

# FACTS ABOUT GEORGIA'S PRINTING INDUSTRY

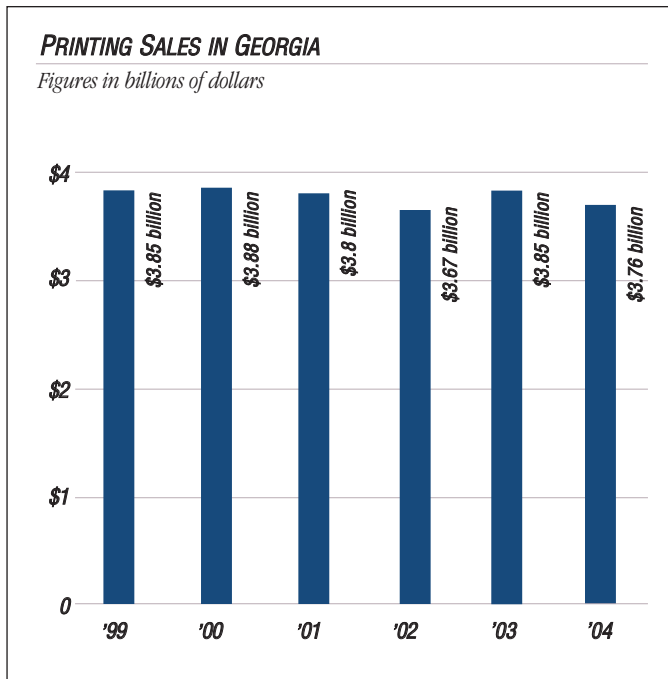
## With 926 Establishments, Printing is Georgia's Largest Manufacturing Industry

The printing industry is defined as those firms engaged primarily in commercial printing, business forms, bookprinting, bookbinding, printing trade services, engraving and platemaking, blankbooks, and binders. It does not include firms engaged primarily in publishing, photocopying or duplication.

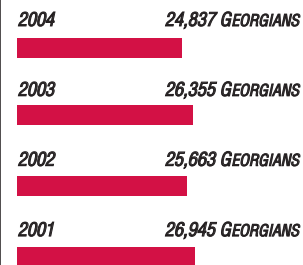
### Ranking Among Other States

Georgia ranks fifteenth in the country in terms of total shipments. Georgia ranks third (15) behind North Carolina (14) and Florida (7) in the Southeast in terms of printing output. The state ranks above the neighboring states of South Carolina (31), Alabama (29)

and Tennessee (19). The city of Atlanta is ranked nationally as the ninth largest metropolitan print market area, in terms of total printing output.



### THE PRINTING INDUSTRY IS ONE OF GEORGIA'S LARGEST MANUFACTURING EMPLOYERS

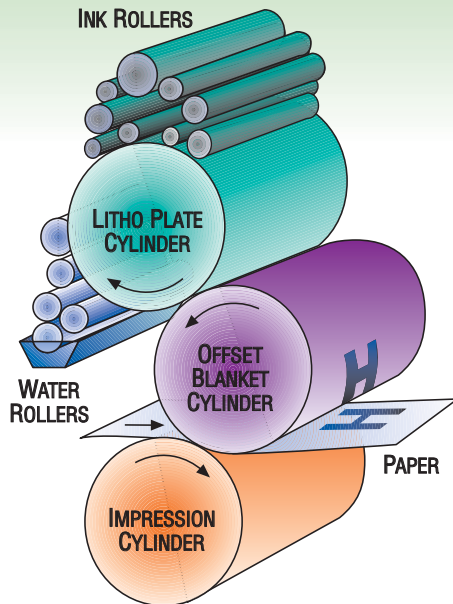


## Regional Profile of Metropolitan Area Printing Centers

CITY	PRINTING FIRMS	SHIPMENTS (\$MILLIONS)	EMPLOYEES
Albany	12	\$21.1	162
Athens	20	\$67.9	429
Atlanta	549	\$2,312.1	15,566
Augusta	40	\$201.3	1,311
Columbus	22	\$148.3	880
Macon	28	\$121.6	731
Savannah	29	\$32.2	274

Figures represent latest available data.

## THE MOST COMMON PRINTING METHOD: OFFSET LITHOGRAPHY



The basic principle of offset lithography is that ink and water don't mix. When plates are exposed, an ink receptive area is activated for the image. Water is applied to the plate and adheres to the non-printing areas and ink to the image areas. The image is transferred from the plate to a blanket (see above) which subsequently prints on the paper. A variation, waterless offset, requires special plates and ink cooling systems.

Offset presses are classified into sheetfed (run from cut sheets) or web (run from rolls). Sheetfed press sizes may run up to 60 inches or larger in a few cases. Web presses, because of their high speeds, are generally used for longer commercial runs and publications. Web presses are further classified as heatset, where the image is dried by passing through an in-line oven (principally used for commercial printing) or open-web (used principally for production on newsprint). Web size designations include: "full webs" (approximately 38 inches wide), "half webs" (approximately 22 inches wide), and "mini-webs" (approximately

17 inches wide). Publication web presses may have even larger plate widths. Most web presses run both sides of the web simultaneously and offer in-line finishing options not found on sheetfed presses.

### DIGITAL PRINTING

When an electronic file is output directly, with no intermediate film stage, the process is called digital printing. Digital color presses use electrophotography and print with toners or special inks. All of them are capable of sheet-to-sheet personalization of images and text commonly known as variable-data printing. Another output process, direct imaging, occurs when a plate is imaged directly on a special lithographic press.

When color digital printing is wider than 24 inches, it's called large- or wide-format. The most popular machines for short runs are thermal or piezoelectric inkjets. Popular applications include banners, posters, point-of-purchase displays, bus wraps, and billboards. Fine art reproductions that are output digitally are known as giclées.

## OTHER PRINTING METHODS

### LETTERPRESS

Formerly the standard printing process, letterpress is now used for specialty work such as numbering, imprinting, diecutting, stamping, and embossing. Letterpress is still used for fine art prints, limited edition books, and posters. The image area is raised above the surface of the non-printing areas and prints directly on the paper.

### FLEXOGRAPHY

Often called flexo, this is a versatile process that uses molded rubber or etched photopolymer plates that carry the image, similar to letterpress, on a raised surface that prints directly on the substrate.

Advances in all parts of the process make flexo well-suited to any substrate supplied in rolls including: paper, films, box boards, and newsprint. Common uses are for labels, tags, envelopes, cartons, newspapers, and packaging such as plastic bags. In fact, flexography's growth as a printing process parallels the growth of the packaging industry.

### GRAVURE

In this process, all images, including type, are screened by tiny cells etched into cylinders. These cells vary in depth and width and are below the non-printing areas. The cylinder rotates through a bath of ink and the non-printing areas are wiped clean by a doctor blade before the image is directly applied to the substrate. Gravure is used for long runs, including publications and packaging.

### SCREEN PRINTING

Formerly known as silk-screen, this is generally used for short runs, but modern automatic equipment has increased the run lengths. Because the process lays a thick film of ink, it is ideal for brilliant colors and fluorescent inks that require a lot of pigment to be deposited. The image is carried on a stretched screen of fabric or fine mesh wire. Ink is deposited on the screen and forced through the image areas by a squeegee onto the substrate.

Some screen presses can print very large images on almost any material for point-of-sale displays, exhibits, posters, and even dimensional objects such as glassware and containers.

## VARIATIONS ON LITHOGRAPHY OR LETTERPRESS

### THERMOGRAPHY

By an in-line attachment, this process deposits a resin on the wet ink and heats it — resulting in a raised image.

### STEEL DIE ENGRAVING

Used for securities, currency, and fine stationery. The image, applied directly to the paper and carried below the surface of the plate, is called a die. The non-printing areas are wiped clean. A handmade counter die pushes the substrate somewhat into the die, giving a tell-tale impression on the back of the sheet and a raised image on the front.



## KEY CONCEPTS

Printing involves more than reproducing words and images on paper. Creation of the physical experience itself — holding the piece, feeling the paper, the interplay of ink and paper — is the complete function of printing. As such, paper — the vehicle of the message, as well as the biggest cost item in a printing job — is of prime importance. Understanding paper and picking the right sheet for your job can make or break your job. Papers are defined by grade and basis weight. Understanding these two concepts is the key to specifying the right paper.

## GRADES OF PAPER

There are seven basic grades (or types) of commercial printing papers:

- **BOND OR WRITING**  
Usually reserved for letterheads, business forms, and copier uses.
- **BOOK**  
The most commonly used coated and uncoated papers for printing.
- **TEXT**  
High-quality sheets in a variety of surfaces and colors.
- **COVER**  
Used when greater bulk is required, such as book covers, postcards or inserts. Available in a wide variety of surfaces and colors.
- **TAG, BRISTOL, AND INDEX**  
Smooth surface papers, mostly uncoated, except for bristols. Uses include displays, file folders, and tickets.

Within each grade there are other distinctions, based on brightness, opacity, and fiber content. For instance, there are matte, premium, and ultra gloss finishes to coated paper. In uncoated book, there is #1 Offset, #3 Offset, Opaque, and Lightweight. Text papers are distinguished by finishes like smooth/vellum, felt/embossed, laid, and linen.

## BASIS WEIGHT

Getting more specific, people identify papers in terms of their basis weights. Since coated papers are more compressed (calendered), you can't necessarily keep the same weight when you switch grades. For instance, you may go from a 60# uncoated to a 70# coated sheet to keep the same thickness. That's why papers are usually referred to by weight and grade.

What is basis weight, exactly? It is the weight of 500 sheets of paper cut to the basic size. So, 500 sheets of 25" x 38", 60# offset weigh 60 lbs. The basic size for bond is 17" x 22"; for text, offset, and coated, 25" x 38"; and for cover, 20" x 26". That's why two similar sheets of different grades may have very different basis weights, for instance, 24# bond and 50# offset.

Different grades of paper have different ranges of weight:

- **BOND**  
Usually 16# for forms, 20# for copying, and 24# for stationery.
- **TEXT**  
Ranges in weight from 60# to 100#, but the most common weights are 70# or 80#.
- **OFFSET**  
Usually a 50# to 70# stock.

- **COATED BOOK**  
Generally goes from 30# to 70# for web, 60# to 110# for sheetfed.
- **COVER**  
Comes in 60#, 65#, 80# or 100# weights.

## RECYCLED PAPERS

Our national waste disposal challenge has led to the increasing use of recycled papers. Paper companies have answered increasing demand with offerings in all paper grades. While recycled sheets still command a premium over virgin stock, they are more widely available than in previous years.

At this time, there are still differences in definitions associated with recycled papers, and concerned buyers need to consult the EPA (Environmental Protection Agency) guidelines, State of Georgia and Federal definitions, and paper companies' literature to make informed judgments.

## DIGITAL PAPERS

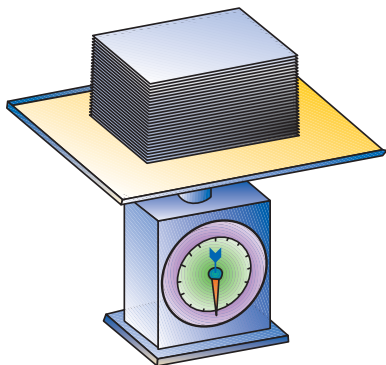
High-speed laser printing, in black-and-white or full color, lays toner on a substrate. Whether the output equipment is a digital copier or a sheetfed or web digital press, the process requires papers that will withstand the heat employed in the fusing process in these machines. In the case of inkjet output, compatible papers are also required.

Today, paper mills are developing full lines that work for these processes as well as offset lithography so that designers can coordinate campaigns that encompass everything from large-format to short-run personalized print to long offset runs. Be sure that the paper you specify is right for the process that will produce your job.

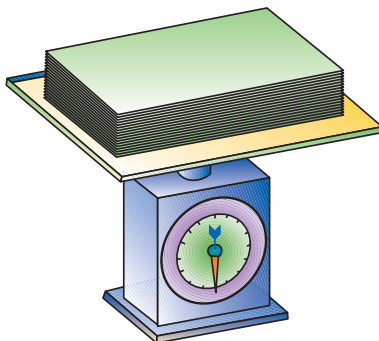
*NOTE: Typically, letterheads will be imprinted via laser imagers or copiers. It is important that you, as the buyer, tell the printer how you intend to use the printed piece. Do not assume that all papers can be used for all processes. Paper merchants will be able to advise whether the paper you selected is compatible for your intended uses.*

*The same caveats apply to inks. Inks containing certain waxes and some other ingredients will soften after being run through a laser printer or copying machine. Again, let the printer know how your printed piece will be used.*

500 SHEETS OF 20" X 26"  
80# COVER PAPER



500 SHEETS OF 25" X 38"  
80# BOOK PAPER



## END OF THE LINE

Finishing includes: mounting, diecutting, coating, laminating, embossing, punching, gluing, and marbling. Binding is the work required to convert printed sheets into books, magazines, catalogs, and folders. Following are the steps of the finishing process.

## SCORING

Heavy stocks or those requiring precise folding should be scored prior to folding. Generally, this is a separate operation on letterpress equipment. But some scoring may be done in-line on offset equipment for certain jobs.

## TRIMMING

Once a piece is printed, trimming is usually done to clean up the sheets. Since trimming cannot be 100 percent accurate from sheet to sheet, certain tolerances must be taken into account. A common mistake that is made is not allowing overwork for images intended to bleed off the edges of the page or sheet. Normally this overwork should be no less than 1/4".

## EMBOSSING

Embossing results in a dimensional image on a sheet. The embossing may be single-level or sculptured (referred to as multilevel). Single-level dies are the least expensive and may be mechanically prepared. Multilevel dies are made in much the same way a sculptor executes a work of art and are therefore more

expensive. Embossing may be either blind (applied without any printed image), foil (applied with foil at the same time as embossing) or printed (embossed over a previously printed image).

## FOIL STAMPING

Application of a flat surface of foil can add much to a printed piece. Foils are not only metallic but may be holographic, tints or pigmented. Pigmented foils, including white, are usually opaque and are used frequently to imprint a light image or type on dark stocks, thus reducing multiple passes required in lithographic or letterpress printing processes to achieve the same degree of opacity.

## FOLDING

Folding is a relatively imprecise operation, so you must leave room for variations in the folds. Remember also that each fold is affected by the variation in the previous fold and the selection of paper. Prepare a paper dummy of the folds before you go to press, and remember to allow adequate trim for the bindery operation. The diagrams below show some common folds.

## BINDING

When planning your job, you need to decide if it will be bound and how. Discuss the bindery requirements with your printer or trade binder before going into production. Following are some common bindings and their definitions:

- **SADDLESTITCHING**

Signatures inserted into each other and stapled through the spine.

*Requirements:* At least 1/4" lip on back of the signature.

Head trims and foot trims should be 1/8".

- **SIDE STITCHING**

Stapled through stack, parallel to spine.

- **PERFECT BINDING**

Individual leaves are glued at the spine to form the book. Ask your bindery for special preparation instructions.

- **SPIRAL BINDING**

Wire spiral inserted through holes punched in bindery edge of leaves.

