Acrobat 5.0 (PDF Version 1.4)

In April, 2001 Adobe began shipment of Acrobat 5.0, an upgrade that primarily provides new features for document sharing and collaboration; and secondarily, for digital prepress and publishing production.

Acrobat 5.0 incorporates a feature set that squarely addresses the needs of corporate users. This is a vast population of document creators, editors, contributors, collaborators, and signatories who produce far more documents than are channeled through the formal publishing process. This group is far greater in number than the graphic media professionals who produce all of the various forms of digital publishing, and is therefore a more attractive marketing target for Adobe.[1]

Research conducted by Adobe found that a majority of Acrobat users also use Microsoft Word, and that they find Word's interface to be the preferred design for a graphic user interface (GUI). Adobe therefore redesigned Acrobat's user interface to make it more like Word (FIG. 1).

In order to address the document needs of the corporate market, Adobe has improved Acrobat in several ways. These include:
- Offering versions of the software that are refined for deployment in large work groups. IT professionals can install Acrobat on thousands of desktop computers using network installation tools. The installations can be customized to suit the needs and preferences of individuals or groups of users. In addition, installations can be locked-down so that users do not have full administrator privileges.

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[1]*According to Bill Lennan, a WR Hambrecht analyst, only about 15% of the revenue realized through Acrobat sales is derived from corporate sales. This makes the corporate market one that is particularly attractive, since it is so potentially profitable.*
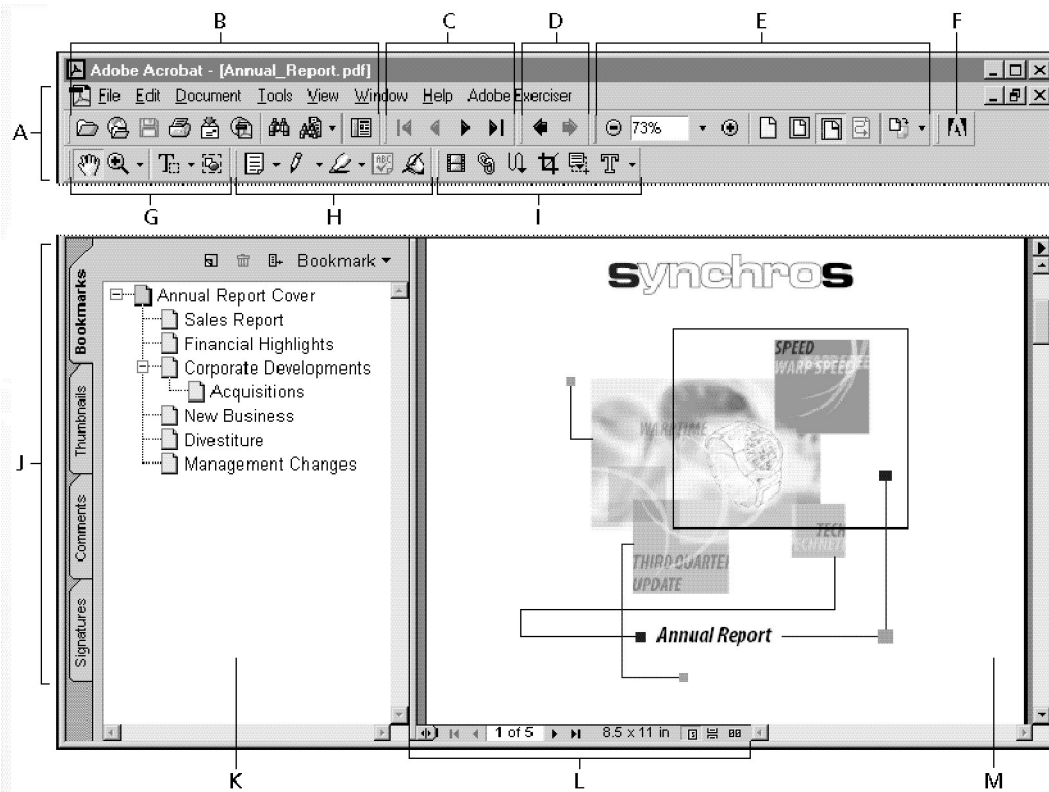Barnes, Cecily. "New Acrobat does Flips for Corporations." *CNET News.com* March 12, 2001.

