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PC TAP
Consumer Report

Desktop Publishing Platforms

Open Forum
dBASE IV Version 1.1 Feedback

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PC TAP CONSUMER REPORTS

From the Editor's Desk

For several years, the Macintosh has been the preferred operating platform for those involved with desktop publishing. The Mac's graphical user interface, and the characteristics of software written for the Macintosh operating environment, had a lot to do with that preference. Although Ventura Publisher, Aldus PageMaker, and other desktop publishing products were available for MS-DOS machines, it was only with the release of Microsoft Windows 3.0 that IBM compatibles posed a serious challenge to the Mac as a desktop publishing platform. In this *Consumer Report* we will examine the viability of DOS/Windows as an operating environment for prominent desktop publishing software.

Speaking of Windows, the wave of enthusiasm in the industry for this product hasn't lost much momentum since the release of version 3.0 a year ago. COMDEX is generally recognized as the premier computer hardware/software show, and Windows 3.0 was everywhere at COMDEX Fall '90. Concurrently with the Spring 1991 edition of COMDEX, the show's promoters are initiating the first *Windows World Conference*, a meeting devoted exclusively to presentations and exhibits pertaining to Microsoft Windows, and to products that run in or support the Windows environment. We will try to keep the evolving Windows picture in focus, and to keep you informed of developments in that arena.

This issue's *Open Line* contains feedback from one of our readers about the report on dBASE IV Version 1.1 that appeared in the last *Consumer Report*. Bill Samuel obviously is a knowledgeable dBASE user who has become very familiar with the product. We're pleased to include his comments for your consideration.

Barring any unexpected changes of plan, our next issue will contain a potpourri of items. Some will be status updates of topics we've reported on in the past, while others will address interesting developments in desktop computing that may not warrant treatment as full-blown PC TAP projects. We're looking forward to compiling the information for that report, and we hope you'll enjoy reading it.

David A. Taylor
PC TAP Coordinator

Desktop Publishing Platforms

Introduction

Since the introduction last year of Microsoft Windows 3.0, 80386-based IBM computers and compatibles have begun to make inroads into the desktop publishing (DTP) market. Although the Macintosh was once considered by many to be *the* operating platform for serious desktop publishing applications, some users now are suggesting that the MS-DOS/Windows 3.0 environment is a viable alternative. The primary purpose of this PC TAP project was to investigate the validity of this claim by DOS/Windows enthusiasts.

What Is Desktop Publishing?

Although advertisements for word processing software often suggest that the product is capable of desktop publishing, and some of them come very close, true desktop publishing is more than just fancy word processing. While some word processing packages provide capabilities to format multiple columns and incorporate pictures, tables, and graphs, the critical element they lack is *page layout*. Page layout is the process of designing the physical characteristics (dimensions, position and size of text elements and graphics) of a printed page before the typographical elements are placed on that page. Page layout is to publishing, or typography, what blueprints are to builders. The page layout identifies the elements of the printed page, indicates their dimensions, and shows the compositor where those elements are to be located.

While some word processing packages may try to pass themselves off as desktop publishers, the reverse isn't so, at least not until Story Editor appeared in the recently-released PageMaker Version 4.0, which is presently available only for the Macintosh. DTP software is designed to *assemble* text and graphics, not produce them. So the recommended approach is to prepare text in a word processor, and do spell checking and final proofreading (but *not* formatting) before importing the text into the DTP package. Similarly, pictures and graphs are produced in a graphics package or are captured with a scanner, then imported into DTP.

Within the desktop publishing environment, a document's textual and graphical components can be manipulated. A number of text-formatting capabilities are available, including font and point size selection, specification of columns, and definition of tables. A DTP text-processing function that usually isn't available in word processors is leading control—that is, adjustable inter-line spacing. Most DTP packages offer a text-editing capability, but it is recommended that text changes of any magnitude be done in the word processor. With respect to graphics, usually it is possible to crop images, and to rotate and size them. Like text, however, it is recommended that if significant changes become necessary, they be made in the graphics software and a revised image imported.

Desktop publishing is not necessarily an easy-to-learn skill. Like most complex, highly-specialized applications, DTP has a unique vocabulary and a set of operating assumptions that many people find foreign at best and completely unfathomable at worst. The learning curve for DTP is fairly steep, and unless you're going to be using it regularly, we think it would be difficult to remember the finer points of usage. If a word processor will do the job, you probably won't want to spend the time and effort to become proficient with a DTP package. On the other hand, if your application heavily mixes text and graphics and really requires a DTP package, nothing else will do—and you'll consider every minute you devoted to learning one very well spent indeed.

Evaluation Methodology

When microcomputers first began to appear in EPA, a major justification for providing a mechanism to purchase Macintoshes was for use in desktop publishing. At the time, software available in the MS-DOS world simply could not compete with the Macintosh for DTP. To determine to what extent the gap has been closed, we set out to answer this question:

> "Can the Macintosh desktop publishing environment that would typically be found
> within EPA be replicated in the MS DOS/Windows 3.0 environment?"

