromedia FreeHand, Corel Draw

Image Manipulation: Adobe Photoshop, Corel PhotoPaint

Windows Platform.

Page Layout: QuarkXPress, Adobe PageMaker, Adobe FrameMaker, Adobe In-Design, Corel Ventura, Microsoft Publisher 2000**

Drawing/Illustration: Corel Draw, Macromedia FreeHand, Adobe Illustrator

Image Manipulation: Adobe Photoshop, Corel PhotoPaint

****Caution:** Files created in Microsoft Publisher prior to version 2000 can be successfully output, however problems are likely to exist if the files are not initially setup and created for an outside service provider. Consult the instructions for saving files for an outside provider that are provided in the program's help menu. Version 2000 of Publisher addresses many of the limitations of its predecessor; however, problems may still exist for certain publications, including black only publications. Consult e-Pub group prior to beginning design in MS Publisher.

Current Software Versions: If possible, use current software. Avoid using any software that is more than one major revision old because most vendors only support recent or near recent applications. Exercise care when using the initial release of software because initial releases of software may contain bugs that affect output. Customers with access to the World Wide Web (WWW) should check software vendors' web sites for upgrade patches and other important technical information.

Tip: Getting updates, upgrades and other helpful software

- Adobe - www.adobe.com
- Corel - www.corel.com
- Quark - www.quark.com
- Macromedia - www.macromedia.com
- Markzware - www.markzware.com
- Extensis - www.extensis.com
- PANTONE - www.pantone.com

File Formats for Print

Native Application Files: At the time of publication, most print industry vendors request that files provided for publishing be in native format. For example, using a Windows version of PageMaker 6.5 the file will be saved as with the .p65 extension, and a QuarkXPress file will be saved with a .qxd extension. Using the save feature of most publishing software creates a native application file.

Tip: Three-letter extensions are used in the Windows environment to register files with programs. On the Macintosh OS, native files are designated by icons (graphical representations of the file) coupled with internal type and creator identifiers. The .P65 extension is native to PageMaker, the .IDD extension is native to InDesign and the .QXD extension is native to QuarkXPress. Adding the 3 letter extension will not cause problems with the file. The icons below represent Quark XPress (left), Adobe PageMaker (center) and Adobe InDesign (right) files created on a Macintosh.



QuarkXPress (.QXD)



PageMaker (.P65)



InDesign (.IDD)

Adobe Acrobat Portable Document Format (PDF): Commonly called PDF files, this file format take the place of native application files. PDF's are designed as self contained, platform independent files and if created properly may eliminate many common prepress problems. PDF files should contain embedded fonts, graphics, color data and layout structure. PDF files are somewhat editable and are more compact (e.g., smaller file size) than native application file formats.

Caution: Not all PDF files are created to be output for print publishing. Design elements must contain appropriate information (e.g., color space, fonts, resolution) in order to be output properly. PDF files created specifically for web use may not output well for print publishing due to resolution, color and other issues.

Tip: PDF files for press output must be created using the appropriate settings in Acrobat Distiller, not through the PDFWriter. PDF files created using the PDF-Writer are not acceptable for print publishing. See e-Pub's web (<http://www.gpo.gov/procurement/ditsg>) site for specific information regarding PDF file creation.

PostScript Files: Commonly referred to as Print-to-file, or print-to-disk, these files may be submitted in the place of native applications files. PostScript files are similar to PDF files in that they are designed as self contained, platform independent print driver files (e.g., contain fonts, graphics and layout structure).

Caution: The majority of GPO’s vendors prefer not to receive PostScript files. This preference is due to the fact that unlike PDF files, PostScript files cannot be readily changed or corrected which makes edits expensive and time consuming. Also, PostScript files often contain output limitations specific to the print driver used to create the file.

Tip: When supplying PostScript files it is important to identify the print driver used when creating the document. Include this information on GPO form 952.

Customers who are comfortable submitting PostScript print-to-disk files are welcomed 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.

