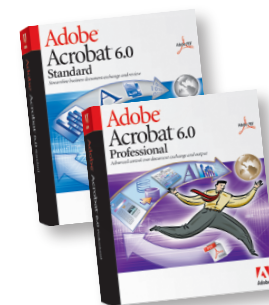




Reliable PDF Creation & Publishing Workflows



New & Improved!
Now Updated for **Adobe** Acrobat 6.0

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Publishing Technologies & Services Group
Adobe Systems Incorporated
November 12, 2003





Agenda

- Introduction
- Guiding Principles
- PDF File Creation
- PDF Generation & Workflow Pain Points
- PDF/X Standards
- Q&A



Introduction

- Introduction
- Guiding Principles
- PDF File Creation
- PDF Generation & Workflow Pain Points
- PDF/X Standards
- Q&A



Introduction

Assumptions & Challenges

- Print is *not dead* ... Print is *changing*!
 - Print as needed – “on demand”
 - ▶ short lead times - **NOW!**
 - Increasing competition and continuing pricing pressures (downwards)
 - Content rendered *via* traditional offset as well as xerography, inkjet, and coming technologies
 - Content rendered *to* paper, screen, and “new media”
 - Content repurposing (reuse)
 - Digital photography enriches content
 - Content from *enterprise* sources converges with content from *creative* sources





Introduction

Assumptions & Challenges

- **Survival implications for printers & print production**
 - Cut costs
 - Eliminate production steps between content creation and rendering (i.e., printing)
 - Improve reliability and consistency
 - Welcome and competently print content from non-traditional sources
(Windows, RGB, TrueType, etc. are OK)
 - Printers offer added-value services
 - Fulfillment
 - Variable data
 - Digital asset management



Introduction

Assumptions & Challenges

- PDF publishing workflows in which the PDF files are properly and consistently created can:
 - Provide the means by which graphically-rich content may be *cost-effectively, reliably, and consistently viewed, printed, or otherwise rendered anywhere and everywhere*, preferably with a *single* PDF file
 - Eliminate the *cost, uncertainty, and unreliability* inherent in a process in which the content creator (*creative professional or enterprise worker*) fully packages and transmits source documents, linked content, fonts, profiles, etc. to the printer



Introduction

Assumptions & Challenges

- However, PDF is only as good as the principles and practices used in your PDF generation and publishing workflows

You can create “very bad” PDF!

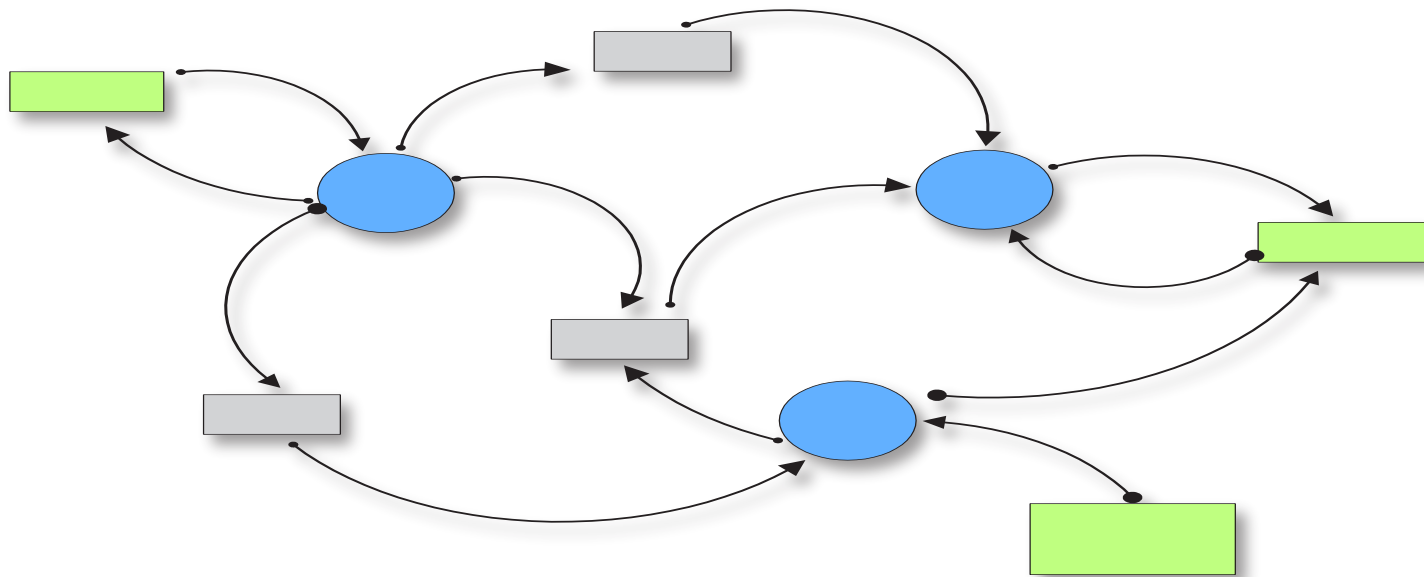




Introduction

Workflow

- **Workflow** refers to *standard operating procedures (SOP)* and *processes* used to accomplish work



- In our context, **PDF Workflow** refers to standard procedures and processes used to create and manipulate PDF files



Introduction

Some Simplifying Assumptions

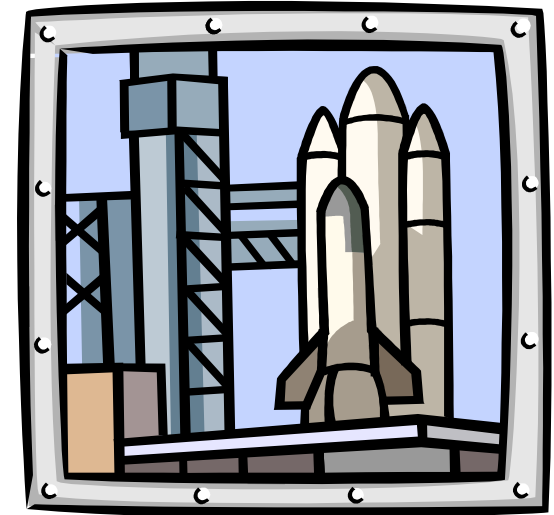
- We limit our discussion to the following operating system environments:
 - Windows 2000, Windows XP, and Windows Server 2003
 - Macintosh 10.2.2 and above





This is not ...

- A sales pitch
- A tutorial on Advanced Techniques
- Rocket Science

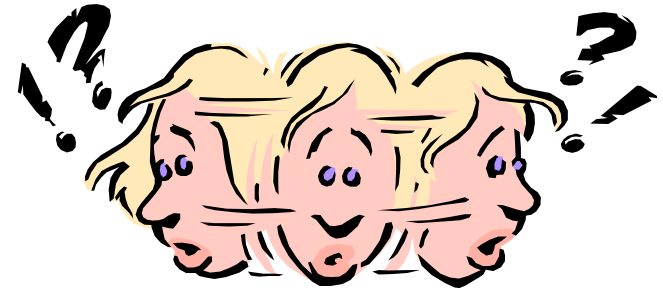




We will ...

■ Discuss:

- Issues associated with content creation
- Methods of PDF file creation
- Techniques and shortcuts to create lean, mean, high quality PDF files suitable for:
 - Display (and web)
 - Direct digital printing
 - Traditional printing processes (i.e., offset, etc.)



- Debunk **bubblemeisers**, myths, and urban legends surrounding basic issues of PDF creation & workflow



The Fine Print (pun intended) ...



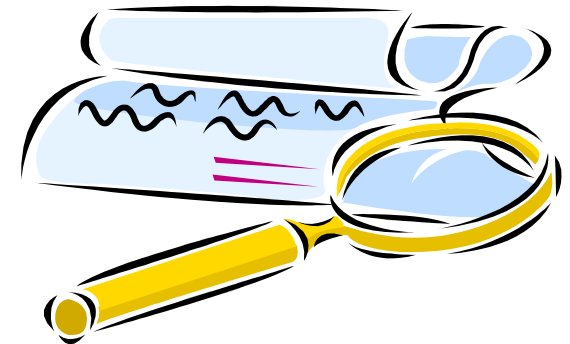
The material presented today may challenge long-held religious beliefs about how to create content and PDF.



The opinions and techniques presented are those of the presenter, Dov Isaacs, and do *not* necessarily represent opinions held by or techniques officially endorsed by Adobe Systems Incorporated.



Your mileage may vary, but DO try this at home (and in your office, of course)!





Guiding Principles

- Introduction
- **Guiding Principles**
- PDF File Creation
- PDF Generation & Workflow Pain Points
- PDF/X Standards
- Q&A



Guiding Principles

Principle 1

The quality of an end-product directly reflects and can be no better than the quality of its source components.

Issues

- Care in content creation or selection, preparation, and assembly is a key success factor for high quality, reliable PDF creation
- And it doesn't hurt to get some real training from competent professionals



Guiding Principles

Application of Principle 1

- A PDF file can never be better than the content from which it is created
- GIGO: Garbage in, garbage out!

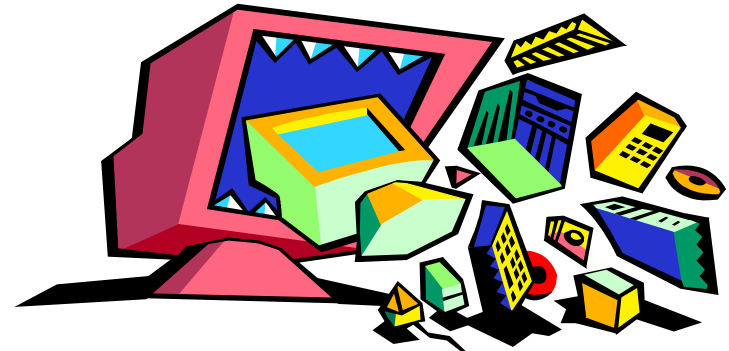




Guiding Principles

Application of Principle 1

- \$2,500 buys a tremendous amount of computer, printer, and software, well beyond even the dreams of publishing professionals fifteen years ago



- Today, we can very rapidly and inexpensively produce cruddy, shlocky-looking junk
- We will discuss the *mechanics* of content and PDF creation, not issues of *taste* and *style*



Guiding Principles

Application of Principle 1

- Investment in training is required to learn to use tools properly and effectively
 - Basics – stroked and filled polygons versus nearly-touching line segments, typography, color selection, etc.
 - Visualization – shapes, widths, color, and effects as ultimately printed as opposed to how they display
- Examples:
 - Misjudgment of line widths
 - RGB screen display (high gamut) versus CMYK print output (lower gamut)





Guiding Principles

Application of Principle 1

■ And finally ...