We decided to approach the question by setting up equivalent operating configurations on roughly comparable machines: a Macintosh II, and an IBM PS/2 Model 70. A "typical DTP software configuration" in each environment was defined as containing most or all of these products:

Software Package	MS-DOS	Macintosh
PageMaker	Yes	Yes
Ventura Publisher	Yes	No
WordPerfect	Yes	Yes
MS Word	Yes	Yes
Aldus Freehand	No	Yes
Adobe Illustrator	No	Yes
CorelDRAW	Yes	No
MacDraw	No	Yes
MS PowerPoint	Yes	Yes

Because we expected that few facilities would have comparable Macintosh *and* IBM-compatible machines configured with the software required to perform this evaluation, we decided to conduct this study as an internal PC TAP project. That is, rather than emphasizing participation from outside users as is our usual practice, the contributors to this study were "insiders." Participants included the PC TAP staff; Pam Worley, of the NDPD Publications staff in RTP; Paul Cooper, an RTP LAN administrator and longtime user of Ventura Publisher; and Dave Levesque, of the Washington Information Center staff, who has lots of experience with DTP and graphics software on both MS-DOS and Macintosh computers. Pam and the TAP staff performed the actual tests. Dave and Paul served as advisors and general information sources.

On a daily basis, Pam Worley uses a Macintosh to produce documents of varying complexity. In PC TAP, on the other hand, we're at home in MS-DOS/Windows. We decided to compose five representative documents in both environments in RTP: a brochure, a technical publication, a flyer, a form, and a newsletter or magazine. Our plan was to re-create the five test documents in both computing environments: PC TAP would compose each one on the Macintosh with some help from Pam; then Pam would repeat the process on our PS/2 Model 70 while we watched and critiqued. During the process, we would carefully record our successes, failures, and any problems we

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encountered. This strategy proved to be very effective (but it also resulted in "overkill," as we'll explain later), and we felt that by following it the effects of our individual preferences and biases on the evaluation results were minimized.

Focusing on the Objective

One final note about the evaluation methodology. In addition to remembering that our objective was to determine whether we could replicate the Mac DTP environment in MS-DOS/Windows, it's important also to keep in mind that we were NOT out to compare DTP software products or describe how to do desktop publishing. We were not trying to compare MS Word with WordPerfect. Neither were we evaluating the capabilities of CorelDRAW with Adobe Illustrator and Aldus Freehand in mind. And we weren't comparing PageMaker with Ventura Publisher. Neither were we trying to decide whether one platform (PS/2 vs Mac) was "easier to use" or faster or more desirable. Our goal was to determine whether the functions or capabilities that are available for desktop publishing on the Macintosh can also be found in the MS DOS/Windows environment.

Now that we've made clear that we recognized the necessity to maintain our objectivity, we must also acknowledge that we liked some products and some methods better than others, and we'll point out those preferences as we go along. We'll talk about what we liked or didn't like about certain products, and will give our impressions, based on our experiences using them in this evaluation. But when it comes time to state the results of the study, we will remind ourselves again to do so within the scope of the primary question we set out to answer.

The Hardware Configurations

A Macintosh II with two megabytes of memory and a 40MB hard drive running under System 6.03 was used in this project. An Apple LaserWriter IINT PostScript printer, an external 5¼-inch disk drive, and a flatbed scanner are attached to the Mac. Our IBM PS/2 Model 70 has a 386 microprocessor, 6 megabytes of memory, a 60MB hard drive, a 44MB Bernoulli drive, an external 5¼-inch disk drive, an Apple LaserWriter Plus PostScript printer, and a ScanMan Plus handheld scanner. For this project, on the PS/2 we ran exclusively within Microsoft Windows under MS DOS 3.3.

The Evaluation Study

The PC TAP brochure, several pages from the NCC Guide to Services (technical publication), an Email flyer, an Email box application form, and pages from a PC TAP Consumer Report (newsletter/magazine) comprised our five "test" documents. Initially, we thought we'd reproduce each of the five documents on both the Mac and the PS/2 using all the pertinent software. Our plan was to treat each test document as an original, and to reproduce each one in the most practical and straightforward manner possible. After we had what we considered to be an acceptable document, we would try other tools and methods just to compare products and techniques.

Early in the project we realized that our original approach would not only be time-consuming and redundant, but probably extremely tedious as well. We quickly learned that the same basic steps were required to re-create each document, and that in essence we were performing different variations of the same process for each document. As a result, we decided after completing two documents that it was unnecessary to continue with the remaining three. Instead, we experimented with importing graphics from different environments and with moving elements from the Macintosh to the MS-DOS environment. Our experiences are discussed in the following pages.

The Technical Document

As you may recall, our technical document consisted of several pages (actually the first four) from the Guide to NCC Services, a reference manual that was developed primarily for users of the NCC-IBM mainframe. The Guide had originally been prepared on the Macintosh. The four pages are reproduced below.
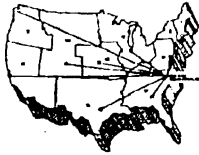
WHAT IS THE NCC?