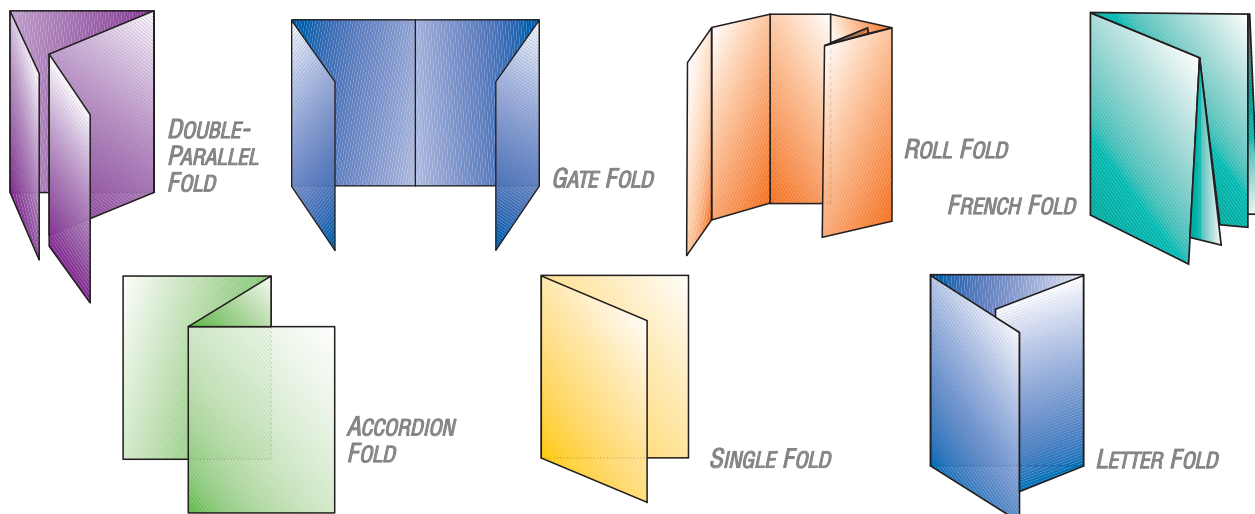
*Requirements:* Minimum trim of 1/8" on head, spine, foot, and front — more if desired. Binding margin is 1/2".

- **COMB BINDING**

Plastic comb binding inserted through holes punched in bindery edge of leaves.

## LAST WORD ON FINISHING

All finishing processes require special planning before the job is printed. In addition to the processes listed above, printed pieces may be diecut, coated or laminated. Many laminates and coatings will react with certain inks and discolor them. Be sure you and your printer are fully aware of the printing requirements that are affected by the finishing processes.



## A BUYER'S RESPONSIBILITY

Digital copy preparation is now virtually universal. Its application to typesetting, art creation, image capture, and page make-up have replaced the traditional forms to such an extent that the mechanical "board" is the exception rather than the rule.

However, the contents of the traditional mechanical that were considered absolute requirements still exist, but in a different form. While application programs provide file originators with a fantastic array of new tools, the significance of communications between the printer and the designer has not lessened. In fact, early collaboration has increased in importance.

As some responsibilities shift from the prepress provider to the customer, the functions previously performed by that provider must now be understood and implemented by the designer/creator of the file.

The file preparer is compelled to comprehend how the work performed on the computer has to reflect the needs of the ink-on-paper product that is the final result. If the anticipated goals — cost savings and quicker turnaround time — are to be realized, these needs must be accurately reflected in the final file given to the printer or prepress provider.

Prepress and printing basics are included in this section to guide you in these efforts.

## DESIGN

Choosing a designer who can efficiently and effectively execute in the digital environment can result in achieving some of the time and money savings that software vendors promise and customers now demand. Communication between the print buyer, the designer, and the printer has become an absolute requirement to ensure smooth delivery of the steps leading to the final printed piece.

Beyond electronic wizardry, consider today's wide spectrum of papers, plus the creative production techniques such as folding, embossing, and coating. These contribute to the effectiveness of print as a media that gets marketing results.

## "SPECING" THE JOB

Detailed, accurate specifications are the key to success with any printing job. Your printer must have complete information to fulfill your expectations. In this section of the *Georgia Print Buyers Guide*, you'll find a checklist for writing printing specifications which will help you organize all the details. You can use this "spec sheet" to help fill out a request for quotation and for issuing a purchase order.

## SELECTING A PRINTER

There are thousands of printers, so how do you choose? First, get to know your local printers. Take tours of their plants and note their specialties. Get to know a variety of printing salespeople and start a file of printing samples. Ask friends or associates for references. When other things are equal, it may be best to go with the company that will provide value-added services that fit the needs of your business — whether that is in full coordination of your project, design or distribution. Establishing an ongoing relationship enables your printer to know your printed product requirements and offer suggestions that can save time and money.

## HOW TO COMPARE ESTIMATES

Each printer should have a mock-up of your design and complete specifications. Request written estimates. If you change a specification for one printer (for example, paper), be sure to change it for all. Otherwise, your estimates are not comparable. Most estimates are good for 30 days.

Scheduling quick turnaround is the rule, but it requires intelligent coordination.

Begin with your distribution date and work backward with your printing sales rep. Then stick to your schedule or alert your rep in advance if there are unavoidable delays. Tell your rep that you expect to be informed if there are delays on the printer's end. If you are contracting tasks separately, account for the time that each vendor needs, including delivery.



## CHECKLIST FOR PRINTING SPECIFICATIONS

**Success in printing requires scrupulous attention to detail.**

**Organize all information related to your printing job on a “spec sheet” so both you and your printer know exactly what you want.**

**Spec sheets are important for filling out “Request for Quotation” forms and purchase orders. On your spec sheet, you should include:**

- **CLIENT NAME, DATE, JOB TITLE, JOB DESCRIPTION**
- **ITEM**  
For example, a 16-page self-cover brochure, catalog, etc. Note that one sheet equals two pages. Use pages when “specifying” a bound piece. For all others, use sheets and indicate if one-sided or two-sided.
- **QUANTITY**  
Include the number of samples as well as the percentage of overs you’ll accept.
- **SIZE**  
Include both trim and folded sizes.
- **STOCK**  
Brand name, color, finish, weight. Is it text, cover, bristol, bond, etc.?
- **INK**  
Include Pantone numbers, varnishes or in-line coating (spot or overall) for front and back.

- **DESIGN FEATURES — DESCRIBE ART**  
Is it all line art? Tints (how many colors per tint), bleeds, reverses, solids, crossover, butt fits or traps, specially built tint colors. Note if keylines print.
- **HALFTONES**  
Number of halftones and/or duotones plus line screen. If duotone, indicate which color will be dominant. Indicate if photos are to be resized and cropped, straightedge crop, silhouette-outline halftones. Note if they butt to keylines and if keylines print.
- **SEPARATIONS**  
Specify number of seps and if using transparencies or reflective art. Show sizes of originals and final images. Indicate line screens and whether emulsion side up or down. Indicate if images butt to keylines or if they are outlines. Any crossover concerns? Retouching or color correcting needed? Include type of color proof preferred, grade of color preferred (e.g. product match, commercial color, etc.) Also, if you are supplying the separations, check to see if your printer should be given two sets of crossovers.
- **PROOFS**  
Indicate what type of color proofing will be required from the provider for color and/or position. Include a folding dummy if applicable. Indicate if stock samples are required from the provider and whether a press check is necessary.
- **BINDERY**  
Trim, fold (type of fold), die cut, score/perf (lithoperf/score or letterpress perf), collate, number, drill (number of holes and hole diameters), stitch, shrinkwrap.
- **FINISHING SPECIALTIES**  
Embossing, foil stamping, UV coating, laminating, etc.
- **PACKAGING**  
Specify counts for piece wrapping, shrink wrapping or banding, maximum carton weight, padding, palleting, and labeling.
- **DUE DATE AND DELIVERY INSTRUCTIONS**  
Indicate single location and quantity for each drop shipment. Include address(es) and phone number(s) to verify shipment.
- **RETURN ARTWORK INSTRUCTIONS**  
Specify number of boards and/or disks and photos/transparencies to be returned along with number of samples.
- **FILM CUSTODIANSHIP/OWNERSHIP**  
Indicate whether changes made to the file by the service provider are to be included in the return of the original digital files to the creator after completion of the job. If film is used, specify whether storage is to be at providers’ site or returned to customer.
- **QUOTED PRICE**  
Be sure to understand the terms.

## APPROVING ELECTRONIC OR CONVENTIONAL MECHANICALS

**After signing your approval on the camera-ready art or a hard-copy proof from an electronic mechanical, any changes or corrections are expensive!**

**Use these checklists to add confidence to your signature.**

- Is all digital information complete and noted as covered on the DTP Preflight Checklist found in this *Guide*?
- On hardcopy proofs (or on traditional boards), verify overall dimensions, margins, column widths, and gutters. Indicate corner and centermarks outside of the printed area. Indicate areas of overall screens on hard copy, even if included in digital file, as a double check for printer or prepress provider.
- Double check correctness of text, headlines, legal lines, credit lines, logos, addresses, contact numbers, and names. Remember, the prepress house or your printer cannot be held responsible for errors you make in supplied material.
- Be sure swatches of specially matched colors are available with the file or the mechanical boards.
- Furnish a complete dummy showing diecuts, trimming, and other special instructions.
- Include all transparencies, photos or reflective copy with the electronic file or mechanical boards.

*Also see “Electronic Preflight Checklist” on page 19.*

## WHAT TO LOOK FOR ON A PREPRESS PROOF

**The prepress proof gives an approximation of what the final image will look like — especially important in four-color printing. This is your last chance to catch prepress errors!**

**Analog and digital proofs are examples of prepress proofs for indicating desired colors, position of elements or both.**

- Go through the proof counting page numbers. Check how pages back up to each other.
- Check borders and rules for alignment and crossovers.
- Re-examine headlines and other display type for typos and placement.
- Study areas for critical register. Look carefully at each page to be sure no elements have been mistakenly masked out or trimmed off.
- Check every photo to be sure it is positioned, scaled, and cropped correctly.
- Clearly circle every blemish, flaw, broken letter, and anything else that seems wrong.
- Are all corrections made from previous proofs?
- When proofing multicolor jobs, know what copy prints in each color. Are color breaks clearly indicated?
- For process color proofs: Are those involved in judging the color looking at the proofs under the same lighting conditions? (Industry standard is 5000°K.)
- Are neutral colors in proper balance? Look at whites, grays, and blacks (gray balance). If they show a significant color cast, the color is probably out of balance in general.
- How is the overall reproduction of color? Focus on “memory” colors such as blue skies, green grass, and red tomatoes — they are the toughest to match. How does the rest of the color look?
- If spot varnish or coating is being applied, is it indicated?
- Are screen percentages correctly indicated? Are the margins consistent?
- Have you confirmed: Paper stock? Quantity? Type of binding?
- Are place, date and time, contact name, and phone number included in the delivery instructions?
- Is the job trimmed to the correct size and properly folded?
- Are all perfs, scores, glue spots, etc. correctly indicated?
- Any last minute corrections to the copy?

## EFFECTIVE PRESS CHECKS

**Here is where your job comes to life! This is your last chance to affect the final product.**

**Press checks can be demanding because they are at the mercy of production schedules. Often you will have only a few hours notice of when your job will be on press. Making changes at this stage can cost hundreds, even thousands of dollars.**

- Press checks are optional and depend on the complexity of your job. Always discuss a printer’s policy on press checks at the time of quotation (cost per hour for press time, time limits, delay charges, etc.)
- Have available: printed samples if rerun, printed samples of companion pieces (your printer should have these in advance), printed samples of same Pantone colors and photo/illustrations, purchase order, original illustrations, photos, transparencies, proofs, comps, and mechanicals. Bring reading material and phone numbers for calls while waiting.
- Scan the entire sheet first. Match against prepress proof. Verify all copy and photos are in place and that all corrections from previous proofs have been made.
- Verify register. Examine the copy; check crossovers and backups.
- Are there any mechanical errors? Is the size correct? Verify paper stock.
- Check register by looking for dots that may be hanging at the edge of a four-color photo.
- Are screen tints the right color?
- For process color, check overall color, neutral colors, memory colors, and contrast range against color (prepress) proof. Remember to use the correct lighting conditions.
- Are varnishes in register? Matte or gloss?
- Look for hickies, ghosting, scumming, roller marks, broken type/rules, pinholes, and other flaws.
- Check rule-up for correct fold, trim, and alignment of die cuts.
- Are the separations, halftones, and duotones sharp and clean? Evaluate the fine details.
- Number each check sheet. Sign, date, and note the time on the final OK’d sheet.
- Confirm shipping instructions and delivery dates. Discuss binding and finishing to anticipate problems or delays. Bring several OK’d sheets back with you.

## VENDORS ELABORATE ON CHECKLIST POINTS

Preflight has become part of national electronic prepress jargon. Discounting the obvious tongue-in-cheek exaggeration, the concept is a superb analogy. A systematic file check by the originator before delivery to a vendor, plus a systematic examination at the vendor's before a file is scheduled for production, is essential. Pilots go through their preflight routines because their lives depend on it. For printing customers and their vendors, time and money — the lifeblood of business — is at stake.

Electronic prepress is supposed to be easier, faster, and cheaper. Productivity is supposed to soar.

- If so, then why do procedures for checking files normally take longer than the traditional checking of artboards?
- Why do printers and prepress houses have such detailed forms to fill out with each file submission?
- What does it take to get a simple disk airborne?

## IT'S ALL IN THE PROCESS

In essence, digital files, which are really electronic mechanicals, require a new organizational process. Once that process becomes routine, electronic prepress begins to fulfill its promise.

One caveat, however, is that even a superb process cannot overcome the quirks of individual software applications. That's where discussion with individual vendors and belonging to user groups help. Also, user feedback to software developers spurs industry-specific improved revisions.

The Preflight Checklist presented on page 19 was developed through a consensus of Digital Printing Industries of Northern California (PINC) members, people from printing companies, prepress houses, and service bureaus who deal with electronic mechanicals on a daily basis.

While sophisticated file generators may understand all the whys behind these wherefores, some of you may appreciate more discussion.

Interestingly, Digital PINC members who contributed information to this article report that it is often the simplest things that cause a job to crash — if it takes off at all. Across the board, prepress vendors say that what most frequently keeps them from outputting a file is:

- Missing element(s). For example: linked or source files and fonts; or
- A lack of pre-separated laser proofs for color work; or
- Unnecessarily complex graphics.

## GETTING IT ALL TOGETHER

In the old artboard days, production departments had methods of checking to be sure that everything necessary to produce the job got sent to the printer. People routinely did things like counting all four pieces of a separation: Making sure that everything is on a disk is just as basic.

Vendors really do need both the files prepared in the application and the source files. Application files are the original files created from the program that will be output. QuarkXPress®, PageMaker®, and InDesign® files are typical, but by no means exclusive. Source files are usually the graphics files, such as those created in Illustrator®, associated with the application files. These are the necessary linked files that the application file will use when printing to the imagesetter.