- Most of us are *not* gifted graphic artists, photographers, or font designers
- Amateur-hour graphics yield amateurish results, reflecting poorly on your organization
- Good vector-based clip art, high quality stock images, and fonts from reliable, high quality font foundries are well worth their cost
- You will pay, one way or another





Guiding Principles

Principle 2

Maintain content at its highest level of abstraction by category and within category.

Expedience will byte you terribly later!

Issues

- *Text versus vector graphics versus images*
- Live gradients versus flattened gradients
- Colorspaces
- Live transparency versus flattened transparency



Guiding Principles

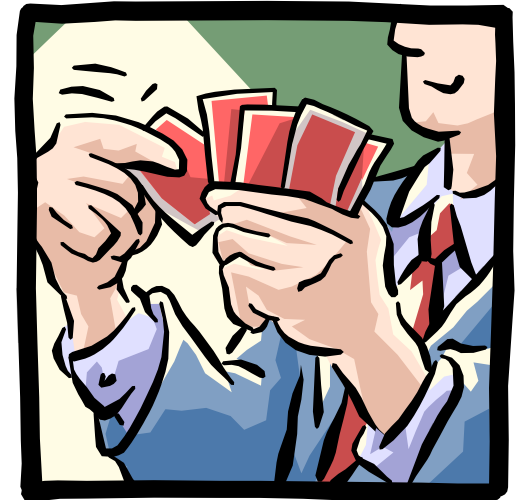
Application of Principle 2

**Text *versus*
Vector Graphics *versus*
Images**

Text (as realized via fonts)
***trumps* Vector Graphics**
(lines and polygons)

&

Vector Graphics (lines and polygons)
***trump* Images** (raster data)





Guiding Principles

Application of Principle 2

- **Not all output is what you expect it to be!**
 - Examples:
 - Gradient fills
 - ▶ bunches of polygons of different colors or image data
 - Vector effects (such as drop shadows) ▶ image data
 - Text ▶ filled outlines
 - Any object ▶ device resolution image data
 - Causes:
 - Inherent problems due to file format / file format version:
 - PostScript 3 versus PostScript Level 2 or Level 1
 - TIFF, GIF, JPEG are image-only formats
 - Wrong export / save options specified
 - Inherent “limitations” of content creation programs



Guiding Principles

Principle 3

**Lose no data before its time ...
... Add no unnecessary data.**

Issues

- Font conversions
- Image data: downsampling and upsampling (interpolation)
- Transparency information: flattening
- Color information: conversion to “device colors”
- Embed all necessary resources (fonts, color profiles, “tagging” ...)



Guiding Principles

Principle 4

Avoid unnecessary and cascading data and attribute transformations.

Issues

- Lossy compression
(multiple decoding and re-encoding of JPEG-compressed images)
- Colorspace transformations
(multiple conversions between managed & device colorspaces)
- Font conversions



Guiding Principles

Principle 5

Problems detected earlier in a workflow are generally easier and less expensive to correct than equivalent problems detected later in the same workflow.

Issues

- Early in the workflow, you have more **context** for the problematic content
- Technical problems detected while “in” an authoring program are easier to fix than problems found “in” Acrobat or “on” a printing press
 - Fix content and/or formatting
 - Replace offending resources (fonts, color specifications, etc.)



PDF File Creation

- Introduction
- Guiding Principles
- **PDF File Creation**
- PDF Generation & Workflow Pain Points
- PDF/X Standards
- Q&A



PDF File Creation

PDF files may be created by the following methods:

- Application Direct PDF Export
- PDF via Distillation of PostScript
(PostScript generated either directly by the application program itself or via the system's PostScript driver)
- PDF via PDFWriter
- Third-party solutions



PDF File Creation

Application Direct PDF Export



Content



Direct PDF Export
Capable Applications



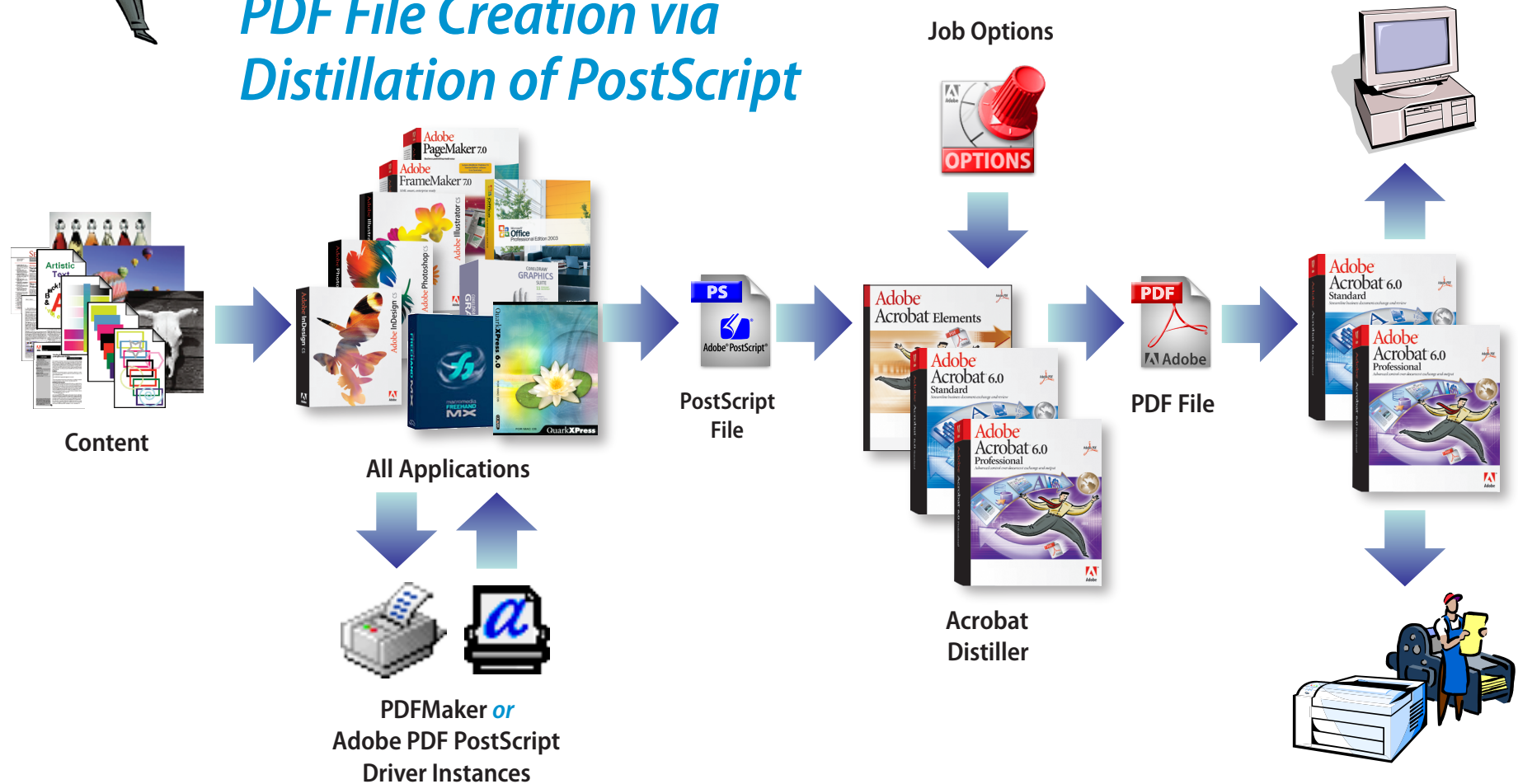
PDF File





PDF File Creation

PDF File Creation via Distillation of PostScript





PDF File Creation via PDFWriter Driver





Controlled PDF File Creation, Distribution, & Archiving via PDF Transit





PDF File Creation

Application Direct PDF Export

Application Direct PDF Export

trumps

PDF File Creation via Distillation of PostScript

- Applications with the capability of directly generating PDF from *all* content:
 - InDesign
 - FreeHand
 - Custom enterprise applications
 - Illustrator
 - CorelDRAW
 - Photoshop
 - WordPerfect
- Application Direct PDF Export is the preferred method of generating PDF from Adobe applications



PDF File Creation

Application Direct PDF Export

- Best support for PDF objects and attributes that have no corresponding feature in PostScript or difficult to “hack” with PDFMark (transparency, ICC color management, advanced tagging, etc.)
- Consistent with **Principle 2** in terms of maintaining content at its highest level of abstraction
- QuarkXPress 6 does **not** provide direct PDF export – under the covers, it generates PostScript and converts to PDF either via a bundled third-party product or configured to Acrobat Distiller



PDF File Creation

PDF via Distillation of PostScript

PDF File Creation via Distillation of PostScript *trumps* PDF File Creation via PDFWriter

- EPS graphics support for most applications requires a PostScript output stream
- Application, driver, and OS support for PostScript:
 - Highest level of graphics support for most applications
 - Most mature drivers
 - Documented “escape” mechanism by which *PDFMark* can supplement standard PostScript for PDF creation (tagging, bookmarks, hyperlinks, etc.)
 - Support for colorspaces other than RGB



PDF File Creation

PDF via Distillation of PostScript

- Generate PostScript per capabilities of PDF, not the capabilities of “final” target print device
 - Acrobat Distiller PPD in conjunction with the application program and the PostScript driver
 - PostScript Language Level 3
 - Native TrueType support

```
*PPD-Adobe: "4.3"
*% Adobe Systems PostScript(R) Printer
*% Copyright 1987-2002 Adobe Systems ...
*% All Rights Reserved.
*% ...
*% PPD file last updated 3 Dec 2002
*FormatVersion: "4.3"
*FileVersion: "1.0"
*LanguageEncoding: ISOLatin1
*LanguageVersion: English
*PCFileName: "ADPDF6.PPD"
*Manufacturer: "Adobe"
```

```
*Product: "(Adobe PDF)"
*PSVersion: "(3015.102) 0"
*ModelName: "Adobe PDF"
*ShortNickName: "Adobe PDF"
*NickName: "Adobe PDF 3015.102"
*% PPD for Adobe PDF 6, Roman
*% === Options and Constraints =====
*% ==== Device Capabilities =====
*SuggestedJobTimeout: "120"
*SuggestedWaitTimeout: "0"
*ADTrueGray: True
*ColorDevice: True
```

```
*DefaultColorSpace: CMYK
*FileSystem: True
*?FileSystem: "(True) == flush"
*LanguageLevel: "3"
*FreeVM: "4194304"
*VMOption None/Standard: "4194304"
*FCacheSize None/Standard: 204800
*Throughput: "400"
*VariablePaperSize: True
*TTRasterizer: Type42
*?TTRasterizer: "(Type42) ="
*% ...
```