MISSION

The National Computer Center (NCC) is one of the largest, most modern, high-speed computer centers in the nation. Its mission is to support the Environmental Protection Agency in the area of scientific and administrative applications. The NCC serves EPA users and other qualified agencies and contractors through a vast telecommunications network which allows the distribution of computer services to remote locations. Along with hardware and software, and the means to communicate data, the NCC provides user support and problem solving services.

The major operations center of the NCC is in Research Triangle Park (RTP), North Carolina. The RTP facility has three principal data processing capabilities:

- IBM-compatible mainframes.
- DEC minicomputers operation.
- Microcomputer software support for uploading and downloading data on personal computers.

All NCC operations are conducted at the center in RTP and at the Washington Information Center (WIC). The WIC provides EPA Headquarters users with remote access through its Logical Mainframe (LMF) to RTP's mainframes. The computer center supports all 10 EPA regional offices, state environmental offices and the EPA labs throughout the country.

SERVICES

The NCC provides a variety of services for its users in eight major areas.

Planning and Acquisitions

Mainframe, mini, or personal computer hardware and software requirements, as well as telecommunications and operating system needs, are identified, planned and procured.

Computer Operations

The mainframe processors are monitored and maintained through consoles at the NCC production control desk.

NCC Operations responds to your requests for mounting tapes, maintaining printers, and loading disk packs. Periodic maintenance checks are performed to keep the computer system operating efficiently.

Telecommunications

The NCC plans, installs, and implements all data communications services requested by the EPA. The requests take the form of a Telecommunications Service Request (TSR). After the request is made, the NCC plans each network connection, issues the work orders to carry out the connection, and tracks the work implementation through a data base. The NCC also manages voice communications (telephones) for the Agency.

Technical Support

NCC's technical support staff installs and maintains all telecommunications software and system software products. These programs allow the regional Logical Mainframe to communicate with RTP's mainframes. Technical support also reconfigures the system for maximum computer performance and installs and maintains systems software, operating systems, and programming languages.

User Support

User Support is the primary point of contact between the NCC user community and the NCC's computers. The User Communications Center in RTP solved over 28,000 user problems last year in many areas such as graphics, PCs, fourth generation languages, programming languages, and information system. Overall, User Support resolves problems associated with approximately 75 software products. When you dial User Support, an operator works with you to define the problem. The operator records this information in the central problem management system and then directs the problem to the appropriate specialist for resolution, then providing a record for later referral.

Training

NCC Training provides instruction on the software and services available in the various hardware configurations at the NCC. PC training is offered and conducted by the Washington Information Center. Potential students may select training from classroom courses, computer-based training, or videotape instruction.

Data Base Support Services

NCC Data Base Support Services supports the Central Data Base Administrator in all facets of central data base administration. These tasks include such activities as operating the Development, Production, and Test ADABAS Systems; testing, implementing, and maintaining all Data Base Management System software; providing technical consultation to Project Managers, developers, and Application Data Base Administrators on ADABAS and the central environment; solving Central Data Base Management System technical problems; and controlling ADABAS data bases, data base files, and disk space.

Information Centers

Information Centers have a wide variety of PC hardware and software. These centers provide users with the assistance to receive individual assistance and to explore current data processing techniques. The information centers provide a wide variety of services such as the following:

- Special seminars.
- Technical library for all users.
- User group meetings.
- Telephone hotline service for PC hardware and software problems.

On the Mac. To begin, PC TAP worked at the Mac while Pam watched and helped. We used PageMaker, which for us was a new experience, to lay out the document. Text and graphics were imported from MS Word and MacDraw files, where they had been stored during composition of the original manual.

We found PageMaker easy to use and intuitive on the Macintosh. The side-by-side page layout screen was helpful, and setting up master pages that prescribed the format for both left- and right-hand pages helped get our mental image of the document into a tangible form. Once our grid lines (used for placing text and graphics, but invisible on the printed page) were laid out, placement of text and graphics was quick and easy. We imported the MS Word body text that runs down the right side of each page; type faces and sizes can be specified or changed easily using the pull-down *Type* menu. We used PageMaker's text editor to enter the large, underlined heading at the top of the first page and the smaller headers in the left-hand column of each page opposite the running text. The map graphic is an imported MacDraw image, and it was easy to place and size, too.

The most tedious part of the task was working out the page layout; as we said earlier, the "desktop publishing" aspect of the task requires some understanding of DTP terms and concepts. There's also a terminology aspect to the software, which isn't at all unusual. For example, PageMaker and Ventura Publisher sometimes use different terms to refer to the same process; or in other cases a given term may mean different things in each of those two products. Nevertheless, once the page layout was defined, creating the headers and importing and formatting the text and graphics was straightforward and quick. The printed result of our efforts could not be distinguished from the original document.

On the PS/2. We viewed the move to the PS/2 as the acid test. It was one thing to re-create a document on the Mac that was originally prepared on the same machine with the same software we used for the re-creation, with a person experienced in DTP monitoring the action. Asking the Macintosh expert to perform the same task on the PS/2 with help from a DTP neophyte was an entirely different proposition.