To help you make sure everything is present, some page layout programs have “collect for output” or “gather for service bureau” functions. In PageMaker®, this option to include files for remote printing can be found in the *Save As* dialogue box. In QuarkXPress®, it's in one of the menus. Another method is to go to the linked graphics listing and chase down the files.

**Unquestionably, the best way to check your submission is to run it through a preflight software program like Markzware's FlightCheck, MarkzNet or similar products.** None of these applications are expensive, and they save you time, money, and hassles with your vendors.

If you have not upgraded your workflow to software preflighting, the next best way to verify that all files are present is to first print a directory of the folder on the disk, and use it to

compare to the gathering function. Then, take the disk that will go to the vendor to a computer that was not used for the project and open the document. Recheck against the printed directory. If it's all there, it's all there.

## REMEMBER THE BINDERY

Few designers would have sent artboards to the printer without marking their images “full bleed” and having their separations sized accordingly. However, another basic element reported as frequently missing from electronic mechanicals is an allowance for bleeds outside the crop area of the page(s).

Called overwork in the Preflight Checklist, a bleed allowance means an extra image area that extends beyond the crop marks. It's created by having the image extend past the trim edge of the document page, usually 0.125” to 0.25” — depending on the kind of press that will be used. Just like the old days, overwork provides for a slight margin of error during the trimming/binding process.

## A WORD ON FONTS

On the Preflight Checklist, two items deal with fonts. Originators are asked to **include all display and printer fonts used in the file plus complete fonts for typefaces that have been modified from library faces.** It should become a habit to include all fonts with every job — including fonts for placed graphics. Customers should also be sure that their vendors have the fonts they are designating.

At this juncture, font licensing and what constitutes copyright violation is under discussion throughout the industry. The jury is still out on the best way to assure fair compensation to type designers and manufacturers without creating production burdens and unreasonable additional costs to consumers. **The safest way to avoid potential legal problems is to be properly licensed for fonts and to use a vendor who is also properly licensed for the same fonts used in the file.**

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*Names of specific platforms, graphic and page make-up application programs, and page description languages are the registered trademarks of the originating companies.*

## TOO MUCH OF A GOOD THING

Ironically, vendors also sound a minor note about making sure that everything is included on the file: That is, **extraneous files should be removed from the transporting media.** Prepress service users, it seems, habitually submit high capacity media with outdated working files or a lot of older files that don't need to be output. Obviously, this can cause needless confusion, plus delays in locating specific files for output.

Compare this to bygone days. Certainly, frugal designers reused artboards, but they always carefully removed old art; nor would designers have dreamed of including preliminary sketches with the final illustration. If, for economic or housekeeping reasons, you have to leave old material on media, then be sure that the vendor has a clear listing of the files to be output.

## DON'T VENDORS MAKE PROOFS?

Prepress proofing, that is interim proofs, bluelines, and contract proofs are purchased from the vendor and are as much a part of the normal workflow in print production as they ever were. Today, however, a large

majority of prepress vendors require at least a marked-up composite laser proof of a file before accepting it for output. **And, to be useful, this proof must be the final version of the file.**

Remember, this is the only way to obtain a visual guideline as to what you expect. Bringing a project up on a monitor does not provide the necessary technical information.

In addition, **printing out a laser proof from a PostScript laser printer is a basic step in internal quality control for the originator.** If a file will not print on a laser printer, it's highly unlikely that it can be RIPped and output to an imagesetter.

Originators who do not have access to a PostScript laser printer should schedule time to purchase laser proofs and make any necessary alterations to the file(s) before their final deadline for project submission.

In multicolor work, whether it's spot color or process color, pre-separated laser proofs are vital as well. **Color separated laser proofs accurately show what colors are going to print and what elements are going to print on which plate.**

Designers may inadvertently place an object on the wrong color layer and won't know it unless they create separations and see that it is missing. Color photos that are not saved

correctly will only print on the black layer, and this will not be evident on a composite proof. Of course, since the large majority of pre-separated laser proofs are black and white, originators should indicate the appropriate color on each separation.

Frequently, a file without proofs arrives at a vendor's shop and prints more than the number of colors designated. One printer even reported receiving a two-color job that would have printed as 42 colors if he had not edited it. Unfortunately, horror stories like this are both common and costly.

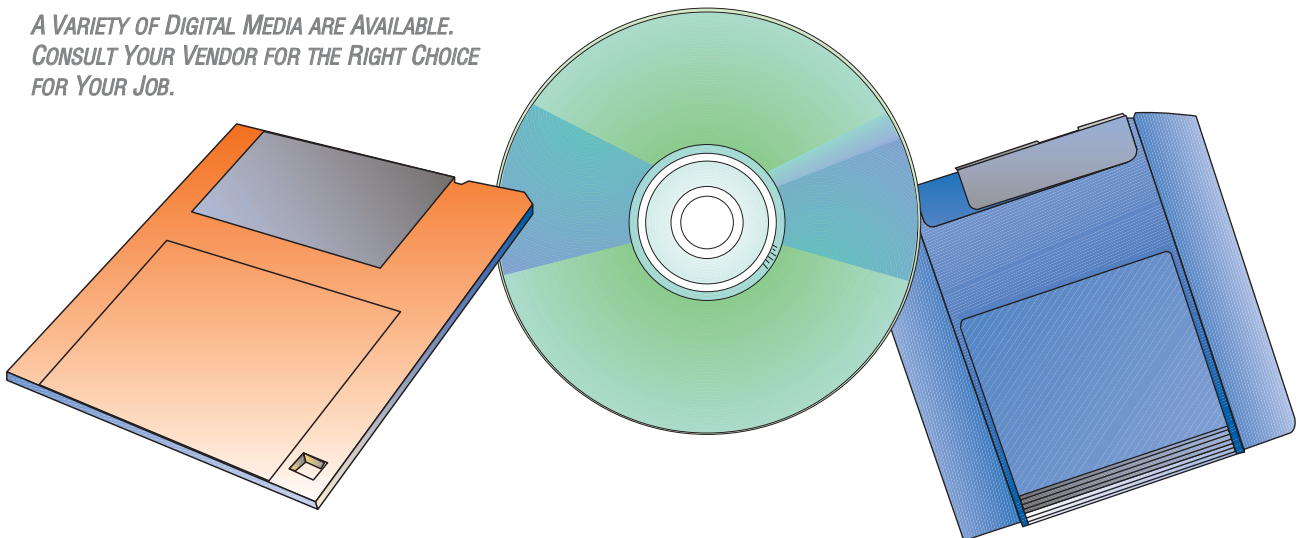
## NOT QUITE HOME-FREE

While laser proofs that are marked with instructions for the vendor are good indicators that a file will RIP, they are not the last word. For example, under the headline: "Some things that don't always appear as they seem," the Preflight Checklist notes that **laser proofs of the same file do not always output the same way on an imagesetter.**

Vendors point out that laser printers are far more tolerant of mixed image formats than are imagesetters. The PICT format, for example, is a major problem and considered

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**A VARIETY OF DIGITAL MEDIA ARE AVAILABLE. CONSULT YOUR VENDOR FOR THE RIGHT CHOICE FOR YOUR JOB.**



an unacceptable format for imagesetter output. Laser printers also include **Quick Draw drivers** since a lot of business drawing programs are Quick Draw based. These drivers are not built into imagesetters. When translated to a PostScript RIP, the images may shift and distort. Furthermore, the laser printer may not use the PostScript Level 2 or PostScript 3 commonly used in imagesetters.

Another interesting example from a Digital PINC member concerns **hairline rules**. A laser printer, remember, usually has a resolution significantly less than that of an imagesetter. However, because of the way PostScript deals with some things, it is possible that some elements, such as rules, may look terrific on laser printer output and not show up at all on imagesetter output — entirely the opposite of what most people would expect.

Electronic printing devices will output line rules only as thin as the resolution the output device is capable of achieving. Any rule or image finer than that resolution will default to the minimum thickness that the device can produce. For example, if the design at the 100 percent size calls for a hairline rule (1/4 point or 0.0035"), the 300 dpi printer will print it as intended since 1/300 of an inch equals roughly 0.0033". However, should the image be reduced to 25 percent of the full size, the laser printer will only print it at the resolution it is capable of handling. So the rule that should measure 0.0008" would print out as 0.0033".

On the other hand, an imagesetter, which can achieve resolutions as fine or finer than 1/2540 of an inch (0.0004" or more than eight times that of the laser printer), would be capable of imaging the line but it might be virtually invisible, might not record on film, and certainly would not match the laser proof image. Care must be taken in creating images to take these output factors into account. **You should not rely on the fine-line laser printer images to reproduce exactly the same on imagesetters.**

## SUBSTANCE OVER STYLE

Type may also yield unwelcome surprises between laser proofs and imagesetter output. **Designers who want an accurately laid out project should apply the correct version of the typeface to properly represent the spacing and character width.** That's one reason why the Preflight Checklist cautions not to use type style selections like bold or italic from a program's *Style* menu. Instead, designate the actual font from the *Font* menu. That means designers must select "Berkeley Italic" from the *Font* menu instead of italicizing the font "Berkeley" in the *Style* menu.

Moreover, not all typefaces have been designed to take advantage of the *Style* menu feature and will not respond to bold when printing. This is because a bold version of the printer font does not exist. And, even if it appears bold on the screen, it won't print that way on a high resolution output device. A laser printer is designed to artificially bold such a face by double printing it to make it fatter. This may look acceptable on the laser proof, but when output on an imagesetter, it will appear that the letter is printed twice, one on top of the other.

Vendors do make the point that there is nothing wrong with using the *Style* menu to select type styles if there is no other option available in the program — with the caution that the type style must be actually present as a font. A Macintosh can simulate a bolded font on screen, but the imagesetter will not be able to print the type style without the actual printer font. The result on a commercial press could be no style applied at all or worse — a doublestrike.

Finally, for originators who appreciate precise typography — how a font suitcase has been harmonized comes into play here. Harmonization is setting the font to be selected when a style variation is chosen. Some font families consist of many different weights of type: light, demi, demi-bold, heavy, etc. Harmonization can make it possible to use a demi-weight font, choose a style of bold and get demi-bold. Someone else can harmonize the same font to generate bold instead of demi-bold. Selecting the desired font directly assures that font is used.

## WHAT'S WRONG WITH COMPLEXITY?

When prepress vendors talk about files being unnecessarily complex, they can mean several things — some of them application-specific. In general, though, **a file may take an extra long time to RIP, thus adding to the cost of the project, when a simpler setup could have produced the same results.**

For instance, the deeper a graphic is embedded, the more difficult and time-consuming it becomes to print. Also, there may be just too much of a good thing — like anchor points or dots per inch in an image — which require lengthy RIP time.

**Experienced users find that with any digital file, simpler is better.** A suggestion from one vendor is to limit anchor points by only using the number absolutely necessary to get the job done correctly. If an autotrace feature is used in any of the programs, modify the resulting graphic.

## NEED HELP?

Finally, and perhaps most important, electronic prepress departments welcome consultations before a project gets underway. Many vendors have instructional information posted on their Web sites — especially for FTP delivery. Others offer recorded directions over the phone or will be glad to e-mail, fax or mail them to you. Like printing presses, electronic imaging equipment has different characteristics and different requirements. Methods that are fine in one software application may not work in another.

Pilots check weather conditions and submit a flight plan before they start their final preflight checklist. When file originators pull away from the gate, they will want to be equally prepared for success.

**Here are a few things to check over while you and your file are both still on the ground.**

## QUESTIONS BEFORE YOU PREPARE THE FILE ...

- Is the service provider's hardware and software (including versions) compatible with yours?
- Does the output that can be provided meet your needs?
- What different types of media can the service provider support?
- Does my service provider have specific instructions for online job transmission, including a job ticket or order form? If you are sending files to an FTP site, be sure you have detailed instructions.
- What compression programs does the service provider support?
- What font libraries does the service provider support?
- Who should trap the files?
- Should the file be prepared as printer or reader spreads?

## PROOFS

- Supply a composite proof (either laser or color) of the FINAL file provided for output.
- For color jobs, in addition to a composite proof, also supply separated laser proofs of each color and indicate color on each sheet.

## ACCEPTABLE GRAPHIC FORMATS

- Submit only TIFF or EPS file formats, regardless of platform.
- Convert color graphics files from RGB to CMYK, including any nested or embedded elements.
- Unacceptable file formats for imagesetter output: PICT, PAINT, RGB TIFF, RGB EPS, Quick Time, Single file CMYK EPS.

*Note: Embedding unacceptable formats in an acceptable format makes the resulting file unacceptable. Also, duotones and files with clipping paths must be supplied as EPS.*

- Check with your vendor for distillation instructions if you want to send files as Adobe PDFs.

## AM I SURE THE FILE FOR OUTPUT IS COMPLETE AND CORRECT? HAVE I ...

- Included all the application files and source files, including EPS files?
- Included all display and printer fonts used?
- Removed any extraneous versions or files from the medium that don't pertain to the job being output?
- Included complete fonts for typefaces I've modified from library faces and given them a different name from the library font?
- Named all FPO (for position only) images for APR (automatic picture replacement) with the same names as the scanned images?

## DON'T FORGET ...

- The service provider's job sheet with the submitted file showing:
  - applications used (including version),
  - file names,
  - directories,
  - fonts used,
  - due date, and
  - contact name, including the business AND after-hours phone numbers.
- Secure the rights on all the copyrightable material used in the file.
- Make a backup copy of the file to keep.

## FILE PREPARATION CONSIDERATIONS ...

- In draw programs, limit anchor points to the smallest number possible.
- Be sure to use the "Style" menu correctly for type styles. Don't use bold, italic, etc. Use the actual font in the "Font" menu.
- Establish crop marks correctly from page setup or preferences; don't place them manually.
- Include overwork for bleeds outside of the crop area.

## SOME THINGS THAT DON'T ALWAYS APPEAR AS THEY SEEM ...

- Laser proofs of the same file do not always output the same on an imagesetter.
- Monitor images do not match the hard proof images.
- All digital proofing devices do not output color hues and values the same way.

## RESPONSIBILITIES

### FILE ORIGINATOR

- Provide complete files that can be run within acceptable RIPping times.
- Provide all necessary information that permits efficient running of files.
- Provide ease of contact with originator and service provider or printer should problems arise.

### SERVICE PROVIDER

- Establish norms for RIPping times for various jobs as a benchmark.
- Establish costs for author's alterations done at the customer's request.
- Establish procedures for calling customers promptly when problems are discovered.

## COST OVERVIEW

### WHAT IS USUALLY INCLUDED IN THE SERVICE PROVIDER'S BASE COSTS?

- Installing fonts listed on the order form and included with the job.
- Setting up applications to run customer files based on client-supplied information.
- Conducting a cursory file examination. (Look for obvious problems that show up when the file is viewed on the monitor.)
- Quality control to meet printing requirements.
- Final image output.
- Redo due to vendor error.

### WHAT IS NOT USUALLY INCLUDED IN THE SERVICE PROVIDER'S BASE COSTS?

- Trapping
- Scanning
- File editing, including conversion of RGB to CMYK.
- Creating laser proofs if not supplied with file.
- Additional time associated with jobs containing incomplete or missing elements.
- Color proofing of final film or output.