PDF File Creation

PDF via Distillation of PostScript

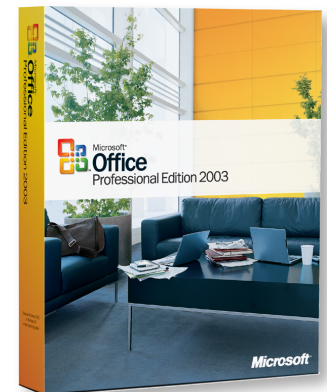
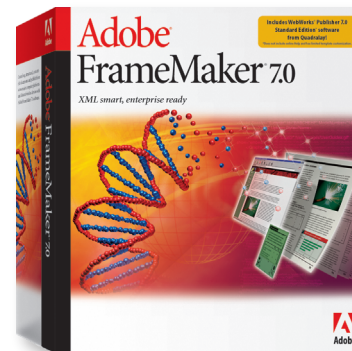
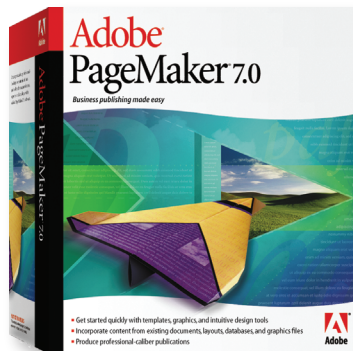
- ***Adobe PDF (Acrobat 6), Acrobat Distiller (Acrobat 5 Windows), & Create Adobe PDF (Acrobat 5 Macintosh) printer driver instances***
 - Created by Acrobat Installer with correct PPD file
 - Obviates most any need to manually create and distill PostScript or to maintain the PostScript files
- ***Adobe PDF Transit***
 - Customizable OEM / VAR / Service Provider product
 - PDF generation, encryption, distribution, archiving, and printing based upon tightly controlled PostScript generation and normalization into PDF



PDF File Creation

PDF via Distillation of PostScript

- ***Export PDF*** in PageMaker, ***Save as PDF*** in FrameMaker, and ***PDFMaker*** for Microsoft Office
create PDF via “silent” creation and distillation of PostScript followed by post-distillation fixup and optimization of the resultant PDF



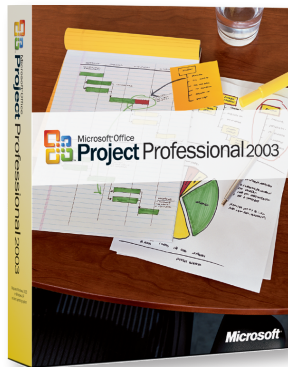


PDF File Creation

PDF via Distillation of PostScript



- Acrobat 6 Professional's *PDFMaker* adds support for:
 - Microsoft Project
 - Microsoft Visio
 - Visio layers translate to PDF layers
 - AutoDesk AutoCAD
 - AutoCAD layers translate to PDF layers





PDF File Creation

PDF via PDFWriter

- PDF support limited to features of the operating system imaging model (GDI - Windows, QuickDraw - MacOS 9 & earlier, etc.)
- PDFWriter support ends with PDF 1.2
 - default Acrobat 5 installation does *not* install PDFWriter!
- PDFWriter is *not* available with Acrobat 6





PDF File Creation

MacOS X Direct PDF Generation



■ The Good News:

- PDF is an integral part of the MacOS X imaging model
- MacOS X provides a PDF file *viewer*
- Any MacOS *native mode* application or system function where you can *print*, (except in Acrobat or Adobe Reader), allows *save as PDF* without Acrobat
- Adobe Reader 6 and Adobe Acrobat 6 run (only) in *native mode*
- InDesign 2, Illustrator 10, and Photoshop 7 (and newer versions, of course) all run in *native mode* and have fully functional PDF export features



MacTM OS



PDF File Creation

MacOS X Direct PDF Generation



■ The Bad News:

- MacOS X PDF is currently only PDF 1.2+ or PDF 1.3- depending upon your viewpoint
- PDF created by the MacOS X *save as PDF* function is **not** generally considered to be production quality PDF
- The MacOS X PDF file *viewer* currently supports only MacOS X PDF (i.e., it can fail with PDF 1.3, 1.4, & 1.5 files)
- MacOS X PostScript drivers are not yet mature and can yield text that cannot readily be searched or edited by the Acrobat's text touch-up tool



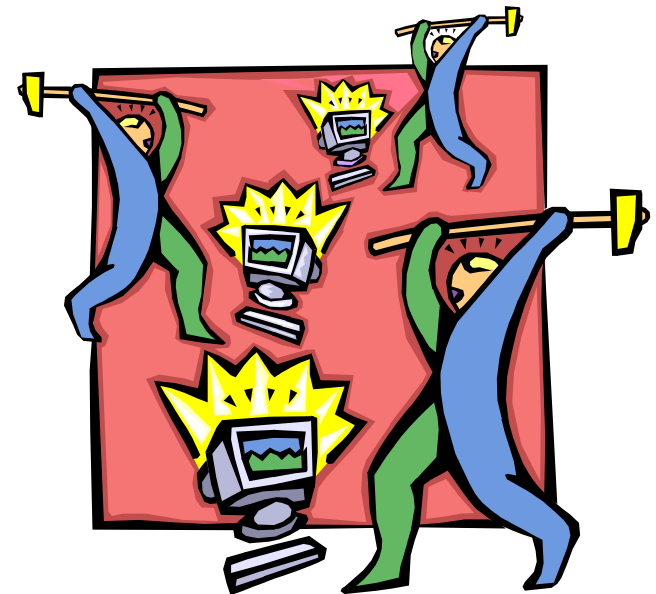
MacTMOS



PostScript Driver Setup

PDF Production & Otherwise

- Some “as installed” default driver settings and default Distiller joboptions could use some serious “tweaking” for best (or even usable) results ...
- We discuss the issues and details regarding these settings and joboptions in another session
- A minimal number of settings are required for workflows that produce PDF files that display, print, and render successfully anywhere and everywhere



PDF Generation & Workflow Pain Points



- Introduction
- Guiding Principles
- PDF File Creation
- **PDF Generation & Workflow Pain Points**
- PDF/X Standards
- Q&A



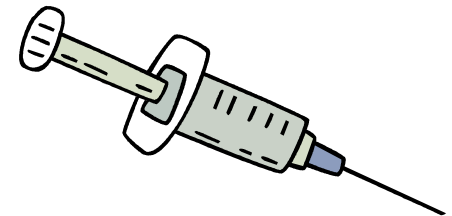
PDF Generation & Workflow Pain Points

The most commonly reported “pain point” areas in PDF generation and workflow:

- Fonts
- Color
- Images
- Transparency
- Other graphic quality problems



What are the symptoms?
How do we relieve the pain?





PDF Generation & Workflow Pain Points

Fonts

- **Embeddability of fonts in PDF files:**
 - **Physical control**
 - *fsType* protection flag in TrueType and all OpenType fonts must allow for at least **preview & print embedding**
 - Font list by location in Distiller job option edit shows lock next to fonts that cannot be embedded
 - Microsoft Font Properties Extension available at:
<<http://www.microsoft.com/typography/property/property.htm>>
Right click font file for “properties”



PDF Generation & Workflow Pain Points

Fonts

The image displays three overlapping 'times Properties' dialog boxes, each showing a different tab:

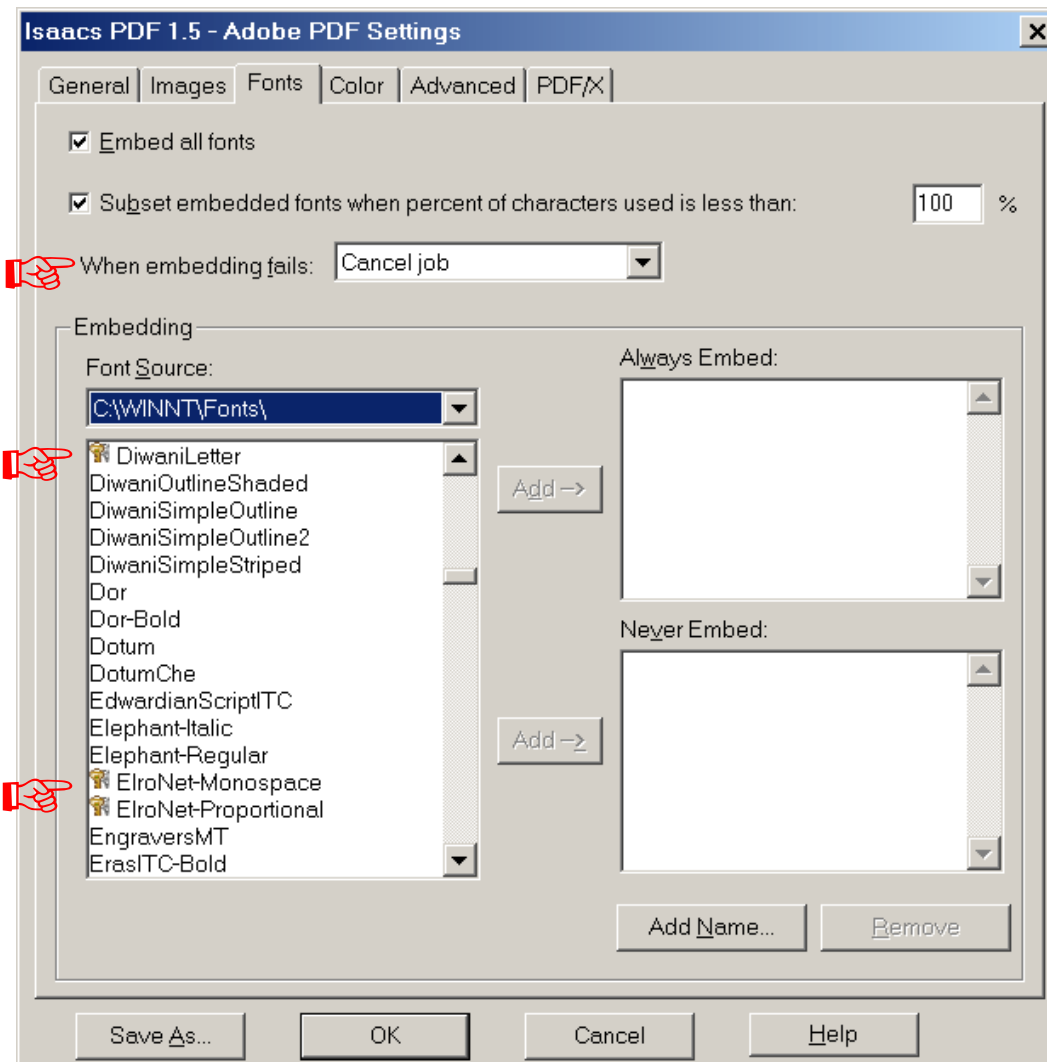
- Embedding Tab:** Shows 'Embeddability for this font' with 'Installable embedding allowed' selected. A red hand icon points to this option. Below, it lists 'Description of possible embedding settings' with three options: 'Installable embedding allowed', 'Editable embedding allowed', and 'Print & Preview embedding allowed'.
- Features Tab:** Shows 'Standard Features' and 'OpenType Features'. The 'OpenType Features' section is expanded, showing a tree structure: 'OpenType Layout Tables' > 'Arabic (arab) Script' > 'Default Language System' > 'Initial Forms (init) Feature', 'Medial Forms (medi) Feature', 'Terminal Forms (fina) Feature', and 'Standard Ligatures (liga) Feature'. A red hand icon points to the 'OpenType Features' section.
- License Tab:** Shows the 'License Description' and 'License Information URL'. The 'License Description' contains a 'NOTIFICATION OF LICENSE AGREEMENT' and two paragraphs of text. A red hand icon points to the 'License Information URL' field, which contains the link <http://www.monotype.com/html/type.license.html>.