Pam sat down at the machine, and we gave her a quick tutorial on Windows. She double-clicked on the PageMaker icon, played around a little bit, and had the page layout completed in record time. Bringing in the text was a snap, as was entering the headers. It was just like doing it on the Mac. There were a couple of *very* subtle differences that we attributed more to the difference in PageMaker versions than to PC/Mac differences (we used PageMaker 4.0 on the Macintosh, and version 3.1 on the PS/2).

The only problem we encountered was that although the graphic file containing the map had a .TIF extension, it wasn't really a TIFF file and PageMaker refused to import it. After a couple of trial-and-error attempts to give the file an extension that PageMaker would handle, we just used the handheld scanner to create a new TIFF file that was brought in with no trouble at all.

When we printed the four pages and compared them with the output from the Macintosh, it was impossible to tell which was which. It's important to note here, though, that both our Mac and our PS/2 were outputting to Apple LaserWriter printers. Based on our first test, we agreed that within the PageMaker environment there are no significant differences between running on the Macintosh and running on the PS/2 under Windows, except for the expected file-name rules variations.

Trying Other Options. Flushed with success, we set out to experiment with variations on the process. But after a couple of frustrating hours spent trying to duplicate our four test pages in Ventura Publisher on the PS/2, we decided the expertise of a seasoned Ventura user was necessary. Paul Cooper spent a half-hour performing the desired task while we watched and learned. Observing a real person certainly is a better way to learn than by plodding through a tutorial, no matter how well the tutorial is done. We picked up more from Paul in a short time than we had in days reading the documentation and working our way through the tutorial lessons. Don't get us wrong, we're advocates of tutorials; but they can't compare with learning from another human being who's experienced in the process or product you're trying to learn.

Paul's approach was to do as much up-front preparation as possible before turning the text over to Ventura for final formatting. Ventura uses a system of "tags" that identify the characteristics of various "paragraphs" of text. In this context, Ventura considers a block of text set off by hard returns a *paragraph*. A tag contains attributes like type face, point size, and justification (flush left, centered, etc.). For example, the *headline* tag in the first line of the example below specifies Helvetica bold 14-point type. You define tags for major titles, subheads, body text, and any other special situations you want to allow for. The setup for bulleted text items with hanging indents is a good example of something for which you might want to set up a tag.

When you're working with Ventura, it's recommended that you do as much preparation as possible in the word processing program, short of including formatting codes. You have the option of imbedding Ventura tags into the text in your word processing program, by setting them off with at-signs and equal signs. Here's the first page of text for the technical document as prepared by Paul in WordPerfect:

> @HEADLINE = WHAT IS THE NCC?
> @SUBHEAD = MISSION
> The National Computer Center (NCC) is one of the largest, most modern, high-speed
> computer centers in the nation. Its mission is to support the Environmental Protection Agency
> in the area of scientific and administrative applications. The NCC serves EPA users and other
> qualified agencies and contractors through a vast telecommunications network which allows
> the distribution of computer services to remote locations. Along with hardware and software,
> and the means to communicate data, the NCC provides user support and problem solving
> services.
> The major operations center of the NCC is in Research Triangle Park (RTP), North Carolina.
> The RTP facility has three principal data processing capabilities:
> @BULLET INDENT = IBM-compatible mainframes.
> @BULLET INDENT = DEC minisystem operation.
> @BULLET INDENT = Micro/mainframe support for uploading and downloading data on
> personal computers.

Any text segments beginning with the "@" sign and ending with " = " are handled as text tags by Ventura. When the text is imported, each paragraph will take on the attributes of the specified tag. The actual tag attributes are set up within Ventura; this is accomplished by working through a series of menu boxes in which the user specifies type face, point size, style (bold, italic, etc.) and rule lines or boxes, if desired. When the tagged text shown above is imported into Ventura from WordPerfect, the *headline, subhead,* and *bullet* indent tags are automatically selected from the Ventura "tag list," and their attributes are applied to the appropriate paragraphs.