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*This article is excerpted from "The PDF Print Production Guide, Second Edition" by Julie Shaffer and Joseph Marin. You can order the first edition of this book online: <http://www.gain.net/store/> (GATTPress #1740).*

## HOW TO MAKE PRINT-PERFECT PDF FILES

The Portable Document Format (PDF) was born in 1991, the brainchild of John Warnock, Adobe System, Inc. co-founder. In his visionary paper, *The Camelot Project*, Warnock first described the concept of PDF, "What industries badly need is a universal way to communicate documents across a wide variety of machine configurations, operating systems, and communication networks. These documents should be viewable on any display and should be printable on any modern printers. If this problem can be solved, then the fundamental way people work will change."

While it took more than a decade to do so, PDF has indeed changed the way people work. As a means to disseminate information via the Internet, PDF has become ubiquitous. So much so that even your mother has probably heard of PDF files (and may have even downloaded the latest tax forms in that format from the IRS). Millions of copies of the free Acrobat Reader have been downloaded from Adobe's Web site, and Acrobat is one of Adobe's biggest-selling products.

But PDF is also becoming more and more widely used as a tool for print production, because it answers so many of the needs we've had since we began creating and attempting to exchange digital documents.

## WHAT ARE SOME BENEFITS OF PDFs?

First, PDF files are platform independent. Regardless of the computer platform used to create a PDF file, it can be viewed on any of the most common platforms in use, including Mac, Windows, and Linux. PDF files eliminate the need for an organization to purchase multiple copies of layout applications, such as QuarkXPress®, PageMaker®, InDesign®, Microsoft Office, etc., for viewing and printing documents. For the graphics industry, this

opens the door to a much simpler approval process. Once the PDF file is created, it can be distributed to the end user(s) and viewed using a completely free application, Acrobat Reader. Now the person who has to stamp that final OK on a corporate brochure, the one who doesn't have any need or desire to have layout applications on his/her computer system, can still electronically view a design file for approval (and, with a full version of Acrobat, could also literally put that stamp of approval on the file.)

PDF files are media and resolution independent. They can be repurposed for a number of uses including Internet or CD-ROM distribution, kiosk display, and on-demand and high-end print. Since PDF files are digital documents, they can be electronically delivered, which will certainly reduce shipping costs.

PDF files are self-contained. All of the elements that make up a document are built into a PDF file. For those in the prepress community, this means no more hodgepodge of file types to sort through prior to final output . . . no more jobs coming into your shop with hundreds of different file types. Best of all, the ability to embed fonts within a PDF file eliminates the number-one prepress problem encountered: missing fonts.

When created properly, PDF files are very predictable. This means that what you are looking at on your computer monitor is usually what you will get when you print. Some of the new viewing tools in Acrobat 5.0, like the Overprint Preview, make WYSIWYG almost a reality with PDF documents.

Finally, typical print-related problems are far less likely with PDF files, because the PostScript file used to create PDFs has already been interpreted. Imagine a full-fledged PostScript Level 3 interpreter right on your desktop computer. That's what Acrobat Distiller is — and it comes bundled with the Adobe Acrobat application (with a street price of about \$270 for the standard version)! PostScript files can be very long and complex. An 8 1/2" x 11" page with the word "hello" typed once results in more than 100 pages of PostScript code. The PostScript file for a single page ad with a couple of images and an illustration or

two can run into thousands of pages of code. The deceptively simple-looking Acrobat Distiller can interpret such a file literally in seconds.

While it's pretty easy to create a PDF document using any one of a growing number of tools available to do so, it's not as simple to make a "good" PDF file for print production. The creator has to know the answer to such questions as:

- In which PDF version should I save this file?
- How far can I safely compress images?
- Should I subset the fonts?
- Do I need to tag the images for color management?
- How do I know that the final PDF document is going to contain everything I need it to?

The safest way to ensure you're making a good print-quality PDF document is to make a good PostScript file and then create the PDF file using Adobe Acrobat Distiller®. We call this making "print-perfect" PDF files. Here's how.

## MAKING PRINT-PERFECT PDF FILES

Even with a PDF workflow, print projects are still created using desktop publishing software such as QuarkXPress® and InDesign®. All the basic rules of good design and desktop publishing must be used when creating these documents. Issues such as image resolution, color space, bleeds, etc. should be resolved at the design stage. A poorly constructed QuarkXPress® document will create a PDF file that is of little value. That is why it is still necessary to perform preliminary preflighting of the native application file before PDF files are created. Tools such as Markzware's Flightcheck and Extensis Preflight Pro can be used for preliminary preflighting.

Before a PDF file can be made correctly, the most current version of the Adobe PostScript printer driver must be installed on your computer. The Adobe PostScript printer driver enables you to print documents from any application to a printer that includes Adobe PostScript Level 2 or Adobe PostScript Level 3.

To get PostScript driver information from the Windows platform, select Acrobat Distiller as the printer from an application's print function; click the Properties button and then select the About... button on the Paper tab to see the PostScript driver version and the associated PPD file. On the Mac OS X platform, the Adobe PostScript printer driver is gone. The Print Center is now used to create a virtual printer which, when created, can be selected directly from any application when creating PostScript.

Another essential component in creating PostScript files for PDF is the Printer Description File (PPD). PPDs are device-specific commands for a given output device. PPDs define resolution, screen ruling, colors, and media formats. Since PDF files are resolution, device, and media independent, PPDs for specific output devices (such as Epson, Hewlett-Packard, and Xerox) should not be used when creating PostScript for PDF. The Acrobat Distiller PPD should always be used to create device-independent PostScript (unless using PDF workflows such as Agfa Apogee or Creo Prinergy, which supply their own custom PPDs). The most current PostScript printer driver and PPD can be found on Adobe's Web site at: [www.adobe.com/support/downloads](http://www.adobe.com/support/downloads).

## CREATING POSTSCRIPT FROM AN APPLICATION

Creating PostScript for Distiller varies slightly from one application to another. Even though the print dialog boxes in various desktop publishing applications look different, the basic concepts of PostScript creation remain the same. Here is a generic list of what to do in order to print PostScript from a layout application.

1. Load all of the fonts used within the document. We recommend loading fonts through a font management program such as Adobe ATM Deluxe or Extensis Suitcase.
2. Open the document in the application with which it was created.

3. Check type and make sure that that no artificial or menu-styled fonts are used. Make sure that the system has access to any fonts used in the document.
4. Check the links to images and ensure that they are linked to high-resolution files and updated.
5. Make sure that spot colors are only defined for items intended to be separated as spot colors (and not process colors).
6. Print the PostScript file. Typically, this is done through the Print dialog and includes selecting a printer description ("Acrobat Distiller," or if you have Acrobat 6.0, "Adobe PDF") and setting up the correct media size to accommodate the page size, allowing for bleed area and any marks — usually 1/2" larger in each dimension than the actual document size. PostScript settings will also have to be made. We recommend: PostScript 3, Binary, set to include all fonts.

When you use the AdobePS printer driver, you have the option of printing to "Virtual Printer" or to "Create Adobe PDF". The Virtual Printer option will write a PostScript file to disk, which can then be converted to a PDF at a later time. Create Adobe PDF will create a PostScript file invisibly in the background, and then automatically invoke Distiller to create the PDF document. If you choose this option, you must select the correct Distiller job options when you print the file from the native layout application. If you don't, the last job option used by Distiller will be used to create this PDF file. This could be a problem if, for example, the last time Distiller was used it had been set up to create a low resolution PDF file for Web use.

## SETTING UP ADOBE DISTILLER

In this section, we want to give you a very detailed description of just what each of those settings under the Job Options menu in Distiller actually mean. The Distiller main interface consists of an Adobe PDF Settings list

(formerly Job Options), along with Acrobat version compatibility. The status window shows the progress of PDF creation. Also shown is the Distiller version and the version of PostScript interpreter on which it is based.

Distiller 6.0 is set up by default to create PDF files for six uses: Smallest File Size, Standard, High Quality, Press Quality, PDFX1a, and PDFX3. The settings are designed to balance file size with image quality. Smallest File Size is the lowest resolution and is designed for on-screen viewing only. Standard is designed for viewing and outputting documents to desktop printers or digital copiers. The High Quality and Press Quality settings are the same except for two important options:

- 1) With Press Quality, Auto Rotate Pages is set to Off. (This is set to Collectively By File with High Quality.)
- 2) And, when font embedding fails, the PDF conversion process is cancelled. (This is set to Warn and Continue with High Quality.) The PDFX1a and PDFX3 settings do what you would expect — create PDF/X-1 and X-3 compliant files.

You can define custom PDF settings by selecting Settings>Edit Adobe PDF Settings. Settings created here may be saved and provided to other users. For example, if a printer requires a standard set of Adobe PDF Settings, they may be saved and sent to the user creating the PDF file. In fact, you may contact your printer to inquire if they have settings they would prefer you to use for your job. These settings can easily be e-mailed to you and then placed into your own Distiller Settings folder.

We recommend using the standard PDFX1a settings as a base and then tweaking them as follows. Generating PDF files for press requires optimized settings. File size is less of a consideration here than maintaining adequate resolution and embedded fonts. Maintaining the integrity of the original file is the highest priority. Here's how to set up Job Options for "Print-Perfect" PDF files.

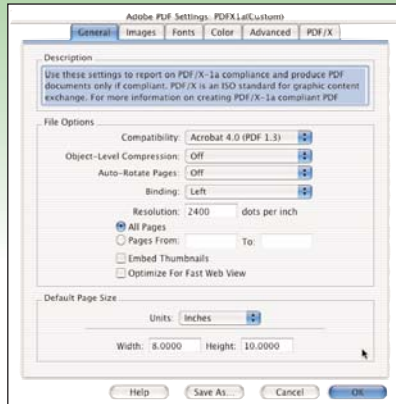


Figure 1

## THE GENERAL TAB

The General tab (Figure 1) is where the version of Acrobat file compatibility is specified. The Acrobat version selected will dictate which version of PDF (1.2, 1.3, 1.4) is created. Resolution and page size are also specified here.

**COMPATIBILITY.** PDF files may be saved as PDF version 1.2, 1.3, 1.4 or 1.5. Some PostScript Level 3 RIPs can handle 1.4 and 1.5 files except when they contain specific information such as transparency or 128-bit encryption. Optimally, set compatibility to Acrobat 4.0 (PDF1.3) to ensure that the DeviceN color space (for duotones and spot color vignettes), smooth shading, and large formats are supported.

**OBJECT-LEVEL COMPRESSION.** Select Off if you want to maintain structural information such as accessibility or tagged PDF. This data allows the end user to navigate and interact with bookmarks and other structural information using Acrobat 5.0 or later. Select Tags Only if you wish to compress this structural data to make accessibility, bookmarks, etc. Acrobat 6.0 compatible only.

**AUTO-ROTATE PAGES.** This option switches page orientation based on the way the type reads in the PDF file and doesn't need to be checked for print production purposes.

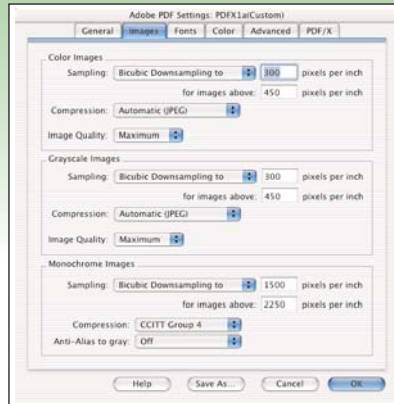


Figure 2

**BINDING.** Binding is for screen display purposes and affects how pages are viewed in the Facing Page — Continuous layout and thumbnails. Set Binding to left (unless you're working with an Asian language or other language that requires right binding).

**RESOLUTION.** Distiller must be set to emulate the final output device. This setting only affects text and vector information. Typical resolution settings for film imagesetting or computer-to-plate are 2400 or 3600 dpi.

**EMBED THUMBNAILS.** This creates small previews of each page in the PDF file which aids navigation. This setting will increase the size of the PDF file and is unnecessary for print production, so leave Embed Thumbnails unchecked.

**OPTIMIZE FOR FAST WEB VIEW.** When selected, this option will compress all text and line art and ignores the settings in the Compression tab. This is designed for page-at-a-time downloading from Web servers and doesn't need to be checked if the PDF file is being created for print production purposes.

**DEFAULT PAGE SIZE.** This option is for EPS files which contain bounding box information but not a page size. PostScript files already contain page-size information and will supercede any setting in this field.

## COMPRESSION

Distiller offers the option of compressing image and text files in PDF documents (Figure 2). With the right settings, compression will reduce file size without sacrificing image quality. If you absolutely wish to avoid any chance of image quality being degraded due to compression, uncheck all of the boxes under the compression tab. The drawback of this is the resulting PDF file will be much larger than if some form of compression is used. Compression can be used very safely in PDF documents — with little or no image degradation. Read on.

**ZIP COMPRESSION.** ZIP compression works well on images that contain large areas of single colors or repeating patterns. ZIP compression is lossless (no data will be sacrificed) if 4-bit compression is used with 4-bit images and 8-bit compression is used with 8-bit images. ZIP is lossy (data will be sacrificed) if 4-bit compression is used with 8-bit images. While it doesn't offer tremendous compression with four-color bitmap images, ZIP compression results in no loss of data, so it is a completely safe way to gain some image compression.

**JPEG COMPRESSION.** JPEG compression is always a lossy compression scheme. Data will be lost when images are compressed. If files are compressed too far, the images in the PDF file will contain artifacts. Distiller offers five levels of JPEG compression: minimum, low, medium, high, and maximum. These options refer to image quality, i.e. minimum is the lowest image quality (most compression) and maximum is the highest image quality (least compression).

**AUTOMATIC COMPRESSION** enables Distiller to choose the type of compression based on image content. For images that contain sharp transitions, ZIP compression will be used. For all other types of images, JPEG compression will be applied.

Sampling images refers to averaging and removing pixels from raster images, resulting in smaller file sizes. For example, if you've placed a 300 dpi image into a layout application, but scaled it to 50 percent of the original size, the effective resolution of that image is now 600 dpi — far more than is needed when printing at 150 line screen. Downsampling will throw away that excess data. Distiller can only downsample images; it cannot resample up. Resampling images in Distiller will analyze pixels in a given area and then replace those pixels with their average value. Sampling options include Average Downsampling, Subsampling, and Bicubic Downsampling.

**AVERAGE DOWNSAMPLING.** Average downsampling averages pixels within a sample area. The average pixel value is then assigned to the entire pixel area.

**SUBSAMPLING.** Subsampling simply chooses the center pixel value within a sample area. The center pixel value is then assigned to the entire sample area. Subsampling is the fastest of the three, but yields lowest quality.

**BICUBIC DOWNSAMPLING.** Bicubic downsampling uses a weighted average within a given area to determine pixel value. With this type of downsampling, all pixels are compared and averaged to the center pixel. The new pixel is an average of these neighboring pixels. Bicubic downsampling takes the longest to process, but yields the best results.