Caution: Common “office” printers use HP’s Printer Control Language (PCL) instead of PostScript language to print data. Unfortunately, PCL printers are incompatible with most print publishing environments (e.g., copy may reflow). When creating print-to-disk files it is necessary to use a PostScript printer and/or PostScript driver. **DO NOT USE PCL LANGUAGE DEPENDENT DEVICES IN A PRINT PUBLISHING ENVIRONMENT.**

Digital Deliverable: The ordering agency may request that the printing contractor supply any corrected files with delivery of the printed product. These files may be requested as Native files, “as printed” PostScript files, Adobe PDF (optimized for Press Output) or other requested formats. Contact e-Pub for more information regarding Digital Deliverable.

Caution: It is up to each customer to designate the type of digital deliverable required. Each has strengths and weaknesses and it is up to the ordering agency to accurately specify the type of digital deliverable. Simply requesting a digital deliverable may result in improper files being returned by the vendor.

File Formats for Alternative Publishing Methods

Re-purposed Deliverable: In order to conform to federal laws governing electronic dissemination, and to make products more accessible to the public, many Government agencies are looking to place documents online. GPO contracts can include requirements for the print vendor to convert native application files to electronic versions of the printed product.

These other file formats consist of, but are not limited to, Adobe Acrobat Portable Document Format (PDF) and Hyper Text Markup Language (HTML). Text files coded in Standard Generalized Markup Language (SGML), or Extensible Markup Language (XML) may be requested as well. Each format has advantages and disadvantages and it is up to the customer to determine the desired format. For help in deciding the appropriate electronic format, the specifics needed, and the possible cost implications contact e-Pub or your customer service representative.

HTML: The most common file format for creating web pages. HTML can be exported from most programs used for layout. As a general rule, simple HTML export is relatively easy to accomplish and should not add significantly to production costs. HTML files are readily searchable and are best used for publications that do not require a high degree of document structure (e.g., formatting, graphic fidelity and page structure) and are not required to visually match the printed version.

Caution: The more functionality you desire for the HTML product the more costly the project becomes. Dynamic features (e.g., links, formatting and graphics/animation) require additional labor (including hand coding) and are very time consuming and costly.

Acrobat PDF (screen/web optimized): The most common format for presenting documents online. PDF files are relatively easy to create and when printed to an office printer maintain product design integrity (e.g., page formatting). Laser prints (or office copier prints) from PDF files are virtually identical to the printed version of a product. Simple PDF files that are generated from electronic files (not scanned from legacy documents), like HTML, can be easy to create and should not add significantly to production costs.

Tip: PDF files for **online** use should be created using the default settings in Acrobat Distiller 3.0 or the Screen Optimized Settings in Acrobat 4.0.

Caution: The more functionality you desire for your PDF product the more costly the project becomes. Dynamic features (e.g., links, video, book marking, etc.) require extra system time and are typically very time consuming. In addition, PDF files created from scanned images may not be readily searchable without third party software and may not conform to all federal requirements.

SGML & XML: Standard Generalized Markup Language (SGML) and Extensible Markup Language are meta languages that are more robust and more complicated than standard HTML. These formats may be requested, but are very labor intensive. Customers should contact ePUB before requesting SGML or XML files.

Fonts

PostScript Type 1: 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. However, send in only the font sets used in the job not your entire font collection. Font files that contain customized features such as kerning and tracking **MUST** be provided.

Caution: True Type fonts may be used, but most commercial print vendors prefer files using PostScript fonts. If your document uses TrueType fonts avoid using PostScript fonts in the same document as mixing font types can cause output problems.

Tip: If it is not possible to supply the font, GPO can require that the vendor substitute a matching font. For this font substitution to work properly customers are still required to indicate the font name(s), manufacturer(s), **AND** the version(s) of all fonts used. If fonts are not supplied GPO strongly recommends that the customer obtain a contract proof and read the proofs very carefully.

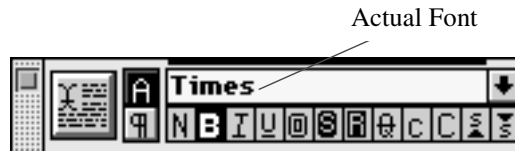
Fonts Used in Graphic files: If drawing/illustration graphic files contain text matter, fonts for these files should also be provided.