A tag can also be applied to a paragraph manually. To do this, simply highlight the paragraph (remember, a paragraph is a text segment bounded by hard returns—it can be one line or a complete paragraph), then click on one of the tag names that is listed in the "tags" box that Ventura supplies. The example at the top of the next page shows the first page of our test document with the tag box and the tools box visible in the top right corner of the screen.
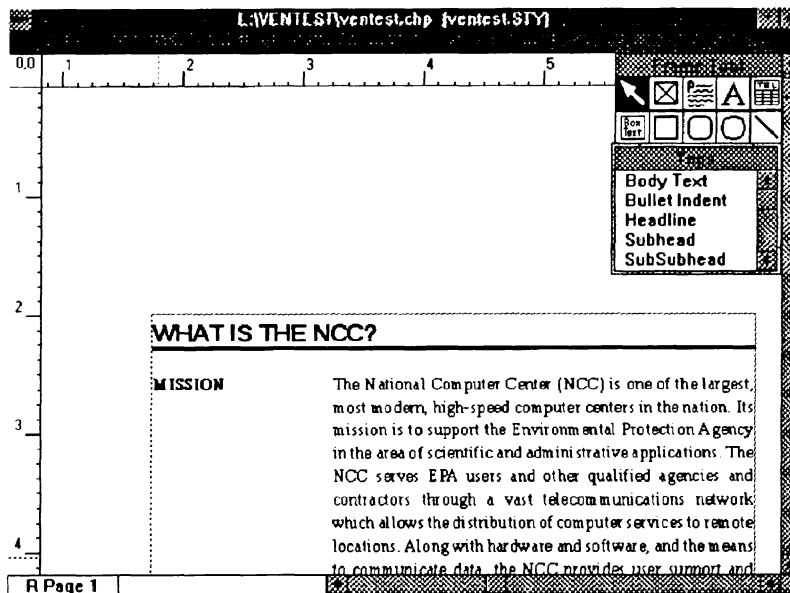
**Technical Document in Ventura Publisher,
Tools and Tags Boxes Displayed**

In contrast with Ventura's tags, in PageMaker a pull-down menu provides the means to select text attributes. Below, the figure on the left shows the *Type* menu with "Type specs" selected. On the right, you see the result of that selection: the text attributes specification screen. These two significantly different methods for controlling the physical attributes of text clearly illustrate the contrasting approaches used by the creators of PageMaker and Ventura Publisher. When you use these two products, you realize that becoming proficient in them requires two entirely different mindsets. The products don't "think or act alike" in many ways, but on the other hand nearly identical results can be achieved with them.

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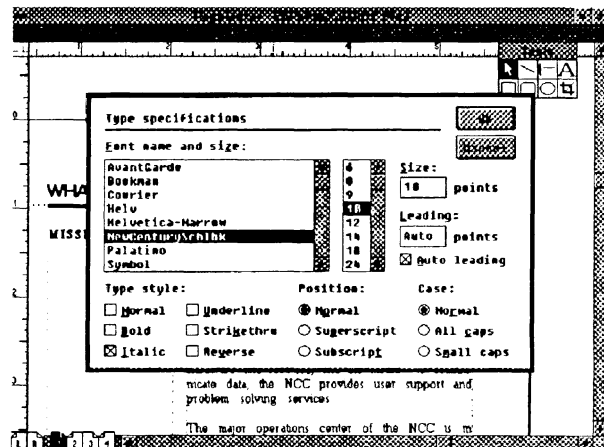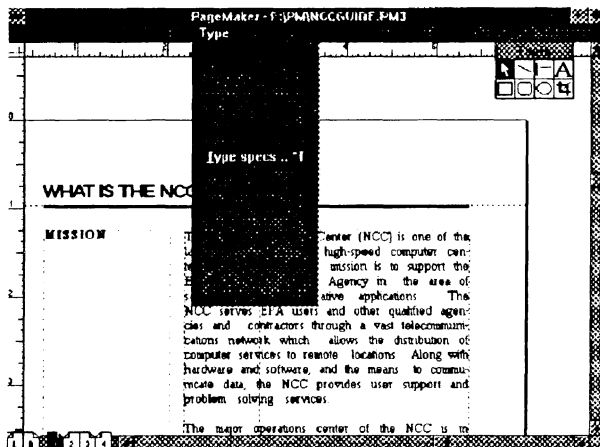
The Brochure

For our second test case, we chose a brochure that describes the PC Technology Assessment Program. The original brochure was created in the MS-DOS environment by preparing the text in WordPerfect and doing manual cut-and-paste to incorporate the graphics elements. It's printed in landscape orientation on 8½x11-inch paper, then tri-folded to make the 8½x3⅔-inch, pocket-size brochure shown at the right.

Since our original methodology worked so well with the Guide to NCC Services, we used the same approach with the brochure. The only difference was we were working PS/2-to-Mac, rather than the other way around. Again, re-creating the document in the original environment was easy. The layout was set up in PageMaker, then the original text was imported from WordPerfect. After a little tweaking of bullets and hanging indents, we had a satisfactory replicate of the original brochure.

To move the document to the Mac, we saved the WordPerfect text file on a floppy disk in WordPerfect format. Next we went to the Mac, set up the page layout, and imported the text. Finally, we scanned the graphics directly into the Mac and imported the .TIF images into the document.

Immediately we began to have more trouble than we had experienced with the Guide to NCC Services. Although we had learned not to expect bullets to translate properly, we also discovered that the tabs and hard returns used to control line breaks in the bulleted text segments in the original document had to be stripped out. This was done in MS Word on the Mac, then the text was re-imported into PageMaker. Things looked better, but now we had hyphenated text along with the bullets, and aesthetically unpleasant line lengths. Cleaning up this problem required more formatting in PageMaker.