FIG. 1: The Acrobat 5.0 user interface is similar in layout to that used in Microsoft Word. (A. Menu bar; B. File toolbar; C. Navigation toolbar ; D. View history toolbar; E. Viewing toolbar; F. Adobe Online button; G. Basic Tool toolbar; H. Commenting toolbar; I. Editing toolbar ; J. Tab palettes; K. Navigation pane; L. Status bar; M. Document pane.) (Screen image courtesy of Adobe Systems Inc.)

- Extending the encryption level from 40-bit, introduced in Acrobat 4.0, to 128-bit.[2]
- Improving the compatibility of the digital signature technology so that it can be supported by a greater number of third-party security providers.
- Endowing the Acrobat plug-in for Web browsers with an enhanced set of tools that permits greater functionality, including document mark-up and improved collaboration (FIG. 2).
- Supporting the industry-standard protocol WebDistributed Authoring and Versioning (WebDAV) for Macintosh and Windows which makes it possible for Acrobat users to simultaneously view PDF documents with comments.

Tagged PDF. *Fidelity of appearance* is the hallmark of Acrobat files. Acrobat PDF files look just like the application files from which they are derived. Acrobat 5.0 extends the duplication

[2]*PDF files set with 40-bit encryption can be opened with earlier versions of Acrobat.*

of documents from the *appearance level* to the *structural level.* It does so by capturing any assigned MS Word Styles which tag document elements in meaningful structural ways. Tagged structure is important for several reasons, not the least of which is that it can show the proper order of, and the relative importance of, document elements. In addition, tagged PDFs can be reflowed so that enlarged page contents do not need to be horizontally scrolled.

Prior to version 5.0, all structural components had to be added to a PDF after it was created. This was accomplished with the use of tools such as thumbnails, bookmarks, and articles.

One of the Acrobat 5.0 feature sets that relies on the structural composition of a PDF is the accessibility functions that address the special needs of those with vision-related disabilities. The understanding of document structure makes it easier for screen readers for the blind and visually impaired[3] to follow the intended flow of page elements, and therefore produce a more
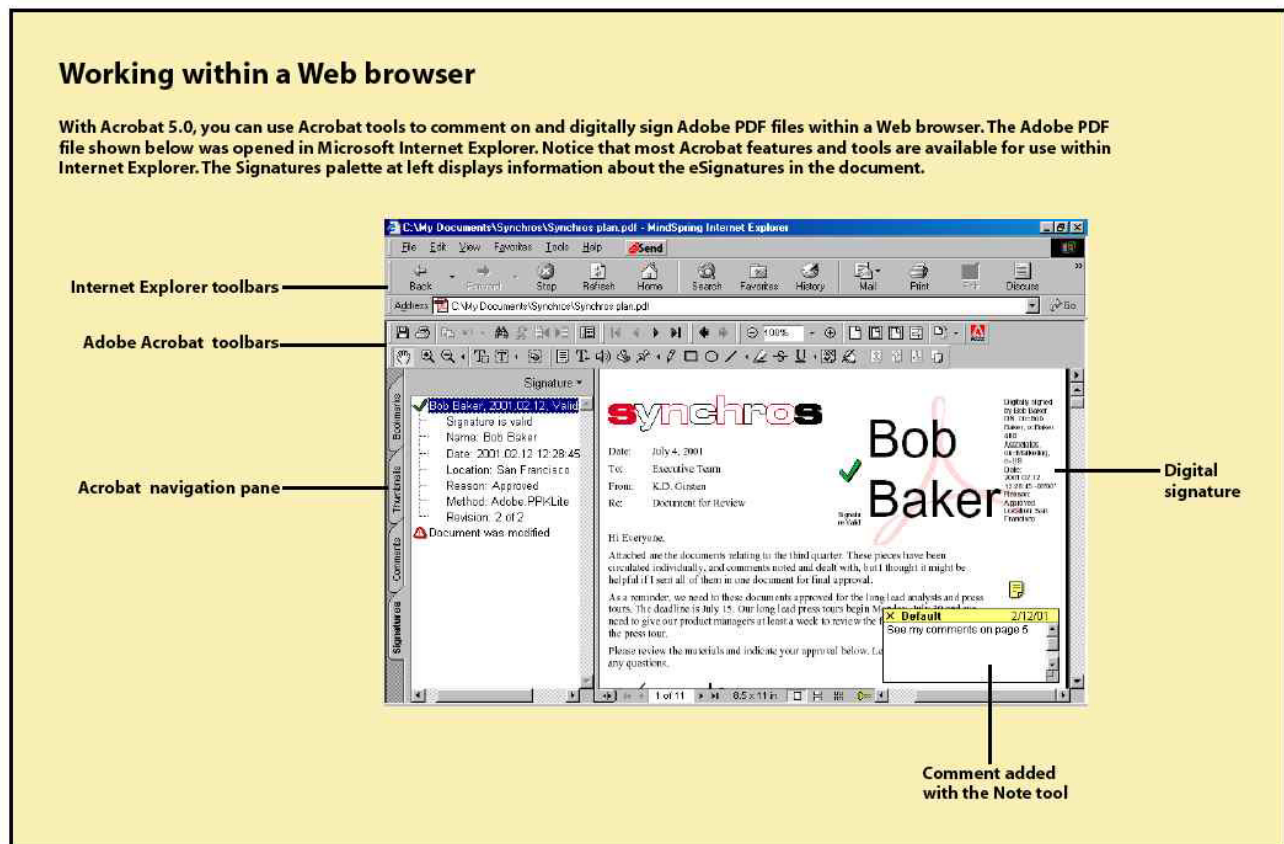

