



The Guidelines

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



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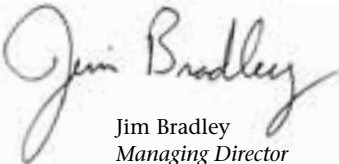
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To Our Customers,

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 GPO will develop customized solutions for meeting your publishing needs and services. These solutions will offer a fully integrated approach, including creating, packaging, disseminating, storing, preserving, and authenticating information.

GPO's new National Sales Program is committed to creating awareness of GPO's product and service offerings, which will promote the full spectrum of GPO's services to you, our agency customers and partners. In doing so, the program will showcase creative services, electronic publishing options, dissemination strategies and other valuable services.

We are committed to providing you with support and solutions to meet your publishing needs. As always, we will continue to keep you informed.



Jim Bradley
Managing Director
Customer Services

Support Through GPO

The goal of this publication, *The Guidelines — Best Practices for Submitting Electronic Design and Prepress Files*, is to provide best practice guidance to customers who are creating publishing products via desktop computers. As always, the **ePUB Support Group** is available to answer questions regarding electronics and publishing.

GPO's **Electronic Publishing Support Group** is an in-house desktop and electronic publishing consulting group. We service all Federal Government agencies who use GPO's Printing Procurement process, as well as our in-house and regional personnel.

Please note that the basics of proper file creation, unlike technology, stay fairly consistent. While no specific "recipe" exists for creating the perfect electronic file, the suggestions provided in this publication will simplify the process and minimize potential problems.

Please direct questions, comments or suggestions for improving this document to **ePUB**:

phone 202.512.1491
e-mail epub@gpo.gov
website www.gpo.gov/procurement/ditsg

NOTE

This edition of *The Guidelines* was revised July of 2004 and replaces the previous version revised in August of 2001. This revision includes updated information regarding software, processes, and the latest trends in industry.

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Education Through GPO

The art and science of producing printed publications using commercial offset lithography or the new digital means requires very structured files. As an example the “colors” produced by these reproduction means are very different and often limited compared to typical desktop printing. Understanding the requirements and limitations of commercial reproduction is often the difference between bringing a project in on-time and being late, and will definitely effect it’s final cost.

The practices described in these guidelines, and many tips and tricks of publication design, are covered in detail in classes taught by GPO. For anyone involved with producing printed publications basic print production training is recommended. For those designing pages, “responsible page building” is also a must.

GPO Training Provides

Electronic Design and Prepress Courses:

Adobe Acrobat –PDF for Press, Checking Desktop Publishing Files—Preflighting, Getting the Best From Desktop Publishing, Printing Processes and Terminology, and others including software specific classes, tutoring, selfpaced learning aids, and on-line training.

Electronic Publishing Courses: courses in electronic publishing such as CD Publication, XML for the WWW and Dreamweaver are also provided.

For training classes, contact the **Institute for Federal Printing and Electronic Publishing (IFPEP)** at GPO:

phone 202.512.1283
 e-mail ifpep-registrar@gpo.gov
 website www.gpo.gov/ifpep/ifpep.html

Platform

Electronic files should be created using either the Macintosh or Microsoft's Windows operating system (OS). When using the Macintosh OS, use system 10.2 or later. When using the Windows OS, use Windows 2000 or XP.

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 includes, but is not limited to, Iomega products (all sizes), single-session recordable CD or DVD. If submitting a DVD, address compatibility issues by making sure that the format of the DVD drive used by the end user is the same format as the DVD drive used for recording.

Caution: DVD-RW drives only record on -R and -RW discs, and DVD+RW drives only record on +R and +RW discs. Make sure you get blank DVD disks that are compatible with your drive.

Tip: The minus format is the most popular format for Windows users, and is almost universally accepted by Mac users as their standard DVD recordable format.

Caution: Customers should be wary of data stored on certain types of removable media (e.g., SyQuest cartridges, 3.5" floppies, etc.) 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: 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., CMYK and PANTONE color, 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 press optimized PDF files instead of native files (see ePUB's website at www.gpo.gov/procurement/ditsg for more information on creating appropriate PDF files).