The final result was a page that looked just like the original, but it took a lot of text editing to get there. Considering the effort required to get the text in shape, the process of scanning and placing the graphics was a piece of cake. Both sides of the brochure are reproduced below.
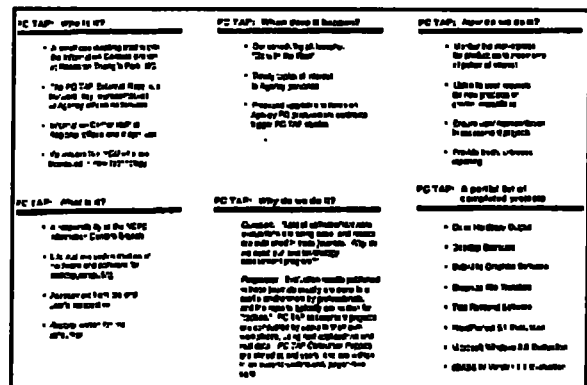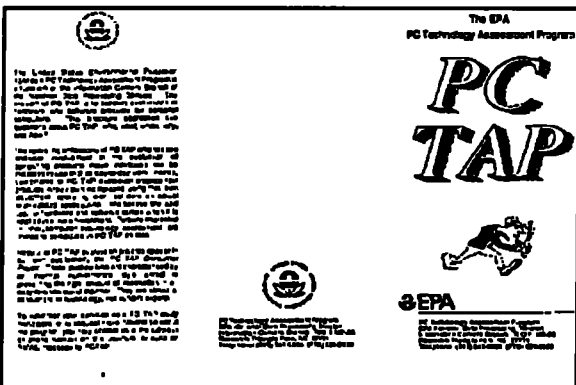
At the end of this rather tedious exercise, we realized that in PageMaker we could have re-entered the small amount of text contained in the brochure in a fraction of the time it took to import and massage the original. It's not always quicker and easier to import text (or graphics, for that matter) just because it exists somewhere. We recommend you consider how much effort it will be to simply re-enter the text when you're faced with such a decision. If the amount of text isn't significant, it might be easier to just re-enter it in the environment in which you are working.

A Procedural Shift

As we mentioned earlier, some key issues became obvious fairly early in our testing. The most important is that, although every document has its own distinctive features, the same basic steps are involved in the DTP process. You decide on a page layout, and then bring text and graphics into that environment. Some limited text entry can be done in the desktop publisher—the setting of headlines is a case in point—but the more you import from a word processing program, the better off you probably will be. Except for draw-type figures, which can be done within most DTP products, graphics too should be prepared externally for subsequent placement into the desktop publishing environment.

Having essentially gone through these basic steps with the technical document and the brochure, we elected not to repeat it with the remainder of the five original test documents we had identified. The results would have looked different, but we would have gone through the same steps to produce them. Instead, we began experimenting with graphics imports into both PageMaker and Ventura, and with moving both graphics and text between the Macintosh and PS/2 environments.

Software Issues

When discussing software we must remember that our objective wasn't to evaluate software products used in desktop publishing; neither was it to judge whether the Mac or the PC is a better desktop publishing machine. Our stated objective was to determine whether the "typical" Macintosh desktop publishing environment could be replicated in the DOS/Windows environment. For our purposes, the software comprising those environments was listed in the table on page 3.

Based on our experience, the desktop publishing package is the key to what you can or can't do. Excellent graphics software, including paint and draw packages, is available in both the Mac and DOS environments. Certainly there are differences in the ways some of the Macintosh packages work when compared with their DOS counterparts. But the *capabilities* are there to do anything in one environment that you can do in the other. Text is no problem at all, with WordPerfect and Word available on both machines.

PageMaker has been the Macintosh DTP package of choice around EPA for some time. DOS versions of both PageMaker and Ventura Publisher have been available, but the Windows version of Ventura is new. The first ever Macintosh version of Ventura Publisher was announced very recently, but too late for us to include in this study. On the other hand, PageMaker 4.0 for the Macintosh was used in this study, but we used release 3.1 of the DOS version of PageMaker; version 4.0 has since been announced. For this study we used both versions 3.1 and 4.0 of PageMaker on the Macintosh, and Version 3.1 of PageMaker and the new Windows version of Ventura Publisher on the PS/2. Since Ventura Publisher hasn't been available for the Mac, it wasn't essential for our objective in this study, but we included some discussion of Ventura to enrich the data for this report.

We found that equivalent results can be achieved using either Ventura Publisher or PageMaker under DOS/Windows, or using PageMaker on the Macintosh. We mentioned earlier that different approaches are used in these two DTP products. We're not in a position to say one is better than the other; but they *are* different. We think it's another of those "different strokes for different folks" situations. Those who are serious about desktop publishing should probably look at both packages and select the one whose personality best fits that of the user. Although Ventura is said to be the more powerful of the two products, we found PageMaker to be more intuitive and easy to use. Certainly PageMaker is easier to learn. There's more discussion about these two products on the following page under "Media Reports."