FIG. 2: Improvements in Acrobat 5.0 empower PDF users to review and mark-up documents directly in their Web browser. (Image courtesy of Adobe Systems Inc.)

accurate, audible interpretation of each page.

In addition to speaking pages, the on-screen display can be set to "high contrast" to improve its visibility for low-vision readers (FIG. 3). Users can set the colors for the text and the background independently, and can use keyboard shortcuts to control certain Acrobat functions.
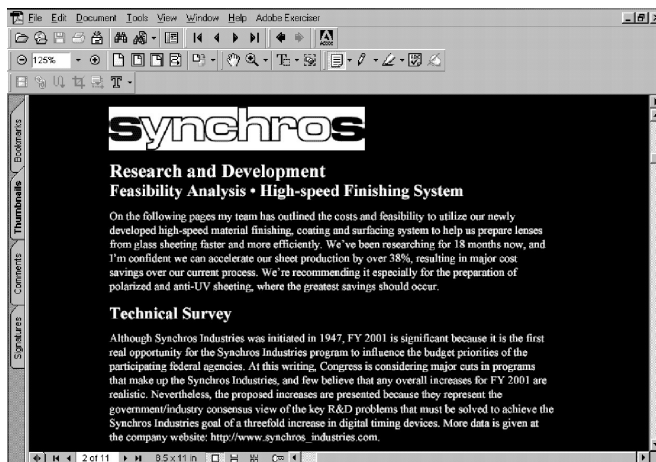

FIG. 3: Colors for the text and background can be reversed, or set to any colors that are preferred by the viewer. (Image capture courtesy of Adobe Systems Inc.)

Structural Elements. Acrobat 5.0 both maintains PDF files for deployment through other channels, and supports the re-use of all or certain selected elements of a document.

Text can be exported as a Rich Text Format (RTF) file[4] and opened and edited directly in Microsoft Word, or any other application that accepts RTF format files, such as most page layout programs. RTF is a standard file format that maintains common formatting features, such as text style, on Macintosh and Windows computers.