Resampling color or grayscale images requires an appropriate resolution setting (dpi) in the field adjacent to the sampling options pull-down menu. Typically, the value set in the dpi field should be twice the line screen (lpi) of the job printed. The For Images Above field is for images that have a resolution above the assigned dpi threshold. Entering the same dpi value here as in the field just above it will further remove unneeded pixels from image files, reducing the size of the PDF file even further.

We recommend using Bicubic Downsampling and resolution settings that are twice the line screen (i.e., 150 lpi requires a resolution of 300 dpi, 175 lpi requires a resolution of 350 dpi, and so on.)

**CCITT GROUP 3 AND 4.** CCITT compression is a general-purpose compression scheme that produces good compression for monochrome images. CCITT compresses images in horizontal rows, one row at a time. This type of compression is also used by fax machines.

**RUN LENGTH COMPRESSION.** Run Length is a lossless compression format which is best suited for monochrome, bitmap images. Images which contain large solid areas of white or black will benefit most from this compression method.

Resampling monochrome images also requires an appropriate resolution setting. Ideally, the resolution setting here should be the same as the intended output device. Keep in mind, though, that a resolution setting above 1500 ppi will significantly increase the size of the PDF file without noticeably increasing quality. We recommend selecting CCITT Group 4 with a resolution setting of 1500 ppi.

**COMPRESS TEXT AND LINE ART.** Compression used for text and line art is ZIP. This type of compression results in no loss of image quality and may be selected for all uses. For text compression, ZIP replaces frequently used data (such as the word “the” in a text file) with a single character. The resulting compression ratio is approximately 2:1. Text is stored in a PDF file line-by-line, meaning that line breaks and paragraph formatting are not honored in the PDF file. If Acrobat is used to make small corrections to a line of text, words will not overflow to the next line.

## FONTS

The number-one problem with submitting files for print production is missing fonts. Missing fonts mean that the job is held up in production until the fonts are delivered on disk or sent electronically. Distiller's ability to embed fonts within a PDF file is one of the format's greatest strengths (Figure 3). Embedding fonts will include a compressed, encoded font within the PDF file. Fonts may be embedded in a PDF file at two points: during the creation of a PostScript file or in Distiller when setting up the Adobe PDF Settings to generate the PDF file.

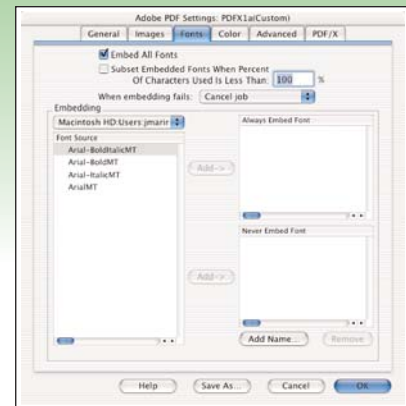


Figure 3

If fonts are not contained in the PostScript file, Distiller offers another option for font embedding. Under the Settings menu, there is an option: Font Locations. In the Font Locations dialog box, Distiller can be given access to fonts in specified folders on the computer's hard drive or on another drive accessed over a network.

One of the most important options to check in Distiller is Embed All Fonts. This will ensure that the entire font is included with the PDF file. If fonts are not embedded, Acrobat will substitute a font when a PDF file is opened and printed. Acrobat creates a substitute font by referencing the Multiple Master font descriptions on the host system.

As a job is submitted to a printer or service bureau for output, fonts are needed to output PDF files. If they are not made available (or embedded) into the PDF for the service provider, the job cannot be output unless the service provider has access to the same fonts on their system. Substitute fonts will seldom match the original font exactly, especially for non-standard fonts such as script faces. Acrobat generates substitute fonts Adobe SerMM and Adobe SanMM for display on screen or for printing; it never embeds these substitute fonts in PDF files. Further, these substitute fonts are only used by Acrobat and cannot be used by other applications.

In addition to embedding fonts, the option is available in Distiller to subset fonts. This is primarily an issue related to Type 1 (PostScript) fonts, because Multiple Master fonts, Type 3, TrueType, and CID (Asian) will *always* subset, even if subsetting is disabled in Distiller's Fonts options. When subsetting is selected, Distiller only includes the information required to draw the characters (glyphs) actually used in the PDF file. Since subsetting does not embed the entire font set, it can reduce the size of the PDF file. Distiller offers the ability to define a threshold for when to subset a font. The value can be set from one to 100 percent. For example, if the percentage of the font's characters used in the document is higher than the subsetting value, then the entire font set will be embedded. If the percentage of the font's characters is lower than the subsetting value, the font will be subsetted.

When fonts are subsetted, they are renamed within the PDF file with a five-letter prefix and a plus (+) sign. For example, EOC DIA+Poetica might be the name of a subset of the Poetica® Type 1 font. The intention of this is to ensure that the original fonts and font metrics are used and not substituted at print time by the service provider outputting those files. Subsetting should be avoided if the PDF file might be edited later using Acrobat and text editing tools. Any characters not used in the original PDF cannot be accessed if the font has been subsetted. For example, if a "\$" has to be added to a PDF but it wasn't used in the original document, it will not be available when you attempt to add it to the PDF file at a later time. Only the individual characters subsetted in the PDF file can be accessed and edited. Additionally, subsetting should be avoided if PDF files will later be merged. Two merged PDF files that contain a different subset of the same font can lead to missing characters, not to mention a larger file size.

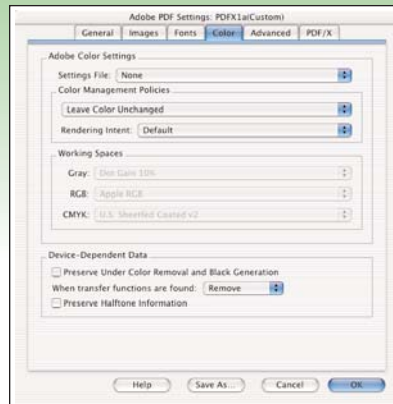


Figure 4

## COLOR

The three primary options for color handling in Distiller (Figure 4) are to Leave Color Unchanged, Tag (Everything or Images Only) for Color Management or to Convert Color to sRGB. Conversion to sRGB is not a viable option when creating PDF files for print production, as the color space is device dependent and gamut constrained. If you are working in a color-managed environment, selecting Tag Everything for Color Management will attach an ICC profile to all images in the document. This will supercede profiles attached to individual images used in the native layout application, so that the entire document will use only one profile for all of the images. If a PDF document contains images tagged with ICC profiles, it will allow the output service provider to use different tags for final output. For device dependent workflows, Leave Color Unchanged will allow images to pass through as either DeviceCMYK, DeviceRGB or DeviceGray.

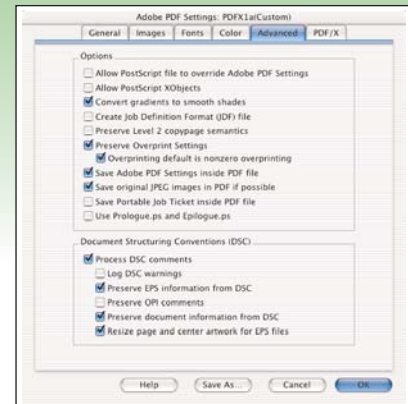


Figure 5

## ADVANCED

**THE ADVANCED JOB OPTIONS** contains all of the settings that are necessary for high-end printing (Figure 5). Options here include the ability to include portable job ticket information, OPI information, and overprints in a PDF file. PostScript smooth shading is also enabled in the Advanced job options.

**ALLOW POSTSCRIPT FILE TO OVERRIDE JOB OPTIONS.** Deselecting this will enable the job options settings to take precedence over settings in the PostScript file. When selected, the settings contained in the PostScript file take precedence. As a general rule, we suggest enabling Allow PostScript File to Override Job Options.

**ALLOW POSTSCRIPT XOBJECTS.** PostScript XObjects store repeating information that appears on many pages of the same PDF file. Examples include a common background image, logo or header and footer information. Using PostScript XObjects can result in faster printing, but requires more printer memory. Leave Allow PostScript XObjects unchecked.

**CONVERT GRADIENTS TO SMOOTH SHADES.** The ability to improve blends created in the originating application is accomplished through a PostScript operator called smooth shading. When smooth shading is invoked, PostScript

files are scanned for blends. These blends are then replaced with superior PostScript Level 3 smooth shading, which supports thousands of gray levels, not just 256. To avoid banding in blends created in native application files, select the Convert Gradients to Smooth Shades option.

#### **CREATE JOB DEFINITION FORMAT (JDF) FILE.**

Selecting this setting will create an XML-based job ticket designed to exchange information from different applications and systems used in print production. JDF is a specification required if a printer has implemented computer-integrated manufacturing (CIM) in the production workflow. If yours has, you may have to select this option — otherwise, leave it unchecked. This information may be used if the printers is using a CIM print workflow, but unless you know that the service provider you're sending the file to is using one, there's no need to select this option.

#### **PRESERVE LEVEL 2 COPYPAGE SEMANTICS.**

Copypage was an operator that was used primarily to test Level 2 printers. It's been replaced by the "showpage" operator in PostScript 3. Sometimes, preserving copypage semantics will help if a PDF file will not print to a Level 2 device. It is typically not necessary to select this option.

**PRESERVE OVERPRINT SETTINGS.** When you are creating artwork in Illustrator®, InDesign® or Freehand®, the option of overprinting colors is available. This is typically done to create traps in the applications. To preserve the overprints in illustrations, select this option. If you don't, all overprint settings made in the illustration applications will be lost in the resulting PDF file.

#### **OVERPRINTING DEFAULTS IS NONZERO**

**OVERPRINTING.** This is intended to prevent overprinted objects with CMYK values of zero from knocking out CMYK objects beneath them.

#### **SAVE ADOBE PDF SETTINGS INSIDE PDF FILE.**

Selecting this option will embed the settings used in Distiller to create the PDF file. This information is very useful in the preflighting process to determine if optimum settings were used to create the PDF. This information can be accessed in Acrobat by selecting Document>File Attachments.

#### **SAVE ORIGINAL JPEG IMAGES IN PDF IF**

**POSSIBLE.** Selecting this option will process JPEG compressed images that were placed in the native application without recompressing them. When selected, Distiller will decompress JPEG images to ensure that they are not corrupt, but leave the original JPEG compression intact. This is a good option to check since it speeds up processing because JPEG files are left in their original compression format and are not recompressed in Distiller.

#### **SAVE PORTABLE JOB TICKET INSIDE PDF FILE.**

Think of a portable job ticket as an envelope that carries information in a PDF about the original PostScript file. Job tickets carry information such as page size, trapping information, line screen, and resolution. This information may be used in various high-end PDF workflows, but unless you know that the service provider you're sending the file to is using one, there's no need to select this option.

#### **USE PROLOGUE.PS AND EPILOGUE.PS.**

When Acrobat 6.0 is installed, two files named prologue.ps and epilogue.ps are placed in the Acrobat 5.0>Distiller>Data folder (Windows) and in the Users>Shared>Adobe PDF 6.0>Data folder (Mac OS X). Think of Prologue.ps and Epilogue.ps as templates where code can be written to enhance PDF files. For example, Prologue.ps is sent before the body of PostScript

code and can be used to add a cover page to all distilled PDF documents. Also, Distiller 4.0 does not have an option for smooth shading, but by editing the Prologue.ps file, smooth shading can be invoked. The Epilogue.ps file is sent at the end of the body of PostScript and can be used to resolve PostScript procedure problems. Distiller will process the prologue.ps and epilogue.ps files only when they are placed in the proper location. If the Open command or Watched Folders are used to process PostScript, the files need to be located in the same folder as the Distiller application. Unless you have some specific code that you need to use when distilling files, leave Use Prologue.ps and Epilogue.ps unchecked.

**PROCESS DSC COMMENTS.** Document structuring comments (DSC) contains information, or metadata, about a PDF file. Selecting this option enables Distiller to scan the PostScript or EPS file for the original creator application, creation date, file size, PDF version, page size, and security information. This data can be very useful for the service provider when preflighting the PDF file.

**LOG DSC WARNINGS.** Selecting this option will enable Distiller to scan for errors found in the Document structuring comments. Any errors encountered will be added to a log file. This option is generally not necessary and can remain unchecked.

**PRESERVE EPS INFORMATION FROM DSC.** This option preserves DSC information from EPS files such as the original creator application, creation date, file size, PDF version, page size, and security information. This information is valuable during the preflighting process and can be viewed in the File>Document Properties... dialog box.

**PRESERVE OPI COMMENTS.** The Open Prepress Interface (OPI) is a system in which high-resolution color images reside on a central server to which all other workstations have access. Low-resolution images are sent out from the server that are placed into the page layout document. When the document is printed, the low-resolution images in the page layout document are swapped out for the high-resolution images on the server. The advantage of this type of workflow is that the low-resolution files in the page layout document minimize network traffic and speed up the printing process. OPI information is retained in a PDF as an invisible window on top of each image. This can make editing a PDF file more difficult. If you or your service provider is using an OPI workflow, select this option, otherwise leave Preserve OPI Comments unchecked.

**PRESERVE DOCUMENT INFORMATION FROM DSC.** Selecting this option allows processed DSC comments to be displayed in the File> Document Properties>Summary dialog box. This dialog box contains the original creator application, creation date, file size, PDF version, page size, and security information. This information is valuable during the preflighting process.

**RESIZE PAGE AND CENTER ARTWORK FOR EPS FILES.** EPS files do not contain page size information. If this option is not checked, the distilled EPS file will be placed in the lower left hand corner of the PDF file. If the EPS is larger than the page specified in the General options, image clipping will occur. Selecting this option will resize the PDF page to accommodate the EPS file. This option is used only for jobs that consist of a single EPS file.

## PDF/X

PDF/X files are designed to meet standards required for high-end print production (Figure 6). The options in this tab are used to ensure that the PostScript file being distilled meets PDFX-1a or PDFX-3 standards before the PDF file is created. Also, options may be selected in the PDF/X tab to make sure that the PostScript file meets additional criteria.

**PDFX-1A OR PDFX-3.** Select which compliance the PDF file should meet. Select the PDFX-1a standard.

**WHEN NOT COMPLIANT.** Options here are Continue or Cancel Job. Choosing Continue will create the PDF along with a text file noting problems found. Cancel Job will create a PDF file only if all the criteria in the PDF/X tab is satisfied. If both PDFX-1a and PDFX-3 are selected and only one set of PDF/X criteria is met (for example, PDFX-1a only), Distiller creates the compliant file and notes the problem in the report.

**IF NEITHER TRIMBOX NOR ARTBOX ARE SPECIFIED.** You can specify Distiller to Report as Error which will report the PostScript file as being noncompliant if the trim box or art box is missing from any page. The other option is to Set TrimBox to MediaBox and specifying offsets. This will create a media box from the values you enter in the fields added to the Default Page Size setting under the General tab. The Default Page Size becomes the Trim Box and the Default Page Size plus offsets becomes the media box size. Select the Set TrimBox to MediaBox with offsets radio button.

**IF BLEED BOX IS NOT SPECIFIED.** You can specify Distiller to Set BleedBox to MediaBox which will use the media box value if the bleed box value is not specified. The other option is to Set BleedBox to TrimBox and specifying offsets. This will create a bleed box from the values you enter in the fields added to the Default Page Size setting under the General tab. The Default Page Size becomes the Trim Box and the Default Page Size plus offsets becomes the bleed box size. Select the Set BleedBox to MediaBox radio button.