Converting Fonts to Outline Path or Curve: One way to avoid font problems with graphic files is to convert all type matter in the graphic to either outlines, paths or curves depending on the software.

Caution: Once converted to outline/path/curve, text is very difficult to edit. Always make a backup of any file prior to converting to outline. This backup file is not sent

to the vendor, but remains with the customer to allow for quick editing or touch-up of text if warranted.

Menu Styles: On a Macintosh, menu styles such as bold and italic 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.

Tip: Windows Only – Menu styling is allowed under the following conditions: Using Times Bold as an example: 1) The actual font “Times Bold” is installed and active on the system, and 2) The font named “Times Bold” does not show in the font menu of your software. In other words, if you know that you’ve installed Times Bold on your system, but the “Actual Font” fails to show in a pull-down menu, it is OK to apply menu styling. This is specific to Windows and is not applicable to the Mac OS.

Images (Scans & Digital Cameras)

Scanning: 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 printed image. In fact, large file sizes may increase processing time and costs.

Tip: To achieve optimal results especially with color images, scanning for EDPP should be accomplished by a prepress professional using properly calibrated equipment and suitable image manipulation software.

Caution: Typical desktop flatbed scanners lack sufficient dynamic range and optical resolution to provide acceptable scans for print publishing. 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 color space) to CMYK through the scanner interface, or image manipulation software (e.g., PhotoShop). All appropriate color correction should be applied at this time.

Tip: If images are supplied in any color mode other than CMYK, be sure to note the supplied color mode on the 952 so that GPO can accurately write the specification requirements.

Caution: When confronted with a color mode other than CMYK (for full color), vendors will convert to CMYK and output as per contract. Unless a reasonable color match standard (e.g., contract proof or CMYK value) is identified in the GPO specification, any color shift or image fidelity issue will be the responsibility of the customer, not the vendor.

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, not in the page layout program. If performed in the layout programs the job may require additional prepress work which can translate into additional money and a lost delivery schedule.

Scanning Resolutions (color and grayscale) . Scan all images at a resolution between 266 and 300 pixels per inch. This requirement is based on an input-to-out-

put (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.

Tip: Using the “Sharpen” or “Unsharp Masking” filters of most image-editing software may improve image quality. In addition, certain software programs (e.g., Binuscan PhotoPerfect, Extensis IntelliHance) automatically process images to achieve high quality results.

Scanning Resolution (line art): Scan all line art as bitmap images with a resolution between 800 and 1240 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 and images should be generated by the customer prior to submission for printing.

Caution: Applying special filters and effects will create a unique image that is difficult for the vendor to recreate. Any special effect should be applied to high-resolution (live) files only.

Layers: GPO recommends working in layers whenever possible with rastered images. By separating elements onto different levels, layered files make correction (especially type correction) much easier to achieve.

Tip: If possible, save an unflattened version of your file prior to converting to the TIFF format. Converting to TIFF merges all layers into a single layer.

Caution: Never merge or flatten layers, or if you do flatten images always provide the unflattened version of the file so that last minute edits can be made.

Scanned Image File Formats: Scanned images should be saved as uncompressed TIFF or EPS files. If saving EPS (see Tip below) files from photoshop deselect the “include halftone screen” and “include transfer function” options.

Caution: The “include halftone screen” and “include transfer function” options can override vendor output settings. Only select these options if you are confident that you are making the correct decision.

Tip: Duotone images and files with clipping paths must be saved as EPS. The balance of bitmapped graphics (scans or other art from image editing programs) should be saved as TIFF.

Caution: Continuous tone images (except duotones) are not generally designed for multiple spot color output. Color images that have been scanned into, or created in an image editing program (e.g., Photoshop) are typically composed of shades of color and do not convert to spot colors easily. Other than duotones, the current version of PhotoShop (6.x) supports spot colors only in multi-channel mode; however, this effect is difficult to achieve in a typical print production environment. Consult your Photoshop manual for more information on multi-channel mode. e-PUB is available to answer questions as to the best way to achieve spot color effects with scanned images.