Macintosh Platform

Page Layout: Adobe InDesign, QuarkXPress, Adobe FrameMaker
Drawing/Illustration: Adobe Illustrator, Macromedia FreeHand
Image Manipulation: Adobe Photoshop

Windows Platform

Page Layout: Adobe InDesign, QuarkXPress, Adobe PageMaker, Adobe FrameMaker
Drawing/Illustration: Adobe Illustrator, Corel Draw, 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 because most vendors only support recent or near recent applications. 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
Apple — www.apple.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 InDesign the file will be saved as with an .indd 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. Adding the 3 letter extension will not cause problems with the file. The icons below represent QuarkXPress (left), Adobe PageMaker (center) and Adobe InDesign (right) files created on a Macintosh.



Quark (.qxd) PageMaker (.pmd) InDesign (.indd)

Adobe Acrobat Portable Document Format (PDF)

Commonly called PDF files, this file format can 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 out-put 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 PDFWriter are not acceptable for print publishing. See ePUB's website (www.gpo.gov/procurement/ditsg) for specific information regarding PDF file creation, including downloadable press optimized Distiller settings.

While this guide does not provide instructions for creating PDF files there are several sources for obtaining this information. In addition to ePUB's website, customers can find instructions for creating high quality PDF files at many web sites including Adobe (www.adobe.com), PDFZone (www.pdfzone.com) and PlanetPDF (www.planetpdf.com). In addition, GPO's Institute for Federal Printing and Electronic Publishing (IFPEP: 202-512-1283) teaches both Adobe Acrobat courses and desktop publishing courses.

PostScript Files

Commonly referred too as Print-to-file or print-to-disk, 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. PostScript files often contain output limitations specific to the print driver used to create the file. In addition, if you submit a PostScript file, you will be responsible for any PostScript errors encountered during output.

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.

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 Deliverables

The ordering agency may request upon completion of the order, that the contractor provide corrected native application files (digital deliverables) with the furnished material. The digital deliverables must represent the final production files and must be an exact representation of the final printed product. Digital deliverables must be returned on the same type of storage media that was furnished with the original submission. The Government will not accept digital deliverables or storage media that do not possess the same formatting, in regards to platform, as the original submission.

File Formats for Repurposed Deliverables

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 convert native application files into other formats for multiple uses. This includes formats for both online use and for future printing.

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 ePUB.

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 can be time consuming and costly.

Acrobat PDF

The most common format for presenting documents online, PDF is also becoming a standard for professional printing. In addition, PDF files are relatively easy to create and when printed to an office printer maintain product design integrity (e.g., page formatting). The type of PDF you should request back from the contractor is determined by the desired output for press or online use.

Press Optimized PDF

PDF files created for output to a press can be generated from native application files. These PDFs contain embedded fonts, graphics, color data, and layout structure.

Screen/Web Optimized PDF

PDF files for **online use** should be created using the “Screen” setting in Acrobat Distiller 5.0 or the “Standard” setting in Acrobat Distiller 6.0. The “Standard” setting in 6.0 may also be used for printing, but only to desktop printers—NOT FOR PRESS.

Caution: Simple PDF files that are generated from electronic files (not scanned from legacy documents) can be easy to create and should not add significantly to production costs. However, the more functionality you desire for your PDF product the more costly the project becomes. Dynamic features (e.g., links, video, bookmarking, etc.) require extra system time. In addition, PDF files created from scanned images will 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 (XML) are meta languages that are more robust and more complicated than standard HTML. XML specifies neither semantics nor a tag set. XML is defined as an application profile of SGML. These formats may be requested, but are very labor intensive. Customers should contact ePUB before requesting SGML or XML files.

Fonts

PostScript Type 1

PostScript Type 1 fonts have been the industry standard. 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, both for character integrity and text reflow.

OpenType

OpenType fonts are accepted on both Windows and Macintosh computer systems. These fonts include PostScript data (both printer and screen) within a single font and are acceptable to use in electronic design files.

Fonts Used in Graphics Files

If drawing/illustration graphic files contain text matter, fonts for these files should also be provided.

Converting Fonts to Outline Paths or Curves

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.