Individual graphics, or the entire complement of a PDF document's graphics, can be extracted and saved in JPEG, TIFF, or PNG file formats (FIG. 4). The images can then be opened in any compatible program for reuse or editing. In addition, individual PDF pages, or entire PDF files, can be exported as JPEG, TIFF, or PNG image files. In either case, the software outputs each page as a separate graphic image. The
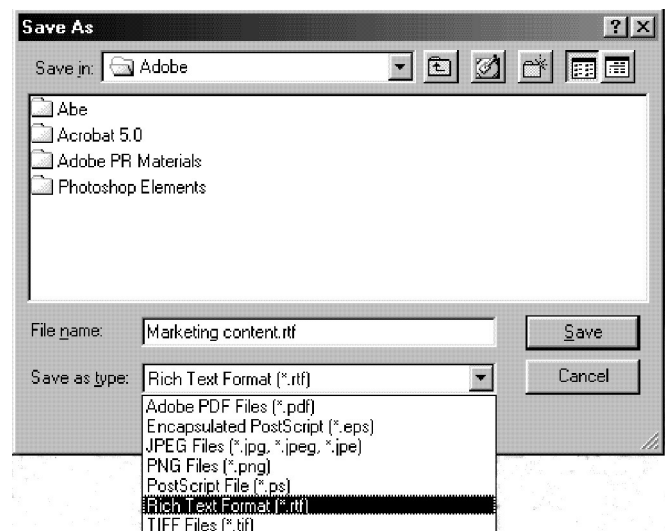
FIG. 4: Acrobat documents can be saved in a wide variety of file formats, including several image-based formats. (Screen capture courtesy of Adobe Systems, Inc.)
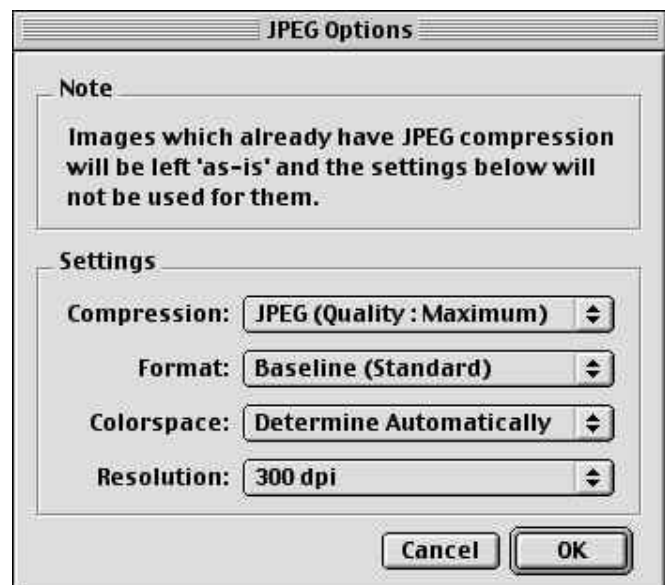
FIG. 5: Users have significant control over the quality of exported images, as shown here in the JPEG Options dialog box.

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[3]*Screen readers convert text into speech. Systems tested with Acrobat include: Henter-Joyce's JAWS (*http://www.hj.com/ JAWS/JAWS.html*), and GW Micro Inc.'s Window-Eyes (http://www.gwmicro.com/).*

[4]*Rich Text Format (RTF) Specification, version 1.6, Microsoft Corporation, May 1999, http://msdn.microsoft.com/library/ specs/rtfspec.htm. "Summary: The Rich Text Format (RTF) Specification provides a format for text and graphics interchange that can be used with different output devices, operating environments, and operating systems. RTF uses the American National Standards Institute (ANSI), PC-8, Macintosh, or IBM PC character set to control the representation and formatting of a document, both on the screen and in print. With the RTF Specification, documents created under different operating systems and with different software applications can be transferred between those operating systems and applications. (248 printed pages)"*

user maintains control over the output options, such as selecting the JPEG compression quality (Minimum, Low, Medium, High, Maximum) and resolution (72, 96, 150, 300, 600) (FIG. 5).