Digital Cameras: Digital cameras, except at the hi-end business or professional level, typically lack the qualities and features necessary for commercial offset print publishing work. Customers who use digital cameras to capture images for print publishing should test the images prior to submission for print (e-Pub provides this service). For customers who must use images obtained from a digital camera we recommend the guidelines that follow:

Resolution Capture: To be used for print production, digital cameras should capture a minimum of 1.6 mega-pixel (minimum capture resolution of 1524 x 1024 ppi.). Images should be captured at the maximum allowable resolution and with the lowest compression settings. Capturing images at this resolution from a 1.6 mega-pixel camera yields suitable resolution for a 3.4 x 5" image at 305 PPI.

Tip: A 2.0 mega-pixel digital camera yields a 292 PPI image at 4 x 6, while a 3.1 mega-pixel digital camera yields a 300 PPI image at 5 x 7".

Caution: Capturing at the highest available resolution should be acceptable for same size (1 to 1 ratio) images; however, images captured at this resolution level may not be sufficient for enlargements. Always use the formula identified under scanning for resolution issues. Enlargements beyond the sizes identified above are not recommended.

Formats and Compression: If possible, avoid using the compression schemes built into digital cameras. If compression is necessary use the lowest possible (highest quality) compression option available. Always save images from digital cameras as TIFF files before editing and sending to GPO.

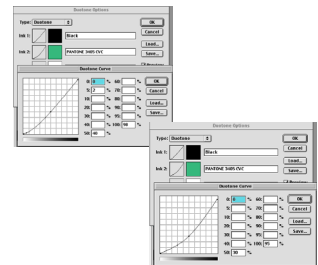
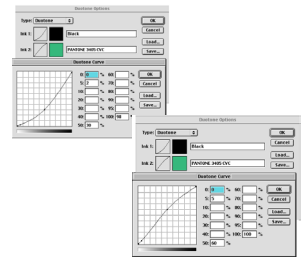
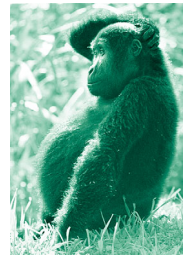
Caution: Be wary of color shifts with images from digital cameras. The RGB captured color data and some compression algorithms (e.g., JPEG) may cause on screen and color printer appearance to differ from printed output.

Tip: Always request contract proofs for any job which uses images obtained from a digital camera.

Duotone Images: Duotone images provide more depth to a typical grayscale image by introducing a second color of ink. However, good duotones are difficult to achieve unless the user is an experienced prepress operator.

Tip: GPO recommends contacting T&D Tech Review for help in setting up duotone images. Software such as CreoScitex Powertone, or swatch books such as PANTONE’s duotone indicator can also provide direction for creating good duotones.

Caution: Duotones and metallic inks can cause output problems and are best avoided.



Transfer Functions: Transfer functions dictate the amount of ink and tonal range of a duotone. The top figure shows a heavily saturated duotone image with a bright green cast. The bottom figure represents an image with less color saturation. While there is no “right” way to create a duotone, the top image will be much more difficult to output due to the extreme ink coverage. The transfer functions (curves) are listed to the right of each image (black on top, green on bottom)

Tip: As a general rule, the second ink should not contain more than 85% in the shadow area and should contain no less than 2% in the highlight.

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.

Tip: Pre 2000 versions of MS Publisher support spot colors, but only if the Publisher file was created for spot color output. When using pre 2000 Publisher for spot colors it is important to read the instructions provided by Microsoft and included with MS Publisher. See earlier Caution on printed page 11.

Caution: Some programs (e.g., MS Word, PowerPoint, Corel WordPerfect, Harvard Graphics) do not support spot colors and should not be used when creating printed pieces that require spot color(s).

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.

Tip: Selecting colors from preprinted color charts that contain representations of built colors, using the TruMatch color system, or internal systems such as Color Sync, or any International Color Consortium (ICC) compliant profiles, can help to standardize four-color process builds.

Caution: Be aware that some spot colors cannot be adequately represented using four-color process inks.

Tip: Consult a color guide book (e.g., PANTONE Process Color Imaging Guide) to see a comparison of spot colors and their closest build.