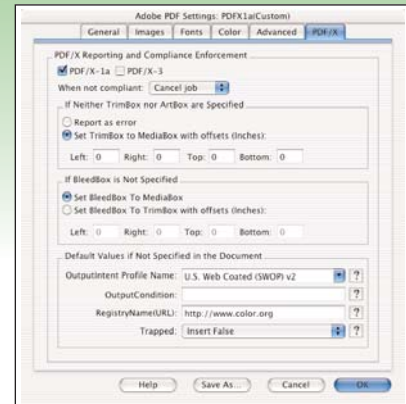


Figure 6

**DEFAULT VALUES IF NOT SPECIFIED IN THE DOCUMENT.** The OutputIntent Profile Name (required for compliance) represents a printing condition (or profile) for which the document is prepared. If a document does not specify an output profile, Distiller will use a profile from this menu.

**OUTPUT CONDITION.** You can describe the intended printing condition in the Output Condition field. The description entered here (not required for compliance) is purely informational and can be useful for the service provider outputting the file.

**REGISTRYNAME(URL).** The RegistryName(URL) is used to indicate the Web address for more information on the registry (not required for compliance). The URL is automatically entered for ICC registry names.

**TRAPPED.** The Trapped setting indicates whether or not the document has been trapped. A value of True or False is required for PDF/X compliance. If a document does not specify a Trapped value, the state (True or False) specified here will be used. Selecting Undefined will require the document to specify the Trapped state or else fail compliance.

After all of the options have been set, the Adobe PDF Settings file can be given a name and saved for future use. Settings files, properly named, can be shared between cross-platform users, so those created on a Mac can be accessed by PC users and vice-versa.

## FONT MANAGEMENT: PUBLIC ENEMY NUMBER ONE

It is an undisputed fact that font-related problems account for the majority of prepress errors that result in extra charges or delayed schedules. Avoiding these common pitfalls requires determination and a sure-fire strategy. If you work with a large font library from multiple sources on multiple platforms, there can be an overwhelming amount of information to consume. Font management is not for the “meek of heart,” it’s for the “geek of heart.” Having a firm grasp on the basic concepts of fonts and typography, in general, is a necessary first step.

## BEGIN WITH THE END IN MIND

Before you purchase fonts or embark upon any font-related project, the most important consideration is whether the proofing and final output devices will properly support the fonts. Although it may sound obvious, this can be the source of some very pesky problems. Using a recent model of an Adobe PostScript Printer is almost essential — especially if you are working with the latest font technology known as OpenType. PostScript printers have evolved into three different “levels” over the past decade. Specifically, a component of a PostScript Printer known as a Raster Image Processor (RIP) needs to be up-to-date to ensure the best results. The important thing to look for here is not just the “Level” number (1, 2 or 3) but the version number. As a general rule of thumb, it’s a good idea to have the same or higher version as Adobe Acrobat Distiller (which is actually a software RIP) — especially if you are using a PDF workflow. You can see the current version of Distiller scroll by when it starts up. For example, 3011.104 is the current PostScript version with Acrobat Distiller 5.0.5. Most PostScript Printers have the ability to print a test page that will reveal this information — or you may need to use a utility that comes with the printer.

## THE RIGHT TYPE OF TYPE

The long-term, undisputed champion of choice among commercial printers has always been Adobe’s “Type 1” PostScript font technology. Conventional wisdom conveys the sentiment that the further you stray from Type 1 technology, the more likely you will encounter problems. Sticking with Type 1 fonts can simplify things immensely — yet that may be impossible in the real world.

There are several other species of font technologies you should learn to recognize in the wild world of fonts. The most popular is TrueType, which was invented by Microsoft and Apple in an effort to avoid paying royalties to Adobe. Ironically enough, this resulted in the default font technology on both Macs and PCs being TrueType, while the default technology among PostScript output devices became Type 1 — a technological train wreck. Mixing TrueType with Type 1 fonts was a no-no with older Level 1 RIPs. However, most modern RIPs can cope with such sins nowadays.

Adobe also invented two other less popular font technologies known as Type 3, which were needed for certain ornate and complex typefaces such as Engraver’s Old English and Multiple Master fonts, which can magically morph into varying widths and weights. Again, older systems may have trouble coping with such fonts.

Another very important consideration is font licensing and copy protection. TrueType fonts can contain copy protection; Type 1 fonts do not. As litigation continues among companies such as Adobe, Agfa Monotype, and ITC, the trend is toward strict enforcement of copy protection built into operating systems and software products that manage fonts.

## WHAT’S IN A FONT?

Depending on your platform and type of font, you may have one or more components that make up a font. Components of TrueType fonts consist of the font itself, character widths, and kern table metrics that are all self-contained in a single file. Windows TrueType fonts have a “.ttf” file name extension with a distinctive capital TT icon.

Type 1 fonts on the Mac consist of a suitcase (which contains the metrics) and an outline component (the font itself). On Windows, the suitcase component has a “.pfm” (as in printer font metrics) and the outline component has a “.pfb” (as in printer font binary) file name extension. It is very important that component fonts always travel in pairs. You may encounter a third component with an “.afm” (as in Adobe font metrics) extension; these are provided for programmers and very old (DOS-era) programs and can otherwise be safely discarded.

## EMERGING TECHNOLOGIES

Several years ago, Adobe stated that they shipped their last Type 1 font and that all new and existing fonts would be converted to OpenType. A reality check reveals that this has not happened yet; but it has by no means been abandoned. There is a worldwide effort, known as the Unicode project, to assign a numerical value to *every* character in *every* font in *every* language. Such a vast task required a new font technology. This gave birth to OpenType, which is the new default font technology on Windows 2000 and XP. You may already be using OpenType fonts and never realized it.

It can be tricky to identify OpenType fonts — especially if they have been embedded in a PDF file. One means of identification is the icon, which has a distinctive italic capital O. Another way is the file name extension “.otf” — but beware that only Adobe uses that for the “Type 1 flavor of OpenType” fonts. To add to the confusion, Microsoft uses “.ttf” for their “TrueType flavor of OpenType,” which is also used for standard TrueType! Of course, all such information is lost when fonts are embedded in PDF files and actually get “re-encoded” into “Type 2” fonts. Another clue is that most Adobe OpenType fonts have the word “Pro” in them. Properly supporting OpenType Fonts in PDF files requires custom installing Asian Font Support for Acrobat. Simply speaking, an OpenType Font is a “wrapper” that can contain either a Type 1

or a TrueType flavor font; but unlike their predecessors, OpenType fonts can contain thousands of characters.

The bottom line is that OpenType is becoming a worldwide standard and a force to be reckoned with whether you are a designer or a service provider. At the very least, you'll need the latest version of Adobe Type Manager to manage OpenType fonts. It may also be a compelling reason to upgrade your RIP or perhaps even replace your output devices for compatibility and performance reasons. One of the many promises of OpenType is potential improved compatibility between Macs and PCs. Regardless of the platform or contents, OpenType fonts always consist of a single file. Another detail worth noting is that since OpenType fonts can be quite large, they are always subsetted in PDF files.

Although most products will work with OpenType fonts, Adobe InDesign® is currently one of the only products that can support a "fully featured" OpenType font, which can contain such typographic refinements as alternate swash characters and symbols, connecting scripts, true-cut small caps, true fractions and lining figures, which can be handy when typesetting spreadsheets in annual reports.

## THE BATTLE OF THE TITANS

So, how do you manage a mess of fonts? Much depends on your computing platform, and font management differs between Macs and PCs. It's interesting to note that Adobe decided not to enter this battle on the Mac OS X platform with their contender, Adobe Type Manager Deluxe, and instead refers customers to competitors. Adobe has also decided to leave PostScript development on OS X to Apple. So that leaves two titans — Extensis with Suitcase and Diamondsoft with Font Reserve — to battle for your font management dollars. Another popular underdog among service providers is Master Juggler.

However, before you spend any money, make sure you only buy what you really need. On Windows NT, 2000, and XP — although the Fonts Control Panel allows you to add or

remove fonts — it is by *no* means a best practice. Adding fonts with the Fonts Control Panel creates a TrueType version of Type 1 fonts (for display purposes), which may lead to problems with Adobe products such as Acrobat. There are also limitations on the number of fonts older versions of Windows (95 and 98) can handle.

On the Mac, you can add or remove fonts from the Fonts Folder within the System Folder but that can quickly become tiresome — even with a tiny font library.

The next best approach — if you just have a handful of fonts to manage — is Adobe Type Manager (ATM) Light or Deluxe. One of these may be all you need, and is a much safer means of adding or removing fonts. The Light version is free and provides basic font management and improved on-screen rendering of Type 1 fonts. The ATM Deluxe version provides folder sets to better organize your fonts but pales in comparison to such fully featured products as Suitcase and Font Reserve. A free version of Font Reserve supports up to 100 fonts. Of course, the real challenge comes when you have more than 100 fonts to manage on two or more computers.

No matter which product you choose, *never* open fonts on another computer over a network! This can lead to system crashes, corrupt fonts, and overall disaster. Always store your fonts on your local hard disk, and don't try to open fonts directly from a CD. It's a good idea to keep a copy of the master CD handy in case you need to replace corrupt fonts.

A much saner approach to font management is to use Suitcase or Font Reserve, which optionally come in Server Versions that allow you to properly synchronize your fonts locally with a Fonts Database or a Fonts Server shared by a workgroup. For details, see [www.extensis.com](http://www.extensis.com) where you'll find comprehensive reviews and trial versions of each product. Note that ATM Deluxe will not peacefully coexist with these products, so you may need to "downgrade" to ATM Light.

## STEAM CLEANING YOUR SYSTEM

A common cause of font problems is a workstation with a long legacy of font-related problems. If you've been using the same system for several years, it may be time to steam clean your system and start with a fresh set of fonts from your master disks. There are several utilities such as Font Doctor that claim to perform this task painlessly; but in my experience, that's seldom the case. For example, your system's Fonts Folder may contain certain fonts which are essential to your operating system and/or applications; therefore, blindly sorting out your fonts may make matters worse — resulting in having to completely reinstall your operating system and all applications. Conventional wisdom dictates installing a completely fresh operating system and/or application whenever possible. Also, avoid running multiple operating systems on one computer or you'll likely encounter some really nasty font problems. Mac OS X is currently in a tricky transition phase with Jaguar and requires the very latest version of Suitcase for optimal font management.

You may also encounter two or more fonts with the same name that can cause conflicts. You may need to do some detective work with some sleuthing tools to uncover the culprit. ATM Deluxe has a basic Verify command that can cough up culprits; but it's no substitute for industrial-strength tools such as Font Reserve, which comprehensively verify differences — not just by the internal font number but also by comparing kerning tables and doing a check on each font you add to its "vault" database.

It's simply not safe to assume that if you didn't knowingly install a font, you can safely remove it. The bottom line is: If you don't know where a font came from and what purpose it may serve, you'll need to find out before you can safely move it. Apple & Microsoft have tech notes on their Web sites that document some of their system and product-related fonts. See [www.info.apple.com](http://www.info.apple.com) and [www.microsoft.com/Typography](http://www.microsoft.com/Typography) for details. There are too many variables for any given situation, and general

advice usually falls short. Unfortunately, much of this wisdom is acquired from years of being a font geek.

## GETTING ORGANIZED

From a designer's standpoint, it may make sense to organize your fonts by typographic classifications such as serif, sans-serif, script, novelty, etc. Suitcase and Font Reserve provide such a means. Most designers seem to gravitate toward Font Reserve, which currently trumps Suitcase slightly in this area. If you need to identify a typeface, there are excellent resources and utilities available online on Web sites such as [www.fonts.com](http://www.fonts.com) and [www.myfonts.com](http://www.myfonts.com) where you can find cool tools like "Font Expert" or "What The Font" which can help identify and classify fonts from scanned images.

From a service provider's standpoint, it may make sense to organize your fonts by customer and/or job number. For safety's sake, most service providers prefer to create a separate fonts folder within each job folder and then open sets on demand, ideally automatically — but such high-tech techniques can get tricky.

## AVOIDING COMMON PITFALLS

Below is a list of several time-proven techniques to help avoid font problems:

- Consider converting fonts to outlines. Many popular products such as Adobe Illustrator®

provide the means to convert a font to outline and potentially eliminate problems. However, you should use this technique judiciously since quality can become an issue with small point sizes in certain typefaces. As a general rule of thumb, don't use this technique for type smaller than 18 points.

- Use page layout programs to set large quantities of text. Products such as Adobe Illustrator® and Photoshop® are designed for creating artwork, not pages destined for a printing press.
- Consider sending PDF/X files which require all fonts to be embedded. At the very least, be sure to set Distiller to *Embed All Fonts*. Be sure the Distiller printer driver is set to *Send Fonts to Distiller*. Also, set Distiller's Job Options Fonts tab to *Cancel Job* when embedding fails.
- If your entire project will be moved from one location to another, make sure that both parties have the appropriate font licensing and use an industrial strength "preflight tool" to completely collect your job, ideally as a PDF/X file. Although many page layout programs such as Quark® and PageMaker® have built-in *Save for Service Provider* tools, older versions may miss fonts that are embedded in EPS files. Newer versions may balk at copy-protected TrueType fonts.

- Consider implementing products such as Markzware FlightCheck and Extensis Preflight Pro into your workflow. While they may be intimidating to novices, these products provide a comprehensive overview of your job from a commercial printer's perspective. There are online and light versions of these products as well. Online, see [www.markzware.com](http://www.markzware.com) and [www.extensis.com](http://www.extensis.com) for details.

## THE ROAD TO FONT UTOPIA?

I have a dream that one day all fonts will be equally available to everyone and peacefully coexist on all platforms. We are seeing pieces of the puzzle fall into place and trends with products such as Font Reserve, which dovetail into Web sites like [MyFonts.com](http://MyFonts.com) and activate them on demand. That's quite impressive, but it would really be cool if you could subscribe to a service that automatically fetched fonts and activated the exact font you need on demand with no fuss.

*Bill Carberry began his career as a typographer's apprentice in 1977, setting type on a VGC Model K PhotoTypesetter — one character at a time. He has worked mostly in production environments for large commercial printing companies as well as for suppliers. These days, he independently provides training services as an Adobe Certified Expert and Enfocis Certified Trainer. More details on fonts can be found on his Web site: <http://PDFexperts.com/fonts/>.*

## BAN THE BOLD BUTTONS!

Many desktop publishing programs provide seemingly innocent buttons to quickly change a font to the bold member of a typeface family. The trouble with such buttons is that it's anyone's guess whether it will actually work as expected.

For example, complete typeface families such as Avant Garde or Futura may contain several weights such as Extra Light, Light, Medium, Demi-Bold, Heavy, Bold, Extra Bold or Ultra Bold. What would happen if you used the bold button on the Light weight of a typeface?

Would you expect to get the Bold weight or the Medium weight? Left to chance, the result can be quite surprising and sometimes even result in a "double-strike" drop shadow effect!