Color Issues

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 and newer versions support spot colors in multi channel mode and/or duotone mode only. Attempting to achieve spot colors from Photoshop in any color mode other than multichannel or duotone can result in extra costs and lost time.

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.

RGB

Red, green, and blue pixels are illuminated on your display and have a different range of colors compared to a printed image. RGB are “additive colors.” Combined they will make white light. RGB color spaces are device dependent and are altered by the gamma of the system displaying them.

Caution: RGB color mode should only be used when images are being electronically displayed (computer monitor, TV, projector screen, etc.), **NOT FOR COMMERCIAL PRINTING.**

Tip: RGB images must be converted to CMYK for process color printing. However, be aware that converting from RGB to CMYK will cause a color shift. The CMYK color can be adjusted using professional image software (e.g., Adobe Photoshop).

Four-Color Process (CMYK)

Cyan, Magenta, Yellow, and Black (K) inks are used when printing. CMYK are “subtractive colors” because they absorb light. Designers and printers should take into account the different properties of inks and papers used for printing.

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

flows. Customers who desire process color printing should use one of the software packages listed under “Commonly Accepted Publishing Software.”

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.

Caution: Be aware that some spot colors cannot be adequately represented using four-color process inks. Consult a color guide book (e.g., PANTONE Process Color Imaging Guide) to see a comparison of spot colors and their closest build.

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

Grayscale

Images that will print using only black ink should be converted to grayscale using professional image editing software (e.g., Adobe Photoshop).

Caution: When you convert to grayscale, you remove all color information.

Duotone Images

Duotone images provide more depth to a typical grayscale image by introducing a second color of ink.

Tip: GPO recommends contacting Creative Services 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.

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).

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 should be accomplished by a prepress professional using properly calibrated equipment and suitable image manipulation software.

Caution: 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.

Scanning Resolution (color and grayscale photographs): Scan all images at a resolution of 300 pixels per inch. This requirement is based on an input-to-output (I/O) size ratio of 1 to 1. For example, a 3 x 5 inch original photograph that is to be printed at 3 x 5 inches (I/O ratio of 1 to 1) should be scanned at 300 pixels per inch. The same 3 x 5 inch original photograph to be printed at 6 x 10 inches (I/O ratio of 1 to 2) should be scanned at 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 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 1200 pixels per inch, based on an I/O ratio of 1 to 1. Enlargements and reductions are similarly proportional.

Scanned Image File Formats: Scanned images should be saved as uncompressed TIFF or EPS files.

Caution: If saving EPS files from Photoshop deselect the “include halftone screen” and “include transfer function” options. These options can override vendor output settings. Only select them if you are confident that you are making the correct decision.

Tip: If you plan to convert an image into a Duotone and/or apply a clipping path, save the scanned image as an EPS file. Otherwise, save bitmapped graphics as TIFF images.

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 (CS 8.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. ePUB is available to answer questions as to the best way to achieve spot color effects with scanned images.

Digital Cameras

Customers who use digital cameras to capture images for print publishing should test the images prior to submission for print (ePUB 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 resolution of 1524 x 1024 ppi. Images should be captured at the maximum allowable resolution and with the lowest compression settings.

Tip: The higher the mega-pixel number, the larger image size you can produce at an acceptable resolution (e.g., 300 ppi). A 3.1 mega-pixel digital camera yields a 300 ppi image at 5" x 7", while a 4.0 mega-pixel digital camera yields a 300 ppi image at 5.33" x 8".

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 the on-screen view and color printer appearance to differ from printed output.

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

Image Manipulation

Special effects such as blurring and distorting should be applied to the images prior to submission for printing.

Cropping, Rotating & Scaling: 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.

Layers: GPO recommends working in layers whenever possible with raster images. By separating elements onto different layers, corrections (especially type corrections) are much easier to achieve.

Tip: If possible, save an unflattened version of your file for future editing. Flattening an image reduces future editing capabilities.

Graphics, Maps, Charts, and Appropriate File Formats

Establishing Links

Always use proper file import techniques (InDesign “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 embeds all image data into the PageMaker document and 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 Office Graphics software applications. Cutting and pasting these images can cause output problems (e.g., color shift, system crashes, and other errors.)