Caution: Pre 2000 versions of MS Publisher do not support process color (CMYK) printing to conventional high resolution, color separation based print publishing workflow. Non graphics software such as MS Word, PowerPoint, Corel WordPerfect, and Harvard Graphics use an RGB color space and are not designed for

CMYK output. Customers who desire process color printing should use one of the software packages listed on pages 8 & 9.

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.

Tip: Photoshop 5.x (not previous versions) supports spot colors in multi channel mode and/or duotone mode only.

Caution: Attempting to achieve spot colors from an image editing program (e.g., Photoshop) in any color mode other than multichannel or duotone can result in extra costs and lost time.

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.

Caution: Color management (the ability to match monitor display, proof output and press output) has made some strides recently, but is still not a viable option for most customers. Unless you've invested in the proper equipment, training and calibration software your monitor will fail to display colors that match offset or digital printing output and will display colors that can not be printed.

Tip: The most accurate and least expensive method of color match is to consult an appropriate color guide book (e.g., PANTONE Process Color Imaging Guide) for all color issues. These books, if current, represent ink characteristics using different production methods (e.g., process builds, solid colors and tint screens).

Graphics, Maps, Charts 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 between programs may yield unacceptable results.

Caution: Avoid using the “Store in Publication” feature of PageMaker, or similar features in other programs. This feature can cause excessive file sizes that may affect processing time and costs.

Caution: Windows users should avoid “cutting and pasting” color images from Word, PowerPoint, Excel and other OG software applications. Cutting and pasting these images can cause output problems (e.g., color shift, system crashes and other errors.)

Tip: Graphics from PowerPoint and Excel can be exported to a Windows Metafile format (.WMF) and then converted in CorelDraw to an EPS file.

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).

Tip: Graphic status can be checked in many software programs. In PageMaker use the Link Info command (File>Link Manager), QuarkXPress (Usage > Picture Usage), Adobe InDesign (File>Links) and Adobe Illustrator (File>Document/Selection Info or Document Info).

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 high resolution output, not web or presentation work, and that the color mode is appropriate for the desired output (e.g., PANTONE or CMYK).

Caution: Not all clip art can be processed properly on a PostScript Raster Image Processor (RIP) for conventional print publishing. Color shifts, low resolution images and RIP crashes are common problems with some stock clip art.

Copyright & Artwork: Copyrighted materials may not be reproduced without written permission from the copyright holder. For your protection, provide a copy of the permission paper to GPO and the contractor for any artwork that has a copyright.

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 (e.g.,

adding traps, correcting type and color adjustment). In order to ensure that changes to these files are possible, include any necessary native application files as well.

Caution: Avoid graphic file formats such as GIF, PICT, BMP, and PCX which are not suitable for most print production methods. Avoid .WMF files if possible, however, with some production systems these files can yield acceptable results. Unless the originator completely understands the pros and cons of graphic compression formats (such as JPEG), avoid these as well.

Tip: Avoid the temptation to “cut and paste” or import native CorelDraw files (.cdr) or native Adobe Illustrator files (.ai) into PageMaker. While this file import technique will output beautiful color composites, PageMaker files containing these types of graphics have historically caused problems at prepress output.

Maps: It is best to create maps in professional illustration applications (e.g., Illustrator or FreeHand) rather than in common Geographic Information System (GIS) software (e.g., Bentley Microstation, ArcView or Generic Mapping Tools).

Caution: Most of the common GIS packages support only 256 RGB colors. Colors used in the print publishing world, PANTONE and CMYK, are not supported by these packages.

Tip: Avenza software makes a product that allows for native editing of GIS data in Adobe Illustrator and Macromedia Freehand.

Graphs and Charts: It is best to create charts in professional illustration applications (e.g., Illustrator or FreeHand) rather than in common graphic and charting software (e.g., Microsoft Excel, Corel Chart).

Caution: Most of the common charting packages support only RGB colors. Colors used in the print publishing world, PANTONE and CMYK, are not supported by these packages.

Tip: For creating charts and graphs always use an application that supports necessary print publishing features. Programs such as Illustrator, FreeHand and CorelDraw are appropriate; however, many customers find these programs cumbersome for charting work. Programs such as SPSS' DeltaGraph are designed specifically for charts and graphs, but also maintain prepress functions and file format support required by the printing industry.