Each dialog box has 'OK', 'Cancel', and 'Apply' buttons at the bottom.



PDF Generation & Workflow Pain Points

Fonts





PDF Generation & Workflow Pain Points

Fonts

- **Embeddability of fonts in PDF files:** *(continued)*
 - **End User License Agreement (EULA)**
 - Regardless of font format and/or any physical font embedding controls present or not present in a font, the actual embeddability of a font in a PDF file (or an application file, EPS file, or PostScript file) is ultimately an issue of rights granted by the governing EULA for the font in question
 - The EULA may also place other restrictions on you with regards to distribution of the file in which the font is embedded
 - Do not assume that converting text to outlines or raster removes EULA embedding restrictions



PDF Generation & Workflow Pain Points

Fonts

- **Text display and print quality problems**

- **Symptom:** Some but not all characters of particular fonts don't display or print

Cause: The font embedded (or not) in the PDF file was not the exact same font with which the original document was composed

- Failure to request embedding
- Embedding failure with *warn & continue* distillation option
- Multiple fonts with the same name
 - MacOS system fonts with font (but not file) names matching user-installed fonts from Adobe (and others)
 - User-modified font saved with same name as original font
 - Content from Windows system distilled under MacOS



PDF Generation & Workflow Pain Points

Fonts

- **Text display and print quality problems** *(continued)*

- **Symptom:** Blotchy, overly-thick looking text at some point sizes and magnifications; possible inability to search text or modify text with Acrobat touch-up tool

Cause: The text (a) is being rendered by an “unhinted” font *or* (b) was “converted to outlines” in the authoring program

- Poorly produced font, likely without any or little hinting data, (often from one of those *10,000 Fonts for \$10* CDRoms)
- Attempt to circumvent physical font embedding restrictions
- Misguided attempt to “avoid TrueType fonts”





PDF Generation & Workflow Pain Points



Fonts

- **Text display and print quality problems** *(continued)*
 - **Symptom:** A “rendering error” occurs while attempting to display text in Acrobat or a PostScript job error occurs while printing text using an embedded font
 - Cause:** The text is being formatted with an improperly / poorly-created font or overly complex font



Fonts

- **Text display and print quality problems** *(continued)*
 - **Symptom:** Text displays without problems on Acrobat but results in a PostScript error on some printers/RIPs
 - Cause:** The printer/RIP in question (a) is under-endowed in memory resources *or* (b) not in conformance with the *PostScript Language Reference* for language level 2 or 3 with regards to support for CID (double byte)-encoded fonts (CID-encoded font support not just support for Japanese, Chinese, and Korean text)
 - Easy to add memory
 - Some “emulations” of Adobe PostScript aren’t what they claim to be; attempt to get a free fix from vendor



PDF Generation & Workflow Pain Points

Fonts

■ Text display and print quality problems *(continued)*

- **Symptom:** Text looks very “tacky”

Cause: There is no accounting for poor taste!

345 Mishagoss Lane West Pork Chop, CA 95075		(408) 936-1212 hunckledinkle@mumble.org
Gustav Hunckledinkle		
Objective	<i>I wanna gud prophphesional posishun!</i>	
Experience	2000 – 2001 Glurbish Design Studio West Pork Chop, CA <i>Grafic Designer</i> ▪ Helped rite and layout many documents & pamflets. ▪ Layed off when customers went elsewhere.	
	1985 – 2000 <i>Acme Supply Company</i> <i>East Pork Chop, CA</i> Quality Manager ▪ PERSONALLY INSPECTED ALL STUPHPIH SHIPPED TO THE COYOTE.	
Education	1985 General Custer High School Surrender, WY ▪ Graduated Summa Cum Lowly.	
Interests	Fast cars and booze .	



PDF Generation & Workflow Pain Points

Fonts

- **Avoid “hacked fonts” via font editor programs**
 - Programs such as *FontLab* and *Fontographer* are great in skilled hands for creating and editing new fonts
 - **NOT** lossless editors and “converters” of existing fonts
 - Changes to metrics may alter line and page breaks
 - Possible changes to design (bezier vs quadratic curves)
 - Loss of kerning data & “hinting” data degrades quality
 - For custom characters and logos
 - Do not add or substitute characters into existing fonts
 - Commission special symbol font from type foundry
 - **NEVER**, repeat **NEVER** modify a commercial font and resave it with the same name!



PDF Generation & Workflow Pain Points



Fonts

- **Avoid “amateur hour” font production like the plague!**
 - Extensive knowledge & experience are required to use tools to produce quality fonts that interface properly with:
 - Latest versions of Windows and Macintosh operating systems
 - Application programs that directly control fonts
 - RIPs
 - Acrobat and ability to be embedded in PDF files
 - What looks OK on-screen at 72 dpi may fail or look terrible farther down in the workflow at 2400 dpi





PDF Generation & Workflow Pain Points

Fonts

- **Avoid TrueType fonts?**
 - An absolute **bubbemeiser** !
 - Based upon
 - Remaining partisans from the “font wars” of late 1980 and early 1990s who have not yet come out of their caves
 - *Mis*-information perpetuated ad-nauseum and accepted at face value by the gullible
 - Convenient excuse to turn away content originating in Microsoft Office and other “enterprise applications” from the great hoards of unwashed, graphics-unsavvy (*gasp*) Windows users!



versus





Fonts

- **Avoid TrueType fonts?** *(continued)*
 - TrueType is fully supported by:
 - All Adobe PostScript 3 printers/RIPs, recent-vintage Adobe PostScript Level 2 printers/RIPs, most “emulations” of PostScript via native support of Type 42 fonts
 - All current PostScript printer drivers and Adobe applications (*including support for TrueType for PostScript printers/RIPs that don't have native TrueType support*)
 - Adobe Acrobat (*likewise including support for TrueType for printers/RIPs that don't have native TrueType support*)
 - There are no intrinsic technical reasons to refuse to use fonts in TrueType format



Fonts

- **Avoid TrueType fonts?** *(continued)*
 - Fully tested by Adobe with the “gnarliest” commercial TrueType fonts such as:



- Converting TrueType to Type 1 or using *convert to outline* or *convert to raster* to eliminate TrueType may actually seriously degrade output quality and/or reliability!
- High quality TrueType fonts are available from many reputable font foundries



Fonts

- **And what about Multiple Master Type 1 fonts?**
 - Occasional reports of “problems” with Multiple Master fonts found to be “pilot error” or bugs in “emulations”
 - No new Multiple Master fonts; sales of existing Multiple Master font families have been discontinued
 - Continued support in PostScript, Adobe applications, and Acrobat/PDF (faux font mechanism based on Multiple Master technology)
 - Recommend no *new* use of Multiple Master fonts
 - Adobe Multiple Master font families replaced with OpenType font families with popular Multiple Master instances replaced by individual OpenType typefaces

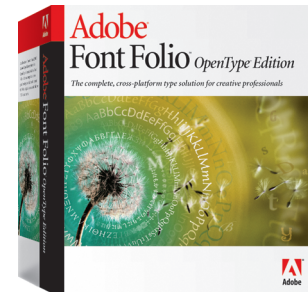


PDF Generation & Workflow Pain Points

Fonts

- **And OpenType fonts?**

- The entire Adobe Type Library in Type 1 format for Macintosh and Windows has been replaced by OpenType CFF fonts
- OpenType fonts are fully cross-platform compatible (same *exact* font file serves both Macintosh and Windows platforms)
- Other font foundries following suite with OpenType CFF or TrueType Open fonts
- Advanced OpenType formatting features supported by latest versions of Adobe InDesign, Illustrator, and Photoshop





PDF Generation & Workflow Pain Points

Fonts

- And OpenType fonts? (continued)
 - Particularly well-suited for international use; avoids “hacked” international character set fonts masquerading as Western Latin fonts

Серия Шиурим Фрэнкельуфер
№ 4а
ПАРШАТ ВА-ЙЕРА – ПЕРВАЯ ЧАСТЬ
Раввин Менахем Лайбтаг

Почему в Сефер Берешите так много «материала» там случайно живет Лот, племянник Авраама? В шиуре этой недели мы увидим, что Седом в Танах Иерусалима. Первая часть является повторением и вторая часть рассматривает ту же тему в нескольких

ВВЕДЕНИЕ
В двух последних шиурим мы обсудили вопрос о том избрал Авраама Авину, т. е. избрал, чтобы положить свое наследие к более близкой Богу жизни. Чтобы...

1

פרשת וירא (שיעורו של הרב מנחם ליבטאג בפ"ש המופיע באינטרנט)

ניסיונו של אברהם להציל את אנשי סדום משקף, אם כן, את אופיו ואת ייעודו.

בשיעורים הקודמים עסקנו בבחירתו של אברהם אבינו: בתכלית שלשמה נבחר- ייסוד עם שינחה את כלל האנושות לאמונה בה', ובהבטחות של זרע וארץ- המכשירים ההכרחיים לתכלית זו. בשיעורנו השבוע נלמד מהן התכונות הלאומיות העתידיות לאפיין את זרעו של אברהם, ואשר באמצעותן הוא עתיד למלא את ייעודו.

פרשיה ארוכה במיוחד

עיון בתנ"ך בעל חלוקה לפרשיות מעלה כי חלק נכבד מאוד של פרשתנו- מפרק י"ח פס' א' ועד פרק י"ט פס' ל"ח- מהווה פרשיה ארוכה אחת, המכילה שני נושאים: (1) הבשורה על הולדת יצחק. (2) סיפור הפיכת סדום והצלתו של לוט.