Digital prepress workflows are enhanced in several ways. First, Adobe has used its core color-management technology in Acrobat, as well as in current versions of Adobe Photoshop, and Adobe Illustrator. This provides a high degree of color consistency as files are moved between and among the applications. Second, Illustrator can be used to open, edit, and enhance PDF files, providing users with an extended editing tool set. Third, batch processing can be applied to almost any Acrobat function using either user-defined action sequences, or through the use of JavaScript. Acrobat 5.0 includes several pre-defined batch operations (FIG. 6). And fourth, users can embed metadata, in XML format, in a PDF file to enrich its identity, and make it easier to locate during a search. This is especially useful for eBook publishers who can add metadata fields for such critical information as ISBN numbers and book category information.
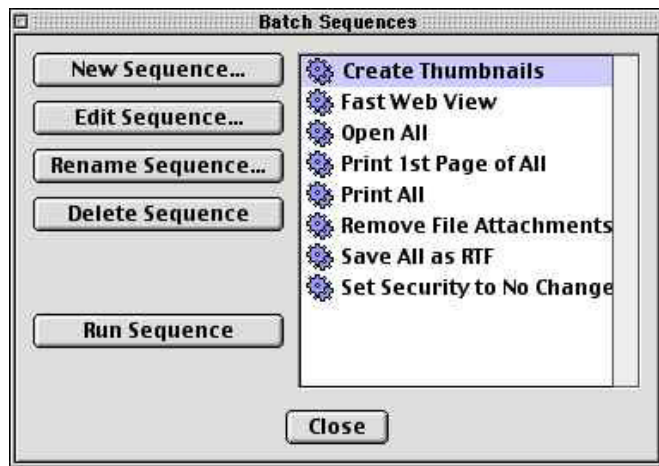

FIG. 6: Several pre-defined batch operations are provided in Acrobat 5.0. (Screen capture courtesy of Adobe Systems Inc.)

Compliant PDFs. New to Acrobat 5.0 is the PDF Consultant tool, which accesses Adobe and third-party plug-ins that have been created for the purpose of inspecting, analyzing, and repairing PDF files. Plug-ins provided by Adobe can:
- Locate and eliminate unneeded or unwanted document elements, such as image alternates

or JavaScript actions. The items can be optionally listed in a report or removed from the PDF.
- Provide a report on space used in the PDF file for certain categories of document elements, such as fonts, images, bookmarks, forms, comments, and overall size. The report is provided both in the actual byte counts and as a percentage of the overall file size (FIG.7).
- Optimize the size of the PDF by removing invalid document elements.

FIG. 7: The report produced by the Space Audit plug-in. (Screen capture courtesy of Adobe Systems Inc.).

Forms. Acrobat 5.0 has been enhanced with several features that extend its form capabilities to simplify the input process, automate certain forms processing functions, and integrate PDF form data with enterprise databases. Forms maintain the same look and feel as their paper versions.

PDF forms users can complete and digitally sign their forms from within a Web browser, and the information can be linked directly to a database. As the forms are being used, their field content can change dynamically based upon the data that is input. Certain kinds of data structures, such as Social Security numbers, can be validated as the data is input; calculations involving addition, subtraction, and multiplication can be computed automatically;and field contents can be spell-checked. In addition, the data from a PDF form can be output in XML, serving the needs of compatible back-end systems.

Print Control. PDF, as a digital format is somewhat independent of the constraints that apply when printing. Unfortunately, every printer has its set of constrains. They may be related to resolution, color, or most likely, to output size. Acrobat 5.0 provides the capability to print jobs that are larger than the maximum output size of the printer by using *tiling.* Tiling divides an image into panels equal to the maximum printer output size, or smaller, if desired. At output the user can select from odd or even pages; rotate and center the pages; set an overlap; and more (FIG. 8). The user can also preview *overprinting* to the screen or to the printer.
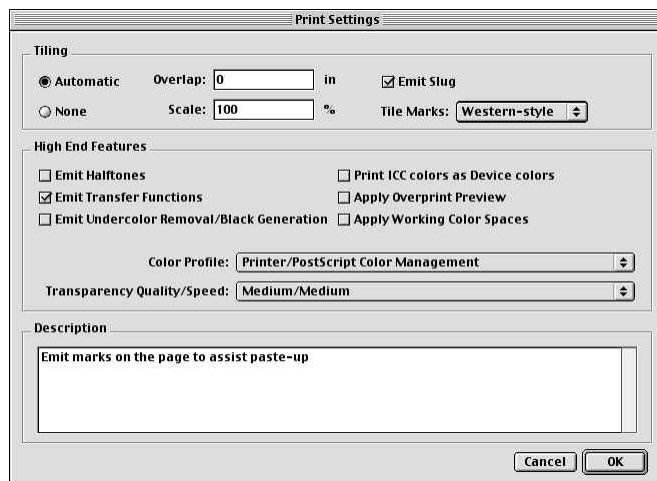

FIG. 8: The Acrobat 5.0 Print Dialog box.