Hardware Issues

At the outset of this project, we expected that hardware differences would be the most significant obstacle between the Macintosh and the PS/2 (or any other DOS machine). That's probably true, but certainly not to any troublesome extent. The walls between the two environments seem to be shrinking with time, as better file translators and conversion routines become available. Indeed, many Mac software products now have a "DOS format" save option built in.

We didn't experience any problems using text or graphics files on the PS/2 that had been created on the Mac, then saved in DOS format on diskettes using the Apple File Exchange translators. As an acid test, we transferred a newsletter-like PageMaker document from the Mac to the PS/2. The document contained various fonts and type sizes, rules, and graphics. When we brought it up in PageMaker on the PS/2, everything was intact except the graphic image, which showed up as a solid black box. However, when the graphic was moved independently, then placed into the document, it looked fine. We repeated this with .EPS, .TIF, and .PCX files. With the exception of the graphics, the Mac-to-DOS/Windows transfer of a completely finished document was flawless.

The most significant complaints that surfaced during our study were procedural in nature: Mac users don't like "the way the PC works with all those colons and back-slashes," and those at home in the DOS/Windows world get lost among the Mac's files, folders, and trash cans. Such differences are inherent in the two environments; they're facts of computer life that one must learn to deal with. The good news is that their significance seems to be diminishing steadily with new releases of software.

Conclusions

Our conclusions can be stated very succinctly: we found that on a PS/2 Model 70 running PageMaker under Windows we could easily replicate documents that originated in Macintosh PageMaker. We re-created Mac originals in PC PageMaker, and we re-created PC original documents on the Mac. No problems. We also moved text and graphics back and forth between the Mac and the PC and imported the elements into PageMaker documents with excellent success. Converted Mac text and graphics files were also moved into Ventura Publisher documents on the PC with ease.

Desktop publishing documents contain elements from three sources: text (from a word processor); graphics (from a graphics package); and headlines, rules, and line-draw graphic elements created in the DTP software itself. Excellent software is available in both the Macintosh and DOS/Windows environments with which to create text and graphics elements that are compatible with PageMaker in both environments. It is reasonable to expect that the same will be true of Ventura Publisher; but as we stated earlier, Ventura isn't part of the equation that addresses the question we set out to answer in this study.

With respect to PageMaker, we found that with a few rather insignificant exceptions (unless you consider the file-naming conventions significant), once you're within PageMaker you almost forget which machine you're working on. Macintosh PageMaker and DOS/Windows PageMaker are essentially the same. And yes, you can replicate the typical EPA Macintosh DTP environment under DOS/Windows.

Media Reports

It was a pleasant coincidence that several relevant reports appeared in major industry publications around the time this study was being planned and conducted. The March 1991 issue of *Macworld* included a "critical comparison of the Macintosh and IBM PC worlds" in an article entitled "Mac vs. PC." One aspect of the article was a discussion of software packages that have versions for both environments. Here is a quotation:

> At this writing, PageMaker 4.0 isn't available for PCs, so the Mac version wins.
> When PC PageMaker 4.0 becomes available (it should be by the time you read
> this), it'll be a toss-up; Aldus has always done a superb job in making the Mac and
> PC versions look and work alike . . . (p. 125).

The April 1 edition of *PC Week* featured an account of the "PC Week Labs Shoot-Out: Windows Desktop Publishing." The event took place on March 6 at the Windows & OS/2 Conference in San Jose, California. Three DTP software vendors, Xerox (Ventura Publisher 3.0 Windows Edition), Aldus Corporation (PageMaker Version 4.0 for Windows), and Archetype Inc. (Archetype Designer) fielded teams that competed to create an eight-page newsletter provided by PC Week Labs. Although the judges selected Ventura Publisher the winner of the competition, PageMaker was ruled a "close second."

More pertinent to our purposes here were some of the comments from users of the software that competed in the shoot-out. For the past four years, PIP Printing, Inc., a national chain of quick printing outlets, has standardized on PageMaker. They say that approximately half of their stores run PageMaker on Macintoshes, while the others half runs it on PCs. Deborah Juhasz, an analyst at Chevron Information Technology Co. in San Ramon, Calif., said ". . . we have a mixture of PCs and Macs. We settled on PageMaker partly because it allowed cross-platform compatibility" (p. 81). She noted that the ability to exchange documents between PCs and Macs was a selling point for the program.

Implications

The most impressive thing we learned from this project was that the whole Mac-PC compatibility issue wasn't nearly as big a problem as we expected it to be. Learning enough about all the software we dealt with was a far bigger task than was employing the software in the two different operating environments.

Based on our experience in this study, we concluded that under DOS/Windows one can indeed replicate the Mac desktop publishing platform. No, everything doesn't work exactly the same, and some purists would probably argue that there are significant differences. However, for those for whom the *product* is more important than the *process,* we feel confident in saying you will find DOS/Windows

an acceptable desktop publishing environment, one that compares favorably with the typical Agency Macintosh configuration.