כיוון שהתורה כוללת את שני הנושאים הללו בפרשיה

باكستان: قوات طالبان ليست ارامية

اعلن الناطق باسم وزارة الخارجية الباكستانية رياض محمد خان الاثنين ان باكستان لا تعتبر مسؤولي حركة طالبان الحاكمة في كابول "ارهابيين". وقال خلال مؤتمر صحفي قبل وصول وزير الخارجية الاميركي كولن باول الى اسلام اباد ان "قوات طالبان ليست ارامية، ولم نعتبرهم ابدا ارهابيين". وقد صرحت باكستان منذ عدة ايام على لسان وزير خارجيتها عبد الستار ان الشعب الافغاني بات "رهينة" بين يدي "مجموعة صغيرة من الغرباء" حيث انها ابتعدت مؤخرا عن طالبان بعد ان اوصلتهم الى الحكم عام 1996. كما رأى عبد الستار ان اعتقال اسامة بن لادن وقادته في تيار "القاعدة" العربي المتطرف يفترض ان يشكل نهاية العمليات العسكرية في افغانستان. مقال خاتم: المجلات المتحدة اوضحت ان اهدافها هي "الارهابيين".

Each of these samples is composed in Arial (as supplied with Windows).

- Further information: <http://www.adobe.com/type/opentype/main>.



PDF Generation & Workflow Pain Points

Fonts

- **Font Pain Point “take aways”**
 - Choice of fonts should be based on:
 - Aesthetics / appropriateness of font design to proposed use
 - Quality of font production including adherence to standards (such as encoding and character sets)
 - Licensing terms – read the [End User License Agreement \(EULA\)](#) and go elsewhere if you don't like the terms
 - Avoid *convert to outline* or *convert to raster* operations
 - Avoid *converted*, *hacked*, and *amateur hour* fonts
 - Always embed fonts in PDF files
 - Printers/RIPs must be fully compliant with the PostScript language specification; upgrade those that aren't



PDF Generation & Workflow Pain Points

Color

- **The Complaint:**

The colors are “wrong!”

The colors I choose and see in my illustration / image / document layout program are not the colors that show up in Acrobat.

And of course what proofs and what prints also differ from each other and from what I see in any of the screen previews.



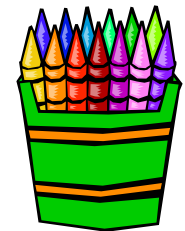
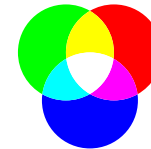


PDF Generation & Workflow Pain Points

Color

- Furthermore:

- Bewildering array of CMYK, RGB, and “spot color” options
- And *color management* is even worse! Each vendor has their own system; the results all differ from each other and are all wrong!
- 100% black prints muddy with colors underneath the black; white areas are off-white – what gives?





PDF Generation & Workflow Pain Points



Color

- As a result, for many professionals, “color by the numbers” rules and

 ***It's a CMYK World After All ...*** 



PDF Generation & Workflow Pain Points

Color

- **What's behind these problems?**
 - Each rendering device has its own color characteristics
 - Color is both objective and very subjective
 - Conflicting proprietary color management implementations, all allegedly based on international standards
(some standards are more standard than others)
 - Consistent and reliable color requires
 - Strict control & discipline in content creation, acquisition, editing, and management throughout the workflow
 - Consistent user training – content creators, prepress service providers, and printers



PDF Generation & Workflow Pain Points

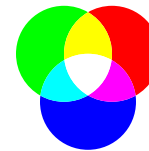
Color

- CMYK versus RGB

- **RGB? RGB!**

We don't print no stinkin' RGB!

Many printers, especially traditional offset printers, absolutely refuse to accept content with RGB color



- Another **hubbemeiser?** Well, you decide ...

- Underlying PostScript RIP technology provides automatic conversions between RGB and CMYK, the quality of which is often vendor and implementation specific
 - Some added-value, third-party PostScript, EPS, and PDF preprocessing programs lack any support for RGB
 - Often easier to say “no” than to deal with the problems



PDF Generation & Workflow Pain Points

Color



- **CMYK versus RGB** *(continued)*
 - On the other hand ...
 - Digital photography images are all ICC color-managed RGB
 - All output from “enterprise software” (including all Microsoft Office components on both Windows and Macintosh) is RGB
 - Premature conversions of colorspace limits flexibility to “view and print everywhere”
 - Clip color gamut to typical offset printing CMYK yielding dull color for screen display
 - Preclude ability to automatically take advantage of high-fidelity printing techniques (extra inks or toners for added gamut)





PDF Generation & Workflow Pain Points

Color

- CMYK versus RGB (*continued*)
- For example ...



Original image in Adobe RGB (1998) colorspace

Both images © 2003 Dov Isaacs



Same image converted in Photoshop to
U.S. Web Coated (SWOP) v2 colorspace (CMYK)



PDF Generation & Workflow Pain Points

Color

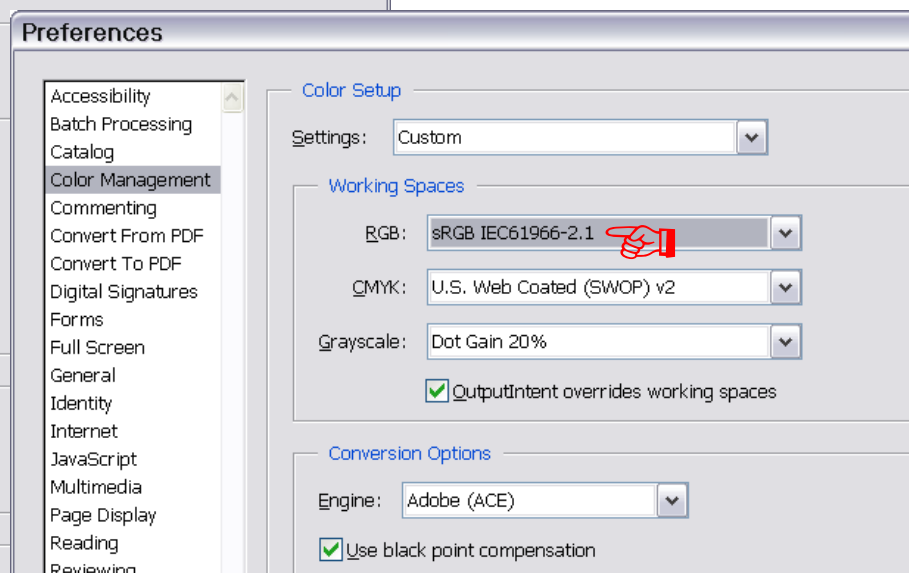
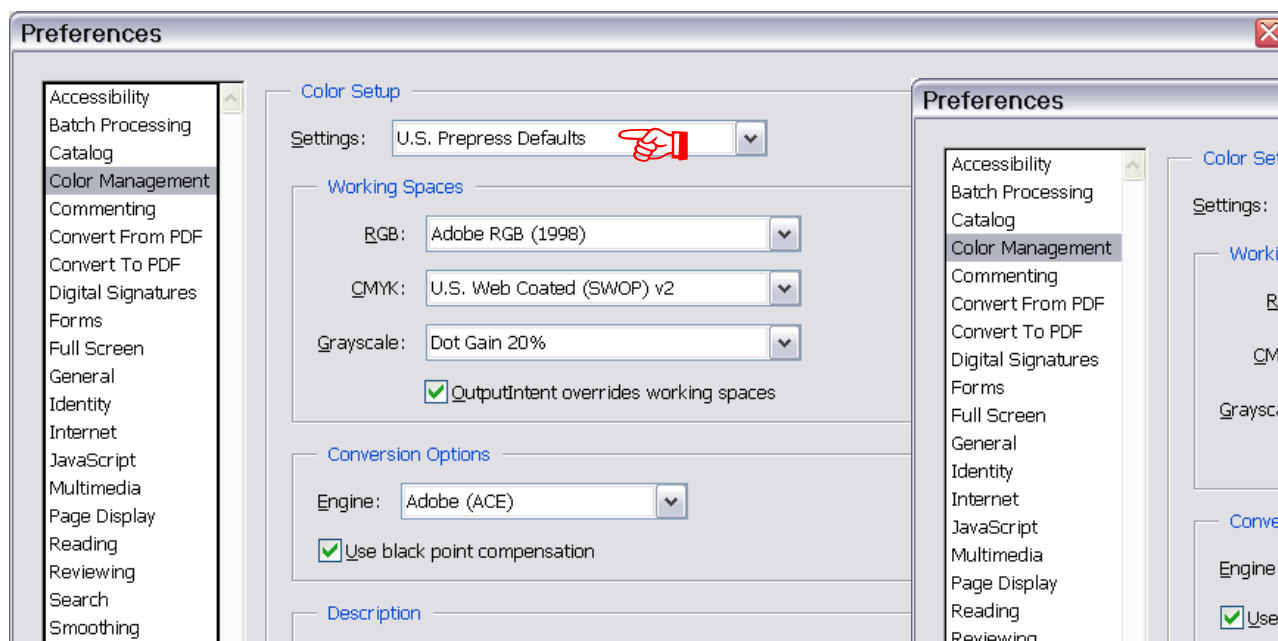
- **CMYK versus RGB** *(continued)*
 - Easy workarounds and solutions ...
 - Windows PostScript driver options
Convert Gray Text to PostScript Gray and
Convert Gray Graphics to PostScript Gray
now defaulted to *Yes* with Acrobat 6
 - Third party PostScript pre-processors for Distiller (such as *Preflight2000 Colour Chameleon* from Grafikhuset) and plug-ins for Acrobat (*Enfocus PitStop Professional* and *Quite a Box of Tricks*) – “do the job” but limit your options
 - Acrobat’s built-in color management does a very respectable job of displaying and printing “untagged” composite-color PDF files with both CMYK and RGB color



PDF Generation & Workflow Pain Points

Color

- **CMYK versus RGB** (*continued*)
 - Acrobat Color Management
 - Setup color management preferences in Acrobat
 - Settings of *U.S. Prepress Defaults* generally yield best results
 - May need to modify RGB Working Space to sRGB