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: The links status of graphics can be checked in many software programs. PageMaker (File>Links Manager), QuarkXPress (Utilities>Usage), Adobe InDesign (Window>Links) and Adobe Illustrator (Window>Links).

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.

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: Some companies (e.g., Avenza) have software packages that allow 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, CorelChart).

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. Some programs (e.g., SPSS' DeltaGraph) are designed specifically for charts and graphs, but also maintain prepress functions and file format support required by the printing industry.

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, WME, and PCX which are not suitable for most print production methods. 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 place native CorelDraw files (.cdr) or native Adobe Illustrator files (.ai) into PageMaker. PageMaker files containing these types of graphics have historically caused problems at prepress output.

Proofing

Proofs should be requested for most jobs, and for all jobs containing color. Consult your 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 the following:

- Ink in traditional printing;
- Inks, toners, and dyes used in digital printing;
- Colorants used in desktop color printers.

Conventional Proofs

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

Standard Digital Proofing (SDP)

Digital proofs have matured into a popular proofing media that can be matched on the press and are highly accurate. Requiring digital proofs will also decrease costs, as outputting film is not necessary.

Digital proofs should be created using the same Raster Image Processor (RIP) that will be used to produce the product. Proofs should be collated with all elements in proper position (not pasted up), imaged face and back and trimmed and folded to the finished size of the product.

Require digital one-piece composite laminated color proofs (Kodak Approval, Screen TrueRite, Dupont Thermal Waterproof, Polaroid PolaProof, CreoSpectrum, or Fuji Final Proof) with a minimum resolution of 2400 dpi (indicate margins). These proofs should have all elements in proper position. Require that the proofs contain color control bars, tint patches and dot gain scale (such as Brunner, GATE, GRETAG, or RIT) repeated consecutively across the sheet. These proofs will be used for color match on the press and will show dot structure.

Caution: Most sublimation, inkjet, photographic, and overlay proofs are not acceptable for color match.

Tip: Require that the make and model number of the proofing system utilized shall be furnished with the proofs.

Caution: For spot color jobs if PANTONE colors are simulated using the CMYK equivalent, the PANTONE color must be clearly indicated on the proof.

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 or digital proofs can be produced. This process allows some flexibility with the design prior to the output of film.

Prior to Production Samples (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.

Miscellaneous

Extraneous Images: Do not include non-imaging files, or files that are For Position Only (FPO) on the production disk. If non-imaging 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.

Designer Responsibility

The creator of the final production files should share responsibility for generating a usable product. Any design contract (either with a Government designer or outside contractor) to produce electronic layout and design files should remain open so that corrections can be made up until the final approval is given to the 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, and setting output specifications should generally be performed by the contractor.

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

Gradients

To avoid problems with banding, gradients should be properly created. Image editing programs such as Photoshop create the smoothest gradients. Drawing programs such as Illustrator and FreeHand can produce good gradients if created properly. Gradients should generally range from 3 to 97 percent for offset printing (avoid using 0 and 100 percent). Various digital printing devices require a higher percentage in the highlight. Inkjet printing devices can hold a highlight dot around 5 percent, while laser devices require a 10-15 percent dot. 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 gradients that cover a large contiguous area (larger than 6" x 10") should consider letting the print contractor create the gradient.

Tint 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.

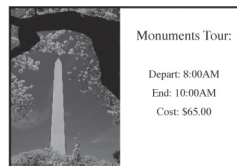
Rules

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.

Final Product



Design with Bleeds



Compressing Files

Unless you are submitting files via electronic file transfer it is best not to compress files (using PKZIP, STUFFIT, 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.

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

A clipping path “clips” unwanted images from a photo, leaving only the image that is desired (see example below). Clipping paths should be created in an image editing program (e.g., Photoshop).

Tip: You can request vendors to create clipping paths, and also request that the file (with the path) be returned as part of a Digital Deliverable. ePUB’s web site (www.gpo.gov/procurement/ditsg) contains an action for Photoshop that may help 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.

Marking Visuals

If additional work (e.g., clipping, 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%, etc.)
- Marks indicating the color system used (PANTONE, Process, 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.



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