Key Issues

We identified a couple of factors that are important in achieving satisfactory results in DTP efforts, or in making them as painless as possible. First, PostScript really helps. When we were describing the results of our tests, we pointed out that the results of our efforts on the Mac and the PS/2 were nearly identical. Had we not been printing to PostScript printers from both machines, this probably would not have been the case. PostScript minimizes many of the differences that often are found in various software products' printer drivers; it serves as a "common language" that lots of devices and programs speak, and which yields uniform results in different environments.

Another point worth noting is the utility of the .TIF files that are created when you scan graphics images. Most graphics packages, and both PageMaker and Ventura Publisher, import .TIF files readily. Certainly (if you have access to a scanner) scanning is a convenient way to capture an existing graphic image. We repeatedly found it quicker and easier to simply scan a hard copy of an image than to move it from one graphics file format to another, and usually with no perceptible loss of image sharpness. Given the relatively low cost of low-end scanning options (acceptable hand-held scanners with bundled-in software are available for under $200), this is a capability that is worth having in your desktop publishing hardware arsenal.

In Closing . . .

Desktop publishing software is a powerful tool that offers impressive capabilities for those whose publications warrant the investment in dollars to acquire the software and hardware components of a good DTP configuration, and the investment in time to learn to use these tools effectively. Whether you choose to install your DTP applications on a Macintosh or on a DOS/Windows machine, the tools are available in the marketplace to produce documents of professional quality. On the other hand, keep in mind that fairly sophisticated publications can be produced using only a word processing package. You're reading one—*PC TAP Consumer Reports* are composed entirely in WordPerfect. But stay tuned . . . we've got some ideas about DTP that we might want to try out in future issues.

Open Forum

This item was submitted in response to our dBASE IV Version 1.1 evaluation by Bill Samuel, EPA Office of the Inspector General In Washington. We thank Bill for sharing his discoveries of two dBASE quirks with our readers.

Bugs in dBASE IV, Version 1.1

Ashton-Tate may have made great improvements in dBASE IV from Version 1.0 to Version 1.1, but the latest release does contain some bugs. While using the Control Center, I have found two: one concerns recompilation of report files, and the other is related to deletion of catalogs.

Report File Recompilation

Sometimes when editing report designs from the Control Center, one gets the message, "Cannot recompile [path name, ending with .FRO extension], source file missing" when attempting to save and exit from report design. The same message also appears sometimes when you try to print a report when the report design has not been changed, but the database has been. This happens irregularly; I have not been able to detect any occurrence pattern. To correct the condition, take these steps:

1. Delete the report from the catalog.

2. Leave dBASE and delete the appropriate ".FRO" file from the directory.

3. Return to dBASE and add the report back to the catalog (dBASE uses the ".FRM" file to do this).

4. If you had tried to change the report design, redo the changes. When you save report design changes or print the report, a new "FRO" file will be created.

Deleting Catalogs from CATALOG.CAT

After I deleted a catalog from my dBASE IV directory, it kept showing up in the list of catalogs dBASE presents when the user wants to change catalogs. This indicates that the name of the deleted catalog had been retained in the CATALOG.CAT file, although it should have been automatically removed along with the catalog to which it referred. In this case, I had specified UNTITLED.CAT as my default startup catalog, and this catalog was empty. I corrected the problem by deleting the specification of a startup catalog. I don't know if this bug shows up only when UNTITLED.CAT is specified, or when any empty catalog is specified, or when any catalog at all is specified. Ashton-Tate warns that the bug also can occur if you have memory-resident programs in your configuration.

How to Submit Items for Open Forum

In keeping with the PC Technology Assessment Program's objective to have the user community actively involved in TAP projects, users are encouraged to submit items for inclusion in future *PC TAP Consumer Reports*. If you have independently investigated the capabilities of a software product or a hardware component, we would like to hear from you. We'd also like you to share with others your solutions to any problems you may have encountered with a particular application or device, and about tricks, shortcuts, or unique applications you have devised. Although we can't promise to publish every contribution, we will evaluate them all in terms of their potential interest to our readers and their conformance to the spirit and intent of PC TAP.

There are no additional rules for *Open Forum* contributions, but here are some guidelines:

1. Contributions must be typed. Our first preference is that they be submitted on a floppy disk in WordPerfect format. If that isn't possible, the next best method is to EMAIL the text to PCTAP, EPA30647. The least preferable method, but still acceptable, is to mail a typewritten article to TAP at the address on the cover of this publication.

2. The length of your contribution will be determined somewhat by its complexity. However, keep in mind that we're primarily interested in the purpose of your study project and how pleased you were with the results, not in the nitty-gritty details of how you did it. We will publish your name, address, and phone number for those who want more details. Two to three pages is probably a reasonable maximum length. On the other hand, a paragraph containing a nugget that may be useful to others would be equally welcome.

3. All material submitted by users is subject to our editing, and you will not be given an opportunity to review the final manuscript before publication. Sorry, you'll just have to trust us. If we have questions or don't understand any part of your text, we'll contact you for clarification.

We hope you enjoy *PC TAP Consumer Reports*, and we look forward to hearing from individuals who have insights or discoveries to share with others. Thanks for your interest and your participation in the PC Technology Assessment Program.