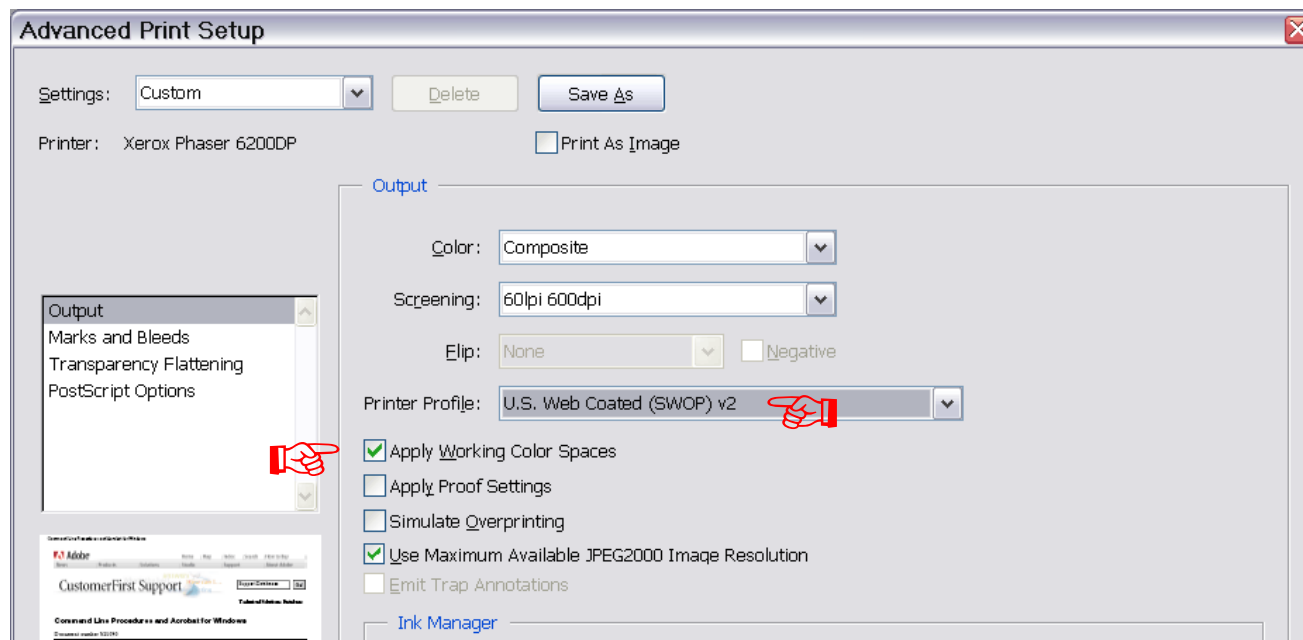




PDF Generation & Workflow Pain Points

Color

- **CMYK versus RGB** *(continued)*
 - Acrobat Color Management
 - Access *Advanced Printer Setup* (*Advanced* button from *Print*) to use same printer profile as *CMYK working space* and enable *Apply Working Color Spaces* option





PDF Generation & Workflow Pain Points

Color

- **CMYK versus RGB** *(continued)*
 - Acrobat Color Management
 - Result is device CMYK and spot color PostScript; no RGB!
 - The *U.S. Web Coated (SWOP) v2* printer profile will quite often yield as good or better results than printer-specific profiles for common composite color laser printers
 - Depending upon the specific printer model (or printer driver), the *Same as Source (No Color Management)* or the *Printer/PostScript Color Management* printer profile may yield best results – experimentation may be helpful here!



PDF Generation & Workflow Pain Points

Color

- **Indexed color**

- Compact and efficient image format for representing CMYK or RGB for images that have no more than 256 distinct hues
 - Well-suited to “screen shots” and similar images
 - Upwards of 60% to 70% storage savings
- Integral part of the *original* PostScript and PDF specs
- For rendering purposes, rendered by PostScript and Acrobat identically to corresponding non-indexed CMYK and RGB images
- No rational reason for rejecting indexed images assuming that no color loss occurred in indexing



PDF Generation & Workflow Pain Points

Color

- **Color Pain Point “take aways”**
 - Your PDF color choices are:
 - Device-dependent CMYK (+spot) color PDF with limited ability to repurpose content
 - Color-managed (explicit or implicit), possibly mixed colorspace, PDF with enhanced content repurposability
 - There are reliable and consistent means of performing late-stage color transformation for the target device
 - Although it is expedient to mandate device CMYK PDF files, remember that neither the *creative professional* nor the *enterprise worker* in the general case are in nearly as good a position as a *print professional* to “properly” convert colors for the printing environment!



Images

- Images are graphical objects represented by raster data – the *most flexible* and the *least flexible* format
 - All graphics can be and ultimately are represented in image format – “edit” can be at the pixel level – the *lowest* level of abstraction for graphics
 - Potential data loss and graphic display quality degradation under transformations:
 - Lossy compressions
 - Scaling
 - Downsampling – data loss
 - Interpolation – quality loss
 - Rotations at other than 90° increments yield resampling



PDF Generation & Workflow Pain Points

Images

- **Image quality loss due to compression**
 - Some image formats are “lossy”
 - Detail loss
 - Color loss
 - “Artifacts”
 - Lossless image formats
 - Uncompressed TIFF
 - LZW or ZIP-compressed TIFF
 - JPEG 2000 Lossless (Acrobat 6)
 - Photoshop PSD
 - BMP, PNG, etc.



PDF Generation & Workflow Pain Points

Images

- **Image quality loss due to compression** *(continued)*
 - Lossy image formats
 - All JPEG files
 - JPEG-compressed TIFF
 - JPEG 2000 except “lossless” mode
 - GIF and 4-bit ZIP *iff* colors are lost in conversion
 - Higher compression (lower quality) settings increase lossiness
 - Cascaded cycles of lossy compression, decompression, and lossy recompression of a single image yield increased lossiness and with JPEG, image artifacts



PDF Generation & Workflow Pain Points

Images

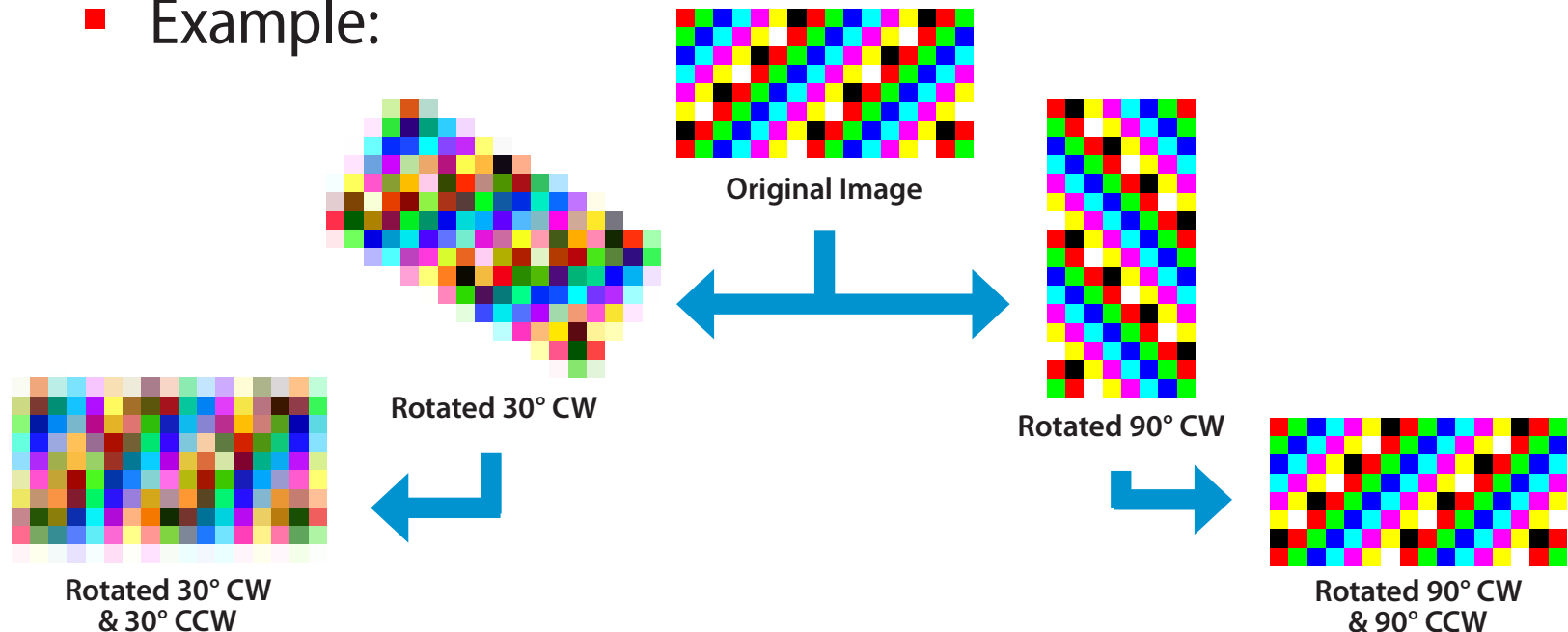
- **Image quality loss due to compression** *(continued)*
 - Recommendations:
 - While “working on” images, always use lossless format
 - For final images, use Distiller image joboptions:
 - Acrobat 5 and earlier
 - *Automatic / Maximum Quality*
 - Acrobat 6, PDF 1.4 or 1.3 compatibility
 - *Automatic (JPEG) / Maximum Quality*
 - Acrobat 6, PDF 1.5, “normal usage”
 - *Automatic (JPEG2000) / Maximum Quality*
 - Acrobat 6, PDF 1.5, “critical applications”
 - *Automatic (JPEG2000) / Lossless Quality*



PDF Generation & Workflow Pain Points

Images

- Image rotations at other than 90° increments yield resampling
 - Avoid finalizing non-90° image rotations (such as via Photoshop) prior to final screen/prINTER rendering
 - Example:





PDF Generation & Workflow Pain Points

Images

- **Image resolution**

- ALL images in PostScript and PDF must be at a resolution commensurate with the needs of the final printing device
 - an absolute **bubbe-meiser!**
- Images should be at a resolution appropriate to the need to maintain content detail
- Image downsampling is inherently “lossy” in that image data in the discarded pixels can not be recovered later if the image must be interpolated to a higher resolution