Acrobat 5.0 also includes a new option related to printing accessibility. In prior versions of Acrobat the publisher either allowed or restricted printing. Publishers can now opt to allow Low Resolution printing of any PDF document (FIG. 9).

FIG. FIG. 9: Publishers have the option to disallow, allow, or restrict printing to low resolution.

Make a PDF. In addition to previous methods to convert files into PDF format (FIG. 10), Acrobat 5.0 introduces a new menu option, File>Open as Adobe PDF. Using this option, BMP, Compuserve GIF, HTML, JPEG, PCX, PNG, TIFF, and text files can be converted into individual PDF files, or appended to existing PDF files.
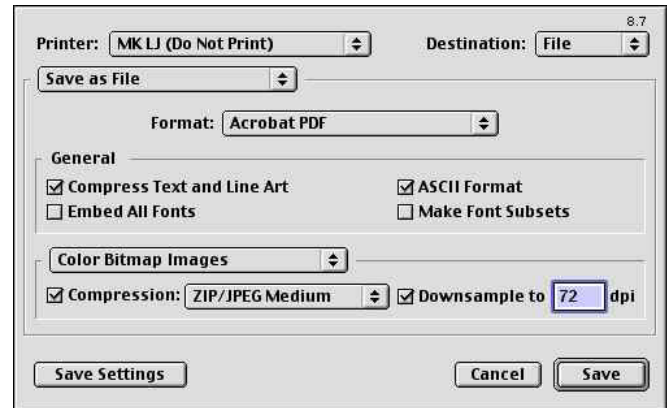
FIG. 10: PDF files can be generated from any software application, as shown here in the Microsoft Word for Macintosh print dialog box.

In the Windows version, Acrobat automatically installs two icons in Microsoft Office applications. Clicking on the first icon converts the open document into a PDF using the Acrobat Distiller. Clicking on the second icon converts the open document into a PDF and automatically attaches it to an e-mail message in the default e-mail client.

The Acrobat Distiller application has been expanded to include default settings for producing eBooks. "EBooks" now joins Press, Print, and Screen, as a default set of Job options (FIGs. 11-15).

FIG. 11

Job Options: eBook

eBook
Press
✓ **Print**
Screen

Job Options:
Compatibility: Acrobat 4 (PDF 1.3)

Info
File: none
Size:
Source:

Pause
Cancel Job

Progress
Status: Ready

Acrobat Distiller 5.00
Started: Thursday, May 31, 2001 at 10:00 AM
Adobe PostScript software version: 3011.104

FIG. 11

FIG. 14

Job Options: eBook

General / Compression / Fonts / Color / Advanced

☑ Embed All Fonts
☑ Subset Embedded Fonts When Percent
Of Characters Used Is Less Than: 100 %
When Embedding Fails: Warn and Continue

Embedding
Base 14 Fonts

Courier
Courier-Bold
Courier-BoldOblique
Courier-Oblique
Helvetica
Helvetica-Bold
Helvetica-BoldOblique
Helvetica-Oblique
Symbol
Times-Bold
Times-BoldItalic
Times-Italic
Times-Roman
ZapfDingbats

Always Embed:

Never Embed:
Courier
Courier-Bold
Courier-BoldOblique
Courier-Oblique
Helvetica
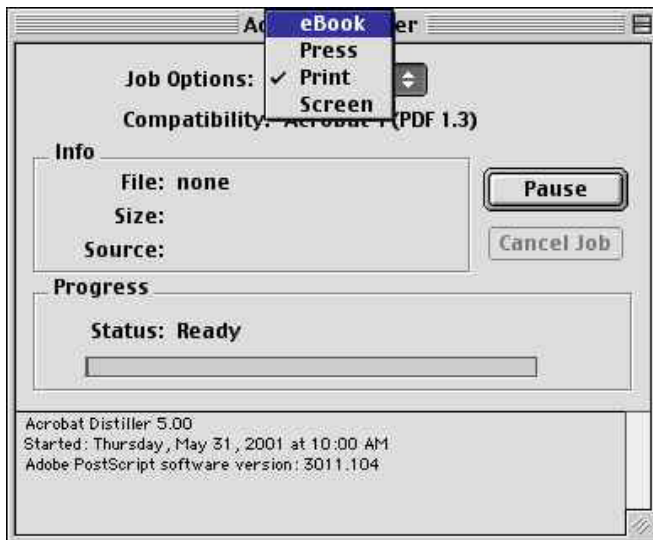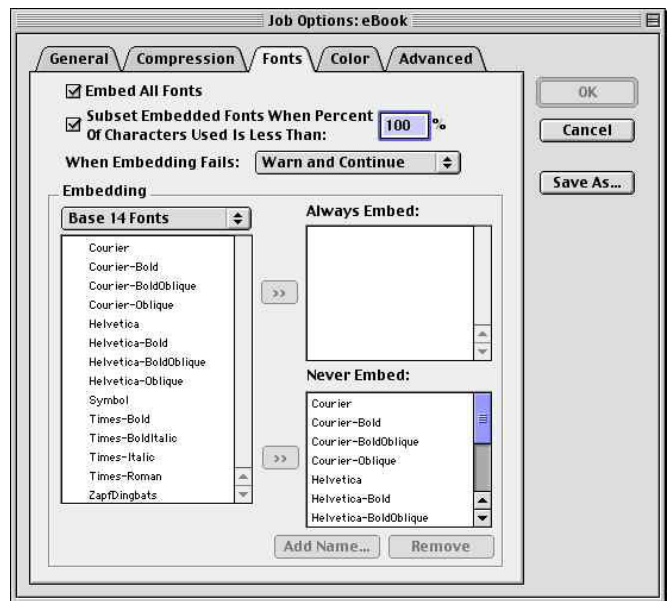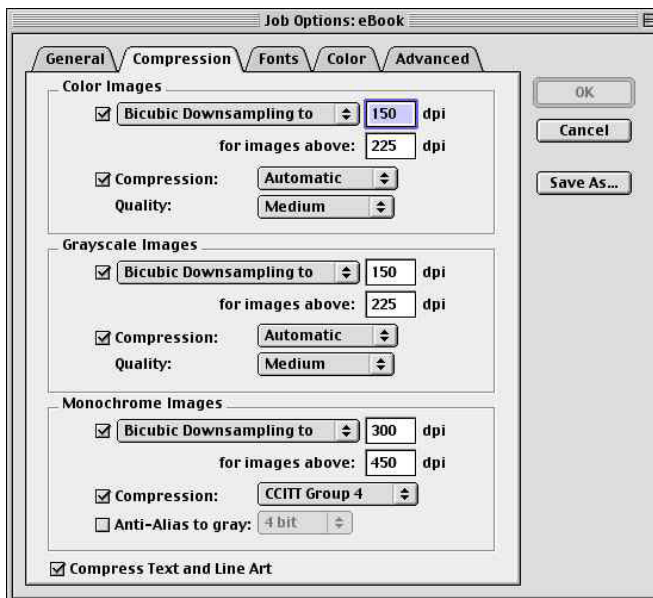Helvetica-Bold
Helvetica-BoldOblique

Add Name... Remove

OK
Cancel
Save As...

FIG. 14

FIG. 12

Job Options: eBook

General / Compression / Fonts / Color / Advanced

Color Images
☑ Bicubic Downsampling to 150 dpi
for images above: 225 dpi
☑ Compression: Automatic
Quality: Medium

Grayscale Images
☑ Bicubic Downsampling to 150 dpi
for images above: 225 dpi
☑ Compression: Automatic
Quality: Medium

Monochrome Images
☑ Bicubic Downsampling to 300 dpi
for images above: 450 dpi
☑ Compression: CCITT Group 4
☐ Anti-Alias to gray: 4 bit

☑ Compress Text and Line Art

OK
Cancel
Save As...