The fact is, it's never a safe bet. It's really up to the designer and manufacturer of the typeface (also known as a foundry) to make such determinations. The solution is to avoid using the

bold button (this goes for italics too) and always access the exact typeface directly whenever possible.

Better yet, bold buttons have been completely banned in many modern industrial strength programs such as Adobe Illustrator® and InDesign®. Perhaps we should petition the rest of the developers to *ban the bold buttons!* The campaign begins today.

— Bill Carberry



Over the past few years, digital technology has greatly impacted printers' business practices and relationships with customers and suppliers. Printing Industries of America, Inc. and the National Association for Printing Leadership set up a joint committee including a representative from Idealliance (formerly Graphic Communications Association) to review current business practices, terms and conditions of sale. The resulting "Best Practices" document contains information that is intended as a guideline for use in various business situations and in communications with customers and suppliers.

This material is not intended to be used verbatim. Printers should carefully review this material and select which parts they wish to incorporate into their specific business practices as they relate to their situations with customers and prospects.

In addition, this material will be monitored by the joint committee, updated, and revised as new issues develop. If you have suggestions for changes or new issues that should be included, please submit them to Ron Davis at [rdavis@piagatf.org](mailto:rdavis@piagatf.org).

Best Industry Practices are voluntary and are provided for the purpose of helping printers and their customers avoid misunderstandings concerning their rights and obligations related to digital files. They are not intended to be legally binding. All elements of price and all other contract terms are a matter of negotiation and agreement between the individual printer and their customer. Printers may choose to modify these best practices before providing them to a customer based upon the printer's individual situation.

## Section 1: Guidelines for Best Business Practices in Digital Asset Management Issues

Each of the following points or practices highlights known issues that may involve time, costs or responsibility on the part of clients, suppliers or both. Also identified are a number of technical issues that should be understood by all digital media users:

### INDUSTRY DEFINITIONS:

#### 1. What are digital files?

A digital file is any file that is created on a computer and stored on a computer-related

device. It can be as simple as a text file or as complex as an entire animated video including sound and computer-generated visuals.

It can be a small file stored or saved on a simple floppy disk or a complex graphic and sound file stored on a server, digital tape or other storage media.

- Any digital file, no matter how simple, should be named according to an agreed upon standard by all parties in the workflow and archived on a computer or some removable media if it is intended to be saved or reused.

#### 2. What is a digital asset?

A digital asset is a digital file or form of digital media that has some commercial value, production value, "intellectual property" value or identification value.

- A file with commercial value might be a photograph or illustration.
- A file with production value might be a graphics file for an ad or brochure, a text file for a phone directory, a price list or metadata.
- A file with intellectual property value might be a manuscript for a book or play, or a legal brief.
- A file with identity value might be a company's logo, trademark or an icon such as a flag.

All digital assets have value. However, their value may be determined by their ability or inability to be replaced. The value of a digital asset may not emerge until some time after creation and may exist because of a relationship to other values.

- A business letter, if erased, can readily be recreated if a hard copy of the file was saved.
- A digital photo, if stored and then lost or erased, may be irreplaceable.

#### 3. Who is a client and who is a supplier?

A client is the end user of digital assets and buys or receives these digital files or that of the organization they represent. The supplier creates and manipulates, provides or sells these files to the client. A client may work for the same organization or company as a supplier, may be a purchaser of the supplier's

materials or they may have a "virtual relationship." The client and supplier may have an informal or a formal working relationship.

- If a secretary creates a digital file of a letter and provides it to their superior, the secretary is the supplier and the superior is the client.
- If a corporate purchasing manager or production manager provides materials to their marketing department, the marketing department is the client and the production manager is the supplier.
- If an art director downloads photographs from a stock photography Web site, the photographer is the client and the stock agency is the supplier.
- If the same art director uses those photos in an ad and supplies them digitally with an ad to the agency's account executive for the agency's use, the account executive and the agency are the clients and the art director is the supplier.

### DIGITAL ASSET MANAGEMENT GUIDELINES AND PRACTICES

1. Formal purchase agreements, use or rights agreements, or archive agreements should accompany any digital file. A sample of what is requested or a hard copy proof of that file should also accompany the file. The agreement should note the costs for the use of the file, the period of time the file should be saved or archived, and the ownership of the file in its original and final form. If a formal written agreement is not customary in your business, then some informal understanding of expectations should be communicated.

2. **ARCHIVING:** Practices for archiving should be contracted or negotiated. Certain files may need to be archived for shorter or longer periods of time.

- Archiving should be defined for materials such as general office files, working files, final commercial value files and identity value files.

Some suppliers will archive files for a fee as an amendment to their usual business agreements. In those cases, the period of time is dictated by the terms of the contract between the supplier and client.

**3. VERSIONS:** All files should be clearly named or clearly dated with relation to their use. All old versions or unnecessary files should be deleted or erased from any storage or transportable media intended for use by a commercial supplier. Properly sized and marked hard copies or laser proofs of those files should accompany the project.

Costs incurred by the mistaken use of improperly outdated files may be the responsibility of the provider of those files.

- If a poorly labeled or inadequately named file provided by a client is mistaken for a live file and used by a supplier, the parties shall agree whether or not there will be a charge for recreating the work and, if so, how much.
- The supplier should check the supplied file against any supplied proof for accuracy.

**4.** If a client has contracted with a supplier to archive their files for a defined period of time, that supplier is responsible to recreate or supply those files if they are lost or damaged.

If the original material is no longer available for use, the supplier may be liable for some form of financial restitution to the client for the value of that work. An advance determination of the value of that work and a commitment for payment should be contracted.

**5.** The setting and communicating of copyright guidelines and usage guidelines for an original image or a file are the responsibility of the client. An indemnification clause is recommended.

**6.** The copy of the original file given by a client to a supplier remains the property of the client. All other files created or amended by the supplier are the property of the supplier. It is recommended that the supplier make a copy of the file provided.

**7.** The amended file created by a supplier to achieve an end result or product remains the property of the supplier.

#### **PRODUCTION AND TECHNICAL ISSUES**

**1.** Some files created on different operating platforms may be mutually incompatible. Some files created by different versions of the

same software may be unusable. Resolve compatibility issues before electronic mechanicals are output by an imagesetter.

- An Adobe Illustrator® file created on a Mac will not be able to be opened on a PC. An MS Word document created in Word 6 will not open on a computer loaded with Word 5.1 or may not be recognized properly as an e-mail attachment. Macintosh computers can, however, save files in PC format.

**2.** Large image files may take hours to transmit through commercially available access lines.

- A 150 MB image file might take several hours to successfully transmit through an electronic communications line. The parties shall agree whether or not there will be a charge for the time needed to receive and access an unusually large transmitted file and, if so, how much.

**3.** Some images created by illustrator programs may take an excessive amount of time to output or transmit.

- An illustrator file with many repetitive blends, although appearing to be a small file, may take many hours above the normal processing times to output or to transmit. It is customary in the industry to charge for the time needed to transmit an excessively large file.

**4.** Software: files used by clients for production work may be created and saved in the latest accepted industry version.

- Many clients or suppliers may be using older or outdated working versions of software. Different versions can cause compatibility problems that affect output.
- A supplier may only want to use the latest updated version of a working program. If that supplier uses that version to correct or edit a client-supplied older version original, that document may take on the characteristics of the newer version and may only be opened by the latest version of the program. If a client uses a brand new or beta version of a program, it is wise to check with suppliers and clients to see if they have that latest version before sending them files.

Everyone should be working on the same version so that opening the document will not change its integrity.

**5.** “High-end prepress computer equipment” may not be able to improve the quality of low-resolution original images.

- Sophisticated image manipulation software and hardware have limited abilities to sharpen, correct or reasonably correct poor or low-resolution images. It is customary in the industry to charge for the time and materials provided by a supplier to correct these images.

**6. CORRUPT FILES:** A corrupted file or a file that can't be read or laser printed by a client may not be able to be used or accessed by a supplier.

- Sophisticated image manipulation software and hardware may have limited abilities to correct and utilize corrupted files. It is customary in the industry to charge for the time spent by a supplier and the media provided to correct these files.

**7.** Use of photographs or illustrations is dictated by a rights agreement or negotiated ownership agreement. Subtle changes to those images using computer-generated techniques or changes in their final format may infringe on the artist's rights and contractual agreements.

- If you scan a photo from a magazine, colorize it, flop it and use it for a commercial venture, you may be liable for infringement of usage rights. If a photo is contracted for use in a publication but is also used for a national ad or on an Internet site, you may be liable for infringement of usage rights.

**8.** An image or file downloaded from the Web and used or repurposed for a commercial application may infringe on the rights of the creator or originator of that image or file.

- Several map publishers have legal teams searching print documents and Internet sites for illegal copyright infringement of their product for commercial uses.

9. It is customary in the industry to charge for the time or materials used by a supplier to recreate an original file into a usable file for production or for a client's use.

- A supplier may recreate art or transfer graphics into other programs in order to use the file. If a client needs a "working file" for other uses or projects, the supplier may have to spend additional time or resources to recreate it. It is customary in the industry to charge for these services.

10. The parties shall agree whether or not there will be a charge for storage or archiving of images or files by a supplier and, if so, how much.

- Any charges for these services should be contracted at the beginning of a project. Some suppliers charge on an hourly basis, a per page or image basis, or on a contracted monthly or yearly fee basis.

11. It is customary in the industry to charge for special digital retouching or image manipulation to photographic or illustrative images.

- It is customary in the industry to charge for the supplier's time and material cost to match the color as close as commercially possible and any time spent or proofs pulled to change colors or manipulate the image away from its original form.

12. The parties shall agree whether or not there will be a charge for uploading or copying a file to transportable or transmittable media for a current job and, if so, how much.

- Those costs include the time needed to find the archived file, the time to copy the file, the storage media (if any), and a delivery fee (if any).

13. Transmission of some digital files through commercial e-mail or Internet service providers may be limited. Attachments to those files may also be limited in quality to text or to small image files.

- An attached and compressed transmission through America Online or other commercial Internet providers oftentimes may be limited in size.

14. **MEDIA:** Popular storage media can get quickly outdated. Keep track of where files are stored and have them copied to the newer

form of media used. Suppliers may be responsible for this if they have been contracted by a client for archiving services.

- Ten years ago the 5 1/2" floppy was the common storage media for PCs. Few PCs have capabilities to read those discs today. In 1995, the 44-88 MB SyQuest was the preferred storage media for Macintosh. SyQuest is now out of business and few industries are using those formats for storage or archiving. Apple Computer is no longer designing floppy drives in their computers, and the ZIP is slowly being outmoded as the costs for CD writers have come down.
- It would be difficult to retrieve an important document such as a will if it was archived in an outdated storage format.

#### OPERATIONAL ISSUES

1. Some transportable media, if dropped or passed through certain magnetic fields, may become corrupted or unusable.

- These files may have to be copied or recreated by the client in order to be usable.

2. Some graphic or business software applications should only be used for desktop or low-resolution creative or design work. A written specification of the programs intended to be used for a project should be agreed upon.

- Programs such as PowerPoint are difficult to use for high-end creative work. Additional time and resources may be needed to repurpose these programs for other than their specific use. It is customary in the industry to charge for these services.
- Programs such as MS Word, WordPerfect or Excel are essentially word processing or spreadsheet programs and should not be used for sophisticated design or high-resolution printing or output work. They are not readily able to be used for printing impositions and their font and image management tools are limited.

3. **STORAGE MEDIA:** Different "storage media" have different cost bases.

4. **RESOLUTION:** Different image file resolutions are needed for proper use with different media. All participants in the production

workflow should be aware of file sizes as delivered and expected with regard to anticipated use.

- A 72 dpi photographic image will be acceptable for use on a video monitor or Internet uses.
- A 150 dpi image will be acceptable for use in a newspaper ad.
- A 250 dpi image may be acceptable for a magazine ad.
- A 300 to 600 dpi image may be acceptable for use in a traditional printed brochure or outdoor billboard.

5. **ENLARGEMENTS:** A "high-resolution file" remains high resolution only if it is used at close to the same size in which it was created.

- A 600 dpi scanned image at 4" x 5" becomes 300 dpi if used at 8" x 10".
- That image would "look better" if it had been scanned at 300 dpi for 8" x 10".

6. Some graphic files, if not compressed properly for transmission, may output only as text files. Some graphic files, if compressed using the latest version of a compression program, may not expand or open if that latest version is not used by the recipient of that file. Some compressions may also lose data.

7. Designs or illustrations created electronically can only be proofed properly by using some form of high-resolution output and proof device.

- Illustrations created by Adobe Illustrator® and similar programs can only be proofed for color accuracy and fidelity by outputting the file and creating a high-resolution digital or analog proof or low-resolution proof or laser devices may not show accurate colors and details.

#### Section 2: Terms and Conditions of Sale

This section covers terms and conditions of sale for quotations, orders, delivery, scheduling, and other issues. The practices covered are listed in alphabetical order.

#### ACCURACY OF SPECIFICATIONS

Quotations are based on the accuracy of the specifications provided. The supplier can request a job at the time of submission if copy,

film, tapes, disks or other input materials do not conform to the information on which the original quotation was based.

#### **ALTERATIONS/CORRECTIONS**

Client alterations include all work performed in addition to the original specifications. It is customary in the industry to charge for these services.

#### **COLOR PROOFING**

A color proof is used to simulate how the printed piece will look. Because of differences in equipment, paper, inks and other conditions between color proofing, and production pressroom operations, a reasonable variation in color between color proofs and the completed job is to be expected. When variation of this kind occurs, it will be considered acceptable performance and the proof becomes a contract between the client and supplier.

#### **CREATIVE WORK**

"No use shall be made, except by written permission of the supplier for all use of this work and for any derivation of ideas from it and compensation (if any) to be determined by the supplier."

#### **CLIENT-FURNISHED MATERIALS**

Materials furnished by clients or their representative are verified by delivery tickets. The supplier bears no responsibility for discrepancies between delivery tickets and actual counts. Client-supplied paper must be delivered according to specifications furnished by the supplier. These specifications will include correct weight, thickness, pick resistance, and other technical requirements. Artwork, film, color separations, special dies, tapes, disks or other materials furnished by the client must be usable by the supplier without alteration or repair. Items not meeting this requirement may be repaired by the client or by the supplier and may be billable.

#### **CLIENT'S PROPERTY**

The supplier will only maintain fire and extended coverage on property belonging to the client while the property is in the supplier's possession. The supplier's liability for this property will not exceed the amount recoverable from the insurance. Additional insurance

coverage may be obtained if it is requested in writing and if the premium is paid to the supplier.

#### **DELIVERY**

Unless otherwise specified, the price quoted is for a single shipment, without storage, F.O.B. supplier's platform. Proposals are based on continuous and uninterrupted delivery of the complete order. If the specifications state otherwise, the supplier will charge accordingly at current rates. Charges for delivery of materials and supplies from the client to the supplier, or from the client's representative to the supplier, are not included in quotations unless specified. Title for finished work passes to the client upon delivery to the carrier at the shipping point or upon mailing of invoices for the finished work or its segments, whichever occurs first.