PDF Generation & Workflow Pain Points

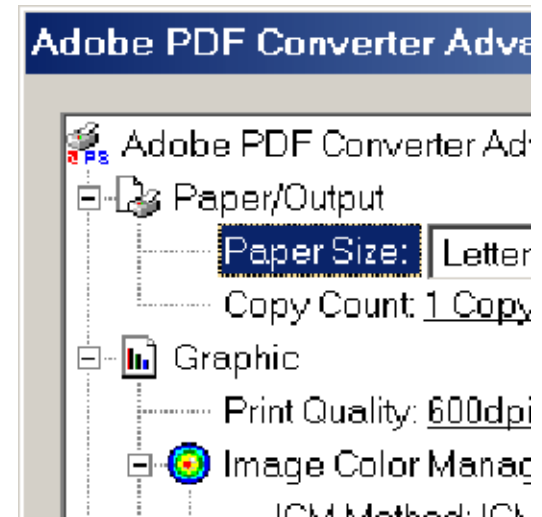
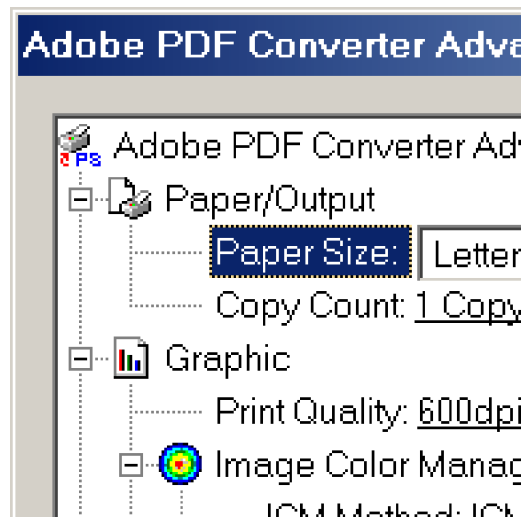
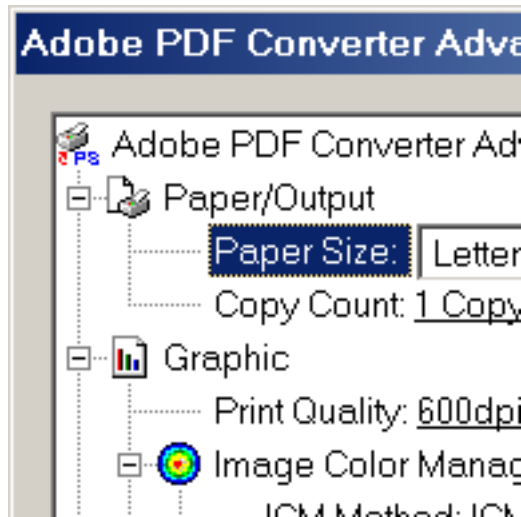
Images

- **Image resolution** *(continued)*

- Upsampling (interpolation) of an image prior to rendering doesn't add detail or improve printing
 - may result in loss of detail in subsequent resampling

- **Example:**

Original @ 72 dpi, Upsampled to 425 dpi, Downsampled to 150 dpi



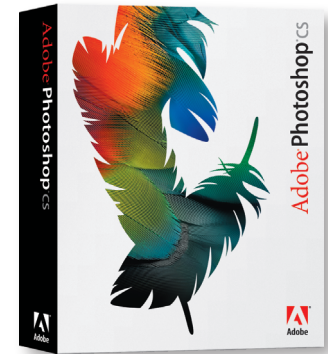


PDF Generation & Workflow Pain Points

Images



- **Judicious use of Photoshop maintains content at the highest level of abstraction throughout your PDF workflow**
 - For polygons, use *shape layers*
 - Keep text *live* as long as possible
 - Use output formats (& options) that preserve scalability
 - **EPS:** Polygons in *shape layers* yield vector PostScript
 - **PDF:** *Live text* yields scalable text PDF via fonts and polygons in *shape layers* yield vector PostScript
 - The *image interpolation* option for EPS and PDF can mitigate low-resolution image data issues
 - Example:





PDF Generation & Workflow Pain Points

Images



Photoshop 7 PDF
108 x 126 pixels (72 dpi)
Image Data Only



Saved with "live text"
(fonts used for text & embedded)



Saved with "live text"
(fonts used for text & embedded)
+ "Image Interpolation" option



PDF Generation & Workflow Pain Points

Images

- Case study of what can and often does “go wrong”
 - Original artwork – totally text and vector (examples at 200% for screen visibility):

The Acme Supply Company

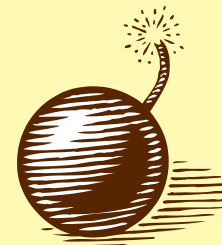
Purveyors of Defective Products to Coyotes Since 1840
Your Absolute Dissatisfaction Guaranteed!

7 Blowaway Path – Monumental Mistake Valley, Arizona



Ima Goniff,
President & General Manager

Lotta Schlock,
Quality Control Manager





PDF Generation & Workflow Pain Points

Images

- Case study of what can and often does “go wrong”
(continued)
- Converted from text and vector to 600dpi image:

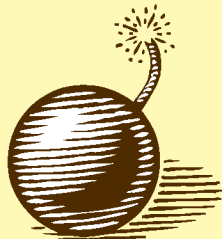
The Acme Supply Company

Purveyors of Defective Products to Coyotes Since 1840
Your Absolute Dissatisfaction Guaranteed!

7 Blowaway Path – Monumental Mistake Valley, Arizona

Ima Goniff,
President & General Manager

Lotta Schlock,
Quality Control Manager

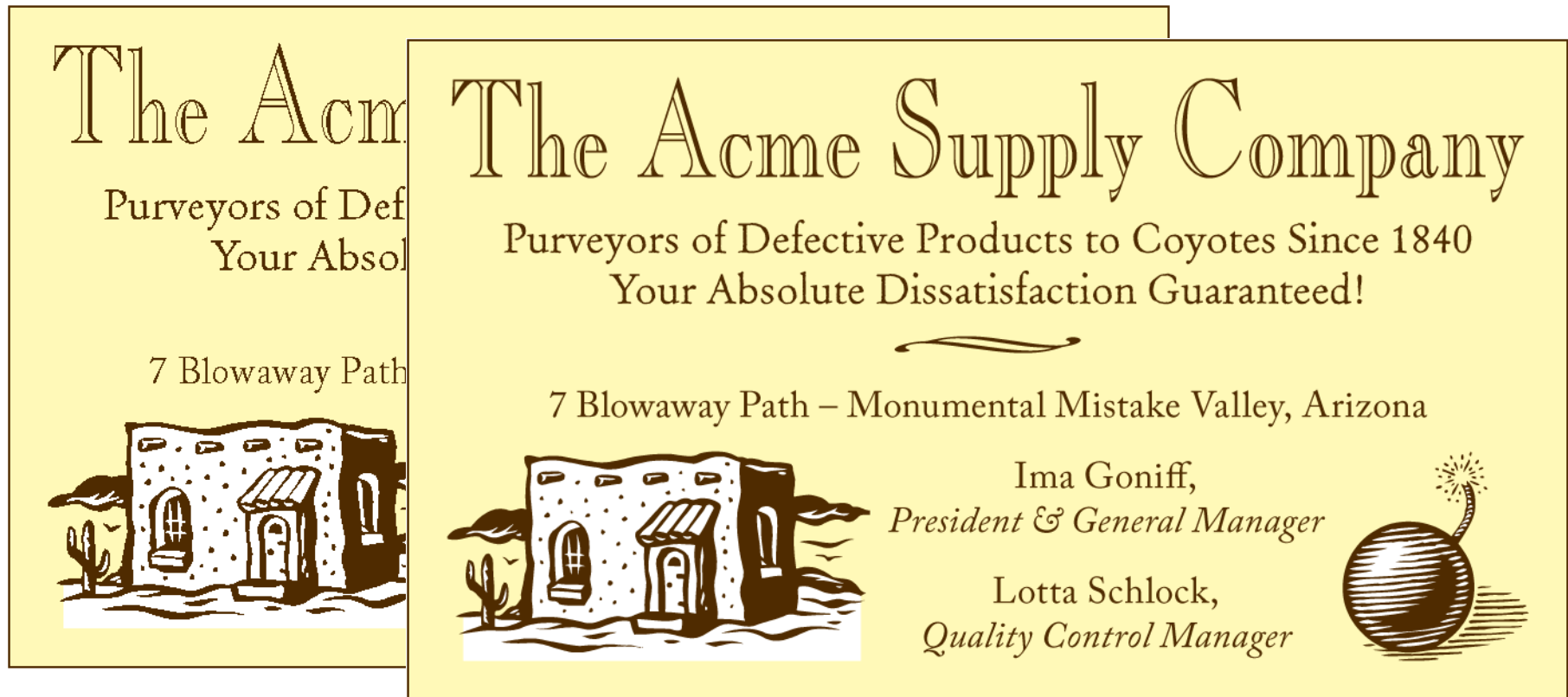




PDF Generation & Workflow Pain Points

Images

- Case study of what can and often does “go wrong”
(continued)
- ... to 300dpi image – “straight” and “anti-aliased” text:





PDF Generation & Workflow Pain Points

Images

- Case study of what can and often does “go wrong”
(continued)
- ... to 150dpi image, anti-aliased text, TIFF format:





PDF Generation & Workflow Pain Points

Images

- Case study of what can and often does “go wrong”
(continued)
- ... to 150dpi image, anti-aliased text, JPEG-compressed:





PDF Generation & Workflow Pain Points

Images

■ Specific recommendations

- Retrieve and use *original artwork* in lieu of grabbing images dumbbed-down for web site use
- Scan photographic images at reasonable resolutions
 - Scanner support for 2400 dpi doesn't mean that an 8"x10" photo should be scanned at 2400 dpi unless significant magnification and/or cropping is required
 - Consider downsampling before saving image
- Save as EPS format image if exact color must be passed through to Distiller from GDI applications (due to Windows RGB imaging model)



PDF Generation & Workflow Pain Points

Images

- **Specific recommendations** *(continued)*
 - Screen shots (and other *simple* image graphics)
 - Do **not** interpolate to higher resolutions or otherwise resample!
 - Extra image data is bloat carried through the workflow and into the PDF file
 - No quality improvement achieved; can and will result in poorer image display and printing
 - If PDF files are to be displayed in Acrobat or Acrobat Reader versions of 5 or earlier, use the *image interpolation* option when saving from Photoshop as EPS or PDF or use the “cheap *prologue.ps* trick”



PDF Generation & Workflow Pain Points

Images

- **Specific recommendations** *(continued)*
 - The “cheap *prologue.ps* trick” may be used to force the high quality image interpolation option “on” for all images created by distillation (*especially recommended for PDF files to be viewed under Acrobat or Acrobat Reader version 5 or earlier*):

```
% Redefine image operator to set Interpolate to true unconditionally.  
/image {  
    dup type /dicttype eq {  
        dup /Interpolate true put}  
    if  
    //image}  
bind def
```



PDF Generation & Workflow Pain Points

Images

- **Specific recommendations** *(continued)*
 - Consider 8-bit Indexed RGB or CMYK color if less than 256 distinct hues in image *(with savings of up to 60% or 70% of file size)*
 - Cardinal rule: ***Postpone image transformations as much as possible to later phases in the workflow***
 - Avoid lossy data compression (such as JPEG for photographic images) until creation of final PDF file
 - Avoid color transformations, resampling, or normalizing image rotation until display or print time
 - Avoid conversions and flattening in Photoshop for shapes and text; use EPS or preferably PDF for export