FIG. 12

FIG. 15

Job Options: eBook

General / Compression / Fonts / Color / Advanced

Adobe Color Settings
Settings File: None

Color Management Policies
Convert All Colors to sRGB
Intent: Default

Working Spaces
Gray: None
RGB: sRGB IEC61966-2.1
CMYK: U.S. Web Coated (SWOP) v2

Device-Dependent Data
☐ Preserve Overprint Settings
☐ Preserve Under Color Removal and Black Generation
Preserve Transfer Functions
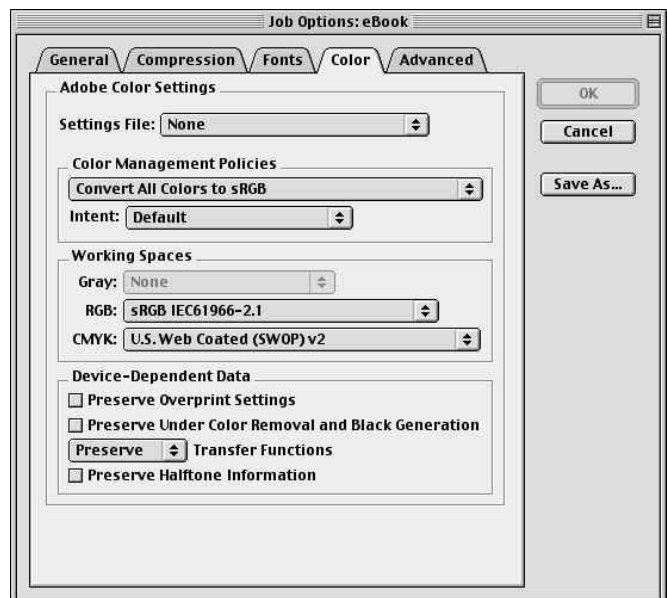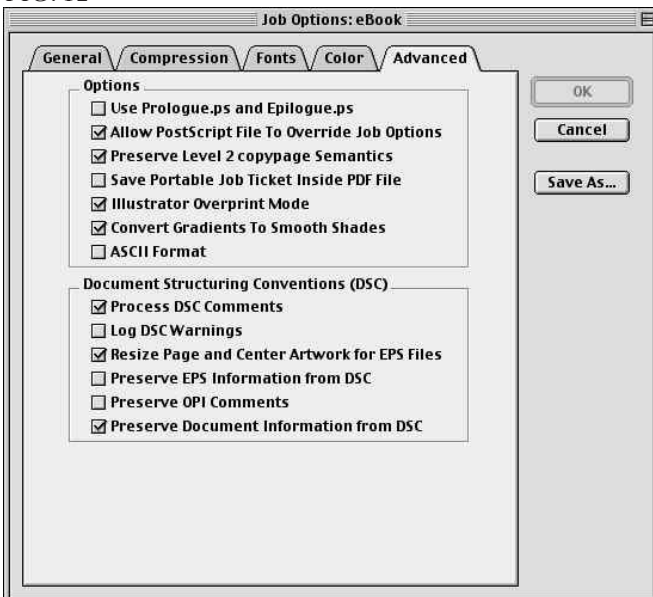☐ Preserve Halftone Information

OK
Cancel
Save As...

FIG. 15

FIGs. 11-15: The default settings for the eBook Job options.

FIG. 13

Job Options: eBook

General / Compression / Fonts / Color / Advanced

Options
☐ Use Prologue.ps and Epilogue.ps
☑ Allow PostScript File To Override Job Options
☑ Preserve Level 2 copypage Semantics
☐ Save Portable Job Ticket Inside PDF File
☑ Illustrator Overprint Mode
☑ Convert Gradients To Smooth Shades
☐ ASCII Format

Document Structuring Conventions (DSC)
☑ Process DSC Comments
☐ Log DSC Warnings
☑ Resize Page and Center Artwork for EPS Files
☐ Preserve EPS Information from DSC
☐ Preserve OPI Comments
☑ Preserve Document Information from DSC

OK
Cancel
Save As...

FIG. 13