#### **ELECTRONIC MANUSCRIPT OR IMAGE**

It is the client's responsibility to maintain a copy of the original file. The supplier is not responsible for accidental damage to media supplied by the client or for the accuracy of furnished input or final input. Until digital input can be evaluated by the supplier, no claims or promises are made about the supplier's ability to work with jobs submitted in digital format and no liability is assumed for problems that may arise.

#### **EXPERIMENTAL WORK**

It is customary in the industry to charge for experimental or preliminary work performed at a client's request. This work cannot be used without the supplier's written consent.

#### **INDEMNIFICATION**

The client agrees to protect the supplier from economic loss and any other harmful consequences that could arise in connection with the work. This means that the client will hold the provider harmless and save, indemnify, and otherwise defend him/her against claims, demands, actions, and proceedings on any and all grounds. This will apply regardless of responsibility for negligence.

**1. COPYRIGHTS:** The client warrants that the subject matter to be printed is not copyrighted by a third party. The client also recognizes that because subject matter does not have to bear a

copyright notice in order to be protected by copyright law, absence of such notice does not necessarily assure a right to reproduce. The client further warrants that no copyright notice has been removed from any material used in preparing the subject matter for reproduction. To support these warranties, the client agrees to indemnify and hold the supplier harmless for all liability, damages, and attorney fees that may be incurred in any legal action connected with copyright infringement involving the work produced or provided.

**2. PERSONAL OR ECONOMIC RIGHTS:** The client also warrants that the work does not contain anything that is libelous or scandalous or anything that threatens anyone's right to privacy or other personal or economic rights. The client will, at the client's sole expense, promptly and thoroughly defend the supplier in all legal actions on these grounds as long as the supplier promptly notifies the client of the legal action and gives the client reasonable time to undertake and conduct a defense. The client reserves the right to use his or her sole discretion in refusing to print anything he or she deems illegal, libelous, scandalous, improper or infringing upon copyright law.

#### **LIABILITY**

##### **1. DISCLAIMER OF EXPRESS WARRANTIES:**

The supplier warrants that the work is as described in the purchase order. The client understands that all sketches, copy, dummies, and preparatory work shown to the client are intended only to illustrate the general type and quality of the work. They are not intended to represent the actual work performed.

##### **2. DISCLAIMER OF IMPLIED WARRANTIES:**

The supplier warrants only that the work will conform to the description contained in the purchase order. The supplier's maximum liability, whether by negligence, contract or otherwise, will not exceed the amount specified in the contract. Under no circumstances will the provider be liable for specific, individual or consequential damages.

#### **ORDER**

Acceptance of an order shall not be effective until acceptance by the supplier. Acceptance by the supplier may be either by notification to the client or by commencing to produce work

on the merchandise ordered. Canceled orders require compensation for incurred cost and related obligations.

#### **OUTSIDE PURCHASES**

Unless otherwise agreed in writing, all outside purchases as requested or authorized by the client are chargeable.

#### **OVER-RUNS OR UNDER-RUNS**

Over-runs or under-runs will not exceed the percentage specified in the contract. The supplier will bill for actual quantity delivered within this tolerance. If the client requires a guaranteed quantity, the percentage of tolerance must be stated at the time of quotation.

#### **PREPARATORY MATERIALS**

Artwork, type, plates, negatives, positives, tapes, disks, and all other items supplied by the supplier remain the supplier's exclusive property.

#### **PREPRESS PROOFS**

The supplier will submit prepress proofs along with the original copy for the client's review and approval. Corrections will be returned to the supplier on a "master set" marked "OK," "OK with Corrections" or "Revised Proof Required" and signed by the client. Until the master set is received, no additional work will be performed. The supplier will not be responsible for undetected production errors if:

- proofs are not required by the client;
- the work is printed per the client's OK; and/or
- requests for changes are communicated orally.

#### **PRESS PROOFS**

Press proofs will not be furnished unless they have been required in writing in the supplier's quotation. A press sheet can be submitted for the client's approval as long as the client is present at the press during makeready. It is customary in the industry to charge for any press time lost or alterations/corrections made because of the client's delay or change of mind.

#### **PRODUCTIONS SCHEDULES**

Production schedules will be established and followed by both the client and the supplier. There will be no liability or penalty for delays due to state of war, riot, civil disorder, fire, strikes, accidents, action of government or civil authority, acts of God or other causes beyond the control of the supplier. In such cases, schedules will be extended by an amount of time equal to delay incurred.

#### **QUOTATION**

A quotation not accepted within 30 days may be changed.

#### **STORAGE**

The supplier will retain intermediate materials until the related end product has been accepted by the client. If requested by the client, intermediate materials will be stored for an additional period for additional charge. The provider is not liable for any loss or damage to stored material beyond what is recoverable by the supplier's fire and extended insurance coverage.

#### **TAXES**

It is customary in the industry to charge for all amounts due for taxes and assessments. They are the responsibility of the client. No tax exemption will be granted unless the customer's "Exemption Certificate" (or other official proof of exemption) accompanies the purchase order. If, after the client has paid the invoice, it is determined that more tax is due, then the client must promptly remit the required taxes to the taxing authority or immediately reimburse the supplier for any additional taxes paid.

#### **TELECOMMUNICATIONS**

Unless otherwise agreed, it is customary in the industry to charge the client for all transmission charges. The supplier is not responsible for any errors, omissions or extra costs resulting from faults in the transmission.

#### **TERMS/CLAIMS/LIENS**

It is customary in the industry that payment is net cash in calendar days from the date of invoice as specified. Claims for defects, damages or shortages must be made by the client in writing no later than a specified number of calendar days after delivery. If no such claim

is made, the supplier and the client will understand that the job has been accepted. By accepting the job, the client acknowledges that the supplier's performance has fully satisfied all terms, conditions, and specifications.

It is customary in the industry that the supplier's liability will be limited to the quoted selling price of defective goods, without additional charge for special or consequential damage or as specified. As security for payment of any sum due under the terms of an agreement, the supplier has the right to hold and place a lien on all client property in the supplier's possession. This right applies even if credit has been extended, notes have been accepted, trade acceptances have been made or payment has been guaranteed. If payment is not made, the client is liable for all collection costs incurred.

#### **Section 3: Refusal to Print**

What rights and obligations do printers have in refusing work? The following information from *PIA Management Portfolio, September 2002, Business Management Advisory* provides guidance on this issue:

#### **POLITICAL PRINTING**

A political candidate your company does not agree with or support offers your firm a print job. Do you have to accept it? No. Printers may have political beliefs or positions and are free to associate and do business with any political party, while excluding others.

#### **ANTITRUST LAWS**

Printers and publishers are under no legal duty to do business with everyone who asks. However, a printer or publisher who dominates a particular market in circulation and advertising could violate federal antitrust laws by refusing work. For instance, a publisher could be seen as establishing a monopoly by refusing to accept advertisements from a customer because that customer advertises with the publisher's competitors.

#### **DISCRIMINATION**

May a printer refuse a job because the customer is part of a specific minority group or of a certain national origin, a particular religion, creed or other protected category? No.

State laws and public policy forbid discrimination on these grounds. Printers have a right to select customers as they please, but this right is not absolute and may, in many jurisdictions, be limited by state anti-discrimination statutes.

Printers may reject a job as long as the reasons are not based on discriminatory grounds. You should not refuse to bid on or print a job based on the customer's characteristics. Seek legal advice before refusing to bid on or print any job where discrimination might be claimed.

#### **CONSCIENTIOUS OBJECTIONS**

What if a printer disagrees with the message or content of the material to be printed? PIA believes that a printer's decision about what to print is protected by the First Amendment's freedom of speech and press provisions. However, this area hasn't been fully addressed by the courts, so seek experienced legal counsel before using these grounds to refuse a job that could bring a complaint or legal challenge based on discrimination.

Even when the real reason for refusing to print a job is that the printer finds the material itself objectionable, rather than any racial, ethnic or other bias against the customer, a substantial risk remains that the courts might find the printer liable of prohibited bias against the customer. Again, act cautiously and seek legal advice before refusing business in circumstances that might implicate anti-discrimination statutes.

Printers who refuse a job because they object to its content should be on good standing, because First Amendment interests should prevail over any applicable anti-discrimination statutes or ordinances, even before the federal courts.

It's advisable to establish written policies reserving the right to refuse to print certain material. Such policies alert customers about the potential for refusal and should help defend against lawsuits based on alleged "implied" contractual obligations to provide service. Also, the existence of an established, published policy should strengthen a printer's

claim of editorial discretion under the First Amendment's prohibition against "compelled speech." A written right-to-refuse policy might also help defend against claims that the printer's real reason was not, in fact, objection to the content but bias against the individual customer.

#### **NONPAYMENT**

Suppose a new customer places a big job. According to the credit report, it seems worthy to extend credit, but even after 90 days the customer still hasn't paid the bill. Then the customer submits another large job. Do you have to accept and print the job? Generally, no. While it is a pure business decision to extend extra credit to this customer, you don't have to accept the second job until you receive payment for the first. You may want to demand at least partial payment before beginning the second job.

#### **COPYRIGHT**

A job comes in with questionable photographs, text, illustrations or other content that doesn't have appropriate credit or any indication that reprint permission has been granted. Do you have to print the job? No. While printing business practices (formerly called trade customs) indicate that the customer should ensure that copyright permission has been secured, this doesn't shield printers from copyright law liability.

Printers may require customers to sign a special release stating that they take full responsibility for all copyright liability. This release may still not protect the printer. You are best protected by asking for written proof that the customer has permission (also in writing) to reprint the material.

#### **UNION LABEL**

Suppose you are a union-free printer and a customer requests you to reprint a job containing the union label. Should you? No! Only unionized printers with a specific agreement to print the union label may do so. The union may obtain, through court order, damages equal to three times your profits for the job — possibly more.

What if yours is a combination shop and only part of your production facility is unionized? Can you print the union label? No. The union label means that all operations to produce the goods bearing the label were handled by the members of a union or those unions who are affiliated with a particular trade council. Only printers with a specific agreement with the union may print the union label. Only employees who are part of the collective bargaining unit may work on a union label job.

Can you print the union label if you are a completely unionized printer but have no union label agreement? No. You can print the union label only if you have a union label agreement. The union label agreement is often separate from your collective bargaining agreement.

What if you are a quick print shop and a customer comes in with preprinted letterhead containing the union label. The customer only wants you to photocopy a letter onto the preprinted letterhead. May you print the job? Yes, as long as you are not manipulating the union label or binding it.

The Graphic Communications International Union (GCIU) has allowed union-free binderies to work on union label jobs when no union binderies are within a reasonable geographic distance. However, this has happened rarely and probably only on the authority of the local union president or trade council.

#### **SEXUAL CONTENT**

What if a customer wants you to print a job that includes pornography. Do you have to print it? No. The First Amendment does not require a printer to print a job.

What if one of your employees refuses to print a job containing pornography? The employee may claim religious grounds or a hostile work environment under Title VII of the 1964 Civil Rights Act. While it may be wise to maintain the morale and respect of your employees by reassigning the job to another worker, a printer maintains the right to conduct business no matter what the content.

## Excerpts from Circular #1, Copyright Basics, October 1993

### WHAT IS COPYRIGHT

Copyright is a form of protection provided by the laws of the United States (title 17, U.S. Code) to the authors of "original works of authorship" including literary, dramatic, musical, artistic, and certain other intellectual works. This protection is available to both published and unpublished work. Section 1206 of the Copyright Act generally gives the owner of the copyright the exclusive right to do and to authorize others to do the following:

- to reproduce the copyrighted work;
- to prepare derivative works based upon the copyrighted work;
- to distribute copies . . . of the copyrighted work to the public by sale or other transfer of ownership, or by rental, lease, or lending;
- to display the copyrighted work publicly, in the case of literary, musical, dramatic, and choreographic works, pictorial, graphic or sculptural works, including the individual images of a motion picture or other audiovisual work.

It is illegal for anyone to violate any of the rights provided by the Act to the owner of the copyright.

### WHO CAN CLAIM COPYRIGHT

Copyright protection exists from the time the work is created in fixed form; that is, it is an incident of the process of authorship. The copyright in the work of authorship immediately becomes the property of the author who created it. Only the author or those deriving their rights through the author can claim copyright.

In the case of works made for hire, the employer and not the employee is presumptively considered the author. Section 101 of the copyright statute defines a "work made for hire" as:

1. a work prepared by an employee within the scope of his or her employment; or
2. a work specially ordered or commissioned for use as a contribution to a collective work, as part of a motion picture or other audiovisual work, as a translation, as a supplementary work, as a compilation, as an instructional text, as a test, as answer material for a test or as an atlas, if the parties expressly agree in a written instrument signed by them that the work shall be considered a work made for hire. The authors of a joint work are co-owners of the copyright in the work, unless there is an agreement to the contrary.

### NOTICE OF COPYRIGHT

For works first published on and after March 1, 1989, use of the copyright notice is optional, though highly recommended. Before March 1, 1989, the use of the notice was mandatory on all published works, and any work first published before that date must bear a notice or risk loss of copyright protection.

### HOW TO SECURE A COPYRIGHT

No publication or registration or other action in the Copyright Office is required to secure copyright. There are, however, certain definite advantages to registration (as soon after creation as possible).

### HOW LONG COPYRIGHT PROTECTION ENDURES

A work that is created on or after January 1, 1978, is automatically protected from the moment of its creation, and is ordinarily given a term enduring for the author's life, plus an additional 50 years after the author's death. For anonymous and pseudonymous works (unless the author's identity is revealed in Copyright Office records), the duration of copyright will be 75 years from publication or 100 years from creation, whichever is shorter.

### TRANSFER OF COPYRIGHT

Any or all of the exclusive rights, or any subdivision of those rights, of the copyright owner may be transferred, but the transfer of exclusive rights is not valid unless that transfer is in writing and signed by the owner of the rights conveyed (or such owner's duly authorized agent). Transfer of a right on a nonexclusive basis does not require a written agreement (Editor's note: To prevent confusion on what rights are specifically transferred, it is good practice to put the conditions of the transfer in writing.)

Copyright is a personal property right, and it is subject to the various state laws and regulations that govern the ownership, inheritance or transfer of personal property as well as terms of contracts or conduct of business. For information about relevant state laws, consult an attorney.

### LEGAL ADVICE

The Copyright Office is not permitted to give legal advice. If information or guidance is needed on matters such as disputes over ownership of a copyright, suits against possible infringers, the procedure for getting a work published or the method of obtaining royalty payments, it may be necessary to consult an attorney.

*For further information on Transfer of Copyright, Work for Hire, International Copyright Protection, Registration Procedures, and Fees, consult Circular #1, or contact the Copyright Office.*

*To speak to a Copyright Information Specialist, call (202) 707-3000 during the office hours of 8:30 a.m. to 5:00 p.m. (Eastern Time) except federal holidays. Or go online: [www.loc.gov/copyright](http://www.loc.gov/copyright).*

*The complete circular is available through the Copyright Office 101 Independence Ave. S.E. Washington, D.C. 20559-6000 or online at [www.copyright.gov/circs/circ1.html](http://www.copyright.gov/circs/circ1.html).*