PDF Generation & Workflow Pain Points

Transparency

- *Transparency* is actually the *opacity* attribute of a graphic object
 - 100% opacity is a solid color; items underneath do not “show through”
 - 0% opacity is totally clear (i.e., 100% transparent); items underneath show through completely
 - Provides support for various blending modes as well



PDF Generation & Workflow Pain Points

Transparency

- **Adobe application support for transparency in:**
 - Photoshop
 - Illustrator 9.0 and later
 - InDesign 2.0 and later
 - Acrobat 5.0 and later
- **Transparency without explicit requests for it:**
 - Drop shadows
 - Feathering



PDF Generation & Workflow Pain Points



Transparency

- PDF 1.4's transparency feature via Illustrator 9, Acrobat 5, and InDesign 2 introduced a major change in Adobe's imaging model
 - For the first time, the imaging model used by Adobe applications and PDF exceeded the imaging model of Adobe PostScript in any significant manner
 - PostScript was *not* updated to accommodate transparency
 - A technique known as "flattening" was introduced to reconcile the transparency model of PDF 1.4 with the all-objects-are-100%-opaque model of PostScript



PDF Generation & Workflow Pain Points

Transparency

- **How does transparency flattening work?** *(simple version)*
 - Pages without any objects with opacity other than 100% or 0% are printed normally
 - Items with opacity other than 100%, but not overlaying any other objects are converted to opaque objects with color adjusted per opacity value
 - Non-opaque text or vector items overlaying any text or vector items results in decomposition of the intersection area into “equivalent” opaque vector items
 - Non-opaque items overlaying any raster image items results in decomposition of the intersection area into “equivalent” opaque raster image items



PDF Generation & Workflow Pain Points

Transparency

- **Results of flattening**

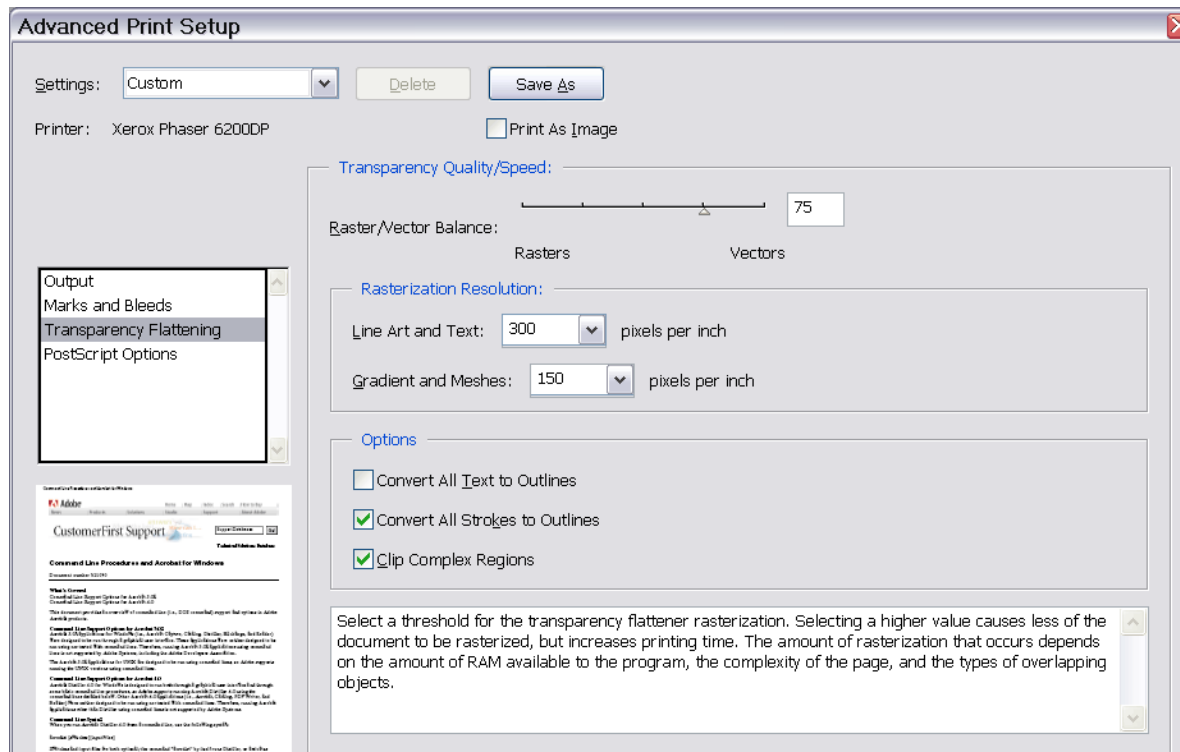
- Highly dependent upon
 - Complexity of content
 - “Correct” specification of flattening parameters by user
 - assumes knowledge of characteristics of target device
- Resultant flattened PostScript or PDF (if creating PDF 1.3 from transparent content) is *highly device dependent*
 - PDF text or object touch-up difficult or impossible
 - PDF search and annotation often disabled for text
- Flattener quality greatly improved with Illustrator 10, InDesign 2, and Acrobat 5.0.5; it is further significantly improved with Acrobat 6, Illustrator CS, and InDesign CS



PDF Generation & Workflow Pain Points

Transparency

- **Setting flattening controls within Acrobat 6**
Access Advanced Printer Setup (Advanced button from print) to set transparency flattening controls





PDF Generation & Workflow Pain Points

Transparency

- **Specific recommendations**

- Advise graphic designers
 - Use transparency judiciously, not just because it is there!
 - Avoid non-opaque text overlaying image data unless really necessary and then, only with larger pointsizes
 - Avoid transparency interactions between objects with process color and spot colors
 - Properly set “vector effect” options (especially *resolution*) in Adobe Illustrator to avoid pixelated output
 - Explicitly set spot color definitions to process color if content is not really going to be printed with spot inks
- Avoid creating pre-flattened, device-dependent PDF from content with transparency



PDF Generation & Workflow Pain Points

Transparency

- **Specific recommendations** *(continued)*
 - Carefully select Acrobat transparency printing controls
 - Higher percent vector as opposed to image generally gives better results
 - The rasterization resolutions should reflect the target print device to avoid pixelation of flattened text and vector graphics
 - Although it is expedient to mandate transparency-flattened PDF files, remember that the *creative professional* in the general case is not in nearly as good a position as a *print professional* to “properly” flatten transparency for the specific printing environment!
 - Stay tuned ...



PDF Generation & Workflow Pain Points

Other Graphics Issues

- **Gradients, blends, fountain fills**
 - Choose object type carefully
(Adobe Illustrator – *blends* never generate PostScript 3 / PDF smooth-shaded gradients, Illustrator *gradients* do)
 - Choose export format carefully
 - PDF 1.3 and above retain smooth-shaded gradients
 - PostScript 3 / EPS with language level 3 required to retain smooth-shaded gradients
 - All other formats decompose gradients



PDF Generation & Workflow Pain Points

Other Graphics Issues

- **Beware of vector artwork from CAD programs**
 - AutoCAD and others output PostScript of the form:
`0 setlinewidth`
resulting in stroked lines that are minimal width renderable, i.e., one pixel in width, regardless of device
 - Workarounds:
 - Brute Force – Import and edit in “draw” program before importing into target document
 - Simple – Download and install the free Creo Distiller Assistant from Creo’s web site



PDF Generation & Workflow Pain Points

Other Graphics Issues

■ Imposition

- Mapping of *logical pages* from the authoring / page layout application to *physical pages* / plates / etc.
- Best *not* done in the authoring / page layout application to allow for flexibility and repurposing
- High quality third-party Acrobat plug-ins available for imposition functions



PDF/X Standards

- Introduction
- Guiding Principles
- PDF File Creation
- PDF Generation & Workflow Pain Points
- **PDF/X Standards**
- Q&A



PDF/X Standards

What is PDF/X?



- File standards that defines subsets of PDF designed specifically for “reliable prepress data exchange” – the **X** in PDF/X is for “eXchange”
- Application standards that defines how applications creating and reading PDF/X files should behave
- Standards developed by CGATS (Committee for Graphic Arts Technical Standards) for ANSI (American National Standards Institute) and subsequently approved by ISO (International Standards Organization)



PDF/X Standards

Current PDF/X Variants

- **PDF/X-1a – full document exchange**
 - Device CMYK device and spot color only
 - Most recent version based upon PDF 1.4 minus transparency
- **PDF/X-3 – full document exchange**
 - ICC-color management and spot color only
 - Most recent version based upon PDF 1.4 minus transparency
- **PDF/X-2 – partial document exchange**
 - Support for OPI (Open Prepress Interchange)
 - Standard still under development



PDF/X Standards

Current PDF/X Variants

■ **PDF/X Plus**

- Variants (i.e., subsets) of PDF/X-1a:2001 and PDF/X-3:2002 supported by The Ghent PDF Workgroup in Europe with “certification” support from EnFocus
- Specific standards based on target print environment (newspapers, magazines, high resolution press, etc.)
- Severe restrictions on some resources based on perceived “safety” (font types, minimum image resolution, page counts, text point size minimums, etc.)
- Forced adherence to some of these standards and restrictions as well as printer-specific restrictions can and does lead to degraded printed output quality



PDF/X Standards

Current State of PDF/X Acceptance

- Subsets of PDF/X-1a are a requirement for advertisement submission to increasing numbers of publications (especially magazines)
- Many professional printers view PDF/X as a panacea for elimination of prepress problems when PDF files are submitted in lieu of original artwork
- PDF/X-3 variants appear to have more traction in Europe



PDF/X Standards

Some Reality

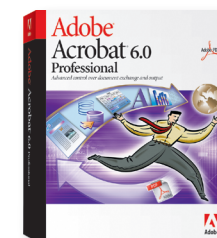
- PDF/X (and variants) only guarantee that the PDF files have been created according to certain rules and avoiding certain constructs, i.e. ***consistency***
- PDF/X does ***not*** guarantee high quality or correct printed results
- Based upon current PDF/X standards, in the general case, PDF/X files are ***device-dependent*** and ***are not repurposeable***
- Future PDF/X-3 standards, with closer adherence to current Adobe PDF versions, will better yield PDF files that view, print, and render everywhere and anywhere

Colophon

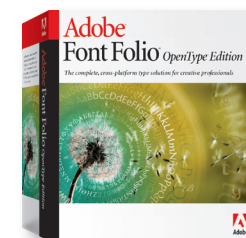
PDF 1.5 (*live transparency, managed color, JPEG 2000 image compression*) exported directly from Adobe InDesign CS



Adobe Acrobat 6 Professional



Adobe OpenType Fonts





Q&A

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