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.

Caution: A visual generated by an agency's 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): Also referred to as Preproofs. Due to many factors (e.g., cost and time) standard digital proofs may be suitable for many of the jobs submitted to GPO. 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 (Imation'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, consider 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 non-imaging 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.

Caution: Don't leave excess images on the "pasteboard". These non printing images can cause confusion to both prepress workers and output devices, thus causing your file to fail and not image or to image more slowly with additional costs.

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.

Tip: Note any special instruction on GPO form 952 (GPO Disk Information Form).

Gradations: To avoid problems with banding, gradations should be properly created. Image editing programs such as Photoshop create the smoothest gradation. Drawing programs such as Illustrator and FreeHand can produce good gradations if created properly. Gradations should generally range from 3 to 98 percent (avoid using 0 and 100 percent). In addition, other factors such as paper stock and the intended production method should be considered as well.

Caution: It is difficult to create large area gradients (that do not cause banding) using most current graphics applications

Tip: Customers who desire gradations that cover a large contiguous (larger than 6 x 10") area should consider letting the print contractor create the gradation.

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 90 percent.

Tip: Other factors such as paper type (e.g., coating, hue and other properties) should also be considered.

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 minimum 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: Unless you are submitting files via an electronic file transfer 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. 10 (File Submission Media) for a brief list of common removable media 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.

Clipping Paths: Clipping paths are used to create silhouette images. In other words a clipping path “clips” unwanted images from a photo, leaving only the image that is desired (see example on next page). Clipping path’s should be created in an image editing program (e.g., Photoshop).

Caution: Avoid creating silhouette images in Quark XPress (using the customize frame feature) or in PageMaker. In older output devices (commonly used in the print publishing industry) these layout file “effects” can cause increased processing times and in some cases system crashes. In addition, it is more difficult to create a good mask/clipping path in layout applications.

Tip: Allow vendors to create clipping paths, and request that the file (with the path) be returned as part of a Digital Deliverable. ePUB's web site (<http://www.gpo.gov/procurement/ditsg>) contains an action for Photoshop 5.5 & 6.0 that may help automate the clipping path process.

Clipping Path Example

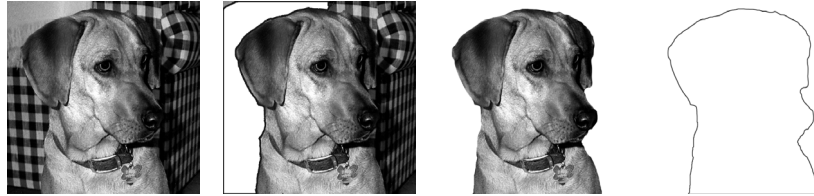


Fig. 1

Fig.2

Fig. 3

Fig. 4

Figs. 1 through 3 illustrates the removal of an unwanted image. Fig. 4 is the actual clipping path. Nothing outside the path will print; everything within the path will print. Note: This example simply illustrates the concept of a clipping path and is not a how-to for creating a path.

Tip: ePUB's web site contains a Photoshop action that helps automate the Clipping path process.

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.

Tip: In some instances GPO includes the completed 952 as part of the printing contract. Any errors contained on the form may impact the cost and administration of your contract.

Tip: Several GPO forms (e.g., 952, Sf-1, 1815) are available as PDF files from GPO's web page – <http://www.access.gpo.gov/procurement/ditsg/forms.html>

Marking Visuals: If additional work (e.g., silhouettes, color correction, etc.) 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 (the media that will be sent to GPO or the print vendor) not from files located on your computer hard drive.

Caution: A supplied visual is used as a general guide, not as a proof. If the supplied files contain any errors, print vendors are not obligated to verify that their output will match the supplied visual. For this reason it is wise to get proofs for all jobs supplied on electronic media.

Color-Separated Visuals: With multi-color jobs, supply a color-separated visual as well as a composite visual. 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.

Tip: Sending color separated visuals insures that only the desired number of ink colors are contained in the file. Color separations, generated by the customer, save time and money by identifying problems prior to the award of the contract

